

Preventing intimate partner violence (IPV) through a digital parenting intervention: Intervention development, programme delivery, and preliminary results

Moa Schafer

Department of Social Policy and Intervention

Balliol College

University of Oxford

Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Social Intervention and Policy Evaluation

Supervisors: Prof Frances Gardner and Dr Jamie M. Lachman

May 2024

Word count: 60,264

To those affected by intimate partner violence
and those working tirelessly to eliminate it.

Table of Contents

List of tables **7**

List of figures **8**

List of supplementary tables and figures **9**

Abbreviations **10**

Acknowledgements **12**

Abstract **14**

Publications and presentations arising from this thesis **16**

Declaration **18**

1 Introduction **19**

1.1.1 Research overview 19

1.1.2 Candidate's role and contribution to the research 20

2 Background and Literature Review **24**

2.1 Intimate partner violence (IPV) **24**

2.1.1 Definition and prevalence 24

2.1.2 Consequences of IPV 25

2.1.3 Policy context 26

2.2 IPV theoretical and conceptual frameworks **28**

2.2.1 Sociological and economic theories of IPV 28

2.2.2 Psychological theories of IPV 29

2.2.3 Integrated theories of IPV 31

2.2.4 Socio-ecological theory: an integrative approach 32

2.2.5 Gender-transformative approaches 33

2.3 Interventions and programming: IPV prevention efforts **36**

2.3.1 Types of violence prevention: primary, secondary, and tertiary 36

2.3.2 Overview of interventions addressing IPV in LMICs 37

2.3.3 Joint prevention efforts: Intersections between IPV and other forms of violence 38

2.3.4 Parenting interventions: an opportunity to address multiple forms of family violence 42

2.3.5 Father-focused programmes and challenges with male engagement 44

2.3.6 Digital interventions and scalability of parenting programmes 47

2.4 Parenting for Lifelong Health (PLH) and ParentText **50**

2.4.1 Parenting for Lifelong Health (PLH) 50

2.4.2 ParentText 51

2.4.3 Study contexts: Jamaica and South Africa 52

3 Methods **55**

3.1 Thesis overview **55**

3.1.1 MRC Framework and overview of research design 55

3.1.2 Paper 1: Intervention development and formative evaluation 56

3.1.3 Paper 2: Quantitative pre-post pilot study 57

3.1.4 Paper 3: Qualitative study 57

3.1.5 Research questions and methodology 58

3.2 Overarching methodology and ethical considerations 59
3.2.1 Wider research study 59
3.2.2 Data collection and privacy 60
3.2.3 Participants 61
3.2.4 Recruitment 62
3.2.5 Participant informed consent 63
3.2.6 Digital assessment procedures and safety 64
3.2.7 Qualitative interviews and FGDs 66
3.3 Measuring IPV and IPV-related outcomes 67
3.3.1 Measuring IPV 67
3.3.2 Measuring attitudes toward IPV and gender-equitable behaviours 70
3.4 Ethics, safety, and privacy 73
3.4.1 Ethical approval 73
3.4.2 Safeguarding and at-risk participants 74
3.4.3 Assessments and sensitive issues 74
3.4.4 Researcher safety 75
3.4.5 Digital and in-person safeguarding measures 76
3.4.6 Equitable research 78
3.4.7 Data Management and Storage 78
3.5 Positionality and reflexivity 80
4 Paper 1 – Integrating intimate partner violence prevention content into a digital parenting chatbot intervention during COVID-19: Intervention development and remote data collection 83
4.1 My role and statement of authorship 84
4.2 Abstract 84
4.3 Background 86
4.4 Methods 91
4.4.1 Study approach 91
4.4.2 Study setting 92
4.4.3 Data collection and analysis 92
4.5 Results 96
4.5.1 Intervention and content development 96
4.5.2 Formative evaluation 108
4.5.3 Participant characteristics 110
4.5.4 User engagement outcomes 111
4.6 Discussion 113
4.7 Conclusion 117
4.8 Paper 1 Additional files 121
4.8.1 Paper 1 Additional file 1: TIDieR Checklist 121
4.8.2 Paper 1 Additional file 2: GUIDED reporting for intervention development studies 123
4.8.3 Paper 1 Additional file 3: Details of ParentText according to TIDieR 125
4.8.4 Paper 1 Additional file 4: Structure of 37-day version of ParentText 127
4.8.5 Paper 1 Additional file 5: Consultation focal points 128
4.8.6 Paper 1 Additional file 6: Example of Check-in Message for IPV Topic 1 129

5 Paper 2 – A digital parenting intervention with intimate partner violence prevention content: A pilot pre-post study in Jamaica and South Africa 130

5.1 My role and statement of authorship 131

5.2 Abstract 131

5.3 Background 134

5.4 Methods 137

5.4.1 Study setting 137
5.4.2 Participants and recruitment 138
5.4.3 Intervention 139
5.4.4 Design and procedures 141
5.4.5 Measures 145
5.4.6 Statistical analysis 152
5.4.7 Ethical Considerations 153

5.5 Results 155

5.5.1 Participant characteristics 155
5.5.2 User engagement outcomes 157
5.5.3 Behavioural outcomes 159

5.6 Discussion 162

5.7 Conclusion 169

5.8 Paper 2 Additional files 172

5.8.1 Paper 2 Additional file 1: Structure of ParentText 23-day version 172
5.8.2 Paper 2 Additional file 2: IPV Assessment 173
5.8.3 Paper 2 Additional file 3: Overview of ParentText IPV prevention content 180
5.8.4 Paper 2 Additional file 4: CONSORT Checklist 181
5.8.5 Paper 2 Additional file 5: Detailed primary and secondary outcome tables 182
5.8.6 Additional Table 1. Women's experiences of IPV (past month): South Africa 182
5.8.7 Additional Table 2. Women's experiences of IPV (past month): Jamaica 183
5.8.8 Additional Table 3. Men's perpetration of IPV (past month): South Africa 184
5.8.9 Additional Table 4. Descriptive statistics of attitudes toward IPV 185
5.8.10 Additional Table 5. Inferential statistics of attitudes toward IPV 186
5.8.11 Additional Table 6. Descriptive statistics of gender-equitable behaviours 187
5.8.12 Additional Table 7. Inferential statistics of gender-equitable behaviours 188

6 Paper 3 – Using a digital parenting intervention to prevent intimate partner violence and promote gender equitable behaviours in South Africa and Jamaica: A qualitative study exploring partnered parents' experiences of ParentText 189

6.1 My role and statement of authorship 190

6.2 Abstract 191

6.3 Background 192

6.4 Methods 195

6.4.1 Study design 195
6.4.2 Study sites and participants 195
6.4.3 The intervention 196
6.4.4 Data collection 197
6.4.5 Data analysis 198

6.4.6 Trustworthiness and rigour....198
6.4.7 Ethics....199
6.4.8 Positionality....200
6.5 Results....200
6.5.1 Participant characteristics....200
6.5.2 Themes....201
6.6 Discussion....209
6.7 Conclusion....214
6.8 Paper 3 Additional files....216
6.8.1 Paper 3 Additional file 1: Structure of ParentText Intervention 23-day version....216
6.8.2 Paper 3 Additional file 2: ParentText IPV prevention content....217
7 General Discussion....219
7.1 Overview of research findings....219
7.1.1 Summary of findings from each paper....219
7.1.2 Discussion of findings....224
7.2 Strengths and limitations....237
7.2.1 Limitations of research....237
7.2.2 Overarching strengths....242
7.3 Suggestions for future research....245
7.3.1 Randomised controlled trials....245
7.3.2 Father and male engagement....246
7.4 Implications for policy and practice....248
7.4.1 Joint prevention of VAW and VAC agenda....248
7.4.2 Scaling up interventions: use of digital technology and safety....249
7.5 Dissemination and impact....249
8 Conclusion....252
References....254
Appendices....311
Appendix 1: Ethics Forms and Approvals....311
COVID-19 Playful Parenting CUREC2 Approval....311
COVID-19 Playful Parenting Oxford CUREC2 Amendment Letter....312
University of Cape Town Ethics Approval....314
Appendix 2: COVID-19 Playful Parenting Oxford CUREC2 Form....315
Appendix 3: ParentText User Testing Study Safety Protocol....339
Appendix 4: Checklist for transparent and ethical reporting of violence research....345
Appendix 5: Author Reflexivity Statement....350
Appendix 6: Information sheets, consent forms, and instruments....354
IPV Assessment information sheet and consent form....354
ParentText Messages and Survey Information Sheet: Jamaica....355
ParentText Messages and Survey Information Sheet: South Africa....361
IPV Survey Referral Messages....364

ParentText Qualitative Information Sheets and Consent Forms 365
ParentText Qualitative Instrument.....368
Appendix 7: ParentText IPV Check-In Messages 371

List of tables

Table 1. Overview of the research design and methodology of the three empirical papers 59

Table 2. Summary of the 6SQuID intervention development framework 93

Table 3. Summary of major intersections between IPV and violence against children 96

Table 4. 6SQUiD Step 2: Summary of factors that have greatest scope for change 98

Table 5. Identified modifiable factors, IPV prevention topics, and example text-messages in ParentText 103

Table 6. Structure of IPV prevention content and check-in message schedule in ParentText 108

Table 7. Characteristics of sample 110

Table 8. ParentText user engagement outcomes 111

Table 9. Stayed in programme long enough to receive IPV Check In messages. 113

Table 10. Outcome measurements 145

Table 11. Demographic characteristics expressed as % and count, and mean and SD 156

Table 12. ParentText user-engagement outcomes of the 23-day programme 158

Table 13. Primary behavioural outcomes 160

Table 14. Secondary behavioural outcomes 161

Table 14. Participant demographic characteristics across the two countries and overall 201

Table 15. Overview of themes 202

List of figures

Figure 1. Photos from data collection in Jamaica 22

Figure 2. Photos from data collection in South Africa 23

Figure 3. UN Sustainable Development Goal 5 28

Figure 4. Socio-ecological model of IPV risk factors contributing towards IPV experienced by women ... 31

Figure 5. The gender continuum 34

Figure 6. Framework for developing and evaluating complex interventions 56

Figure 8. UNICEF Jamaica ParentText recruitment flyer 62

Figure 9. Theory of Change: ParentText IPV Prevention Content 103

Figure 10. Example of the IPV prevention content delivered via text and video in ParentText 105

Figure 11. Additional examples of multi-media content in ParentText (added after publication) 106

Figure 12. Example of illustrations of IPV prevention material integrated in ParentText 106

Figure 13. Example of updated illustrations added to ParentText (added after publication) 107

Figure 13. IPV Topic Message Flow (added after submission to journal) 140

Figure 14. IPV Topic 2 Check-In Message Flow (added after submission to journal) 141

Figure 16. Overview of ParentText timeline 143

Figure 17. Study flow diagram 144

List of supplementary tables and figures

Supplementary table 1. TIDieR Checklist 121

Supplementary table 2. GUIDED reporting for intervention development studies 123

Supplementary table 3. Details of ParentText according to TIDieR 125

Supplementary table 4: Structure of 37-day version of ParentText 127

Supplementary table 5: Consultation focal points 128

Supplementary table 6: Example of Check-in Message for IPV Topic 1 129

Supplementary table 7: CONSORT checklist 181

Supplementary table 8: Women's experiences of IPV (past month): South Africa 182

Supplementary table 9: Women's experiences of IPV (past month): Jamaica 183

Supplementary table 10: Men's perpetration of IPV (past month): South Africa 184

Supplementary table 11: Descriptive statistics of attitudes toward IPV 185

Supplementary table 12: Inferential statistics of attitudes toward IPV 186

Supplementary table 13: Descriptive statistics of gender-equitable behaviours 187

Supplementary table 14: Inferential statistics of gender-equitable behaviours 188

Supplementary table 15: Structure of ParentText Intervention 23-day version 216

Supplementary table 16: ParentText IPV prevention content (fathers) 217

Supplementary table 17: ParentText IPV prevention content (mothers) 217

Supplementary table 18: ParentText IPV prevention content (gender-neutral) 218

Abbreviations

6SQuID	Six Steps in Quality Intervention Development Framework
ACASI	Audio Computer-Assisted Self Interviewing
aRR	Adjusted risk ratio
CI	Confidence interval
CTS	Conflict Tactics Scale
CUREC	Central University Research Ethics Committee at Oxford
CWBSA	Clowns Without Borders South Africa
DPhil	Doctor of Philosophy
DREC	Department Research Ethics Committee
ESRC	Economic and Social Research Council
FGD	Focus group discussion
FGM/C	Female genital mutilation/cutting
GDP	Gross Domestic Product
GPI	Global Parenting Initiative
GUIDED	Guideline For Reporting Intervention Development Studies
HIC	High-income country
ICAST-Trial	ISPCAN Child Abuse Screening Tool for use in trials
IDEMS	Innovations in Development, Education and the Mathematical Sciences
IPV	Intimate partner violence
IRR	Incidence rate ratio
LAC	Latin America and Caribbean Region
LIC	Low-income country
LMIC	Low- and middle-income country
LSHTM	London School of Hygiene and Tropical Medicine
MRC	Medical Research Council

NCS	National Crime Survey
NCVS	National Crime Victimization Survey
NPSC	National Parenting Support Commission
ODK	Open Data Kit
OECD	Organisation for Economic Co-operation and Development
OR	Odds ratio
PLH	Parenting for Lifelong Health
RCCE	Risk Communication and Community Engagement
RCT	Randomized controlled trial
REAL Fathers	Responsible, Engaged, and Loving (REAL) Fathers Initiative
RR	Risk ratio
SD	Standard Deviation
SDG	Sustainable Development Goals
TIDieR	Template for Intervention Description and Replication
UN	United Nations
UN Women	UN entity dedicated to gender equality and empowerment of women
UNICEF	United Nations Children's Fund
UNICEF Innocenti	UNICEF Innocenti – Global Office of Research and Foresight
USAID	United States Agency for International Development Government
VAC	Violence against children
VAW	Violence against women
VAWI	WHO's Violence Against Women Instrument
WHO	World Health Organization

Acknowledgements

Throughout this doctorate journey, I have been fortunate enough to learn from, grow with, and receive support from a large number of people. I want to express my gratitude and appreciation for a couple of these individuals here.

To the incredible friends I have made through College. To Minnie – who, from day one of the DPhil, has been a source of continuous support. Thank you for the impromptu walks, flatmate evening chats, and for all of the laughter. I am deeply grateful for your kindness, endless wisdom, and humour. To my other Balliol gals: Linda – thank you for the library sessions, the Balliol hall lunches, for sending encouraging memes, and for introducing me to your wonderful friends. Sophie – thank you for always cheering me on, for pottery nights, and for the video calls. Anna – thank you for reminding me of the importance of fun, for being the ultimate hype woman, for music nights, triathlon adventures, and for being a listening ear. Vicky – thank you for your wise words, for focaccia, for spontaneous phone calls, and for chats about DPhil life and beyond. The trio – Mia, Hannah, and Emily – thank you for all of the musicals, Cornwall, and the in-between reunions. I am grateful to have had the chance to share music, travel, and laughter together with you.

To the DSPI DPhil crew – thank you for making the department feel like a community. Thank you for the lunchtime chats, common room snacks, and the DSPI run club. Kathleen, Alex, Roselinde, Adrienne, Solhee – thank you for your friendship and writing solidarity. Susie – thank you for the cinema trips, morning runs, and coffee chats. Stephanie – thank you for the late-night work sessions, the weekend library visits, the fieldwork conversations, and for the laughter. Caro – thank you for the dinner parties, for always bringing a new perspective, and for thought-provoking conversations. Hannah – thank you for the uni park walks, for your book recommendations, and for the encouraging chats.

To the many other friends, communities, and individuals in Oxford and beyond – Luke, Abhishek, Ben – thank you for your friendship, across cities, countries, and continents. To the triathlon club and lifting – thank you for giving me an opportunity to get outside and away from my desk. To the physio team – thank you for the marathon training, the pivots in plans, and the continuous support. To Helena – thank you for your guidance and for providing opportunities for reflection. To Kit – thank you for all of your support, kindness, and encouragement, both from near and from afar.

To my supervisors, Frances Gardner and Jamie Lachman – thank you for your continuous guidance, insightful feedback, and words of encouragement throughout the DPhil. I am grateful for your expertise, support, and for all of the unique opportunities you have provided me with to learn and develop. To the mentors, Alessandra, Natalie, and many more, that I have been fortunate enough to learn from, in the field of violence prevention and women's and children's rights at both Oxford and beyond – thank you for your wisdom, kindness, and your dedication to the field.

To my parents, Mamma and Pappa – thank you for your truly unwavering support. Thank you for your belief in me, for cheering me on, and for being both a sounding board and a source of strength. I am so grateful for you. To my brother, Oscar – your humour, words of wisdom, and perspective have kept me grounded and reminded me of the bigger picture.

This research would also not have been possible without the support of the research partners I had the opportunity to collaborate with – including colleagues at UNICEF, UCT, and beyond – thank you. I would also like to thank the Economic and Social Research Council (ESRC) Grand Union Doctoral Training Partnership, along with Balliol College and the Saven European Scholarship, for awarding me with scholarships that allowed me to pursue this research. I am also very grateful for the support and opportunities provided through the Department of Social Policy and Intervention. Finally, to all of the individuals who generously took the time to participate in and take part in the present research. This research truly would not have been possible without you. Thank you.

Abstract

Background: Intimate partner violence (IPV) is a serious public health issue and human rights violation, which has severe immediate and long-term consequences. Given the magnitude of the problem, there is an urgent need for evidence-based, scalable efforts to prevent and reduce IPV. In light of research highlighting the co-occurrence of IPV with other forms of family violence, such as violence against children, there has been a growing demand for joint prevention efforts that address multiple types of violence. Parenting programmes offers a unique entry-point to engage caregivers to challenge harmful gender roles and adopt healthy, nonviolent relationship dynamics, and have therefore been identified as a valuable opportunity to also address IPV. Digital parenting interventions, in particular, have been gaining attention, as they seek to overcome challenges with programme reach, male engagement, and limited resources.

Objectives: This doctoral thesis responds to calls from researchers, practitioners, and policymakers for an increase in joint prevention efforts that address IPV alongside other forms of violence in the family. More specifically, the present thesis aimed to develop and integrate IPV prevention material into the ParentText chatbot parenting intervention, investigate parents' experience of using ParentText, and explore how the intervention might reduce and prevent IPV and risk factors associated with IPV.

Methods: This doctoral thesis by publication is structured around three papers. The first paper is on the development and formative evaluation (N=96) of the IPV prevention content integrated into the ParentText intervention, developed by Parenting for Lifelong Health (PLH), which was carried out using the Six Steps in Quality Intervention Development (6SQuID) framework. The second paper is a quantitative pre-post pilot study of ParentText in

South Africa and Jamaica focusing on user engagement outcomes and preliminary IPV results (N=68). The third paper is a qualitative study using semi-structured interviews (N=20) and four focus groups (N=16) to investigate male and female parents' experiences of using ParentText in South Africa and Jamaica.

Results: Using the 6SQuID model (Paper 1), five topics on IPV prevention were integrated into the ParentText chatbot. Text-messages covering each topic, including additional materials such as cartoons and videos, were also developed. The formative evaluation revealed positive findings with high levels of user-engagement (0.50 chatbot interactions per day). The pre-post study (Paper 2) found modest levels of user-engagement (0.21-0.59 chatbot interactions per day) and revealed promising indicative results suggesting reductions in overall IPV experience, perpetration, harmful attitudes toward IPV among men, and an increase in gender-equitable behaviours. Findings from the thematic analysis which was conducted as part of the qualitative study (Paper 3), revealed that caregivers perceived the chatbot to be accessible, observed positive changes in relationship dynamics, and noted some technological barriers and limitations.

Conclusions: Overall, these research findings contribute to the expanding evidence base on IPV prevention efforts and the use of digital interventions, highlighting areas of promising potential and those that warrant further research. The thesis offers preliminary, yet valuable, insights demonstrating how digital technology can be used to deliver violence prevention content, reaching a larger population than in-person methods. The findings also indicate that future research would benefit from focusing on enhancing participant engagement, particularly among fathers, and exploring hybrid modalities to maximize intervention impact and reach.

Publications and presentations arising from this thesis

Published:

Schafer, M., Lachman, J. M., Gardner, F., Zinser, P., Calderon, F., Han, Q., Facciola, C., & Clements, L. (2023). Integrating intimate partner violence prevention content into a digital parenting chatbot intervention during COVID-19: Intervention development and remote data collection. BMC public health, 23(1), 1708. (Paper 1)

Papers submitted for publication:

Schafer, M., Lachman, J.M., Zinser, P., Calderon, F., Han, Q., Facciola, C., Clements, L., Gardner, F., Haupt Ronnie, G., & Sheil, R.A digital parenting intervention with intimate partner violence prevention content: A pilot pre-post study in Jamaica and South Africa. Manuscript submitted for publication. (Paper 2)

Schafer, M., Lachman, J.M., Zinser, P., Calderon, F., Han, Q., Facciola, C., Clements, L., Haupt Ronnie, G., Kame, Z., Ntentema, Z., Sheil, R., Harris, J., Coore, C., & Gardner, F. Using a digital parenting intervention to prevent intimate partner violence and promote gender equitable behaviours in South Africa and Jamaica: A qualitative study exploring partnered parents' experiences of ParentText. Manuscript submitted for publication. (Paper 3)

Presentations:

Schafer, Moa. (2024, October; forthcoming). Preventing violence against children and intimate partner violence using a digital parenting intervention: A pre-post study of the ParentText chatbot in Jamaica and South Africa. SVRI Forum: The Sexual Violence Research Initiative. Cape Town, South Africa.

Schafer, Moa. (2024, August; forthcoming). Preventing violence against children and intimate partner violence using a digital parenting intervention: A pre-post study of the ParentText chatbot in Jamaica and South Africa. ISPCAN (The International Society for the Prevention of Child Abuse & Neglect) Sweden Congress. Uppsala, Sweden.

Schafer, Moa. (2024, July; forthcoming). Integrating intimate partner violence prevention into a digital parenting intervention: Preliminary results from a mixed methods study of the Parenting for Lifelong Health chatbot in Jamaica. UNICEF Jamaica. Oxford, United Kingdom.

Schafer, Moa. (2023, September). Preventing violence against children and intimate partner violence through a digital parenting intervention: A mixed-methods programme evaluation of the Parenting for Lifelong Health (PLH) ParentText chatbot in parents and caregivers in Jamaica. ISPCAN Edinburgh Congress: The International Society for the Prevention of Child Abuse & Neglect. Edinburgh, Scotland.

Schafer, Moa. (2023, June). Preventing intimate partner violence (IPV) and promoting gender equality: Integrating IPV prevention material in a digital parenting programme. European Institute of Gender (EIGE). Oxford, United Kingdom.

Schafer, Moa. (2023, May). Integrating intimate partner violence (IPV) prevention into digital parenting programmes in sub-Saharan Africa and beyond. The Department of Social Intervention and Policy Evaluation Symposium for Early Researchers in Social Policy & Intervention (SERSPI). Nuffield College, University of Oxford, United Kingdom.

Schafer, Moa. (2022, October). Integrating intimate partner violence (IPV) prevention into digital parenting programmes in sub-Saharan Africa and beyond. SVRI (Sexual Violence Research Initiative) Forum. Cancún, Mexico.

Schafer, Moa. (2022, June). Integrating intimate partner violence (IPV) prevention into digital parenting programmes. The Economic and Social Research Council (ESRC) Grand Union Training Partnership Annual Conference. St. Anne's College, University of Oxford, United Kingdom.

Schafer, Moa. (2022, May). Development and integration of intimate partner violence (IPV) prevention content into the parenting programme ParentText. The Department of Social Intervention and Policy Evaluation Symposium for Early Researchers in Social Policy & Intervention (SERSPI). Nuffield College, University of Oxford, United Kingdom.

Schafer, Moa. (2021, October). Webinar, Lessons on virtual violence prevention and response programmes: The Integration of Intimate Partner Violence (IPV) Prevention into a Chatbot-Led Intervention. The Prevention Collaborative. Oxford, United Kingdom.

Schafer, Moa. (2021, May). Intimate Partner Violence Prevention in the ParentText Chatbot-Intervention: A Gender-Transformative Approach. The Department of Social Policy and Intervention (DSPI) Violence Research Group. University of Oxford, United Kingdom.

Schafer, Moa. (2021, April). Integrating intimate partner violence prevention into Parenting for Lifelong Health: Content and assessment. Centre for Evidence-Based Intervention (CEBI) Seminar. University of Oxford, United Kingdom.

Declaration

Degree Title: Doctor of Philosophy in Social Intervention and Policy Evaluation

DECLARATION OF AUTHORSHIP

Name (in capitals): MOA SCHAFER **Candidate number: 1038318**

College (in capitals): BALLIOL **[Supervisor/Adviser:] PROF FRANCES GARNDER**

Title of [thesis/extended essay] (in capitals): PREVENTING INTIMATE PARTNER VIOLENCE THROUGH A DIGITAL PARENTING INTERVENTION: INTERVENTION DEVELOPMENT, PROGRAMME DELIVERY, AND PRELIMINARY RESULTS

Word count: 60,264

Please tick to confirm the following:

I have read and understood the University's disciplinary regulations concerning conduct in examinations and, in particular, the regulations on plagiarism (*The University Student Handbook* Section 7.7)	X
I have read and understood the Education Committee's information and guidance on academic good practice and plagiarism	X
The [thesis/dissertation/extended essay/assignment/project/other submitted work] I am submitting is entirely my own work except where otherwise indicated.	X
It has not been submitted, either partially or in full, either for this Honour School or qualification or for another Honour School or qualification of this University (except where the Special Regulations for the subject permit this)[1], or for a qualification at any other institution.	X
I have clearly indicated the presence of all material I have quoted from other sources, including any diagrams, charts, tables or graphs.	X
I have clearly indicated the presence of all paraphrased material with appropriate references.	X
I have acknowledged appropriately any assistance I have received in addition to that provided by my [tutor/supervisor/adviser].	X
I have not copied from the work of any other candidate.	X
I have not used the services of any agency providing specimen, model or ghost-written work, or unauthorised artificial intelligence in the preparation of this thesis/dissertation/extended essay/assignment/project/other submitted work. See also section 2 (4) of Statute XI on University Discipline under which members of the University are prohibited from providing material of this nature for candidates in examinations at this University or elsewhere. Sections 3 and 4 of Proctors' Regulations 1 of 2003 dealing with unauthorised use of AI, also apply.	X
I agree to retain an electronic copy of this work until the publication of my final examination result, except where submission in hand-written format is permitted.	X
I agree to make any such electronic copy available to the examiners should it be necessary to confirm my word count or to check for plagiarism.	X

Candidate's signature: ………….. Date: …29 May 2024……

[1] [1] Where a dissertation/thesis builds upon preparatory work previously submitted (such as a Research Design Essay or Research Proposal etc.), this is permissible.

1http://www.ox.ac.uk/students/academic/guidance/skills

1 Introduction

1.1.1 Research overview

Intimate partner violence (IPV) is a serious public health issue and human rights violation that results in severe physical and mental health problems (García-Moreno & Stöckl, 2009) that affects millions of women globally (WHO, 2021c). Research indicates that over 26% of ever-partnered women 15 years and above are estimated to have experienced IPV at least once during their life (Sardinha et al., 2022). Given the magnitude of the problem, there is an urgent need for efforts to prevent and reduce IPV (Leight, 2022). Alongside calls for greater IPV prevention initiatives, there is a growing body of evidence highlighting the co-occurrence of IPV with other types of family violence, such as violence against children (Pearson et al., 2022). In light of research underscoring the shared risk factors between IPV and violence against children, calls for joint prevention efforts that target both forms of violence simultaneously have been increasing (Bott et al., 2020).

Parenting interventions have been identified as a promising strategy to address multiple forms of family violence, including IPV and violence against children (VAC), concurrently (Guedes et al., 2016). Addressing IPV through parenting programmes also holds the potential of engaging male caregivers and fathers (Ashburn et al., 2017). Indeed, fatherhood has been identified as a pivotal entry-point for involving men in tasks that promote their role in parenting and in domestic work and as a strategy for addressing harmful gender roles, attitudes, and power dynamics in the family (Bott et al., 2020). Furthermore, men with more inequitable gender attitudes and attitudes that condone violence against women are more likely to have perpetrated IPV (Fleming et al., 2015). Accordingly, parenting programmes which seek to challenge harmful gender norms by encouraging men to become more involved

caregivers and equitable partners may therefore help prevent IPV in addition to reducing child maltreatment. Moreover, attitudes toward gender roles, gender equality, and violence against women are often passed between generations (Farré & Vella, 2013; Ruti Galia Levtov et al., 2014); changing men's attitudes to become more gender equitable likely also influences their children's attitudes. This further underscores the intergenerational aspects of violence in the family, and how parenting interventions can adopt a life course perspective when seeking to prevent violence (Bott et al., 2020).

1.1.2 Candidate's role and contribution to the research

The aim of this doctoral thesis is to build on the existing research evidence base by more closely investigating how parenting programmes may play a role in reducing IPV and addressing IPV-related risk factors. As part of this, I **developed** (see *DPhil Paper 1*), quantitatively **tested** (see *DPhil Paper 2*), and qualitatively **evaluated** (see *DPhil Paper 3*), IPV prevention content that was integrated into a digital parenting intervention, ParentText, aimed at low- and middle-income parents and caregivers. As part of *DPhil Paper 1*, I designed and developed, through consultations with IPV experts and researchers, local organisations, and institutions (Clowns Without Borders South Africa, University of Cape Town, Parenting Partners Caribbean, Jamaica, UNICEF Jamaica), IPV prevention multi-media content and material (both text, video, audio, and image-based). Based on consultations and discussions, material was revised to enhance clarity and cultural acceptability.

I also designed, organized, and led the research study that sought to quantitatively pilot the IPV prevention content that was integrated into ParentText in two different cultural contexts with high rates of IPV: South Africa and Jamaica. I was responsible for the design, execution,

and management of the pilot study in both countries, working with local research assistants in South Africa and UNICEF Jamaica members of staff in Kingston. Due to Covid-19 travel restrictions and funding limitations, this involved remotely leading the participant recruitment and intervention dissemination. This role involved supervision and training of local research assistants and members of staff as well as leading remote participant recruitment, remote data collection, and data management. I also designed study surveys and measurements, developed and delivered using the open-source platform Open Data Kit (ODK), and ensured the integration of local referral resources.

I was also responsible for the development and coordination of the translation of the intervention content, the quantitative surveys, and the qualitative interview guides. Following quantitative data collection, I carried out the data cleaning, database management, and data analysis. Remote data collection started in August 2022, with in-person fieldwork in Jamaica (see Figure 1) and South Africa (see Figure 2) between November 2022 and March 2023. For the qualitative data collection (*DPhil Paper 3),* I developed and designed the interview and focus group guide, and also trained local research assistants and staff who supported with translation and interpretation during qualitative data collection. I also conducted all of the qualitative data analysis and interpretation. I was also involved in the dissemination of study results, which included producing published journal articles and policy briefs, as well as presenting findings at international conferences, during online webinars, and for partner organisations and institutions (for details see Dissemination and impact). The IPV prevention material that I developed has been translated into over eight languages in five countries (Jamaica, South Africa, Sri Lanka, Tanzania, and Malaysia) and has contributed to the global dissemination of ParentText informing how the parenting chatbot can address violence against women and violence against children. The content and measurements have been

incorporated into several Global Parenting Initiative (GPI) parenting intervention randomized controlled trials being conducted in Tanzania (Baerecke et al., 2024), South Africa (Ambrosio et al., 2023), and Malaysia (Cooper et al., 2023).

Figure 1. Photos from data collection in Jamaica



Photo description: Photos from qualitative data collection in Jamaica (from top left-hand corner clockwise): (1) fieldwork travel to rural schools and women's centres; (2) downtown Kingston, Jamaica (3); image of 'Stop Domestic Violence' roadside billboard depicting the representation of violence as an issue in public media; (4) classroom used during focus group discussion and interviews *(n.b., photos showing the schools and women's centres included in*

the study are not depicted in order to retain anonymity) (Source: photos by the author during fieldwork)

Figure 2. Photos from data collection in South Africa



Photo description: Photos from qualitative data collection in South Africa (from top left-hand corner clockwise): (1) University of Cape Town campus; (2) fieldwork site for focus group discussions and interviews; (3) room used for focus group discussions; (4) location of qualitative data collection (Source: photos by the author during fieldwork).

2 Background and Literature Review

2.1 Intimate partner violence (IPV)

2.1.1 Definition and prevalence

> *'Across their lifetime, 1 in 3 women, around 736 million, are subjected to physical or sexual violence by an intimate partner or sexual violence from a non-partner – a number that has remained largely unchanged over the past decade.'*
> *– World Health Organization (WHO) (2021, p.1)*

Violence against women (VAW) is both a serious public health problem and a violation of human rights (Sardinha et al., 2022). VAW is a form of violence defined by the United Nations (UN) as 'any act of gender-based violence that results in, or is likely to result in, physical, sexual, or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life' (United Nations, 1993, p. 2). VAW is also sometimes referred to as VAWG (violence against women and girls) to reflect that gender-based violence affects girls as well as women across the life cycle (Bott et al., 2020). While VAWG includes various types of violence such as non-partner sexual violence, trafficking, and harmful practices like female genital mutilation/cutting (FGM/C) (UN Women, 2017), intimate partner violence (IPV), which is the focus of this thesis, refers specifically to violence that is perpetrated by an intimate partner (WHO, 2013 p.vii).

IPV is a serious and pervasive issue, which has both acute and longstanding effects on women and families worldwide (Stubbs & Szoeke, 2021). IPV is the most common form of

violence experienced by women (UNSD, 2015) and global estimates indicate that, in their lifetime, 1 in 4 women experience IPV (WHO, 2021b). This thesis uses the definition from the World Health Organisation (WHO, 2013 p.vii), which defines IPV as 'behaviour by an intimate partner that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviours'. The definitions of different types of IPV, such as physical and psychological IPV, are discussed in further detail in Chapter 3.3. Even though IPV can take place regardless of gender, most reported cases of IPV are perpetrated by men towards women (Anderson & van Ee, 2018). However, as discussed in greater depth in the measurement section, this is contested by some scholars, such as Straus (2005).

Many of the terms related to IPV are contested, and their definitions and meanings continue to be debated, refined, and developed among experts and practitioners (Fulu et al., 2013). Terms such as 'victim' and 'survivor' are often used when describing individuals who experience IPV. However, in recent years, this terminology has been recognised as limiting an individual's sense of identity and self-agency, and increasingly, scholars recommend using the term 'experience' instead (Fulu et al., 2013). Accordingly, for the purpose of this thesis, the term 'experience' (rather than 'victimisation') and the term 'perpetration' will be used in relation to IPV.

2.1.2 Consequences of IPV

IPV experience is associated with a range of short- and long-term physical and mental health consequences including physical injuries, mental health issues, chronic disease, and stress (WHO, 2012). For example, physical consequences that can result from IPV experience include fractures and broken bones, damage to sight or hearing, as well as back, neck, and

head injuries (Heise et al., 2002). In addition to injuries, experiencing IPV can also have a large impact on physical functioning and wellbeing. Women who have experienced IPV are also at increased risk of chronic pain syndromes, gastrointestinal disorders, reproductive health issues (Heise et al., 2002). IPV experience also has serious effects in terms of mental wellbeing and health. Research indicates that experiencing IPV increases the odds of having depression (Devries et al., 2013) and that women who have been abused also suffer from more mental ill health than non-abused women (Roberts et al., 1998). IPV against women also occurs during pregnancy, and global prevalence estimates of IPV during pregnancy among ever-pregnant women range from 3.8% to 8.8% (Devries et al., 2010). IPV during pregnancy is considered a serious risk factor associated with numerous adverse health effects for both the mother and the new-born (Devries et al., 2010). Consequences of IPV during pregnancy include effects on maternal health such as inconsistent prenatal care, insufficient weight gain, and substance use, as well as adverse neonatal outcomes such as preterm birth and low birth weight (Alhusen et al., 2015). Research findings also indicate that more than a third of homicides of women are perpetrated by an intimate partner (Stöckl et al., 2013), and numerous studies have identified IPV as a leading cause of maternal mortality (Campbell et al., 2007). IPV also has serious effects on children. Children who witness IPV in the family are at greater risk of a wide range of behavioural and emotional problems and physical health effects (Wathen & MacMillan, 2013).

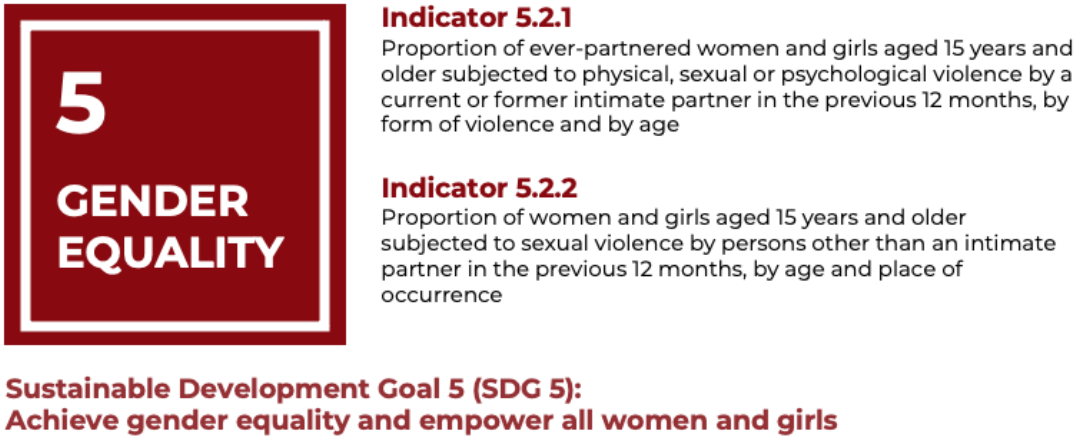
2.1.3 Policy context

Calls for the elimination of violence against women has been spearheaded by women's health and women's rights organisations for numerous decades (WHO, 2021b). On a global level, these calls include the 1993 Declaration on the Elimination of Violence against Women adopted by the UN General Assembly, which requires Member States to condemn violence

against women, develop sanctions in legislation to redress the wrongs caused to the individuals who have experienced harmful practices, and offer access to mechanisms of justice (UN Women, 2013). Similarly, the 1995 Beijing Platform for Action, adopted at the Fourth World Conference on Women, urges governments to enact and reinforce sanctions in legislation to redress the wrongs caused to individuals who have experienced violence and to adopt and review legislation seeking to eliminate violence against women (UN Women, 2013).

Another notable document is the 2030 UN Agenda for Sustainable Development, which was adopted by UN Member States in 2015 (WHO, 2021b) and includes the Sustainable Development Goal 5 (SDG 5): 'Achieve gender equality and empower all women and girl' and, more specifically, Target 5.2 which seeks to 'Eliminate all forms of violence against women and girls in the public and private spheres' (UN General Assembly, 2015, p.18) (see Figure 3). Likewise, in 2016 at the 69th World Health Assembly, WHO Member States endorsed resolution WHA69.5 '*Global Plan of Action to Strengthen the Role of the Health System within a National Multisectoral Response to Address Interpersonal Violence, in particular Against Women and Girls, and Against Children'* (Burke et al., 2024; World Health Organisation, 2016, p.1). This plan urges WHO Member States to explicitly address VAW in health policies and guidelines in alignment with WHO recommendations and international human rights standards and includes improving the collection and use of robust data (Burke et al., 2024; WHO, 2021c). Notably, the WHO resolution also addresses other forms of family violence, such as violence against children (WHO, 2016b). This is worth noting, particularly given the areas of overlap which are shared between violence against women and violence against children (Guedes et al., 2016). These intersections are explored further in the section that follows.

Figure 3. UN Sustainable Development Goal 5



Source: SDG 5 Indicators (UN General Assembly, 2015); Figure adapted from WHO (2021c)

2.2 IPV theoretical and conceptual frameworks

The field of IPV comprises of a variety of distinct theories and the phenomenon can be explained by a range of frameworks, including psychological, biological, feminist, economic, social learning, ecological, and criminological perspectives (Ali & Naylor, 2013a, 2013b; Lawson, 2012; Sarah Meyer et al., 2024).

2.2.1 Sociological and economic theories of IPV

Sociological theories of IPV predominately comprise of two main groups of theories, which approach IPV from either a feminist perspective or a general family violence perspective (Lawson, 2012). The family violence perspective approach aims to explain IPV 'as a manifestation of family conflict' (Meyer & Frost, 2019, p.36). Theories used by scholars in the family violence framework include paradigms such as systems theory, exchange theory, and resource theory (Lawson, 2012). In contrast, the feminist perspective argues that the

family systems perspective's emphasis on conflict as the source of IPV is misled, and argue instead that the source of IPV concerns power and control, rather than conflicts of interest between individuals (Lawson, 2012). Notably, the role that gender plays in IPV is the key factor which separates the theoretical underpinnings of the family violence perspective and the feminist perspective of IPV (Lawson, 2012). Indeed, the empirical and theoretical literature on IPV is filled with debates on whether the causes and effects of IPV are gendered (De Coster & Heimer, 2021), and there is quite a stark polarisation and difference in ideology surrounding the role of gender between scholars (Meyer & Frost, 2019).

Economic theories are also increasingly being used to understand drivers of IPV (Ranganathan et al., 2021). In broad terms, economic theories suggest that individuals act rationally, making choices that aim to maximize their utility (Meyer et al., 2024). The household is typically viewed as a cooperative economic entity that can negotiate and develop comparative advantage in order to maximize satisfaction and well-being (Farmer & Tiefenthaler, 1997). There exist a range of economic theories which seek to address predictors of IPV (Ali & Naylor, 2013a). Findings from a systematic review and narrative synthesis examining economic theories of predictors of IPV against women found that articles addressed predictors of IPV primarily through theories such as bargaining theory, resource theory, empowerment theory, exchange theory, and game theory (Meyer et al., 2024).

2.2.2 Psychological theories of IPV

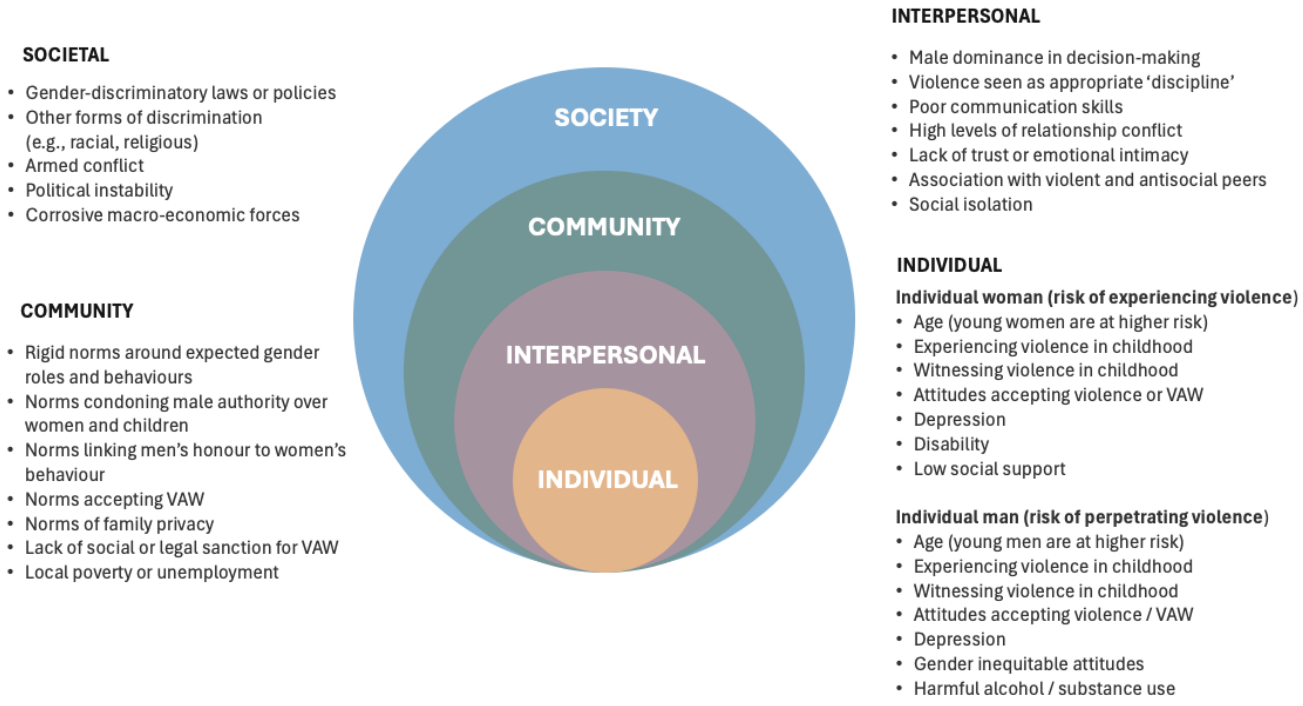
There are also a range of psychological theories that seek to explain IPV. The psychological perspective of IPV predominately examines factors which impact the individual experiencing or perpetrating IPV (Ali & Naylor, 2013b). Psychological theories explore the role of various

factors and draw upon a range of theoretical models, including social learning theory, attachment styles, trauma, aggression, personality disorders, substance abuse, and communication difficulties (Ali & Naylor, 2013b). For example, social learning theory posits that aggressive behaviour is learned through observational learning within the family (Bandura, 1973; Cameranesi & Piotrowski, 2020) and that children who witness violence in the home are more likely to perpetrate violence as adults (Anderson & Kras, 2008). This theory suggests that modelling behaviour is a critical aspect of learning aggressive behaviour and is learned to a large extent through repetition and reinforcement (Anderson & Kras, 2008). Coercive family process theory (or coercion theory for short) (Patterson & Reid, 1982), is also often used to describe the development of aggressive behaviour in youth, and has also been used to explain how negative family relationships and interactions during adolescence may predict IPV in adulthood (Andrews et al., 2000; Ha et al., 2021). More specifically, coercion theory is a developmental theory that proposes that individuals learn aggressive behaviours during childhood in the family, and posits that these behaviours, along with the expectation of their rewards, continue into partner relationships (Dishion & Snyder, 2015). In other words, family interactions can produce responses that reinforce and increase aggression and conflict (Patterson & Reid, 1982; Timmons et al., 2021) and coercive behaviours are learned via negative reinforcement through conflict termination (Mitnick et al., 2021). Some scholars have also drawn on attachment theory to explain and understand IPV (Ainsworth et al., 1978; Bowlby, 1969; Cameranesi & Piotrowski, 2020). For example, attachment theory has been used to examine how attachment styles may influence an individual's likelihood of perpetrating IPV (Heyman & Foran, 2013), with insecure attachment predicting the perpetration of IPV in adulthood (Dutton & White, 2012).

2.2.3 Integrated theories of IPV

In recent years, more integrated theoretical frameworks of IPV have been gaining attention, placing greater emphasis on recognising the issue as a multifaceted phenomenon (Meyer & Frost, 2019). For example, public health researchers often adopt a broad theoretical approach, grounded in the socio-ecological framework (Ranganathan et al., 2021) which uses a multifaceted, intersectional lens to account for the complex range of factors – both individual, interpersonal, social, and structural – that underlie IPV (Meyer & Frost, 2019). The socio-ecological model is often used as a framework to investigate the different levels of factors, (individual, interpersonal, community, and societal) that interact to influence a person's likelihood of experiencing or perpetrating IPV (see Figure 4) (Heise, 1998; Kato-Wallace et al., 2019; Ranganathan et al., 2021). This allows the framework to draw on a wide range of psychological, behavioural, sociological, and biological theories to better understand different types of risk factors which may contribute to IPV (Ranganathan et al., 2021).

Figure 4. Socio-ecological model of IPV risk factors contributing towards IPV experienced by women



Source: Adapted from The Prevention Collaborative (2020)

2.2.4 Socio-ecological theory: an integrative approach

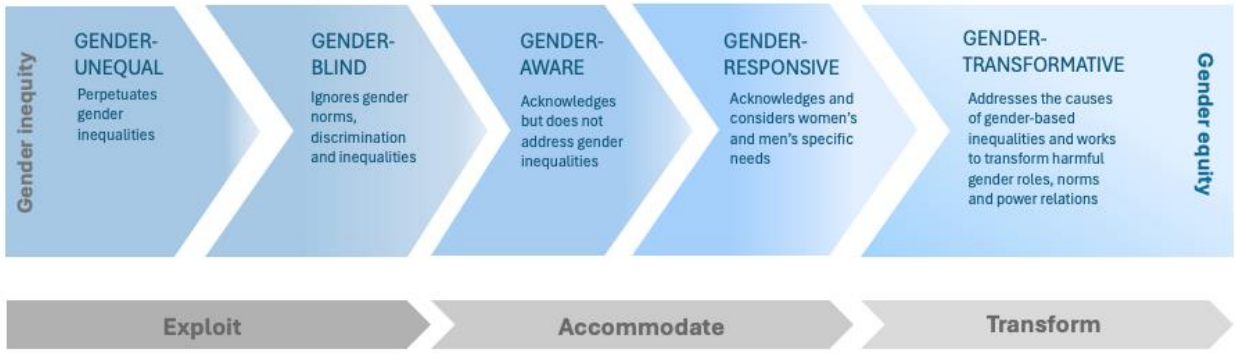
Given the complexity of IPV and the interplay of different risk factors involved, the following thesis will draw upon the so-called integrated ecological framework (Heise, 1998). An adaptation of the integrative ecological framework within the field of IPV has been proposed by Heise (1998), which draws on both feminist perspectives and previous versions of the ecological models. Her integrated version of the model utilises the same ecological framework offered by Dutton (2006), which was first applied to violence and the aetiology of child abuse and neglect by Belsky (1980). Incorporating a feminist perspective into the framework, Heise (1998) outlines the model as comprised of four nested levels of violence-related factors: individual, interpersonal, community, and societal. The framework acknowledges various risk factors of IPV, such as social and economic policies that perpetuate socioeconomic inequalities, childhood experiences of violence, and romantic jealousy, a factor which in recent studies has been identified as a potential trigger of and pathway to IPV (Aloyce et al., 2023, 2024; Buller et al., 2023; Kyegombe et al., 2022). Furthermore, while she emphasises that gender is a core part of the ecological model, Heise (1998) also acknowledges the importance of considering multiple, casual factors in the model. She goes on to underscore that the framework incorporates theoretical factors beyond the patriarchy and that it is the interplay of these numerous factors that is critical, rather than the use of a single-factor model and explanation for IPV (Heise, 1998). In addition to the role of individual risk factors, there has been growing attention placed on couple and community factors impacting IPV (VanderEnde et al., 2012). In a revised version of the socio-ecological model Heise (2011) underscores the role that relationships dynamics, such as decision-making (Zegenhagen et al., 2019) and romantic jealousy (Kyegombe et al., 2022), play in IPV. Given the emphasis on the interplay of risk factors, this framework is particularly helpful when examining how multifaceted interventions, such as parenting programmes,

might be able to reduce both IPV and other forms of violence in the family, by addressing shared risk factors.

2.2.5 Gender-transformative approaches

This DPhil thesis draws upon the concept of gender transformative approaches as an additional theoretical framework. Gender transformative approaches can be defined as those which 'addresses the causes of gender-based inequalities and works to transform harmful gender roles, norms and power imbalances' (UNICEF, 2020c, p.3). The origin of the term is credited to Gupta (2000), who outlined a continuum of classifications of approaches seeking to address gender, sexuality, and HIV. The UNFPA and Promundo, two organizations which spearhead major funding and implementation efforts in the field of GBV prevention, adapted Gupta's framework in 2010, categorizing the continuum into four specific gender programming categories: gender exploitative, gender neutral, gender sensitive, and gender transformative (Casey et al., 2018). The framework was further adapted by Pederson et al. (2015) who refined the continuum using the following terms: gender unequal (also referred to as gender discriminatory by some scholars); gender blind (sometimes referred to as gender neutral), gender sensitive; gender specific (also referred to as gender responsive by some organisations), and gender transformative (see Figure 5). In this framework, gender unequal approaches refer to those that perpetuate gender inequalities, gender blind refers to ones that ignore gender norms, gender sensitive approaches recognise but does not actively address gender inequalities, gender specific or responsive approaches refer to approaches that recognise gender norms and consider women's and men's particular needs, and gender transformative approaches address the causes of and work to transform harmful gender norms, roles, and relations (Pederson et al., 2015).

Figure 5. The gender continuum



Source: Figure adapted from UNICEF (2020c) and Pederson et al. (2015)

In the field of prevention efforts addressing gender-related outcomes, such as IPV, family wellbeing, sexual and reproductive health, child marriage, and access to education, the gender transformative approach has been identified as an ideal standard for prevention programming (Casey et al., 2018; Kyegombe et al., 2022). However, some scholars, such as Brush and Miller (2019), have expressed strong reservations about the approach, arguing that mixed results from research on gender-transformative interventions indicate that the conceptual framework is flawed, does not work, and does not adopt a sufficiently intersectional approach. These criticisms, however, have been strongly challenged in the field (Orchowski, 2019). For instance, Dworkin & Barker (2019) highlight that it is reductionist to label the entire gender-transformative approach as flawed due to mixed results following some programmes, which are rather a reflection of the complex realities of programme implementation and fidelity, rather than the framework itself.

Emerging evidence of interventions which adopt a gender-transformative approach have shown promising findings in terms of shifting restrictive gender norms and reducing violence-related behaviours (Casey et al., 2018; Stewart et al., 2021). For instance, a

systematic review of interventions using gender transformative approaches to prevent IPV by Pérez-Martínez et al. (2023) found that 12 out of 15 of the included studies demonstrated reductions in IPV. Promising findings are also revealed in a systematic review of interventions targeting restrictive gender norms by Levy et al. (2020), whereby programmes aiming to improve attitudes to violence found significant improvements 81% of the time. Notably, however, only 38% of programme evaluations in the review which measured experiences of violence demonstrated significant improvement (Levy et al., 2020). These differences in changes in behaviours and beliefs highlight important considerations surrounding pathways to change, and how changes in individual attitudes, gender norms, and behaviours influence each other, questions which have been raised in other gender transformative studies as well (McLean et al., 2020). For instance, findings from a study on the gender-transformative IPV prevention programme Indashyikirwa, in Rwanda, suggest that the relationship between behaviours, attitudes, and norms is not necessarily linear (McLean et al., 2020). In their research, the authors found that while women's and men's behaviours and beliefs changed, and reductions in violence occurred, certain restrictive gender norms around male authority still persisted (Dunkle et al., 2020; McLean et al., 2020). Reflecting on these outcomes, McLean et al. (2020) emphasise that while their findings showed significant changes in individual behaviours and beliefs, the observed persistence of more deeply-entrenched norms around gender roles and male authority highlight the need for broader structural support to consolidate normative change at the individual- and community-level. The importance of targeting restrictive gender attitudes at the individual level, whilst simultaneously seeking to create structural changes has been stressed by other research as well (Kågesten & Chandra-Mouli, 2020). This emphasis of taking an ecological approach further underscores the importance of ensuring that gender transformative interventions

address factors across different levels of the ecological model in order to drive change in both gender relations, attitudes, and behaviours (Kato-Wallace et al., 2019).

2.3 Interventions and programming: IPV prevention efforts

2.3.1 Types of violence prevention: primary, secondary, and tertiary

Another important consideration includes the types of prevention efforts that exist in the field of violence. In the violence prevention field, interventions can be divided into three main types: primary, secondary, and tertiary prevention (Matjasko et al., 2012). Primary prevention interventions seek to target risk and protective factors to prevent violence before it occurs, secondary prevention interventions take place directly after violent behaviours have occurred and aim to reduce the re-occurrence of violence and reduce its short-term effects, and tertiary interventions occur after violent events have taken place and seek with addressing the long-term impacts (Kirk et al., 2017; Matjasko et al., 2012). While tertiary prevention interventions are extremely important in terms of responding to IPV occurrence and helping meet the needs of and providing support for survivors of violence (e.g., counselling, domestic abuse shelters), this paper focuses on primary and secondary prevention efforts that seek to prevent violence from taking place and reducing its re-occurrence. Prevention efforts that seek to address shared risk factors of IPV and VAC therefore provide a unique opportunity to prevent the occurrence of multiple forms of violence simultaneously.

Secondary prevention efforts are often used to address the risk factors which promote or sustain violent behaviours in parental or intimate relationships (Meyer & Frost, 2019). In this context, risk factors can be defined as the characteristics or surroundings of an individual which increase the likelihood that the person will experience an adverse outcome (Mrazek &

Haggerty, 1994). In relation to IPV and VAC, several shared risk factors have been identified between the two forms of violence, as discussed more in-depth in the section on Intersections between IPV and other forms of violence – joint prevention efforts. These intersecting risk factors are receiving increasing attention from scholars and practitioners, given the potential they hold in terms of leveraging programming opportunities to intervene and in potentially preventing multiple forms of violence simultaneously (Guedes et al., 2016).

2.3.2 Overview of interventions addressing IPV in LMICs

There exist a wide range of primary prevention programmatic efforts that seek to prevent and reduce IPV in LMICs (Turner et al., 2020). For instance, a recent systematic review and meta-analysis by Alsina et al. (2023) on interventions to prevent IPV identified 26 studies, out of which 17 were conducted in LMICs. Results revealed an average 15% decrease in risk of experiencing or perpetrating IPV amongst intervention participants, a significant effect that is in line with previous evidence on the efficacy of interventions seeking to prevent IPV (Jewkes et al., 2021). Programmes in the review ranged from individual support and group-based counselling programmes, to economic empowerment and community mobilization interventions, and also included IPV screening and referral interventions for women (Alsina et al., 2023). Results from a meta-regression analysis in the review found that participant gender was associated with variations in intervention effects. Interventions targeting both women and men and those targeting men only, were more effective compared to those aimed at only women (Alsina et al., 2023). The study authors note, however, that in the analyses the type of interventions aimed at both women and men, and those aimed at men only, were different from those aimed solely at women (Alsina et al., 2023). Overall, the types of interventions aimed only at women primarily comprised of counselling and individual support, a design which might be more responsive and less associated with the underlying

causes of IPV, whereas the interventions that included men typically included small group counselling and community mobilization components. As such, the lower level of effectiveness in the interventions targeting only women may have been due to the intervention type and the theory of change being less suitable (Alsina et al., 2023). A systematic review on RCTs of interventions addressing IPV in Sub-Saharan Africa by Cork et al. (2020) also provides a number of promising findings. The results revealed that interventions with more significant and larger effects were primarily ones that operated at the community level or across multiple levels of the ecological model. This finding is consistent with theories such as the integrated ecological model of violence, which suggest that factors across various ecological levels, from the individual to the societal level, contribute to IPV (Heise, 1998, 2011).

2.3.3 Joint prevention efforts: Intersections between IPV and other forms of violence

In the past, the fields of IPV and VAC were frequently viewed as moderately distinct (Bacchus et al., 2017). Given increasing evidence of the various intersections that surround the two forms of violence, there have been calls for prevention efforts that address both issues (Guedes & Mikton, 2013). In particular, three major intersections that have been identified between IPV and VAC include: (1) common risk factors and violence co-occurrence; (2) similar consequences and inter-generational effects; and (3) shared social norms (Guedes et al., 2016).

2.3.3.1 Common risk factors and violence co-occurrence

A major intersection between IPV and VAC includes the risk factors they share (Guedes et al., 2016). For instance, society- and family-level risk factors like acceptability of family

violence, poverty, and marital conflict, as well as perpetrator-level risk factors, such as substance abuse, poor mental health, and parental history of physical abuse, are all factors shared by both forms of violence (Alhusen et al., 2014; Gracia, Rodriguez, Martín-Fernández, & Lila, 2017). This overlap in risk factors between IPV and VAC has been gaining attention in the prevention field as scholars have started to explore potential ways of addressing shared risk factors which may reduce both forms of violence concurrently (Stark & Seff, 2021). Another key risk factor associated with both IPV and VAC are social and gender norms that condone violence (Guedes et al., 2016). The implications of these social norms in relation to IPV and VAC and joint prevention efforts will be considered more closely at the end of this section.

Another important intersection between IPV and VAC is their co-occurrence, in other words, the occurrence of both forms of violence in the same home during the same time period (Guedes & Mikton, 2013). Research from high-income countries (HICs) and low- and middle-income countries (LMICs), indicate that children in families with IPV are also at greater risk of experiencing child maltreatment (Guedes et al., 2016; Jouriles et al., 2008). In the family systems literature, it has been suggested the negative (or positive) interactions within one dyad in the family (e.g. couple dyad) may spill over to another dyad (e.g. parent-child dyad) (Marshall et al., 2019).

2.3.3.2 Similar consequences and inter-generational effects

Another critical intersection between IPV and VAC are their similar consequences (Guedes & Mikton, 2013). The impact of IPV and VAC are in many cases both severe and long-term. Studies have found that both forms of violence are linked with a number of negative health effects, including mental health issues, like anxiety and depression, and physical health

problems, like injuries or chronic pain (Chisholm, Bullock, & Ferguson, 2017; Li, D'Arcy, & Meng, 2016).

There are also a range of intergenerational consequences associated with both types of violence. IPV experience has been found to lead to an increase in pregnancy-associated mental health problems, such as postpartum depression, which negatively impacts a mother's ability to provide sensitive care and provide a nurturing, and safe environment for her children (Fisher et al., 2012). Research also suggests there are intergenerational effects associated with experiences of child maltreatment as well. For example, studies have found that men who experience physical abuse as children are at greater risk of perpetrating IPV as adults (Machisa et al., 2016; Widom et al., 2014). There is also research indicating that individuals who experience child maltreatment as children are more likely to experience IPV as adults (Shields et al., 2020). While most research focuses on the experience of child maltreatment in childhood as a predictor of IPV in adulthood there are also studies which suggest that IPV may also be a causal factor for child maltreatment (Chan et al., 2012). A longitudinal study by Chan et al. (2012), for example, found that IPV during pregnancy was a factor predicting physical abuse against children. This supports previous studies that have suggested that violence between partners can spill over to parent-child relationships and lead to violence against children (Cox et al., 2001). This intergenerational aspect of child maltreatment and its relation to IPV highlights the intersections between these two forms of violence and the importance of considering them in conjunction.

2.3.3.3 Shared social norms

Another important point of intersection between IPV and VAC are social norms. Social norms are typically defined as 'rules of action shared by people in a given society or group; they

define what is considered normal and acceptable behaviour for the members of that group' (Cislaghi & Heise, 2020 p.409). Gender norms are a type of social norms defined as 'social norms defining acceptable and appropriate actions for women and men in a given group or society' (Cislaghi & Heise, 2020, p.415). While an in-depth literature review of the detailed definitions and distinctions between different types of norms is outside the scope of this thesis, it is important to understand how shared social norms relate to the intersections that exist between VAC and IPV. For example, social norms may play a key role in not only sustaining violence against children (Lokot et al., 2020) but also in sustaining IPV (Stark & Seff, 2021). Wessells and Kostelny (2021), for instance, discuss how social norms often underpin the use of corporal punishment. In some contexts, for example, parents may believe or expect that all parents use harsh parenting in response to unruly child behaviour, and that other parents would criticise them if they did not beat their children for being disobedient (Wessells & Kostelny, 2021). Various social norms have also been linked to a women's risk of experiencing IPV, including men's dominance over women, acceptance of wife-beating, and the use of violence to resolve conflict (Clark et al., 2018). Indeed, research studies have found that patriarchal gender norms are frequently related to both the occurrence of VAW and VAC (Mootz et al., 2019). In light of this growing recognition surrounding the social norms associated with both forms of violence and the other intersections that exist between IPV and VAC, there is an increasing consensus on the importance of utilising prevention efforts that address both issues simultaneously (Stark & Seff, 2021).

2.3.3.4 Joint prevention efforts

Amidst the growing attention placed on the overlap between IPV and violence against children, there have been an increase in prevention efforts that seek to address both forms of violence. To explore coordinated efforts seeking to prevent or respond to IPV and violence

against children, Bacchus et al. (2024) conducted a systematic review of interventions that prevent or respond to IPV against women and violence against children. In contrast to their scoping review in 2017 (Bacchus et al., 2017), which identified only six studies in LMICs, in their more recent review, Bacchus et al. (2024) identified 19 primary prevention interventions, out of which 18 were conducted in LMICs. Moreover, in their new review, nine (47%) of the prevention interventions identified were parenting programmes, seven (37%) were community-based interventions, two (11%) were school-based programmes, and there was one (5%) cash-transfer programme (Bacchus et al., 2024). All nine of the parenting programmes and all seven of the community-based interventions found reductions in IPV and violence against children (Bacchus et al., 2024). All of the school-based interventions reported reductions in violence against children but only one reported reductions in IPV, and the cash transfer programme found no effect on either type of violence (Bacchus et al., 2024). Bacchus et al. (2024) also identified key mechanisms for reducing IPV and violence against, which included improved communication, reflection on harmful gender norms, conflict resolution, and recognition of the harmful effects of IPV and VAC on children. The large portion (47%) of parenting programmes identified in the systematic review (Bacchus et al., 2024), along with the promising findings demonstrating reductions in multiple forms of violence, underscores the promising potential of parenting programmes as an avenue for reducing multiple forms of violence, including IPV, in families, as explored further in the next section.

2.3.4 Parenting interventions: an opportunity to address multiple forms of family violence

In light of evidence that IPV and violence against children often co-occur in households and produce intergenerational effects, scholars have called for more early prevention efforts, in

which parenting programmes have been identified as an opportunity to address multiple forms of family violence (Guedes et al., 2016). Parenting programmes can be broadly be defined as interventions that seek to 'help parents improve the quality of parenting that their child receives, and, in turn, the child's development and behaviour' (Gardner & Leijten, 2017, p.99). Parenting interventions have been found to show promising results in reducing child maltreatment and have been identified as one of the key prevention efforts to address violence against children (Desai et al., 2017; Mikton & Butchart, 2009). Research findings indicate that parenting programmes can effectively reduce physical and emotional violent parenting behaviours (Backhaus et al., 2023) and can prevent child maltreatment by enhancing protective factors and reducing risk factors (Chen & Chan, 2016). This is reiterated in a more recent systematic review by Backhaus et al. (2023) which found that parenting interventions can reduce child maltreatment, physical abuse, and psychological abuse, as well as increase positive parenting behaviours. In their review, Backhaus et al. (2023) also found that found a trend towards a decrease in IPV after participation in a parenting intervention, however, given the lack of included studies that measured IPV, they also highlight that is an area that warrants further research.

Prior to examining how parenting programmes and integrated prevention efforts may be able to reduce and prevent IPV, the section that follows will first briefly provide an overview of what parenting interventions are, including the different theoretical frameworks they draw upon, the formats in which they can be delivered, and how programming has recently evolved into utilising digital platforms to improve scalability. There exist a range of formats and modalities through which parenting interventions are delivered. Some common delivery methods that interventions draw upon include interactive techniques such as modelling, role-playing, and discussions (Barlow et al., 2016). The theoretical basis of parenting programmes

varies, however, common frameworks that are often drawn upon include behavioural approaches such as social learning theory, as well as attachment, family systems, and mindfulness theories (Barlow, 2014). Some parenting programmes also include additional content beyond parenting and child management skills that focus on broader family relations. As will be discussed in greater depth in the next section, these include modules on content such as couple communication skills, co-parenting, and interparental relations.

2.3.5 Father-focused programmes and challenges with male engagement

While research findings underscore the benefits of fathers' involvement in parenting, most parenting interventions find it challenging to recruit and engage fathers due to cultural and logistical barriers (Panter-Brick et al., 2014). Findings from a study by Bayley et al. (2009), for example, which involved focus groups with fathers, revealed that if an intervention is labelled as for 'parents', fathers sometimes interpret this as intended specifically for mothers, and as such feel hesitant to take part. Nonetheless, interventions that involve men and boys have been identified as a unique and valuable opportunity to address masculine norms that contribute to child maltreatment and gender-based violence (Siu et al., 2017), through activities that promote new behaviours and self-reflection encouraging positive involvement as fathers (Doyle et al., 2014). There is also strong evidence that parenting programmes that involve both fathers and mothers, also lead to better child behaviour outcomes more generally. A meta-analysis by Lundahl et al. (2007), for instance, found that parent training programmes that included fathers, compared to those that did not, found significantly more positive child behaviour outcomes and favourable parenting practices.

Globally, interventions involving men to prevent the perpetration of IPV are also becoming more common (Jewkes et al., 2015). A community mobilisation intervention by Raising

Voices called SASA! in Uganda, for example, seeks to change community norms, attitudes, and behaviours that lead to gender inequality and violence (Abramsky et al., 2016). Results from a pair-matched cluster randomized controlled trial of SASA! conducted in eight communities, with a baseline sample of 2,240 households, found a number of promising findings. For instance, at follow-up, compared to their control counterparts, women in intervention communities were less likely to have experienced all types of IPV (physical, sexual, emotional, and controlling behaviours) in the 12 months prior to the follow-up survey, with the largest effect size observed with regards to physical IPV (adjusted risk ratio (aRR) 0.48, 95% CI 0.16 to 1.39) (Abramsky et al., 2014). However, out of these findings, only the emotional aggression result was statistically significant (aRR 0.61, 95% CI 0.47 to 0.79). It should also be noted that the SASA! intervention does not include child maltreatment as a goal (Abramsky et al., 2012).

Despite the growing number of interventions targeting men to prevent the perpetration of IPV, and the numerous parenting programmes that aim to reduce VAC, the evidence base on interventions that address *both* IPV and VAC, and particularly ones that target fathers, remains limited (Ashburn et al., 2017). It is only recently that there has been an emerging number of rigorous evaluations of father-focused interventions aiming to address both IPV and VAC outcomes. One such example includes the Bandebereho couples' intervention, a gender-transformative programme for men and couples that seeks to promote men's engagement in caregiving, reproductive health, and positive couple relationships, which was delivered as part of the MenCare+ programme in Rwanda. In a multi-site RCT, conducted in four Rwandan districts to evaluate the impact of the Bandebereho couples' intervention on selected outcomes, current and expectant fathers and their partners were randomised to either the intervention (n = 575 couples) or the control group (n = 624 couples) (Doyle et al., 2018).

At the 21-month follow-up, study findings by Doyle et al. (2018) revealed numerous promising results. Over half of women (56.53%) in the control group reported experiencing physical IPV from their partner in the past 12 months, compared to one-third of women (33.33%) in the intervention group (OR 0.37, 95% CI 0.28–0.49 p<0.001). Likewise, rates of sexual IPV among women in the intervention group (35.01%) were lower than rates among women in the control group 60.17% (OR 0.34, 95% CI 0.25–0.48, p<0.001) (Doyle et al., 2018). While these findings demonstrate robust, positive effects, it also highlights that high rates of violence still persist, with approximately a third of women in the intervention group reporting experiences of IPV in the past year (Doyle et al., 2018).

Promisingly, the study by Doyle et al. (2018) revealed positive findings in terms of improvements in household division of labour and decision-making. For example, participants in the intervention group reported greater levels of men's participation in household tasks and childcare compared to participants in the control group (β 0.33, 95% CI 0.26–0.41, p<0.001 for men, β 0.39, 95% CI 0·31–0.47, p<0.001 for women) (Doyle et al., 2018). However, it is worth noting that even though men in the intervention group reported spending more hours on these tasks compared to men in the control group (β 0.86, 95% CI 0.50–1.22, p<0.001), no statistically significant differences were detected between women in the intervention and control group in terms of reductions in the amount of the time women spent on these tasks. As such, future research should aim to examine how tasks shift within the household as men take on more involved caregiving roles, and how this can distribute women's care burden. Study findings also revealed that the intervention led to reductions in men's dominance in household decision-making, with 45.47% of men (OR 0.35, 95% CI 0.25–0.48, p<0.001) and 56.08% of women (OR 0.31, 95% CI 0.24–0.42, p<0.001) in the intervention group reporting that the man had the final say on decisions regarding the

household's expenses and income, in contrast to 70.27% of men and 78.74% of women in the control group (Doyle et al., 2018).

Another programme seeking to address both IPV and VAC outcomes includes the REAL FATHERS initiative in Uganda, which is a men-specific, father mentoring intervention, that seeks to end the cycle of intergenerational violence, encourage positive images of men as fathers, and reduce children's exposure to violence in the home (Ashburn et al., 2017). An evaluation comparing survey results among men exposed to the intervention and those unexposed found both a significant reduction in child maltreatment and a positive impact on IPV (Ashburn et al., 2017). More specifically, study findings revealed a significant reduction in perpetration of all forms of IPV both at post-test (aOR 0.48, CI 0.31, 0.76, $p < 0.001$) and at follow-up (aOR 0.47, CI 0.31, 0.77, $p < 0.001$). Exposure to the intervention was also associated with lower odds of using physical child punishment at follow-up (aOR 0.52, CI 0.32, 0.82, $p < 0.01$), however not at post-test. Another intervention delivered in Uganda is the Parenting for Respectability (PfR) programme which also seeks to address both gender-based violence and child maltreatment and is currently being tested in a cluster randomised controlled trial ($N = 54$ clusters, 2000 participants, ClinicalTrials NCT05105373) (Siu et al., 2017).

2.3.6 Digital interventions and scalability of parenting programmes

While there is extensive evidence of the effectiveness of parenting programmes across various health and psychosocial outcomes, the reach of parenting programmes is often limited due to barriers which end up limiting the accessibility and reach of the interventions (Weisenmuller & Hilton, 2021). In particular, structural barriers in LMICs, such as high costs, limited infrastructure, and human resources, often create additional challenges in programme

delivery and implementation (Baumann et al., 2018; Olofsson et al., 2016). Furthermore, while various evidence-based parenting programmes exist, there is a need for programme implementation on a larger scale in order to achieve greater reach and programme impact, and reflect the widespread incidence of VAC and IPV on population levels (Marcus et al., 2020). Responding to this need, there has been a substantial increase over the past two decades in the use of digital devices for the delivery of interventions (Day et al., 2019; Patrick et al., 2016), particularly in LMICs, in order to overcome barriers with access and reach (Chang et al., 2011; Kola et al., 2021).

Digital modalities provide promising possibilities in terms of overcoming challenges associated with reach and limited resources (Sanders et al., 2021). It has also been suggested that the flexible format of digitally delivered interventions can make participation more convenient and increase participation rates, especially for populations that may have not previously attended programmes such as male caregivers and working parents (Sanders et al., 2021). It has also been identified as a potentially more cost-effective modality (Sanders et al., 2021). Mobile access in LMICs has increased substantially over the past decade, with households in urban areas of least developed countries (LDCs) reaching a high degree of mobile phone ownership, with a country average of above 90% (International Telecommunication Union, 2021).

Emerging research evidence suggests that adapting parenting programmes from in-person formats to digital delivery can be effective. Systematic reviews and meta-analyses of interventions in high-income countries (HICs), for instance, indicate that digital parenting programmes have similar treatment effects to in-person programmes (Florean et al., 2020; Spencer et al., 2019; Thongseiratch et al., 2020). A meta-analyses by Spencer et al. (2019),

for example, which included 28 studies across 9 countries, revealed that online parenting programmes had significant effects on reducing both negative discipline strategies, as well as reducing parenting conflict and parent anger. While the research on digital parenting programmes in LMICs is more limited and requires further research, a growing number of studies have examined this in recent years. A study by Awah et al. (2022), for instance, qualitatively explored the acceptability, usability, and satisfaction of a digital parenting intervention across nine African countries. Results revealed a high level of satisfaction with the app content among participants and overall, the app was described by participants as easy to use and helpful (Awah et al., 2022).

In addition to app-based programmes, digital parenting interventions can also be delivered using other modalities, such as chatbots. One example of a parenting chatbot includes *Afinidata,* a digital parenting intervention delivered via Facebook Messenger to low-income families in remote areas of Latin America (Jäggi et al., 2023). A mixed methods study examining the reach, acceptability and use of the *Afinidata* chatbot, revealed promising findings, with high access to smartphones and internet in the rural region, positive participant feedback, and high levels of initial chatbot engagement (Jäggi et al., 2023). While the evidence surrounding the effectiveness of parenting chatbots is currently very limited (Entenberg et al., 2023; Entenberg et al., 2023), the opportunity they offer in terms of scaling up interventions has been identified as highly promising (Jäggi et al., 2023). One collaboration that is currently exploring the potential of chatbots, is Parenting for Lifelong Health (PLH), a collaborative initiative that seeks to provide evidence-based, scalable, parenting programmes for families across the world.

2.4 Parenting for Lifelong Health (PLH) and ParentText

2.4.1 Parenting for Lifelong Health (PLH)

Parenting for Lifelong Health (PLH) is a collaborative initiative founded by individuals from UNICEF, the WHO, and the Universities of Bangor, Cape Town, Oxford, and Stellenbosch (Cluver et al., 2016; Shenderovich et al., 2020; Ward et al., 2016). It seeks to develop, test, and scale-up parenting interventions to reduce violence against children and improve child wellbeing across LMICs (Shenderovich et al., 2020). The initiative developed a suite of in-person, group-based parenting interventions, which comprised of a number of low-cost, Creative Commons-licenced programmes, including PLH for Babies (prenatal to 6 months), PLH for Toddlers (ages 10 to 60 months), PLH for Young Children (ages 2 to 9 years), and PLH for Parents and Teens (ages 10 to 17 years) (Cluver et al., 2018; Ward et al., 2020). The PLH programmes are mainly based on social learning theory and attachment theory and contains content around themes of relationship building, positive reinforcement, limit setting, and effective discipline (Lachman et al., 2019b). A number of RCTs have revealed a range of positive impacts of the in-person PLH programmes, including improvements in positive parenting, parental self-efficacy, and a reduction in violence against children and parent stress (Cluver et al., 2018; Lachman et al., 2017; Ward et al., 2020b). A recent study of PLH for Young Children in the Philippines also found reductions in intimate partner violence perpetration with low-income mothers of children ages two to six years who were beneficiaries of a national conditional cash transfer programme (Lachman et al., 2021). In 2022, PLH was founded as a UK-based charity to support the increasing demand for evidence-based, freely-available, locally-adapted, and scalable parenting programmes.

2.4.2 ParentText

In response to COVID-19, a series of digital adaptations of the in-person PLH programmes were produced, including the development of ParentText. ParentText is an automated, pre-programmed, text messaging chatbot intervention for parents and caregivers of children aged 0 to 17 years. The programme is delivered via RapidPro, which is an open-source application aimed at serving low-income communities. ParentText messages can be sent via social messaging platforms such as WhatsApp, Telegram, and Facebook messenger, and also via SMS for individuals without smartphone access. The parenting content of ParentText was derived from the in-person PLH programmes and was locally adapted collaboratively with implementing partners in various LMICs (including South Africa, Jamaica, the Philippines, Malaysia, and Sri Lanka), to make sure the content is culturally relevant (Klapow et al., 2023). The material has also been translated into the local languages of the implementing countries. While there have been subsequent, updated versions of ParentText, in the ParentText 1.0 version, which is the focus of the present thesis, enrolled participants receive three to 12 weeks of ParentText content, depending on the frequency of messages. The specific content the user receives in ParentText aligns with the children's development stage (0-23 months, 2-9 years, 10-17 years) of the chosen indicative child. The content is delivered via a range of formats including text messages, images, audio, and video for parents and caregivers. More specifically, users receive parenting content on the three main themes: (1) relationship building by spending time together, (2) positive reinforcement, (3) stress reduction for parents and caregivers. ParentText also includes content on additional topics including child development, children living with disabilities, online child safety, talking about COVID-19 with children, family budgeting, helping with schoolwork, family harmony, sexual violence prevention, and partner relationships – the latter of which is the primary focus of this research project. Participants also receive check-in messages corresponding to

the tips to see whether they practised the skill, how it went and to identify what challenges they may have experienced.

2.4.3 Study contexts: Jamaica and South Africa

2.4.3.1 Jamaica

One of the countries included in the present research is Jamaica. Jamaica is a small island nation in the Latin American and Caribbean (LAC) region, categorised as a upper-middle-income country, with a population of 2,726,000 (UNDP, 2022) and a Gross Domestic Product (GDP) per capita of US $6777.3 (World Bank, 2024a). Violence has been highlighted as one of the most pressing challenges facing the country (United Nations, 2022a). Rates of violence against women, in particular, are deeply concerning, with 24% of women in Jamaica having experienced physical and/or sexual violence from an intimate partner sometime during their life (OECD, 2023). Research findings also indicate a high prevalence of patriarchal social norms, and restrictive beliefs around women's roles in Jamaica (World Bank, 2023). Results from the Women's Health Survey conducted in Jamaica underscore this, with over 77% of agreeing with a statement that it is natural that men should be the head of the family, and 70% agreeing that a woman's main role is to take care of her home (Williams, 2016). Moreover, over 32% agreed that a wife should obey her husband even if she disagrees with him, and more than 31% agreed with the statement that is a wife's obligation to have sex with husband whenever he wants (Williams, 2016).

The history of the region's colonial plantation economy and gendered labour systems are also important to take into consideration when discussing violence, gender attitudes, and harmful practices in the region (Biholar, 2022). The history of enslavement, along with colonial strategies of violence, underscore the intersections of gender, race, and class in Jamaica

(Leslie, 2022). Scholars have highlighted how IPV and gender-based violence were part of a system of oppression by the British colonial system, rather than a merely a by-product (Bean, 2022). Accordingly, situating the present research within this socio-historical context of imperialism and power inequalities, along with highly gendered forms of violence and oppression, is therefore crucial (Bean, 2022; Biholar, 2022). In addition to recognising the historical context of the setting of this research, critically reflecting on the first author's positionality as an 'outsider' to Jamaica is also important, and is discussed in greater depth in the Positionality and reflexivity section.

2.4.3.2 South Africa

The present research was also conducted in South Africa. South Africa is the largest country in the Southern African region (United Nations Population Fund, 2020), with a population of 60.5 million and a Gross Domestic Product (GDP) per capita of US $6248.5 (World Bank, 2024b). Categorised an upper-middle income country, South Africa has been noted as one of the most unequal societies in the world, with widespread inequalities that disproportionately impact marginalized ethnic groups and women (UNICEF, 2020b) and where over 40% of the population live below the national poverty line (United Nations, 2020). Whilst progress has been made since the formal end of the Apartheid system in 1994, the enduring impacts of Apartheid and deeply rooted patriarchy continue to influence the daily lives of countless South Africans (Phaswana, 2021). Indeed, the enduring racial, spatial, and gendered divide that persists in South Africa today is a result of the historical legacy of the patriarchal nature of Apartheid (Moodley, 2019; Phaswana, 2021). Gender and racial disparities, harmful sociocultural norms, and shortcomings in implementing legal frameworks addressing gender-based violence contribute to the high levels of violence in the country, where the incidence of rape per capita is the highest in the world (United Nations Population Fund, 2020). While

research findings reveal that rates of IPV vary within South Africa, a finding that is in line with rates of IPV in other countries, the 2017 Statistics South Africa survey indicated that approximately one in five women in South Africa had experienced violence by a partner in their life, an estimate which is lower than the regional prevalence rate of IPV (Bolarinwa et al., 2023; Selin et al., 2019). In South Africa, a majority of black and coloured (the term coloured is the accepted word used for mixed race people in South Africa) women lack adequate access to health care and services, further underscoring the intersectionality of race, sex, and class in the country and how intersecting systems of oppression disproportionally affect women of colour (Phaswana, 2021). Acknowledging these intersecting forms of inequality, along with the historical and socio-political context of the setting of this research is crucial. Reflecting on my positionality as a Caucasian, cis-woman, and as a doctoral researcher based at an institute in the Global North, within this research project is also important and is discussed in the Positionality and reflexivity section.

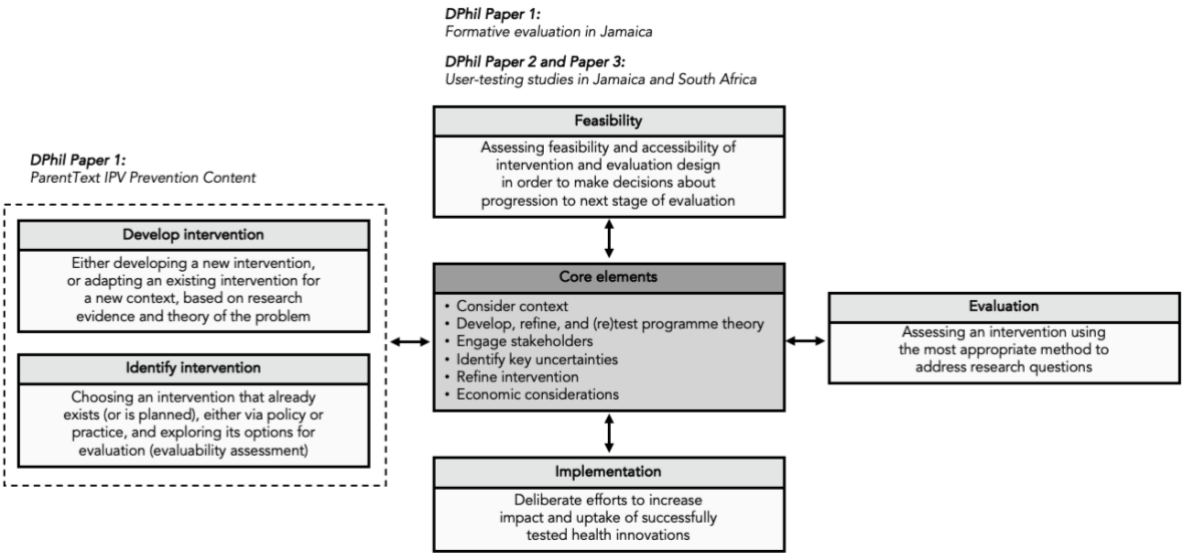
3 Methods

3.1 Thesis overview

3.1.1 MRC Framework and overview of research design

This thesis involves both intervention development (ParentText IPV prevention content) as well as user-testing pilot studies (quantitative and qualitative research), which seek to assess the feasibility of the programme and evaluate preliminary changes in IPV and IPV-related outcomes following the intervention. The intervention development and empirical studies are aligned with the UK Medical Research Council (MRC) framework for developing and evaluating complex interventions (Skivington et al., 2021). The intervention development stage of this research (*DPhil Paper 1*) draws upon the 6SQuID framework (Wight et al., 2016), and is situated within the 'Develop intervention' and 'Feasibility' phase in the MRC framework (Skivington et al., 2021). The quantitative research (*DPhil Paper 2*) utilizes a single-arm, pre-post-test design and the qualitative research (*DPhil Paper 3*) uses in-depth interviews and focus group discussions (FGDs), which also aligns with 'Feasibility' phase of the MRC framework. See Figure 6 for an overview of the DPhil papers and the MRC framework. Each of these research stages are discussed in more detail in the sections that follow.

Figure 6. Framework for developing and evaluating complex interventions



Source: Adapted from Skivington et al. (2021) with DPhil papers corresponding to different stages of the framework added for clarity

3.1.2 Paper 1: Intervention development and formative evaluation

The IPV prevention content development stage of this thesis is based on the intervention development stage in UK MRC's framework (Skivington et al., 2021). This phase refers to the process of planning and designing an intervention or adapting an existing an intervention to address new target outcomes (Skivington et al., 2021). Using a clearly developed programme theory during this stage can be particularly helpful (Skivington et al., 2021). For the IPV prevention content developed for ParentText, a clear programme theory was designed, which is discussed in detail in Paper 1. Preliminary testing of the IPV prevention content was also carried out, which is in line with the 'Feasibility' phase in the MRC framework. The objective of this paper was to develop, create, and evaluate IPV prevention content embedded in the digital intervention ParentText. More specifically, this paper sought to examine the retention rate and level of user engagement with IPV prevention content

developed and integrated into the digital intervention ParentText for low-income parents and caregivers above 16 years of age in Jamaica.

3.1.3 Paper 2: Quantitative pre-post pilot study

Following the development of the ParentText IPV prevention content, a quantitative pre-post pilot study was designed and conducted in two countries with high rates of IPV: Jamaica and South Africa. In the new MRC framework (Skivington et al., 2021), the feasibility phase seeks to explore the feasibility and accessibility of an intervention. In alignment with this, the objective of Paper 2 was to assess the engagement of low-income parents and caregivers in the ParentText chatbot with integrated IPV prevention material and examine preliminary pre-post changes in experiences and perpetration of IPV and related outcomes including attitudes toward IPV and gender-equitable behaviours following the ParentText intervention.

3.1.4 Paper 3: Qualitative study

Guidelines from the MRC framework suggest that using qualitative and mixed methods designs can be helpful in answering questions that extend beyond effectiveness (Skivington et al., 2021). Accordingly, in Paper 3, a qualitative design was used, which incorporated in-depth interviews and focus groups discussions (FGDs). The objective of this Paper was to explore partnered parents' experience of using a chatbot parenting intervention in terms of the quality of their partner relationship and explore the opinions of partnered parents on the content and structure of ParentText, especially with respect to the ParentText content on relationships. In-depth interviews and FGDs were used for this research paper since they provide a unique opportunity to gain a deeper understanding of participants' experiences (Kohlbrenner & Stoll, 2023).

3.1.5 Research questions and methodology

A summary of the methodology of each empirical chapter, along with the research question, research design, analytical approach and data source used, is provided below and in Table 1.

RQ1 (*DPhil Paper 1*): What is the retention rate and level of user engagement with IPV prevention content developed and integrated into the digital intervention ParentText for low-income parents and caregivers in Jamaica?

RQ2 (*DPhil Paper 2*): What are the indicative impacts of the ParentText intervention on experiences and perpetration of IPV (primary outcomes) and related risk factors including attitudes toward IPV and gender-equitable behaviours (secondary outcomes) with low-income caregivers in Jamaica and South Africa?

RQ3 (*DPhil Paper 3*): How do partnered parents in South Africa and Jamaica perceive their experience interacting with a chatbot parenting intervention in terms of the quality of their partner relationships?

Table 1. Overview of the research design and methodology of the three empirical papers

Research question	Research design	Analytical approach	Country and data source	Thesis Chapter
RQ1: What is the retention rate and level of user engagement with IPV prevention content developed and integrated into the digital intervention ParentText for low-income parents and caregivers in Jamaica?	**Intervention development and formative evaluation:** 6SQuID and single-arm pre-post test	**Intervention development:** 6SQuID **Descriptive statistics:** sociodemographic characteristics and engagement outcomes	**Jamaica:** Author-led primary data collection	**Chapter 4** *(DPhil Paper 1)*
RQ2: What are the indicative impacts of the ParentText intervention on experiences and perpetration of IPV (primary outcomes) and related risk factors including attitudes toward IPV and gender-equitable behaviours (secondary outcomes) with low-income caregivers in Jamaica and South Africa	**Quantitative user-testing study:** single-arm pre-post test	**Descriptive statistics:** sociodemographic characteristics and engagement outcomes **Inferential statistics:** Linear, Poisson, and logistic regression models: IPV and IPV-related outcomes (pre-post test)	**South Africa and Jamaica:** Author-led primary data collection	**Chapter 5** *(DPhil Paper 2)*
RQ3: How do partnered parents in South Africa and Jamaica perceive their experience interacting with a chatbot parenting intervention in terms of the quality of their partner relationships?	**Qualitative user-testing study:** Interviews and focus discussion groups (FGDs)	**Descriptive statistics:** sociodemographic characteristics **Qualitative analysis:** Thematic analysis	**South Africa and Jamaica:** Author-led primary data collection	**Chapter 6** *(DPhil Paper 3)*

3.2 Overarching methodology and ethical considerations

3.2.1 Wider research study

This study was nested within a wider research project called the COVID-19 Playful Parenting study, which was part of an inter-agency coalition including UNICEF, WHO, the Global Partnership to End Violence, USAID and the US Centers for Disease Control and Prevention (Cluver et al., 2020). As part of this project, open-source COVID-19 parenting resources were developed and made available via online, audio-visual, and print media. These parenting materials were distributed in over 174 countries and translated into more than 100 languages (Lachman et al., 2024). The COVID-19 Playful Parenting research project sought to examine

the dissemination of these parenting material and their impact on families. Embedded within this wider research project, the present doctoral thesis consisted of a formative evaluation and a user-testing study focusing on the development, integration, and testing of IPV prevention material in the ParentText digital parenting chatbot.

3.2.2 Data collection and privacy

The primary data collection for this research project included both quantitative and qualitative research. The quantitative research included measures such as outcomes on user-engagement with the chatbot, IPV experience and perpetration, attitudes toward IPV and gender roles, and gender-equitable behaviours. The qualitative data collection involved focus group discussion (FGDs) and individual interviews with participants. For the delivery of the ParentText messages, UNICEF, the study implementing partner, used only secure platforms like WhatsApp to reduce internet surveillance. Furthermore, research data collected was not linked to personal data so that participants' identities were protected. Data on user engagement were collected by UNICEF on the RapidPro server, with anonymised data shared with the research team. Upon recruitment, participants were also invited to participate in qualitative FGDs and interviews about their experience of taking part in ParentText. If participants indicated willingness to participate in FGDs and interviews, they shared their contact information via the secure platform of Online Data Kit (ODK) and were later contacted by a member of the research team or research partner. Participants were also invited to respond to IPV assessments via an external secure server, through Oxford's Linux virtual machine using ODK. Further details regarding this procedure and privacy are provided in the section Ethics, safety, and privacy.

3.2.3 Participants

Inclusion criteria

Parents/caregivers needed to be above 18 years old to participate in South Africa, and in Jamaica parents/caregivers could be 16 years old and above. Jamaica's UNICEF country office and their partner Women's Centre Jamaica Foundation wanted to provide ParentText to 16- and 17-year-old parents/caregivers seeing as a substantial number of parents are teenagers in Jamaica and there was demand for a programme like ParentText in Jamaica among younger parents. Inclusion criteria also included currently caring for a child between the ages of 0 to 17 years, and being in a relationship (defined as either having a partner or being married (see Additional file 2: IPV Assessment for more details), having access to a phone that was able to receive messages on WhatsApp and that could connect to 3G or the internet, and was able to speak either English or isiXhosa (South Africa only). To be included, participants also needed to consent to participate in ParentText, the anonymous surveys, and the individual interviews and FGDs. In Jamaica, adolescents under the age of 18 needed to receive parental/caregiver consent to participate and also assent to take part in the FGDs and in-depth interviews.

Exclusion criteria

Exclusion criteria included individuals who do not give consent to participate in the research and adolescents who did not have parental/caregiver consent to participate. In South Africa participants under the age of 18 were excluded, and in Jamaica, participants under the age of 16 were excluded. Also excluded were participants who were not currently in a partnered relationship and participants who were not caregivers, parents, or currently caring for a child.

3.2.4 Recruitment

Paper 1: Formative evaluation

For the formative evaluation, participants were recruited using convenience sampling carried out in collaboration with UNICEF Jamaica and Parent Mentors from the National Parenting Support Commission (NPSC) who visited parents in communities throughout Kingston, Jamaica. For an example of the recruitment flyers used (both digitally and printed) see Figure 7. Upon recruitment, parents and caregivers would sign up to receive a recruitment link to the intervention embedded within a WhatsApp, Facebook Messenger, or Telegram business account. Participants that clicked on the link were directed to the account and were asked if they consented to participate in the intervention and evaluation with a link to a more detailed information sheet (see IPV Assessment information sheet and consent form).

Figure 7. UNICEF Jamaica ParentText recruitment flyer



Source: UNICEF Jamaica (2023)

Papers 2 and 3: Quantitative and qualitative user-testing study

Participants in the quantitative and qualitative user-testing study were recruited through convenience sampling carried out by local research assistants through the organisation Clowns Without Borders South Africa (CWBSA) in Cape Town, South Africa and by members of UNICEF country office staff in Jamaica. In South Africa, recruitment mainly took place in neighbourhoods, townships, and communities in urban Cape Town, and in Jamaica, recruitment was primarily carried out at schools and at women's centres for adolescent mothers in both urban and rural communities. While the aim was originally to recruit both men and women in both countries, due to resource constraints in Jamaica, only women were recruited. Upon recruitment, parents and caregivers were provided with links to the chatbot landing page, where they were asked if they consented to participate in the intervention and the evaluation, and where a link to a more detailed information sheet was provided (see ParentText Messages and Survey Information Sheet: Jamaica and South Africa). At the end of the study, all enrolled participants were also invited to take part in the FGD and individual interviews. Participants who took part in the study received a small financial incentive (a mobile data bundle valued at approximately £2) to thank them for their participation. Participants who took part the individual interviews and FGDs were also offered lunch and transport to cover logistical expenses.

3.2.5 Participant informed consent

Participants who completed the IPV assessments delivered via Oxford's Linux virtual machine through Open Data Kit (ODK), were only able to proceed with the assessment if they had read the information provided and chose to proceed with the assessment. Informed consent was also obtained from participants again prior to the qualitative FGDs and individual interviews, with parental/caregiver consent for adolescents' participants obtained

prior to obtaining adolescent assent to participate in individual interviews and FGDs (ParentText Messages and Survey Information Sheet: Jamaica). In Jamaica, participants under the age of 18 years provided assent and their parents needed to consent to their participation. For new enrolees at the Women's Centre, the Women's Centre Jamaica included ParentText information and the consent form in their routine registration form. For women already part of the Women's Centre, information and consent forms were provided (ParentText Messages and Survey Information Sheet: Jamaica) to take home and to be signed by their parents. Once the Women's Centre had received parental consent, they provided the participant with the link to the programme, as well as a special keyword to start the ParentText programme. This keyword was unique to the Women's Centre and activated a specific version of ParentText to start that is designed for 16–17-year-old caregivers/parents (i.e. the version with referral details for 16–17-year-olds). The keyword was not shared on any other recruitment material and only participants who have joined the Women's Centre were given the keyword, to make sure that they had received parental consent. In Jamaica, if a participant indicated that they were under 18 on the 18 and above ParentText programme, they were referred to the Women's Centre Jamaica and were required to follow the aforementioned assent and consent procedure.

3.2.6 Digital assessment procedures and safety

Upon recruitment, participants were asked to provide consent for participating in the intervention and evaluation with a link to a more detailed information sheet (see ParentText Messages and Survey Information Sheet: Jamaica and South Africa). Participants who did not provide consent exited the intervention. See the Appendix for the consent forms and qualitative instruments developed for the further qualitative exploration into participant experiences of ParentText. Parents who clicked on the link were be directed to the UNICEF

WhatsApp account and were asked to select their preferred language to receive the chatbot content.

At baseline, participants were invited to respond to IPV assessments (see Paper 2 Additional file 2: IPV Assessment for the IPV assessment questions) via an external secure server, through Oxford's Linux virtual machine using Open Data Kit (ODK), in order to protect participants by ensuring no responses were saved on their mobile devices. Participants provided their phone number when completing the IPV survey in order for their responses to be recorded and linked with a unique user ID. These data were then de-identified and uploaded to a secure server in Oxford, which was only accessible by the research team, and which is password protected.

The IPV assessments were optional, and parents could refuse to answer them and still receive the chatbot parenting content. Before they were invited respond to the IPV assessment, participants were be asked for permission and were reminded that their answers would be completely private (see the Appendix for further details). To minimise any risk of harm, at the start of the IPV assessment there was a question to make sure that men and women from the same household were not both interviewed about IPV. This is accordance with WHO's violence against women (VAW) research guidelines and ethical and safety recommendations for intervention research on VAW (WHO, 2016a), which outline that VAW research should avoid interviewing women and men from the same household on violence to prevent putting women at risk. As such, men who reported that their partner were participating in the programme were therefore not asked the IPV questions from the IPV assessment and were instead only asked questions on gender-equitable behaviours and attitudes toward gender roles and IPV. Participants responding to the IPV assessment were also asked demographic

questions including items on their age, gender, relationship status, education level, employment status, the employment status of their partner, whether they were living with their partner, and how many children they had or cared for. Participants were also invited to complete the IPV assessment at 3-week post-test. See the Appendices (Qualitative Instrument) for the qualitative instruments developed for further qualitative exploration into participant experiences of ParentText.

3.2.7 Qualitative interviews and FGDs

Participants were invited to take part in qualitative individual interviews and FGDs which were conducted by the primary author and with assistance from local research assistants and local members of country office staff at UNICEF Jamaica. In South Africa, an interpreter was utilised to assist with conducting the interviews and FGDs held in isiXhosa. In the interviews and FGDs, participants were asked questions on whether they had shared anything about the programme with others, what other resources they may like to see, as well as their experience using the chatbot. Parents were also asked about their experience of the ParentText programme in relation to their relationship with other adults in their family or household (see Appendix Qualitative Instrument for the qualitative interview schedule for the individual interviews with participating parents and for the FGD schedule). Informed consent to carry out audio recordings for the individual interviews and FGDs was obtained prior to starting the recordings. Management of data is outlined in the data management section.

3.3 Measuring IPV and IPV-related outcomes

3.3.1 Measuring IPV

One major theoretical and methodological debate that often divides the field of IPV is the issue of gender symmetry. To understand this dispute, which is closely linked to research methodology, it is useful to review the two major sides of the debate. The gender symmetry position, which is primarily supported by family violence theorists, posits that women are equally likely as men to use violence in intimate partner relationships (see for example Dutton (2011), Stets & Straus (1989), and Straus et al. (2006). This position is often disputed by many feminist theorists, who instead argue that IPV is gender asymmetrical, with men being much more likely to use violence in intimate partner relationships, and that the violence used by women is primarily for self-defence reasons (see DeKeseredy & Dragiewicz (2007), Dobash & Dobash (1979), and Johnson (1995; 2006)). Notably, however, most studies which report that IPV perpetration appears equal between women and men have measured IPV using the Conflict Tactics Scale (CTS) using community samples (De Coster & Heimer, 2021). Numerous scholars, however, have raised methodological concerns regarding these instruments and samples, such as critiques that the CTS does not consider the context of the violence in relation to control, power, and self-defence (De Coster & Heimer, 2021). Indeed, various nationally representative samples that use tools other than the CTS, such as the National Crime Survey (NCS) and the National Crime Victimization Survey (NCVS) in the United States, have found that women are considerably more likely to experience IPV than men. Accordingly, these discrepancies in the field raise questions both concerning sampling biases and the methodological approaches adopted.

Johnson (2008) proposes an IPV typology that may help to explain these diverging findings. Johnson's typology identifies two major forms of IPV – intimate terrorism and situational couple violence – which are defined based on the control context in which the violence takes place (De Coster & Heimer, 2021). Intimate terrorism is mainly perpetrated by men towards women and occurs within a broader pattern of coercive control in the relationship, where the violent incidents form part of a repetitive behaviour of sustaining power in the relationship (De Coster & Heimer, 2021). In contrast, situational couple violence is perpetrated more equally by women and men and occur from the escalation of conflicts and are not driven by efforts to sustain or gain control and power (De Coster & Heimer, 2021). In short, Johnson (1995) suggests that the diverging research findings, prevalence rates, and perspectives found in the field, are partially a reflection of the fact that theorists are examining different phenomena, that is, different types of IPV (Lawson, 2012).

While an in-depth analysis of the theoretical divide that underpins the gender symmetry and asymmetry debate in the IPV field is beyond the scope of this thesis, the preceding discussion has sought to offer a brief summary of the debates that exist in the field in order to contextualise the methodological and theoretical approach adopted in this thesis. More specifically, following guidance from experts in the field, including IPV and VAW researchers and practitioners (see Paper 1 Additional file 5: Consultation focal points), the measurement of IPV and the typology used was based primarily on items adapted from the WHO's Violence Against Women Instrument (VAWI) (García-Moreno et al., 2005), rather than the CTS scale (see IPV and IPV-related measurement tools for further details on the specific items and types of IPV measured).

Most IPV measurement tools measure experiences based on time scales referring to the past year, rather than shorter time scales such as the past month, as used in Paper 2. The justification for using a shorter time scale when measuring IPV in the present pilot study (Paper 2) was because it was an intervention study. In future research, longer-term outcome measurements will be beneficial to examine to assess whether the intervention effects are sustained or whether booster programmes are needed (Bailey et al., 2020). However, since the present research sought to explore any potential preliminary changes in IPV following the intervention, the IPV assessment is based on past-month experiences. This modification is similar to the trial adaptation of the ICAST child abuse self-report measure by Meinck et al. (2018) for use in intervention studies. It should also be noted that the use of a shorter time frame when measuring IPV is not entirely unique and has been used by researchers examining IPV and child maltreatment outcomes in similar contexts. In a paper by Ebert & Steinert (2021), for example, which examines the prevalence of violence against women and children during COVID-19 in Germany, experiences of IPV were measured using a past-month time scale. Nonetheless, the present study still recognises the limitations associated with measuring IPV on a shorter time scale, and therefore, the assessment in Paper 2 also includes a more general section on gender roles and attitudes as well as a section on broader relationship experiences. While measuring gender norms and attitudes and relationship experiences is no replacement for assessing IPV experiences directly, assessing these related constructs in addition to measuring IPV may provide a more comprehensive understanding of any changes that take place following the intervention in terms of family dynamics and attitudes toward violence.

Furthermore, the inclusion of a more general section on gender roles and attitudes, as well as a section on broader relationship experiences, also seeks to address some of the other

limitations associated with measuring IPV. Under-reporting of IPV is often expected, particularly when violence against women is perceived as common (Humbert et al., 2021). However, assessing IPV through a digital platform may help reduce some of the issues regarding disclosure and conservative prevalence rates, such as social desirability bias and disclosure bias. Previous research, for example, suggests that the use of digital data collection techniques, such as Audio Computer-Assisted Self Interviewing (ACASI) methods, may help reduce social desirability bias when measuring sensitive issues such as sexual behaviour (Beauclair et al., 2013). In an article on measuring IPV in intervention research, O'Doherty et al. (2014) highlight some of these key challenges, including discussions on when it is reasonable to detect a reduction in violence, the difficulties in selecting assessment timeframes, and the implications of using different types of IPV outcomes. In addition to measuring direct experiences of IPV, the measurement of relationship interactions and attitudes toward gender roles and IPV are therefore also included in Paper 2 to try and overcome some of these reporting biases, detection issues, and time scale limitations.

3.3.2 Measuring attitudes toward IPV and gender-equitable behaviours

There are various measurement considerations and challenges associated with measuring attitudes toward gender roles and gender-equitable behaviours. At the individual level, attitudes toward IPV have been identified as a risk factor for IPV (Cao et al., 2023; Demeke & Shibeshi, 2022; L. Wang, 2020; Zark & Satyen, 2022), and as such, they are often measured in research examining gender-transformative programmes focusing on IPV prevention (Abebe et al., 2018; Dunkle et al., 2020). Attitudes can be defined as 'individually held beliefs' (Heise & Manji, 2016, p.2) which are 'independent of what others do or what is deemed to be appropriate' (Ben Cislaghi & Heise, 2016, p.6). In contrast, social norms, as noted previously in the literature review, can be defined as 'rules of action shared by people

in a given society or group; they define what is considered normal and acceptable behaviour for the members of that group' (Cislaghi & Heise, 2020 p.409). One of the main distinguishing elements between attitudes and norms is that the latter refers to *collectively* shared beliefs 'about what others do (descriptive norms) and/or approve of (injunctive norms)' (Cislaghi & Heise, 2018a, p.563), which are based, at least partially, on the anticipation of negative or positive sanctions (Heise & Manji, 2016). As such, while both attitudes and norms can influence each other and have been identified as risk factors associated with IPV, their differences in operationalisation have implications for measurements (Beniamino Cislaghi & Heise, 2018b).

Both attitudes and norms associated with IPV have been highlighted in the literature as challenging to operationalise and measure (Hoxmeier et al., 2024), and the two constructs are sometimes conflated with each other in research studies (Beniamino Cislaghi & Heise, 2018b; Levy et al., 2020). There exist a range of measures to examine gender norms (Beniamino Cislaghi et al., 2022; Meiksin et al., 2024), however, frequently, research studies draw on proxies for gender norms, such as aggregates of individual attitudes or behaviours (Weber et al., 2021). When seeking to effectively measure norms, scholars suggest that assessments need to measure: (1) empirical expectations (what participants believe that others are doing); (2) normative expectations (what participants believe others are expecting them to do); (3) sanctions (reactions to complying or not complying); and (4) whose opinion matters to participants and/or who oversees sanctions (that is, the so-called reference group) (Weber et al., 2021). In the present research, due to space constraints in the digitally administered survey, and concerns with participant burden (Aiyegbusi et al., 2024), the decision was made to include a shorter assessment of individual-level attitudes, as is common in IPV prevention studies (Abebe et al., 2018; Ashburn et al., 2017; Doyle et al., 2018; Dunkle et al., 2020),

rather than use a lengthier battery of questions designed to measure gender norms (Weber et al., 2021). Some of the limitations associated with this and considerations for future studies to measure gender norms are elaborated on in the Discussion chapter.

There are various measures and instruments that include items on gender-equitable attitudes and attitudes toward IPV (García-Moreno et al., 2005; Hoxmeier et al., 2024; Pulerwitz & Barker, 2008). This DPhil thesis measured self-reported attitudes towards gender roles and IPV using six items included in the 'Attitudes toward gender roles' section of the WHO Multi-Country Study on Domestic Violence (García-Moreno et al., 2005). Items from this survey were chosen since they have been used in previous research on IPV prevention programmes (Abramsky et al., 2020), and because many of the items overlap with those used in the Demographic and Health Surveys (DHS) (The DHS Program, 2018), which are also frequently used in studies on IPV prevention (Ashburn et al., 2017; Dunkle et al., 2020). Survey items in the present research included statements such as "A woman should obey her husband's wishes even if she disagrees" (see IPV Assessment in the Appendices to view all of the items included in the assessment). Parents were asked to indicate whether they agreed or disagreed with the six statements provided based on a Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). In the survey negative items were reverse-coded so that higher scores denoted more gender-equitable attitudes. The scores were then summed for all items for the overall attitude score. The possible score for overall attitude ranged from 6 – 30.

This DPhil also assessed gender equitable behaviours and relationships as an additional potential pathway for reducing IPV (Stern et al., 2021; Treves-Kagan et al., 2022). Various IPV prevention programmes frequently measure joint decision-making and improved couple communication as an indicator of gender equitable behaviours (Abramsky et al., 2016a;

Doyle et al., 2023). Four items adapted from questionnaires used in previous violence prevention studies were used to measure gender equitable behaviours in the present research (Abramsky et al., 2020; Doyle et al., 2018). Three items were adapted from Abramsky et al. (2020). These items included questions on couple communication, joint decision-making, and partner conflict resolution, (i.e., "In the past week, how many times did you and your partner talk about your worries and feelings?" and "In the past week, how many times did you and your partner make a decision together?"). The fourth item was adapted from a questionnaire developed by researchers of an RCT of a gender-transformative violence prevention intervention in Rwanda (i.e., "In the past week, how many times did you and your partner share housework and caregiving tasks equally?") (Doyle et al., 2018). To see all items included see IPV Assessment in the Appendices. Parents/caregivers were asked to report whether in the past week the specific behaviour occurred on a scale of 0 (never) to 3 (many times). The scores were then summed for all four items for the overall gender equitable behaviour score. The possible score for overall gender-equitable behaviours ranged from 0 – 12.

3.4 Ethics, safety, and privacy

3.4.1 Ethical approval

Ethical approval was obtained for all studies in this thesis by the Department Research Ethics Committee (DREC) at the University of Oxford (CUREC 2 Ref No: R69569/RE008). All methods were conducted in accordance with relevant guidelines and regulations. Informed consent to participate in the study was obtained from all participants prior to enrolling in the study and the intervention.

3.4.2 Safeguarding and at-risk participants

The assessments of intimate partner violence (IPV) in the study were pseudo-anonymised, and while it was possible to link outcomes back to personal identifying data, safeguarding measures were put in place so that participants who reported experiencing IPV were automatically provided with referrals to services supporting individuals experiencing violence, customised to their local context. The author and research team recognises the limits of the study in reporting IPV perpetration to legal authorities but provided perpetrators with automatic referrals (see IPV Survey Referral Messages). It is also worth noting that while participants were over the age of 18 in South Africa, in Jamaica participants also included 16–17-year-olds (due to a local collaboration between UNICEF Jamaica and an adolescent programme in Jamaica). For this reason, in Jamaica, for participants aged 16 and 17 links were included that provided information and referrals designed specifically for parents and caregivers aged 16-17.

3.4.3 Assessments and sensitive issues

The online assessment on IPV in the study sought to explore the possible impact of ParentText on relationship behaviours. This assessment included items on physical violence, sexual abuse, psychological abuse, coercion, and economic abuse, as well as questions on positive partner interactions, gender equitable behaviours, and attitudes toward IPV and gender roles. At the end of the assessment, participants were provided referral details to in-person support from local organisations and agencies. Referral contacts were country-specific to South Africa and Jamaica and provided details to support from local agencies.

For the qualitative data collection, the majority of the interviews and FGDs were conducted where the interviewer and interviewees and FGDs participants were the same gender, in a

gender-matched interview and FGD setting. This attempted to create a balance between trust and rapport, and sought to address power imbalances between the researcher and participants (Elliott & Roberts, 2020). As such, the male interviews and FGD in South Africa were conducted in English and Xhosa by a male local research assistant. Female interviews and FGDs were conducted in English by the first author (female) with assistance from a local female research assistant interpreter who spoke Xhosa and English. In Jamaica, the female interviews were primarily conducted in English by the first author (female) with interpretation assistance from female and male UNICEF Jamaica staff who spoke English and Jamaican Patois.

At the start of the interview and FGDs, participants were reminded that there were no right or wrong answers, that they could skip any questions they did not want to answer and could stop taking part in the study at any time, without giving a reason. At the end of the individual interviews and FGDs, participants were also provided with referral contact details of country-specific agencies and services.

3.4.4 Researcher safety

Researcher safety was also an important aspect of the present study. A user-testing safety protocol was developed for the study (see ParentText User Testing Study Safety Protocol), which contains a general procedure that was followed to ensure the safety of the primary researcher and research assistants and staff involved in the present study. As the primary researcher, I also held regular online meetings with the local research assistants and research collaborators involved to plan and discuss the study as well as monitor study progress. These meetings were also an opportunity to address and discuss any issues or concerns that came

up. The meetings included the main research partners from Clowns Without Borders South Africa, IDEMS International, University of Cape Town, and UNICEF Jamaica.

3.4.5 Digital and in-person safeguarding measures

In alignment with UNICEF chatbot safeguarding guidelines, ParentText is designed to detect high-risk keywords to recognise possible disclosure of a dangerous situation in free text fields. After detection, the chatbot is designed to automatically provide the user an empathetic and empowering reply and referral details localised to the country (South Africa and Jamaica) that supports parents and child safety (e.g., police and ambulance). Furthermore, in instances of detected concern, the automated text response in ParentText is designed to be generalised and not specific to challenges that families might be experiencing, such as IPV, an example of wording is as follows: "It sounds like you are having a really rough time. If you would like extra support, please type 'support' and we will share a list of helpful resources." Since IPV data will only be pseudo-anonymised and can be linked back to the individual, participants who report experiencing IPV will automatically be provided with referrals to agencies and services supporting individuals experiencing violence, customised to their local context in South Africa and Jamaica. It is recognised that the study is limited in reporting IPV perpetration to legal authorities but perpetrators will also be provided with automatic referrals. The referral procedure can be found in the Appendix IPV Survey Referral Messages.

In the qualitative interviews and FGDs, participants were asked questions on whether they had shared anything about the programme with others, what other resources they may like to see, as well as their experience using the chatbot. Parents were also asked about their experience of the ParentText programme in relation to their relationship with other adults in

their family or household (see the Appendix Qualitative Instrument for the qualitative interview schedule for the individual interviews with participating parents and for the FGD schedule). The qualitative interviews and FGDs did not include any questions specifically on IPV. However, during qualitative interviews and FGDs, it was a possibility that participants might disclose violent practices in their family. Within the informed consent form, it was indicated that some information regarding harmful practices may have to be disclosed without respondents' consent if they pose danger or harm to themselves or family members. In instances where information was disclosed which suggested that a member of a household was at risk of significant harm, the protocol was that the researcher would discuss concerns with the respondent at the end of the interview. If there was reasonable concern, the Primary Investigator and Research Manager would be informed for further guidance. If the household member at risk of harm was 16 or 17, the researcher would discuss with the participant the possibilities for referral to child welfare, health organisations, and additional services. If the decision was made to take action, the participant would be informed, and a referral would be made. If severe abuse was disclosed during an interview or FGD, the involved individuals of would be immediately referred to social or medical services and the interview or FGD would be immediately ended. Regular meetings with the primary author, the research assistants and collaborators, were held to discuss any issues that arose. Finally, if it was determined that respondents or their families had experienced significant harm due to participating in the study (i.e., suicidality, severe abuse, IPV, or other potential psychological or physical injuries), the protocol was to cease further activities until the issues were addressed sufficiently.

In terms of incidental findings, it was not anticipated that any incidental findings would be encountered due to the nature of the study assessments. Data from the IPV assessments were

pseudo-anonymised at the point of data extraction. Individual interviews and FGDs were focused on partner interactions and how participants found the chatbot, therefore it was not anticipated that any incidental findings would be encountered during the interviews and FGDs. However, at the end of the interviews and FGD participants were provided referral contact details to local implementing partners and services for IPV (see IPV Survey Referral Messages).

3.4.6 Equitable research

The present study followed the 14-item checklist of best practices for the transparent and ethical reporting of violence research accounting for challenges during COVID-19, which seeks to guide study design, research reporting, and peer-review, developed by Peterman et al. (2023). For details on procedures that were followed in an effort to adopt equitable research practices see the Checklist for transparent and ethical reporting of violence research during COVID-19 in the Appendices.

3.4.7 Data Management and Storage

Data types and security

The data collected included a range of different types of data: consent records included participant names (written consent forms, audio-recorded consent, assent forms (for research the involving minors)); audio recordings (only of participating parents/caregivers who consented to the individual interviews and FGDs); transcripts of audio recordings; contact details for research purposes only (destroyed when no longer needed for this research); chatbot user-engagement data; and quantitative IPV assessment answers. Data security and storage had high priority in the research project. All completed online assessments, user-engagement data, and consent forms were uploaded to secure servers at the University of

Oxford. Audio recordings and transcripts were also uploaded to secure servers at Oxford, which are backed up internally. Qualitative data collected during fieldwork was stored on secure, password-protected external hard-drives.

Data storage and safety

ParentText user-engagement data were collected on the UNICEF RapidPro server and fully anonymised before it was shared with the research team who stored the data on the University's OneDrive. All completed online assessments were uploaded to a secure server in Oxford and password protected. Audio recordings and transcripts collected during fieldwork in Jamaica and South Africa were stored on encrypted, password-protected external hard-drives and stored on Oxford's OneDrive. Only research team members with the specific password protection had access to the data. Transcripts from qualitative interviews and FGDs were pseudo-anonymised with their personal data removed from transcripts using unique participant numbers. The unique participant numbers were then replaced with pseudonyms in the written manuscripts of the studies. All personal identifying data were deleted as soon as end line data collection was completed. Availability of both the quantitative and qualitative data was limited to researchers on the team and study partners. For the IPV assessments, all personal identifying data were deleted as soon as end line data collection was completed. Qualitative data (i.e., recordings and transcripts) will be destroyed by erasing electronic data three years after study completion.

Sharing research data with other organisations

In the instance that research data were to be shared with another organisation, only an anonymised version without any identifiable data or information would be transferred. Any organisation who wants to get access to the data would need to complete an official form and

commit to adhere to all of the data protection regulations. They would then be given a one-time password to download the dataset.

3.5 Positionality and reflexivity

Reflexivity is the introspective process of reflecting on one's role as a researcher, and the influence of one's subjectivities and biases on the research process, design, and analysis, and how one's worldview influences the research one conducts (Jamieson et al., 2023). Whilst reflexivity is often associated with qualitative research, considerations of positionality are arguably equally important to consider in quantitative research as well (Shockley, 2021). For instance, researcher identity shapes the quantitative research process by, for example influencing what types of research questions are asked, and who is included as participants in the sample. Elements that are relevant to a researcher's positioning include characteristics, such as, but not limited to, gender, race, age, affiliation, language skills, personal experiences, political stances, and personal beliefs (Berger, 2015), and, whether a researcher is in a position of an outsider, that is, whether they are part of and belong to the group they are researching or not (Dwyer & Buckle, 2023). The positions of a researcher can influence a study in various ways, including i) impacting access to participants and willingness of individuals to take part in, for example, and interview; ii) the nature of the researcher-researched relationship which may influence how much and what type of information participants share; iii) the language used during data collection and interpretation of research findings based on the researcher's background and worldview (Berger, 2015).

In light of these considerations, in what follows below, I seek to reflect on my positionality within the present research, in an attempt to explore how my background, experiences, and perspective may have influenced my engagement with the present research. As a cisgender,

Caucasian woman from a high-income country in Europe, pursuing a doctorate in the Global North, I was an 'outsider' within the present research study, which was conducted in Jamaica and South Africa. My education background is in Psychology and Evidence-Based Social Policy and Intervention, which shapes the research approach I take in terms of the theoretical frameworks that I draw upon and the mixed-methods methodology that I have chosen to use. Alongside my studies, I have been engaged in various types of gender-equality and violence prevention work, with experience working as a consultant on violence prevention projects at both UN Women and UNICEF. All of these experiences will have influenced the types of research questions that I asked when designing the present study and research project. Furthermore, whilst originally from a high-income country in Europe, I grew up in southeast Asia, and this international upbringing will likely also have influenced my role as a researcher. Additionally, having grown up in a society with high levels of gender inequality and violence, it is also important for me to acknowledge that gender equality and efforts seeking to eliminate of violence against women and girls are topics that I am personally invested in. As is discussed in greater depth individually in the empirical papers, measures were taken to reduce the influence of my positionality on the research (e.g., using digital devices for quantitative surveys to reduce social desirability bias and using male interviewers for male participants). Furthermore, since I designed and developed the IPV prevention intervention content used in ParentText, steps were also taken during the programme development process (e.g., consultations with local organisations and experts in the field of IPV) in an attempt to mitigate any impacts on the intervention.

Alongside considering my positionality within this research, I would also like to acknowledge that I grappled with how to critically approach writing this positionality statement. Whilst addressing my positionality offers me, as a researcher, the opportunity to

reflect on my own assumptions and biases, and how they have influenced the research, I am cognisant of the historical background of colonialism that underpins positionality statements and critiques associated with the practice of declaring positionality (Gani & Khan, 2024). As such, whilst recognising that critically engaging with positionality and reflexivity requires not only reflection but also action, I have outlined how I have sought to embed these practices throughout my research process in my Author Reflexivity Statement.

4 Paper 1 – Integrating intimate partner violence prevention content into a digital parenting chatbot intervention during COVID-19: Intervention development and remote data collection

The following chapter is published in *BMC Public Health*. This paper has been written in alignment with the journal's submission guidelines. Supplementary materials for this paper are available in Paper 1 Additional files. Figures and tables are numbered in alignment with the overall thesis.

Schafer, M.,[1] Lachman, J.M., [1,2,3] Gardner, F., [1] Zinser, P., [1] Calderon, F. [1], Han, Q.,[1] Facciola, C., [4] Clements, L., [4]

[1] Centre for Evidence Based Intervention, Department of Social Policy and Intervention, University of Oxford, [2] Social and Public Health Sciences Unit, University of Glasgow, [3] Centre for Social Science Research, University of Cape Town, [4] IDEMS International

Corresponding Author: Moa Schafer, Centre for Evidence Based Intervention, Department of Social Policy and Intervention, University of Oxford, moa.schafer@spi.ox.ac.uk

The final published version of this chapter is available as the following Open Access article:

Schafer, M., Lachman, J. M., Gardner, F., Zinser, P., Calderon, F., Han, Q., ... & Clements, L. (2023). Integrating intimate partner violence prevention content into a digital parenting chatbot intervention during COVID-19: Intervention development and remote data collection. *BMC Public Health*, *23*(1), 1708. https://doi.org/10.1186/s12889-023-16776-0

Journal website link: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-16649-w

© 2023 The Author(s). This article is licensed under a Creative Commons Attribution 4.0 International License (https://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution, and reproduction in any medium or format, as long as appropriate credit is given to the original author(s) and the source, a link to the Creative Commons license is provided, and indication is made if changes were made.

4.1 My role and statement of authorship

I confirm that I carried out the majority of the work in this research study. I conceptualised of the study, developed the IPV prevention intervention content, coordinated the translation of the IPV prevention intervention content into multiple languages, designed the IPV assessment surveys, created the IPV assessment on ODK, liaised with research partners staff from partner organizations assisting with programme implementation, planned and conducted the data analyses, drafted the manuscript, and revised the manuscript. JML and FG participated in the design of the study and intervention development and oversaw data collection and cleaning. PZ and FC provided support during the data collection process. MS designed the statistical analysis, with JML, FG, QH, FC, and LC providing guidance on the analysis approach. MS drafted the manuscript, with JML and FG contributing. All authors approved the final manuscript.

4.2 Abstract

Background: Intimate partner violence (IPV) is a serious public health issue which experienced a sharp incline during the onset of COVID-19. Increases in other forms of

violence, such as violence against children (VAC), have also been linked to the pandemic, and there have been calls for greater prevention efforts that tackle both forms of violence concurrently. The COVID-19 crisis has highlighted the urgent need for evidence-based and scalable violence prevention interventions that target multiple forms of family violence. Parenting programmes have shown promising results in preventing various forms of family violence, including IPV and VAC, and have recently experienced an expansion in delivery, with digital intervention formats growing. This paper describes the development and evaluation of the IPV prevention content designed and integrated into ParentText, a chatbot parenting intervention adapted from Parenting for Lifelong Health programmes.

Methods: The ParentText IPV prevention content was developed using the Six Steps in Quality Intervention Development (6SQuID) framework. This involved targeted literature searches for key studies to identify causal factors associated with IPV and determining those with greatest scope for change. Findings were used to develop the intervention content and theory of change. Consultations were held with academic researchers (n=5), practitioners (n=5), and local community organisations (n=7), who reviewed the content. A formative evaluation was conducted with parents in relationships (n=96) in Jamaica to better understand patterns in user engagement with the intervention and identify strategies to further improve engagement.

Results: Using the 6SQuID model, five topics on IPV prevention were integrated into the ParentText chatbot. Text-messages covering each topic, including additional materials such as cartoons and videos, were also developed. The formative evaluation revealed an average user-engagement length of 14 days, 0.50 chatbot interactions per day, and over half of participants selected to view additional relationship content.

Conclusions: This article provides a unique contribution as the first to integrate IPV prevention content into a remotely delivered, digital parenting intervention for low-resource

settings. The findings from this research and formative evaluation shed light on the promising potential of chatbots as scalable and accessible forms of violence prevention, targeting multiple types of family violence.

Keywords: Intimate partner violence, violence against children, COVID-19, parenting, intervention development

4.3 Background

Intimate partner violence (IPV) is a serious and pervasive issue, which has both acute and long-standing effects on women and families worldwide (Stubbs & Szoeke, 2021). IPV is associated with a range of short- and long-term physical and mental health consequences including physical injuries, mental health issues, chronic disease, and stress (WHO, 2012). IPV is the most common form of violence experienced by women (UNSD, 2015) and global estimates indicate that, in their lifetime, 1 in 4 women experience IPV (WHO, 2021b). The onset of the COVID-19 pandemic saw rates of IPV, including other forms of violence in the home such as violence against children, sharply increase (Bhatia et al., 2021). Notably, the co-occurrence of IPV and other forms of violence in the household has received growing attention in recent years (Pearson et al., 2022), with a particular focus on the intersections that

exist between IPV and violence against children (Guedes et al., 2016). In the past, efforts to address these two forms of violence have developed predominantly in separate trajectories (Guedes et al., 2016). However, increasingly, global calls have been made for more integrated forms of prevention to urgently tackle both types of violence concurrently (Bott et al., 2020). The surge in rates of both IPV and violence against children following the arrival of COVID-19, have further underscored this pressing need for integrated and scalable violence prevention efforts (Bhatia et al., 2021).

Parenting interventions have been identified as an effective strategy to address and prevent multiple forms of family violence, including IPV and violence against children (Guedes et al., 2016). For example, a randomized controlled trial (RCT) of a group-based parenting programme in the Philippines found significant reductions in both child maltreatment and also in IPV at post-test (Lachman et al., 2021). In terms of preventing violence against children, parenting programmes have shown a number of promising results (Backhaus* et al., 2023; Coore Desai et al., 2017). Findings from a meta-analysis by Chen and Chan (Chen & Chan, 2016), for example, found that parenting programmes prevented child maltreatment by enhancing protective factors and reducing risk factors. Likewise, a systematic review for the 2023 WHO Guideline on Parenting Interventions found 49 randomized trials showing consistent beneficial effects of parenting interventions for reducing maltreatment and harsh parenting (Backhaus* et al., 2023). In a similar vein, fatherhood interventions, which focus on the involvement of and engagement between fathers and their children, are also gaining recognition in the violence prevention literature (Henry et al., 2020). Whilst parenting interventions have often faced challenges with recruiting and engaging fathers due to cultural and logistical barriers (Panter-Brick et al., 2014), in recent years there have been an increase in interventions that focus specifically on fathers and improving their engagement (Ashburn

et al., 2017). Indeed, interventions that involve men and boys have been identified as a unique and valuable opportunity to address masculine norms that contribute to child maltreatment and gender-based violence (Siu et al., 2017), through activities that promote new behaviours and self-reflection encouraging positive involvement as fathers (Doyle et al., 2014).

Globally, interventions that involve men to prevent the perpetration of IPV are gradually becoming more common (Jewkes et al., 2015). The community mobilisation intervention SASA! in Uganda, for example, was designed to change community norms, attitudes, and behaviours that lead to gender inequality and violence (Abramsky et al., 2016). Results from a pair-matched cluster RCT of SASA! found a number of promising findings. For instance, compared to their control counterparts, women in intervention communities were less likely to have experienced all types of IPV (physical, sexual, emotional, and controlling behaviours) at follow-up (Abramsky et al., 2014).

While there is extensive evidence of the effectiveness of parenting programmes across various well-being and psychosocial outcomes, the reach of parenting programmes is often limited due to the accessibility and reach of the interventions (Weisenmuller & Hilton, 2021). Structural barriers in LMICs, such as high costs, limited infrastructure, and human resources, often create challenges in programme delivery and implementation (Baumann et al., 2018; Olofsson et al., 2016). There is also a need for programme implementation on a larger scale to achieve greater reach and programme impact and reflect the widespread incidence of VAC and IPV on population levels (Marcus et al., 2020). Responding to this need, there has been a substantial increase over the past two decades in the use of digital technology for the delivery of interventions (Day et al., 2019; Patrick et al., 2016). Indeed, mobile technology is

increasingly being used to deliver interventions, particularly in LMICs, to overcome barriers with access and reach (Chang et al., 2011; Kola et al., 2021). Digital modalities, such as apps, video conferencing, and chatbots, thus provide promising possibilities in terms of overcoming challenges associated with reach and limited resources (Sanders et al., 2021). The emergence of COVID-19 further underscored the importance of digital and remote delivery of interventions (Sherr et al., 2022). Digital modalities thus provide promising possibilities in terms of overcoming challenges associated with reach and limited resources (Sanders et al., 2021).

The flexible format of digitally delivered interventions has also been suggested to make participation easier and increase participation rates, especially for populations that previously may not have attended programmes such as male caregivers and working parents, and the format has also been identified as potentially more cost-effective (Sanders et al., 2021). Digital programmes also offer unique opportunities for intervention content to be personalised, a strategy which in existing research on text messaging-based interventions has found to increase intervention efficacy (Head et al., 2013), as well as provide users with more targeted and relevant material (Glass et al., 2017). Despite the increase in attention placed on digital interventions and on programmes addressing multiple forms of violence, there still remains a paucity of empirical evidence on digital prevention efforts that seek to address both forms of violence (Bacchus et al., 2017). This gap in the literature thus underscores the need for further research and programmatic efforts in this area.

Parenting for Lifelong Health and Digital Innovations

In response to COVID-19, a series of digital adaptations of the in-person Parenting for Lifelong Health (PLH) programmes were produced, including the development of

ParentText, a chatbot intervention for parents and caregivers of children aged 0 to 17 years. ParentText sends automated messages to users via social messaging platforms such as WhatsApp, Telegram, and Facebook messenger, and is also available via SMS for individuals without smartphone access. The parenting content of ParentText was derived from the in-person PLH programmes (Cluver et al., 2018; Ward et al., 2020) and has been locally adapted collaboratively with implementing partners in various low- and middle-income countries (LMICs), including in South Africa, Jamaica, the Philippines, Malaysia, and Sri Lanka, to make sure the content is culturally relevant. The material has also been translated into the local languages of the implementing countries. Enrolled participants receive ParentText messages over five weeks. The specific content the user receives in ParentText aligns with the children's development stage (0-23 months, 2-9 years, 10-17 years) and is delivered via a range of formats including text messages, images, audio, and video for parents and caregivers. Users receive parenting content on the three main themes: 1) relationship building by spending time together, 2) positive reinforcement, 3) stress reduction for parents and caregivers. ParentText also includes material on additional topics including child development, children living with disabilities, online child safety, talking about COVID-19 with children, family budgeting, helping with schoolwork, family harmony, sexual violence prevention, and partner relationships – the latter of which is the primary focus of this research project. In addition, participants receive troubleshooting messages corresponding to the material to see whether they practised the skill, how it went, and to identify what challenges they may have experienced.

Using the Six Steps in Quality Intervention Development (6SQuID) framework (Wight et al., 2016), this paper sets out to describe the empirical research underpinning the intervention development and preliminary testing of the IPV prevention content in ParentText. More

specifically, this article seeks to answer the research question: How can intimate partner violence (IPV) prevention content be developed and integrated into a digital parenting intervention? In line with this, the present paper seeks to address the following objectives: 1) Develop IPV prevention content that can be integrated into a remotely delivered, digitally adapted parenting programme through carrying out targeted literature searches of existing evidence and conducting community and stakeholder consultations; 2) Identify key components in parenting interventions that are relevant for preventing and reducing IPV by synthesising findings from existing research and holding consultations with leading experts in the field; 3) Explore methods of remotely delivering and evaluating IPV prevention content and assessments using digital technology by testing the chatbot through conducting a formative evaluation.

4.4 Methods

4.4.1 Study approach

This study reports on the formative research carried out to develop, create, and evaluate the IPV prevention content and assessments integrated in the ParentText programme and follows the Six Steps in Quality Intervention Development (6SQuID) model (Wight et al., 2016). The 6SQuID framework builds upon existing intervention development models, such as the UK Medical Research Council's (MRC) guidance for developing and evaluating complex interventions (Craig et al., 2008; Skivington et al., 2021), by offering a detailed series of practical steps (see Table 2). The 6SQuID model has been used in various contexts to design and develop behaviour change interventions, including gender-based violence prevention (Wight et al., 2022) and digital parent support programmes (Matsuno & Israel, 2021).

4.4.2 Study setting

The intervention development was carried out globally in consultation with researchers and practitioners in five LMICs (South Africa, Jamaica, Malaysia, the Philippines, and Sri Lanka) to account for variations in contexts in preparation for scaling up the intervention in the future. These countries were purposefully selected because of pre-existing partnerships with research institutions and organisations in the locations, and because of the high rates of IPV reported in these countries (Bandara et al., 2021; Sere et al., 2021; Shuib et al., 2013; Williams, 2016; Yoshioka et al., 2020).The formative evaluation was carried out in Kingston, Jamaica in order to assess engagement with the chatbot and the intervention content. Jamaica was selected as the location for the formative evaluation due to the high levels of IPV reported in the country and because existing collaborations with research partners and community organisations in the country made rollout more feasible.

4.4.3 Data collection and analysis

The development of the ParentText IPV prevention content and assessment was guided by the first five steps of SQuID model: 1) define and understand the problem and its underlying causes; 2) identify which contextual or causal factors have greatest scope for change; 3) clarify how to bring about change; 4) select how to deliver the mechanisms of change; 5) test and adapt on a small scale (Wight et al., 2016). The sixth step, 6) 'Collect sufficient evidence of effectiveness to justify rigorous implementation or evaluation' (Bacchus et al., 2017, p.521), is being pursued through a pre-post user-testing study that is currently being conducted in South Africa and Jamaica, which will be reported in a separate forthcoming paper. A summary of each step is provided in Table 2.

Table 2. Summary of the 6SQuID intervention development framework

6SQuID Steps	Application in the present study
Step 1: Define and understand the problem	• Conduct targeted literature search to identify risk factors associated with IPV • Review existing literature to clarify intersections between IPV and other forms of family violence (e.g., violence against children) • Examine evidence base on the intergenerational effects of IPV
Step 2: Clarify which causal or contextual factors are malleable and have greatest scope for change	• Carry out targeted review of existing literature on IPV prevention and theoretical frameworks • Conduct a targeted literature search to identify which risk factors and social norms are addressed in existing IPV interventions
Step 3: Identify how to bring about change: the change mechanism	• Use findings from targeted literature searches to identify patterns and type of content included in interventions with promising findings • Develop a Theory of Change and IPV prevention and assessment materials using empirical findings from Steps 1-3 • Conduct consultations with grassroot organisation partners (n=7), academic researchers (n=5), and practitioners (n=5) to test intervention content, revise materials, and carry out surface level adaptations and translations
Step 4: Identify how to deliver the change mechanism	• Determine content structure, frequency, and length to develop an intervention content schedule • Hold virtual consultation sessions with grassroots organisation partners (n=7) and academic researcher stakeholder group (n=5) to receive feedback and make amendments on programme structure
Step 5: Test and refine on a small scale	• Conduct a small scale formative evaluation (n=96) in selected Kingston, Jamaica, to test user engagement with the intervention content, with participants recruited through UNICEF Jamaica

	• Measure and analyse user engagement outcomes to examine interactions with the chatbot • Evaluate findings and identify areas for further improvement and refinement
Step 6: Collect sufficient evidence of effectiveness to justify rigorous implementation or evaluation	• Pre-post user-testing study in Jamacia and South Africa currently underway to test preliminary effectiveness, which will be reported in a subsequent forthcoming paper

Note: 6SQUID: Six Steps in Quality Intervention Development Framework (Wight et al., 2016).

Step 1. 'Define and understand the problem'

In Step 1, we conducted targeted literature searches to review published research and consulted leading researchers in the field of violence prevention to gain a better understanding of risk factors associated with intimate partner violence (IPV) and major points of intersections it shares with other forms of violence in the family, such as violence against children (VAC).

Step 2. 'Clarify which causal or contextual factors are malleable and have greatest scope for change'

For Step 2 we sought to identify which underlying contextual and causal factors associated with IPV have the greatest potential for change. For this step, we built on our empirical findings from Step 1, and extended our review to examine the content and results of existing evidence-based interventions seeking to prevent IPV or address IPV risk factors.

Step 3. 'Identify how to bring about change: the change mechanism'

Step 3 focuses on identifying what the change mechanism is, in other words, understanding what process triggers and achieves the desired change (Wight et al., 2016). For this, we examined how change could be achieved to the modifiable risk factors identified in Step 2.

We developed a theory of change to map out how to bring about the change and developed intervention content in various modalities (text, image, video, and audio) that would allow us to deliver the change mechanism in the identified factors. The content was tested and reviewed by grassroots organisation partners (n=7) in virtual consultation sessions and reviewed by academic researchers (n=5) and practitioners (n=5), who provided written and verbal input via email and in individual consultation meetings. Translations and surface-level adaptations of the content were also carried out.

Step 4. 'Identify how to deliver the change mechanism'

Step 4 in 6SQuID is based on determining how to *deliver* the change mechanism (Wight et al., 2016). Here we drew upon the risk factors identified in Step 1 and 2, and the theory of change and content we developed in Step 3, to create a programme schedule. This involved determining what structure, frequency, and length to use, and consulting the grassroots organisation partners (n=7) and the researcher stakeholder group (n=5) to receive feedback and make amendments.

Step 5. 'Test and refine on a small scale'

Step 5 focuses on examining the feasibility of the intervention content and delivery, as such, we conducted a formative evaluation to test the chatbot and further refine the intervention material. For this, partnered parents and caregivers (n=96) were recruited in Kingston, Jamaica, through convenience sampling carried out through UNICEF Jamaica, to test the ParentText chatbot. Recruited parents signed up to the chatbot by texting the word 'PARENT' to a designated sign-up number on WhatsApp, which then enrolled them in the programme. The aim of this formative evaluation was to help us better understand user engagement with the chatbot and how the intervention could be improved.

Step 6. 'Collect sufficient evidence of effectiveness to justify rigorous implementation or evaluation'

This paper focuses on steps 1-5 of the 6SQuID model, and the procedures and results of Step 6 are beyond the scope of this article and will be reported in a separate, forthcoming paper.

4.5 Results

4.5.1 Intervention and content development

Step 1: Define and understand the problem

We synthesised findings from Step 1 by focusing on three main intersections between IPV and child maltreatment, as highlighted in the literature (Table 3) (Guedes et al., 2016). These intersections help us to understand the risk factors associated with IPV in relation to other forms of violence, thus identifying areas of overlap which may serve as key entry points for integrated violence prevention strategies. The three major intersections identified between IPV and child maltreatment are outlined below and include: 1) common risk factors and violence co-occurrence; 2) similar consequences and inter-generational effects; and 3) shared social norms (Guedes et al., 2016).

Table 3. Summary of major intersections between IPV and violence against children

Intersections between IPV and violence against children
• Common risk factors and violence co-occurrence • Similar consequences and inter-generational effects • Shared social norms

Common risk factors and violence co-occurrence

A major intersection between IPV and child maltreatment includes the risk factors they share (Guedes et al., 2016), including society- and family-level risk factors (e.g., acceptability of family violence) and perpetrator-level risk factors (e.g., parental history of physical abuse)

(Alhusen et al., 2014; Gracia et al., 2017). This intersection has been gaining attention as scholars start to explore ways of addressing shared risk factors in attempts to reduce both forms of violence concurrently (Stark & Seff, 2021). Social and gender norms that condone violence are also a notable shared risk factor (Guedes et al., 2016), as discussed in greater detail below. Another critical intersection is violence co-occurrence, that is, the occurrence of both forms of violence in the same home during the same time period (Guedes & Mikton, 2013).

Similar consequences and inter-generational effects

The similar consequences shared by IPV and child maltreatment are also notable (Guedes & Mikton, 2013), both have impacts that are severe and long-term. Both are linked with serious negative effects on mental and physical health (Chisholm et al., 2017; Li et al., 2016). IPV and child maltreatment also share intergenerational consequences. IPV has been found to lead to an increase in pregnancy-associated mental health problems, such as postpartum depression, which negatively impacts a mother's ability to provide sensitive care for her children (Fisher et al., 2012). In terms of child maltreatment, studies have found that men who experience physical abuse as children are at greater risk of perpetrating IPV as adults (Machisa et al., 2016; Widom et al., 2014). Studies also suggest that IPV may be a causal factor for child maltreatment (Chan et al., 2012). A study by Chan et al. (Chan et al., 2012), for example, found that IPV during pregnancy was a factor predicting physical abuse against children (Chan et al., 2012).

Shared social norms

Another important intersection are social norms, defined as 'rules of action shared by people in a given society or group; they define what is considered normal and acceptable behaviour

for the members of that group' (Cislaghi & Heise, 2020, p.409). Gender norms are a subtype defined as 'social norms defining acceptable and appropriate actions for women and men in a given group or society' (Cislaghi & Heise, 2020, p.415). Scholars suggest that social norms play a key role in not only sustaining VAC but also IPV (Stark & Seff, 2021). Wessells and Kostelny (2021) note how social norms often underpin the use of corporal punishment. In some contexts, for example, parents may believe that all parents use harsh parenting in response to unruly child behaviour, and that other parents would criticise them if they did not beat their children for being disobedient (Wessells & Kostelny, 2021). Various social norms have also been linked to a women's risk of experiencing IPV, including men's dominance over women and men's acceptance of wife-beating (Clark et al., 2018). Given the growing recognition of these overlapping harmful social norms, there is an increasing consensus on the importance of utilising prevention efforts that address both forms of violence simultaneously (Stark & Seff, 2021).

Step 2: Clarify which causal or contextual factors are malleable

For Step 2, a mixture of targeted literature searches for key studies, systematic reviews, and relevant articles were carried out to identify which causal or contextual factors related to IPV have the greatest scope for change. After reviewing a wide range of research, with a particular focus on content and results from existing evidence-based interventions seeking to prevent IPV or address IPV risk factors, five causal factors and associated behaviours were selected (Table 4). A summary of each factor is provided below.

Table 4. 6SQUiD Step 2: Summary of factors that have greatest scope for change

6SQuID Step 2: Causal factors and behaviours with greatest scope for change

(1) Gender-equitable behaviours and attitudes
(2) Involved and equitable co-parenting
(3) Equally distributed workload
(4) Conflict resolution skills
(5) Effective communication

Gender-equitable behaviours and attitudes

The Bandebereho intervention (Doyle et al., 2018) includes sessions on: 'Gender Equality' (which encourages participants to consider how gender norms impact the relationships and lives of men and women), in addition to sessions on distributing household and care work more equally between men and women. Notably, findings from a study on Bandebereho by Doyle et al. (2018) revealed a reduction in men's dominance in decision-making in the household and greater levels of men's participation in household tasks and childcare.

Involved and equitable co-parenting

The Bandebereho programme (Doyle et al., 2018) and the REAL Fathers intervention (Ashburn et al., 2017) include sessions on becoming a better parent by being an involved father, as well as sessions on becoming a more supportive partner by communicating effectively and being more involved in childcare and housework. For instance, Bandebereho includes sessions such as 'Becoming a Father', encouraging men to reflect on the benefits of being an engaged father and how to support both the mother and children (Doyle et al., 2018). Following their study, Doyle et al. (2018) found an increase in men's accompaniment to antenatal care and women in the intervention reported greater levels of partner support during pregnancy compared to the control group. Similarly, REAL Fathers seeks to help participants develop effective couple communication and problem-solving skills (Ashburn et al., 2017). Notably, findings from a study on REAL Fathers by Ashburn et al. (2017) revealed

both a reduction in IPV perpetration in addition to reductions in physical punishment of children.

Equally distributed workload

Bandebereho also includes a session on 'Sharing Responsibilities at Home', encouraging participants to consider how gender roles impact division of work at home (e.g., childcare and household work) and how to distribute this more equally (Doyle et al., 2018). Findings from their study indicated greater levels of men's participation in household tasks and childcare, improvements in division of housework, in addition to women in the intervention group reporting reductions in past-year physical and sexual IPV (Doyle et al., 2018).

Conflict resolution skills

MAISHA is a microfinance and gender training intervention seeking to reduce violence against women (Kapiga et al., 2019). One of the ways the gender training component seeks to prevent IPV is through helping participants develop relationship skills such as non-violent, conflict resolution strategies. Findings from a cluster RCT of MAISHA indicated that at follow-up, compared to the control, women participating in the programme were less likely to experience physical IPV and express attitudes accepting of IPV (Kapiga et al., 2019). Similarly, the Bandebereho intervention also includes content on conflict resolution strategies (Doyle et al., 2018). Results from their study showed that compared to the control, women in the intervention reported less past-year physical and sexual IPV. Men and women in the intervention group also reported less child physical punishment (Doyle et al., 2018).

Effective communication

REAL Fathers (Ashburn et al., 2017) also includes content that aims to build effective couple communication skills and promote collaborative problem-solving skills between partners. Findings from their intervention showed significant positive effects on couple communication. Men who participated in group mentoring and individual sessions had twice the odds, compared to those who did not, of the following: listening to their spouse, telling their spouse they appreciated them, and speaking with their partner about things that make them happy or frustrated, at both short- and longer-term follow-up (Ashburn et al., 2017).

Step 3: Identify how to bring about change: mechanisms of change

Step 3 involves determining the specific mechanisms through which the factors identified in Step 2 might be able to change. Hence, underpinning an intervention with relevant theory in order to initiate change is key (De Silva et al., 2014; Wight et al., 2016). Outlined below are the theories drawn upon when developing the IPV prevention content aimed at initiating the mechanisms of change.

Programme theory

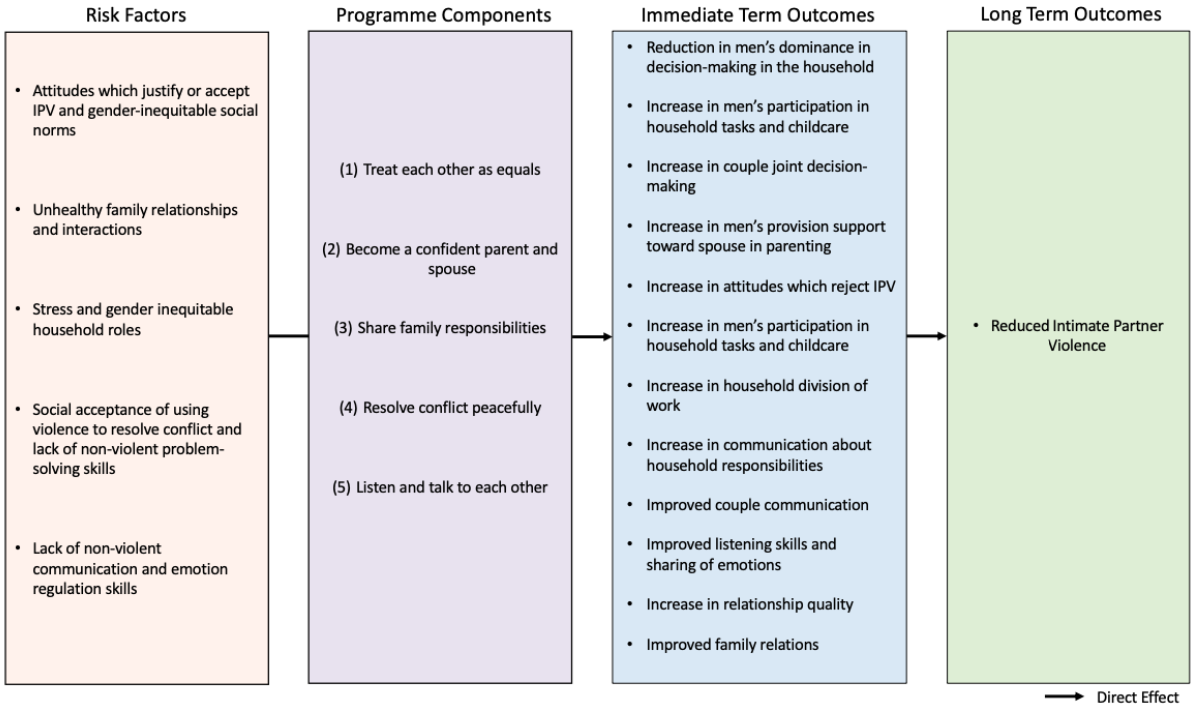
The Parenting for Lifelong Health (PLH) programmes, including ParentText, are primarily based on social learning theory and attachment theory, and consist of content based around themes of relationship building, positive reinforcement, limit setting, and effective discipline (Lachman et al., 2019). The digital adaptations of the in-person PLH programmes, including ParentText, are also grounded in these theoretical approaches. In ParentText, the IPV prevention content also draws upon gender-transformative approaches used in interventions been found to reduce IPV and improve gender-equitable attitudes (see Step 1 and 2). Gender transformative interventions are those which are ‘designed specifically to encourage men and boys to adopt and enact gender-equitable, nonviolent attitudes and behaviours’ (Brush &

Miller, 2019, p.1635-1636), and often seek to target harmful social and gender norms – a key shared risk factor identified and discussed in Step 1. This approach has seen a rapid increase in recent years, and in a systematic review on gender-transformative interventions by Casey et al. (Casey et al., 2018), six out of the 10 interventions found a statistically significant effect on one or more outcomes related to IPV, gender-equitable attitudes and behaviours.

Theory of change

The content in ParentText draws upon material from various evidence-based interventions found to improve gender-equitable attitudes and reduce IPV (elaborated in Step 2) (Ashburn et al., 2017; Doyle et al., 2018; Kapiga et al., 2019). Using the risk factors identified in Step 2, and following preliminary consultations with the selected group of academic researchers (n=5) and practitioners (n=5), through virtual interviews and written feedback provided via email, five topics of focus were selected for the ParentText IPV prevention content: 1) Treat each other as equals; 2) Become a confident parent and supportive spouse; 3) Share family responsibilities; 4) Resolve conflict peacefully; 5) Listen and talk to each other. The proposed causal pathway between each IPV prevention topic, identified risk factor, and behaviour change domain, is illustrated in the theory of change in Figure 8.

Figure 8. Theory of Change: ParentText IPV Prevention Content



Programme: IPV prevention content

I then created specific intervention content related to each modifiable factor identified in Step 2. Using the findings from Step 1 and 2, I drafted a set of core text-messages to accompany each topic (Table 5).

Table 5. Identified modifiable factors, IPV prevention topics, and example text-messages in ParentText

Modifiable Factor	IPV Prevention Topic	Example message (version for fathers)
Gender-equitable behaviours and attitudes	(1) Treat each other as equals	"Family and friends might tell you how a husband or a father should act. But both men and women benefit when they talk to each other and make decisions together. For example, next time a decision needs to be made, involve your partner, and ask what they think!"

Involved and equitable co-parenting	(2) Become a confident parent and supportive spouse	"Get involved! When fathers are engaged in parenting their children, both the child, mother, and father benefit. Set aside some time today to spend with the children."
Equally distributed workload	(3) Share family responsibilities	"Sharing family responsibilities with your partner can make life less stressful. Think of ways you can share the workload. Doing tasks together can also make them more fun."
Conflict resolution skills	(4) Resolve conflict peacefully	"All adults have disagreements sometimes. But fighting is not an effective way to solve issues. Instead, if you start feeling angry, take a deep breath first and then respond in a calmer way."
Effective communication	(5) Listen and talk to each other	"Listening and talking to those around us are key to a more peaceful home. Talking to your partner about issues before they become bigger problems can help avoid arguments from building up."

These text-messages were tested with grassroots organisation partners (n=7), including but not limited to, Parenting Partners Caribbean (PPC), UNICEF Jamaica, Clowns Without Borders South Africa, and the Jamaica National Parenting Support Commission (NPSC), in virtual consultation sessions where feedback was provided to ensure the text-messages and content was appropriate for the target audience. The material was also reviewed by academic researchers (n=5) and practitioners (n=5), who provided written and verbal input via email and in individual consultation meetings (see Additional file 5: Consultation focal points for full list of stakeholders). The intervention content is described in accordance with the Template for Intervention Description and Replication (TIDieR) checklist (Additional file 1)

and the guideline for reporting intervention development studies (GUIDED) (Additional file 2). Further details are provided in accordance with TIDieR in Additional file 3.

Check-in messages and multimedia content

I also developed check-in messages and multimedia material (Figure 9 and Figure 10). The check-in messages seek to remind parents of activities and provide troubleshooting support. One check-in message for each IPV prevention topic is delivered every two days following the IPV material (see Additional file 6 for examples). A variety of multimedia content, including videos (Figure 9 and Figure 10) and comics (Figure 11 and Figure 12), was also created.

Figure 9. Example of the IPV prevention content delivered via text and video in ParentText

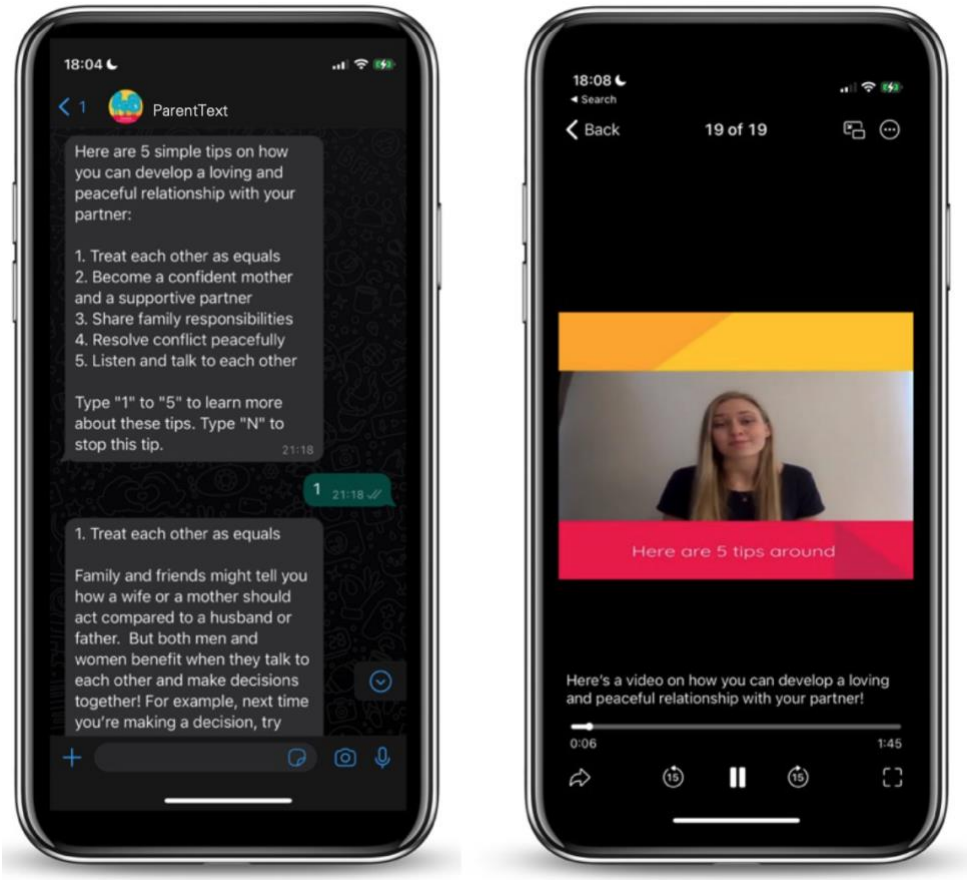


Figure 10. Additional examples of multi-media content in ParentText (added after publication)

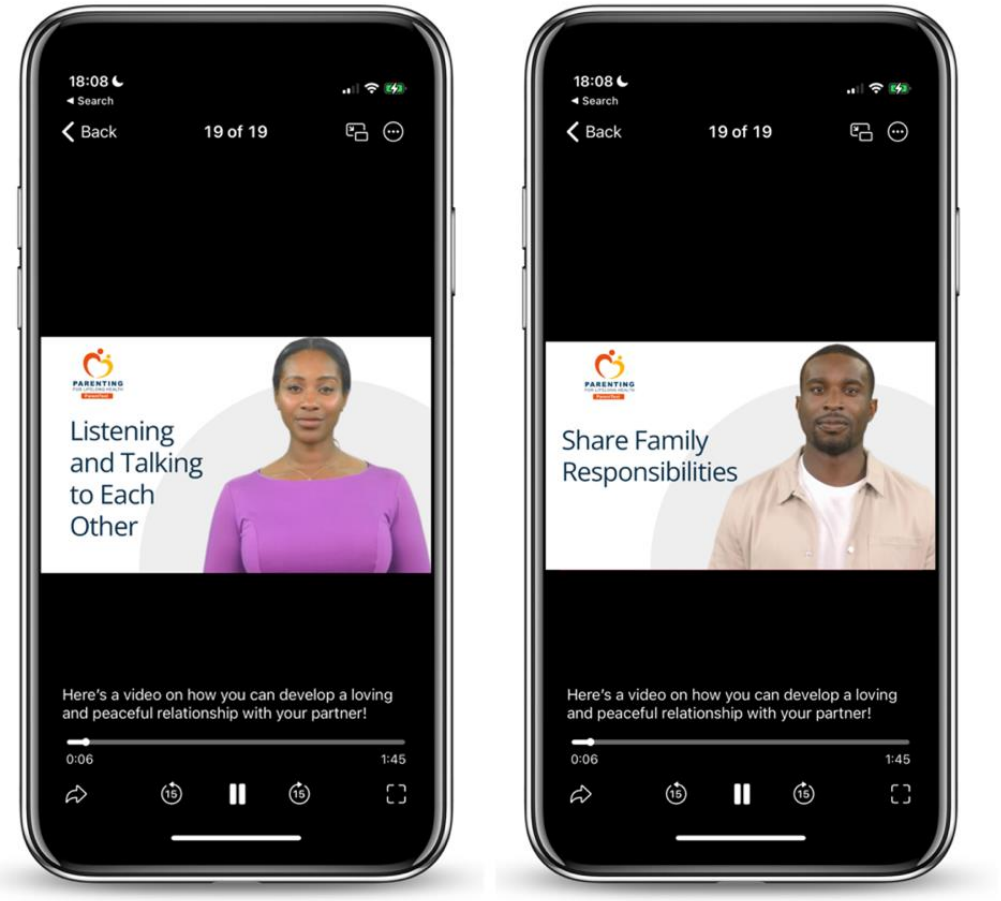


Figure 11. Example of illustrations of IPV prevention material integrated in ParentText

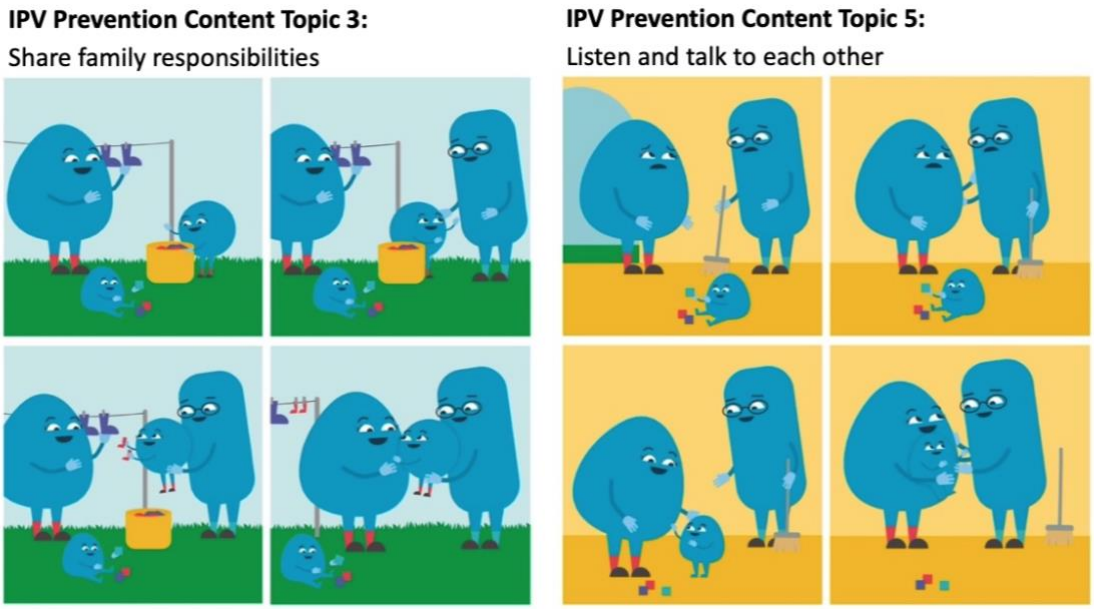
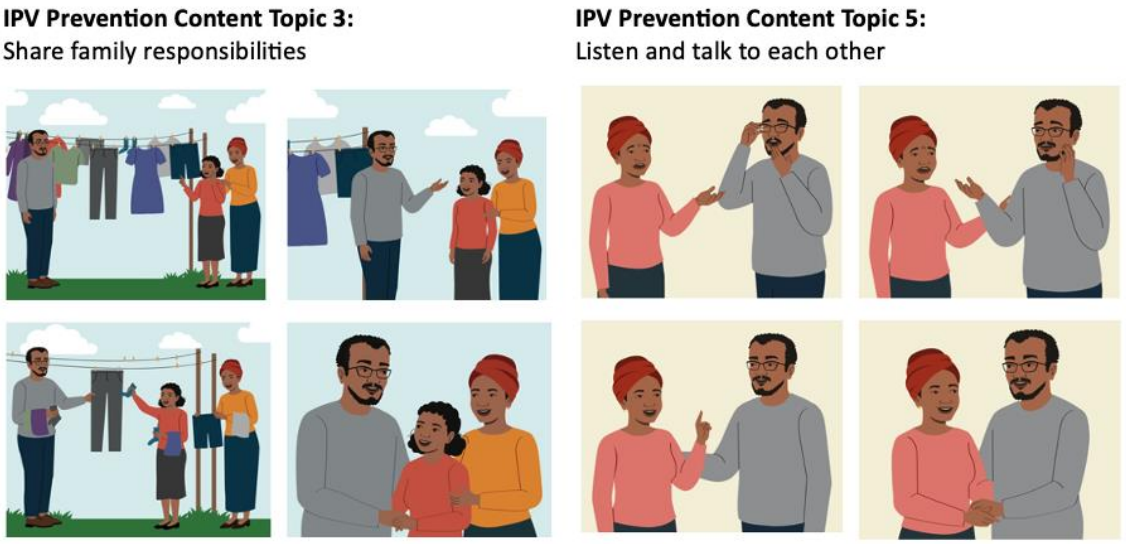


Figure 12. Example of updated illustrations added to ParentText (added after publication)



Note: These updated illustrations were developed after publication of Paper 1 following results from Paper 3

Step 4: Identify how to deliver the change mechanism

While Step 3 involves identifying *what* the change mechanism is, Step 4 focuses on determining how to *deliver* the change mechanism (Wight et al., 2016). Hence, for Step 4, a programme schedule was designed see (Table 6). (For the full 37-day ParentText schedule see Additional file 4). Once developed, the programme schedule underwent further revisions after being reviewed by the partner grassroots organisations (n=7) and researcher stakeholder group (n=5), who provided their perceptions on the programme structure.

Table 6. Structure of IPV prevention content and check-in message schedule in ParentText

Day	IPV Prevention Content
Day 1	Programme starts
Day 3	IPV Baseline assessment
Day 8	**Main IPV Prevention Content:** IPV Prevention Content Topics 1-5
Day 11	**Check-in**: IPV Topic 1 (Treat each other as equals)
Day 14	**Check-in**: IPV Topic 2 (Become a confident parent and supportive spouse)
Day 18	**Check-in:** IPV Topic 3 (Share family responsibilities)
Day 22	**Check-in:** IPV Topic 4 (Resolve conflict peacefully)
Day 26	**Check-in:** IPV Topic 5 (Listen and talk to each other)
Day 37	Programme ends

Step 5: Test and refine on a small scale: formative evaluation in Jamaica

4.5.2 Formative evaluation

Formative evaluation: Methods

Setting and population.

The formative evaluation study was carried out in Kingston, Jamaica from June to December 2022. Inclusion criteria for participants in this formative evaluation study were parents and caregivers over 16 years of age, currently caring for a child between the ages of 0 to 17 years, currently in a partnered relationship, has access to a phone that can receive messages via WhatsApp, and has provided consent to participate in the study. Participants were recruited via a recruitment message sent out in collaboration with UNICEF Jamaica which included a link to the intervention embedded within a WhatsApp, Facebook Messenger, or Telegram business account. Participants that clicked on the link were directed to the account and were asked if they consented to participate in the intervention and evaluation with a link to a more detailed information sheet.

Data collection.

In total, 96 partnered participants took part in the evaluation study. Participants who indicated that they were either married or partnered were invited to respond to IPV assessments on a secure external server, via Oxford's Linux virtual machine using Online Data Kit (ODK) to ensure that no responses were saved on their mobile devices. All personal identifying data were deleted as soon as end line data collection was completed. Further ethical and safety considerations are elaborated on in the ethics section. The IPV assessments were optional, and parents could refuse to answer them but still receive parenting tips. Before they were invited to respond to the IPV assessment, participants were asked for permission and were reminded that their answers would be completely private. The IPV assessments were delivered at baseline and at 1-month post-intervention. Engagement data, including engagement rate (days active in program) and interaction with the IPV content was also examined to gain a better understanding into the participants' experience of interacting with the chatbot.

Data analysis.

Descriptive statistics were used to examine participants' level of engagement with the chatbot. We also explored interactions with the IPV content by using descriptive statistics to examine participants' behaviour and engagement related to the IPV material, topics, and check-ins provided in the intervention.

Ethics.

Participants were screened at the beginning of the IPV assessment to ensure that men and women from the same household were not both interviewed about IPV. This is based on WHO's violence against women (VAW) research guidelines (WHO, 2016a) and ethical and safety recommendations for intervention research on VAW to minimise any risk of harm

(Garcia-Moreno et al., 2001). Accordingly, men who reported that their partner was participating in the programme were not asked the IPV questions from the IPV assessment and were instead only asked questions on gender-equitable behaviours and on attitudes toward IPV and gender roles as part of the embedded surveys. Participants who reported IPV experiences were automatically provided with referrals to services supporting individuals experiencing violence customised to their local context. Participants were also able to access local referral details by writing "Help Me" and selecting "Other Support" in the ParentText free text field.

Formative evaluation: results

4.5.3 Participant characteristics

Participants ranged in age from 16 to 51 years old (M = 33.48; SD = 8.09). Most participants were female (85%) and 5% were male (see Table 7 for a detailed breakdown). Forty-three percent of caregivers reported their relationship status as married, and 53% as partnered.

Table 7. Characteristics of sample

Sociodemographic characteristics	**Participants (N = 96)**
Age	33.5 years
Gender	
Female	85 (88%)
Male	4 (5%)
Non-binary	3 (3%)
Not stated	4 (4%)
Relationship status	
Married	43 (44%)
Partnered	53 (55%)

Note: Data are N (%) or mean (standard deviation)

4.5.4 User engagement outcomes

Overall, the average engagement rate was 0.50 interactions per day, in other words, interacting with the intervention once every other day (Table 8). The average length in the programme was 14 days (SD = 56.42). In terms of engagement, when prompted to view the relationship material introduction, approximately half of participants (51%) responded "yes" and 49% responded "no" or didn't respond. When provided with the option to view additional content on the topic of relationships, 45% responded "yes"; 55% didn't respond; only 3% responded "no", and 1% did not select any of these options and instead responded by typing a question about parenting as a stepfather in the textbox. Across the five relationship topics, *Relationship Topic 1* ('Treat each other as equals') was viewed by the largest proportion of participants (28%), as well as revisited and viewed the greatest number of times in total (34 times). Following this, *Relationship Topic 2* was viewed by 25% of participants, *Topic 3* by 21% of participants, *Topic 4* by 20% of participants, and *Topic 5* by 22% of participants. A total of 15% of all participants selected to view all five relationship topics.

Table 8. ParentText user engagement outcomes

Overall engagement	
Engagement rate (interactions per day)	0.50 interactions per day
Average length in programme	14 days (56.42)
IPV content engagement	
Selected to view the relationship material introduction	Total of sample (%)
Responded "Yes"	49 (51%)
Responded "No" / Didn't respond	47 (49%)
Selected to view the additional topics	
Responded "Yes"	41 (43%)
Responded "No"	3 (3%)
Didn't respond	51 (53%)
Other response	1 (1%)

Engagement with relationship topics	Participants who viewed content (% of total sample)	Total number of times each topic was viewed*
Relationship Topic 1 'Treat each other as equals'	27 (28%)	34
Relationship Topic 2 'Become a confident parent and supportive spouse'	24 (25%)	28
Relationship Topic 3 'Share family responsibilities'	20 (21%)	24
Relationship Topic 4 'Resolve conflict peacefully'	19 (20%)	21
Relationship Topic 5 'Listen and talk to each other'	21 (22%)	28
All Relationship Topics (Participants who viewed all topics)	14 (15%)	–

Note: *Some participants viewed each topic more than once as they had the opportunity to revisit the material after each Check In message.

In total, the ParentText programme lasted 37 days, with the IPV Relationship material delivered in the first 26 days. Overall, 23% of participants stayed in the programme long enough to receive the *Relationship Check In 1* delivered on Day 11 of the programme (Table 9). Notably, by Day 14, only 13% of participants were in the programme to receive *Relationship Check In 2.* By Day 18, when *Relationship Check In 3* was delivered, 6% of participants remained in the programme. Notably, 3% of participants remained by Day 22 and 1% by Day 26 when *Check In 4* and *Check In 5* were delivered respectively.

Table 9. Stayed in programme long enough to receive IPV Check In messages.

Participant retention	Total of sample (%) † who received relationship Check In messages
Relationship Check In 1 (day 11) 'Treat each other as equals'	22 (23%)
Relationship Check In 2 (day 14) 'Become a confident parent and supportive spouse'	13 (13%)
Relationship Check In 3 (day 18) 'Share family responsibilities'	6 (6%)
Relationship Check In 4 (day 22) 'Listen and talk to each other'	3 (3%)
Relationship Check In 5 (day 26) 'Listen and talk to each other'	1 (1%)

Note: † Out of the total sample who received IPV prevention content (96 participants).

4.6 Discussion

This article describes and examines the development of the IPV prevention content created for the digital parenting intervention ParentText. The development of the intervention content followed the steps in the 6SQuiD intervention development model (Wight et al., 2016), which builds on the MRC UK framework for developing and evaluating complex health interventions (Craig et al., 2008). This process involved conducting targeted literature searches and reviewing existing interventions to guide the selection of the intervention content and theory used, as well as consulting researchers, practitioners, and members of grassroots organisations throughout for input and feedback on the intervention content and design. A formative evaluation was also conducted to gain preliminary insights on user engagement with the chatbot in order to identify areas with room for further improvement and intervention refinement.

To our knowledge, this study is the first to report the development process of integrating IPV prevention content into a digital parenting intervention. It offers a unique and important contribution both to the field of violence prevention as well as to research on digital interventions. Indeed, while there is growing evidence surrounding the use of technology-based and digital programmes in public health, there is a paucity of research on digital interventions for IPV prevention, in particular, in addressing multiple forms of family violence (Philbrick et al., 2022). Notably, even though there exist some technology-based studies addressing family violence, most focus on the secondary and tertiary prevention of IPV (i.e. response interventions), rather than on primary prevention (El Morr & Layal, 2020; Philbrick et al., 2022). As such, the present study offers an important first step in examining the development and preliminary evaluation of integrating primary IPV prevention strategies into a parenting chatbot. The formative evaluation provides valuable insights on the importance of examining and identifying strategies to enhance user-engagement outcomes in digital interventions. The retention rates in the formative evaluation (a median 11-day retention of 23% and a median 22-day retention of 3%) were similar to that of other digital intervention studies. For instance, a study by Baumel et al. (Baumel et al., 2019), examining user engagement with digital interventions and apps focusing on mental health, found that overall user retention rates were low, with median 15-day and 30-day retention rates consisting of 3.9% and 3.3% respectively. Whilst low retention rates in smartphone-delivered interventions are not uncommon and have been noted as one of the main challenges in the field (Valentine et al., 2022), numerous studies have revealed potential solutions and strategies that may increase retention and enhance user engagement. For example, a meta-analysis on attrition rates in smartphone-based interventions by Linardon and Fuller-

Tyszkiewicz (2020) found that providing incentives and reminding participants to engage in the programme, significantly reduced attrition rates.

Similarly, numerous studies have also found for digital interventions with optional or unguided components, it is not uncommon for users to exit the intervention before engaging with all of the programme material (Baumel et al., 2019). These findings were also noted in our present study. For instance, in our formative evaluation, 45% of participants selected "Yes" when presented with the option to view additional relationship topics in ParentText, however, only 15% of participants viewed all five of the relationship topics. Interestingly, these results are very similar to findings reported in other studies. A systematic review of user engagement in mental health digital interventions, for example, revealed that rates of completion of all programme modules in the interventions ranged from 2.8% to 19.5% (Fleming et al., 2018). These metrics are comparable to another study where researchers found that 17% of participants in the intervention selected to view the supplemental material provided (Hanno, 2023). Despite these challenges, digital interventions also offer unique opportunities in terms of providing scalable, low-cost, and accessible solutions for disseminating interventions (Flett et al., 2019). Combined with promising research findings that have revealed how digital interventions and text-messaging based programmes have been used successfully to deliver critical behaviour change techniques and enhance access to local health resources (Graham et al., 2022; Wang & Foronda, 2022), exploring ways to improve user engagement with digital programmes remains critical.

Overall, the results from the formative evaluation suggest there is room for refinement in terms of improving user engagement and the retention rate in the programme. Given that the evaluation study revealed that only 23% of participants remained in the programme by day 11

(out of 37 days), this highlights that the way the content is delivered, and the programme length overall, may need to be adjusted in future iterations of the programme. This is reiterated by the average length in the programme which was a median of 14 days. In the field of parenting interventions, findings from numerous meta-analyses suggest that shorter interventions produce greater positive change, both in technology-based parenting interventions (Harris et al., 2020) and in-person programmes (Baudry et al., 2017).These findings are being incorporated in the next version of the programme that is currently being tested in a pre-post study, where the programme length has been cut by almost 50%, from 37 days to 23 days. A qualitative research study is also currently being planned with participants in order to better improve the design and content of the intervention to enhance user engagement and retention. Furthermore, given that the findings from the evaluation study revealed that 20-28% of participants selected to view the relationship topics, in future studies it would be important to gain further insights and explore more strategies, such as goal setting, to increase user engagement with the programme content.

Strengths and limitations

There are various strengths of this intervention content development and formative evaluation study. The evidence- and theory-informed, stepwise approach used for the intervention content development is a major strength of the present research. Providing a transparent and detailed documentation of the content development process, allows for intervention content to be appraised, replicated, and improved (Leon et al., 2021). The specific content in the programme the participants received is also personalised based on each user, with options to use a low-data mode for users who prefer text-only format and differences in the language used for fathers and mothers to make the content more personalised, which has been

suggested to increase intervention efficacy in previous text messaging-based interventions (Head et al., 2013).

There are also a few limitations worth addressing. Difficulties surrounding access to internet or credit for mobile data remains a major challenge with digital interventions. Similarly, technological problems, such as lack of memory space on digital devices is also a common issue when using digital resources (Owen et al., 2022). Whilst the programme included content personalised for male caregivers, recruitment of men still appeared to be a challenge in the present study, with only 5% of participants identifying as male. While the low representation of male caregivers in the present study is a common challenge in the parenting programme field (Panter-Brick et al., 2014), this underscores the importance of making further adjustments to programme content and recruitment strategies to ensure male caregivers are also included. In addition, the present paper, while including a formative evaluation, due to the lack of a control group, was not able to examine the effectiveness of the programme content on IPV outcomes. As such, future studies would benefit from using more rigorous methods to optimise and evaluate the programme, both in terms of effectiveness as well as by investigating what the 'active' ingredients of change are in the intervention (Bornstein et al., 2022).

4.7 Conclusion

The COVID-19 pandemic has contributed to a substantial increase in rates of IPV as well as violence against children worldwide (Bhatia et al., 2021). Given that rates of IPV were already extremely high pre-pandemic, there is now an even greater need for evidence-based prevention efforts and scalable interventions that address this form of violence. Alongside a growing awareness surrounding the intersections that are shared by IPV and other forms of

violence in the home, such as violence against children, parenting programmes are uniquely positioned to target both forms of violence concurrently. With a rise of digital interventions in the public health sphere, digital parenting programmes offer a valuable opportunity to target both intergenerational forms of violence as well as in terms of addressing key risk factors of IPV. The IPV prevention content that was empirically and iteratively developed, as outlined in this paper, offers a clear example of how IPV prevention material can be integrated into a digital parenting intervention. Whilst further research is necessary to establish intervention effectiveness, this article and the results from formative evaluation have provided valuable preliminary insights surrounding patterns in user engagement in the intervention and the programme content, shedding light on elements of the chatbot where there is room for refinement to enhance engagement.

Article information

Ethics approval and consent to participate

Ethical approval was obtained by the Department Research Ethics Committee (DREC) at the University of Oxford (CUREC 2 Ref No: R69569/RE008). All methods were carried out in accordance with relevant guidelines and regulations. Informed consent to participate in the study was obtained from all participants prior to enrolling the study and the intervention.

Consent for publication

Consent for publication was obtained and consent to publish the identifiable image was obtained from the study participant.

Availability of data and materials

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

As part of this project, MS is a researcher at the University of Oxford and JML and FG are employed as staff at the University. Furthermore, JML is the CEO of Parenting for Lifelong Health (PLH), a charitable organization based in the United Kingdom that developed the ParentText intervention. MS, JML, PZ, QH, FC, and FG have participated/are participating in several research studies involving the program as investigators, and the Universities of Oxford, Cape Town, and Glasgow. FC and LC are employees of IDEMS International, a technology development company that co-developed the ParentText intervention and provided support on data analysis of user engagement. Conflict is avoided by declaring these potential conflicts of interest and by conducting and disseminating rigorous, transparent, and impartial evaluation research on both this and other similar parenting programs. No profit or financial gain will be made from this programme.

Funding

This research was funded by UNICEF Jamaica and the Economic and Social Research Council (ESRC) Grand Union Doctoral Training Partnership in collaboration with the University of Oxford Saven European Scholarship and the Balliol College Dervorguilla Scholarship in Social Sciences. This research is part of the Global Parenting Initiative, which is funded by The LEGO Foundation, Oak Foundation, the World Childhood Foundation, The Human Safety Net, the University of Oxford COVID-19 Research Response Fund, and the GCRF Newton Fund. Aside from UNICEF's involvement in guiding the selection of research site and study timeframe, none of the funders were involved in study design, data collection, data analysis and interpretation, or the writing of the manuscript.

Authors' contributions

MS, JML, and FG participated in the design of the study and intervention development and oversaw data collection and cleaning. MS managed the data collection process, with support from PZ and FC. MS designed the statistical analysis, with JML, FG, QH, FC, and LC

providing guidance on the analysis approach. MS drafted the paper, with JML and FG contributing. All authors approved the final manuscript.

Acknowledgements

We thank those who made this research possible: the respondents who participated in this study, UNICEF Jamaica, the study funders, the researchers and stakeholders who provided input during intervention development, and the Department of Social Policy and Intervention at the University of Oxford for administrative support.

4.8 Paper 1 Additional files

4.8.1 Paper 1 Additional file 1: TIDieR Checklist

Supplementary table 1. TIDieR Checklist

The TIDieR (Template for Intervention Description and Replication) Checklist*:

Information to include when describing an intervention and the location of the information

Item number	Item	Where located **	
		Primary paper (page or appendix number)	Other † (details)
1.	**BRIEF NAME** Provide the name or a phrase that describes the intervention.	_____7_____	_____
2.	**WHY** Describe any rationale, theory, or goal of the elements essential to the intervention.	____7-8_____	_____
3.	**WHAT** Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers.	___18-22____	_Additional file 6_
4.	Provide information on where the materials can be accessed (e.g. online appendix, URL). Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	___20-22____	_____
5.	**WHO PROVIDED** For each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given.	___7-9_____	_____
6.	**HOW** Describe the modes of delivery (e.g. face-to-face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.	___17-20_____	_____
7.	**WHERE** Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	___9; 18-19___	_____

	WHEN and HOW MUCH		
8.	Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity or dose.	____20____	_____
	TAILORING		
9.	If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when, and how.	____18-19____	_____
	MODIFICATIONS		
10.‡	If the intervention was modified during the course of the study, describe the changes (what, why, when, and how).	____18-20___	_____
	HOW WELL		
11.	Planned: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.	___24-25____	_____
12.‡	Actual: If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned.	___24-25____	_____

** **Authors** - use N/A if an item is not applicable for the intervention being described. **Reviewers** – use '?' if information about the element is not reported/not sufficiently reported.

† If the information is not provided in the primary paper, give details of where this information is available. This may include locations such as a published protocol or other published papers (provide citation details) or a website (provide the URL). ‡ If completing the TIDieR checklist for a protocol, these items are not relevant to the protocol and cannot be described until the study is complete.

* We strongly recommend using this checklist in conjunction with the TIDieR guide (see *BMJ* 2014;348:g1687) which contains an explanation and elaboration for each item.

* The focus of TIDieR is on reporting details of the intervention elements (and where relevant, comparison elements) of a study. Other elements and methodological features of studies are covered by other reporting statements and checklists and have not been duplicated as part of the TIDieR checklist. When a **randomised trial** is being reported, the TIDieR checklist should be used in conjunction with the CONSORT statement (see www.consort-statement.org) as an extension of **Item 5 of the CONSORT 2010 Statement.**

When a **clinical trial protocol** is being reported, the TIDieR checklist should be used in conjunction with the SPIRIT statement as an extension of **Item 11 of the SPIRIT 2013 Statement** (see www.spirit-statement.org). For alternate study designs, TIDieR can be used in conjunction with the appropriate checklist for that study design (see www.equator-network.org).

4.8.2 Paper 1 Additional file 2: GUIDED reporting for intervention development studies

Supplementary table 2. GUIDED reporting for intervention development studies

GUIDED – a guideline for reporting for intervention development studies.

Description	Explanation	Page in manuscript where item is located	Other*
1. Report the context for which the intervention was developed.	Understanding the context in which an intervention was developed informs readers about the suitability and transferability of the intervention to the context in which they are considering evaluating, adapting or using the intervention. Context here can include place, organisational and wider socio-political factors that may influence the development and/or delivery of the intervention (15).	16-18	
2. Report the purpose of the intervention development process.	Clearly describing the purpose of the intervention specifies what it sets out to achieve. The purpose may be informed by research priorities, for example those identified in systematic reviews, evidence gaps set out in practice guidance such as The National Institute for Health and Care Excellence or specific prioritisation exercises such as those undertaken with patients and practitioners through the James Lind Alliance.	12-16	
3. Report the target population for the intervention development process.	The target population is the population that will potentially benefit from the intervention – this may include patients, clinicians, and/or members of the public. If the target population is clearly described then readers will be able to understand the relevance of the intervention to their own research or practice. Health inequalities, gender and ethnicity are features of the target population that may be relevant to intervention development processes.	17; 20-21	
4. Report how any published intervention development approach contributed to the development process	Many formal intervention development approaches exist and are used to guide the intervention development process (e.g. 6Squid (16) or The Person Based Approach to Intervention Development (17)). Where a formal intervention development approach is used, it is helpful to describe the process that was followed, including any deviations. More general approaches to intervention development also exist and have been categorised as follows (3):- Target Population-centred intervention development; evidence and theory-based intervention development; partnership intervention development; implementation-based intervention development; efficacy-based intervention development; step or phased-based intervention development; and intervention-specific intervention development (3). These approaches do not always have specific guidance that describe their use. Nevertheless, it is helpful to give a rich description of how any published approach was operationalised	10-11	
5. Report how evidence from different sources informed the intervention development process.	Intervention development is often based on published evidence and/or primary data that has been collected to inform the intervention development process. It is useful to describe and reference all forms of evidence and data that have informed the development of the intervention because evidence bases can change rapidly, and to explain the manner in which the evidence and/or data was used. Understanding what evidence was and was not available at the time of intervention development can help readers to assess transferability to their current situation.	9-11	
6. Report how/if published theory informed the intervention development process.	Reporting whether and how theory informed the intervention development process aids the reader's understanding of the theoretical rationale that underpins the intervention. Though not mentioned in the e-Delphi or consensus meeting, it became increasingly apparent through the development of our guidance that this theory item could relate to either existing published theory or programme theory	16-18; 21-23	
7. Report any use of components from an existing intervention in the current intervention development process.	Some interventions are developed with components that have been adopted from existing interventions. Clearly identifying components that have been adopted or adapted and acknowledging their original source helps the reader to understand and distinguish between the novel and adopted components of the new intervention.	12-17	
8. Report any guiding principles, people or factors that were prioritised when making decisions during the intervention development process.	Reporting any guiding principles that governed the development of the application helps the reader to understand the authors' reasoning behind the decisions that were made. These could include the examples of particular populations who views are being considered when designing the intervention, the modality that is viewed as being most appropriate, design features considered important for the target population, or the potential for the intervention to be scaled up.	9-11	

Description	Explanation	Page in manuscript where item is located	Other*
9. Report how stakeholders contributed to the intervention development process.	Potential stakeholders can include patient and community representatives, local and national policy makers, health care providers and those paying for or commissioning health care. Each of these groups may influence the intervention development process in different ways. Specifying how differing groups of stakeholders contributed to the intervention development process helps the reader to understand how stakeholders were involved and the degree of influence they had on the overall process. Further detail on how to integrate stakeholder contributions within intervention reporting are available (19).	9-10	
10. Report how the intervention changed in content and format from the start of the intervention development process.	Intervention development is frequently an iterative process. The conclusion of the initial phase of intervention development does not necessarily mean that all uncertainties have been addressed. It is helpful to list remaining uncertainties such as the intervention intensity, mode of delivery, materials, procedures, or type of location that the intervention is most suitable for. This can guide other researchers to potential future areas of research and practitioners about uncertainties relevant to their healthcare context.	26-29	
11. Report any changes to interventions required or likely to be required for subgroups.	Specifying any changes that the intervention development team perceive are required for the intervention to be delivered or tailored to specific sub groups enables readers to understand the applicability of the intervention to their target population or context. These changes could include changes to personnel delivering the intervention, to the content of the intervention, or to the mode of delivery of the intervention.	26-29	
12. Report important uncertainties at the end of the intervention development process.	Intervention development is frequently an iterative process. The conclusion of the initial phase of intervention development does not necessarily mean that all uncertainties have been addressed. It is helpful to list remaining uncertainties such as the intervention intensity, mode of delivery, materials, procedures, or type of location that the intervention is most suitable for. This can guide other researchers to potential future areas of research and practitioners about uncertainties relevant to their healthcare context.	29-30	
13. Follow TIDieR guidance when describing the developed intervention.	Interventions have been poorly reported for a number of years. In response to this, internationally recognized guidance has been published to support the high quality reporting of health care? interventions[5] and public health interventions[14]. This guidance should therefore be followed when describing a developed intervention.		Additional file 3
14. Report the intervention development process in an open access format.	Unless reports of intervention development are available people considering using an intervention cannot understand the process that was undertaken and make a judgement about its appropriateness to their context. It also limits cumulative learning about intervention development methodology and observed consequences at later evaluation, translation and implementation stages. Reporting intervention development in an open access (Gold or Green) publishing format increases the accessibility and visibility of intervention development research and makes it more likely to be read and used. Potential platforms for open access publication of intervention development include open access journal publications, freely accessible funder reports or a study web-page that details the intervention development process.		Open access journal

*e.g. if item is reported elsewhere, then the location of this information can be stated here.

4.8.3 Paper 1 Additional file 3: Details of ParentText according to TIDieR

Supplementary table 3. Details of ParentText according to TIDieR

Item		Description
1.	Brief name	ParentText: Intimate Partner Violence (IPV) Prevention Content
2.	Why	In recent years, a number of shared risk factors have been identified between violence against children and intimate partner violence, with a particular emphasis harmful gender and social norms that condone violence. Accordingly, calls for an increase in violence prevention efforts that target both forms of violence concurrently have been growing. The gender-transformative and partner relationship content in ParentText thus seeks to address these risk factors associated with harmful gender and social norms, in order to prevent and reduce IPV and violence in the family. The underlying theories of the ParentText programme and of the IPV prevention content are Social Learning Theory (SLT), Attachment Theory, and gender-transformative approaches which champion the adoption and enactment of gender-equitable, nonviolent attitudes, and behaviours to prevent gender-based violence and harm.
3.	What (Materials)	The content material developed draws upon existing evidence-based violence prevention interventions including the Bandebereho programme (1)and the REAL Fathers intervention (2), the MAISHA microfinance and gender training intervention (3).
4.	What (Procedures)	The intervention content in ParentText seeks to increase parents' and caregivers' understanding of the effect of harmful gender stereotypes and attitudes, as well as provide them with examples and skills on how to they can become a more supportive parent and partner. This material is delivered both in the form of text-based messages as well as via multi-media content such as through cartoons and videos. The programme also uses 'check-in' messages to follow-up on the material introduced earlier in the intervention and asks users at regular intervals how they are progressing with practicing the different skills they have learnt. This allows users to revisit the material and provides them with gentle reminders and examples of how they can further incorporate more gender-equitable attitudes and behaviours both as a partner and parent.
5.	Who (Provides)	The intervention is delivered through RapidPro, an open-source application that serves low-income communities.
6.	When and how much (Mode of delivery)	The material is delivered via text-messages and multi-media content through messaging platforms such as Telegram, WhatsApp and Facebook messages, and via SMS for individuals without smartphone access. Participants receive messages over 5 to 12 weeks, depending on the frequency of delivery.

9.	Tailoring	The content is personalised based on the gender of the participant using the programme and based on the data availability of the mobile device (with options for text-only or a combination of text, images, and video). ParentText content has also been adapted with implementing partners in multiple LMICs to ensure that the content is culturally relevant and available in multiple local languages.
10.	Modifications	Future iterations will be made shorter. Revisions for future iterations are discussed in the Discussions section of the paper.
11.	How well (planned)	Fidelity to the program was assessed based on engagement data (see Results section of the paper) and via qualitative interviews and focus group discussions (the latter of which are covered in subsequent publications).
12.	How well (actual)	Engagement data assessing the actual adherence is reported in the present paper, and further information on adherence based on findings from qualitative interviews and focus group discussions with users will be covered in subsequent publications.

Note: TIDieR: Template for Intervention Description and Replication (4)

4.8.4 Paper 1 Additional file 4: Structure of 37-day version of ParentText

Supplementary table 4: Structure of 37-day version of ParentText

Day	Morning	Main	Evening
1		Welcome	
2	Content: One-on-one time	Supportive: Activities	Supportive: Share
3	**IPV Baseline assessment**	Content: Take a pause	Supportive: Praise/Calm
4	Supportive: Sharing	Content: Positive introduction	Supportive: Praise/Calm
5	Supportive: Praise/Calm	Content: Positive instructions	Check-in: One-on-one time
6	Content: Quick Pause	Content: Book sharing	Supportive: Praise/Calm
7	Check-in: Connection	Content: Routines	Supportive: Praise/Calm
8	Check-in: Instructions	**Content: IPV Main Material**	Supportive: Praise/Calm
9	Supportive: Praise/Calm	Supportive: Praise/Calm	Check-in: Book sharing
10	Supportive: Praise/Calm		Supportive: Praise/Calm
11	Check-in: Routine	Content: Positive rules	**Check-in: IPV Topic 1 - Treat each other as equals**
12	Supportive: Praise/Calm	Supportive: Help reminder	Supportive: Praise/Calm
13	Check-in: Covid	Content: Education	Supportive: Share
14	Supportive: Praise/Calm	Supportive: Disabilities	**Check-in: IPV Topic 2 - Become a confident parent and supportive spouse**
15	Supportive: Praise/Calm	Content: Online	Content: Relax
16	Supportive: Praise/Calm	Supportive: Help reminder	Supportive: Praise/Calm
17	Check-in: Rules	Content: Redirection	Content: Anger management
18	Supportive: Praise/Calm	Supportive: Sharing	**Check-in: IPV Topic 3 - Share family responsibilities**
19	Supportive: Praise/Calm	Content: Behaviour / Crying	Check-in: Education
20	Supportive: Praise/Calm	Supportive: Activities	Supportive: Praise/Calm
21	Check-in: Online	Content: Consequences	Supportive: Activities
22	Supportive: Praise/Calm	Supportive: Help reminder	**Check-in: IPV Topic 4 - Resolve conflict peacefully**
23	Supportive: Praise/Calm	Content: Problem solving	Supportive: Praise/Calm
24	Supportive: Praise/Calm	Supportive: Behaviour	Supportive: Praise/Calm
25	Check-in: Redirect	Content: Emotion	Supportive: Praise/Calm
26	Supportive: Praise/Calm	Supportive: Help reminder	**Check-in: IPV Topic 5 - Listen and talk to each other**
27	Check-in: Crying	Content: Behaviour / Crisis	Supportive: Praise/Calm
28	Supportive: Praise/Calm	Supportive: Sharing	Supportive: Praise/Calm
29	Supportive: Praise/Calm	Content: Budgeting	Check-in: Consequences
30	Supportive: Praise/Calm	Supportive: Activities	Supportive: Praise/Calm
31	Supportive: Praise/Calm	Content: Loving Kindness	Check-in: Problem solving
32	Supportive: Praise/Calm	Supportive: Reminder	Supportive: Praise/Calm
33	Check-in: Emotions	Content: Exercise	Supportive: Praise/Calm
34	Supportive: Praise/Calm	Supportive: Reminder	Supportive: Praise/Calm
35	Supportive: Praise/Calm	Content: Anger management	Check-in: Behaviour / crisis
36	Supportive: Praise/Calm	Supportive: Help reminder	Supportive: Praise/Calm
37	Celebrate finishing programme		

Note: IPV prevention content is noted in bold font. Types of messages include in the programme include Content messages, Check-in messages and Supportive messages.

4.8.5 Paper 1 Additional file 5: Consultation focal points

Supplementary table 5: Consultation focal points

Academic researchers
Alessandra Guedes – UNICEF Innocenti, Italy
Dr Heidi Stoeckl – Ludwig Maximilian University of Munich, Germany
Professor Dr Rumaya Binti Juhari – Department of Human Development & Family Studies, Faculty of Human Ecology, University Putra Malaysia
Dr Rosanne M. Jocson – Ateneo de Manila University, the Philippines
Dr Joyce Wamoyi – Tanzania National Institute of Medical Research, Tanzania
Violence prevention professionals and stakeholders
Helena Duch – Oak Foundation Head of Solutions Sub-Programme (Prevent Child Sexual Abuse Programme), Switzerland
Blain Teketel – Oak Foundation Programme Officer, Child Abuse Programme, East Africa, Ethiopia
Ytske Van Winden – International Child Protection Consultant, Gender Unit, UNICEF Jamaica
Ross Sheil – Communications Officer, Digital Media, UNICEF Jamaica
Elizabeth Dartnall – Executive Director, Sexual Violence Research Initiative (SVRI)
Local community organisations and institutions
Mpume Danisa and colleagues – Clowns Without Borders South Africa (CWBSA)
Susie Mjwara – Clowns Without Borders South Africa (CWBSA)
Jamaica National Parenting Support Commission (NPSC)
Colleen Wint-Bond and colleagues – Parenting Partners Caribbean (PPC)
Janet Brown – Parenting Partners Caribbean (PPC)
Glynis Salmon – Parenting Partners Caribbean (PPC)
Linda Craige-Brown – Parenting Partners Caribbean (PPC)

4.8.6 Paper 1 Additional file 6: Example of Check-in Message for IPV Topic 1

Supplementary table 6: Example of Check-in Message for IPV Topic 1

<table>
<tr><th colspan="5">Check In 1</th></tr>
<tr><td colspan="5">Hi! Have you tried involving your partner when making decisions recently? [Yes / No]</td></tr>
<tr><td colspan="5">Well done! Communicating and working together with your partner makes a difference!
How was your experience?</td></tr>
<tr><th colspan="2">1. Great</th><th>2. Neutral</th><th colspan="2">3. Bad</th></tr>
<tr><td colspan="5">[If they reply “Great”:]
That is fantastic! Would you like to review the content on this? (Yes / No)
That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!</td></tr>
<tr><td colspan="5">[If they reply “Neutral / Bad”:]
I am sorry to hear this. What did you find difficult about involving your partner when making a decision? Please select a number 1-5 from the following options:

1. I didn’t have time to involve my partner
2. I didn’t know how to involve my partner
3. I felt uncomfortable asking for my partner's opinion
4. I forgot to involve my partner
5. My partner reacted negatively to me when I tried</td></tr>
<tr><th colspan="5">[Advice responses based on responses 1-5 above]:</th></tr>
<tr><td>[Response 1]:
It can sometimes be difficult to find the time to ask our partners for their opinions when making decisions. Think of a time during the day when both you and your partner might be less busy, such as early in the morning or later in the evening.</td><td>[Response 2]:
It can sometimes be hard to know how to involve your partner when making a decision. Sometimes all you need to do is to ask them what they think. This shows them you care and want them to be involved!</td><td>[Response 3]:
It can take time to get used to making decisions together. Give yourself time and keep trying. Remember that by communicating with your partner and involving them in decision-making, you will both eventually start to feel more comfortable doing so.</td><td>[Response 4]:
It can be hard to remember to involve our partners in decision making, especially when we are used to doing it alone. If you forget, it’s important to keep trying. Asking for their opinion shows that you care and want them to be involved.</td><td>[Response 5]:
Sorry to hear that your partner reacted negatively. Be proud of yourself for trying and be gentle with yourself. Remember you can always get extra support by typing "Help".</td></tr>
</table>

5 Paper 2 – A digital parenting intervention with intimate partner violence prevention content: A pilot pre-post study in Jamaica and South Africa

The following chapter has been submitted to an academic journal. This paper has been written in alignment with the journal's submission guidelines. Supplementary materials for this paper are available in Paper 2 Additional files. Figures and tables are numbered in alignment with the overall thesis.

Schafer, M.,[1] Lachman, J.M., [1,2,3] Zinser, P., [1] Calderon, F. [1], Han, Q.,[1] Facciola, C., [4] Clements, L., [4] Gardner, F., [1] Haupt Ronnie, G., [3] Sheil, R. [5]

[1] Centre for Evidence Based Intervention, Department of Social Policy and Intervention, University of Oxford, United Kingdom, [2] Social and Public Health Sciences Unit, University of Glasgow, United Kingdom, [3] Centre for Social Science Research, University of Cape Town, South Africa, [4] IDEMS (Innovations in Development, Education, and the Mathematical Sciences) International, United Kingdom, [5] UNICEF Jamaica, Kingston, Jamaica

The final published version of this chapter is now available as the following Open Access article:

Schafer, M., Lachman, J., Zinser, P., Alfaro, F. A. C., Han, Q., Facciola, C., ... & Sheil, R. (2025). A digital parenting intervention with intimate partner violence prevention content: Quantitative pre-post pilot study. *JMIR Formative Research*, 9(1), e58611. https://doi.org/10.2196/58611

Journal website link: https://formative.jmir.org/2025/1/e58611

© 2025 Moa Schafer, Jamie Lachman, Paula Zinser, Francisco Antonio Calderón Alfaro, Qing Han, Chiara Facciola, Lily Clements, Frances Gardner, Genevieve Haupt Ronnie, Ross Sheil. Originally published in JMIR Formative Research (https://formative.jmir.org), 03.01.2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in JMIR Formative Research, is properly cited.

5.1 My role and statement of authorship

I confirm that I carried out the majority of the work in this research study. I conceptualised of the study, developed the IPV prevention intervention content used in the study, designed the IPV assessment surveys, created the IPV assessment on ODK, liaised with research partners staff from partner organizations assisting with programme implementation and remote data collection, planned and conducted the data analyses, drafted the manuscript, and revised the manuscript. In summary, MS, JML and FG participated in the design of the study and oversaw data collection and cleaning. MS managed the data collection process, with support from PZ, FC, GHR, and RS. MS designed the statistical analysis, with JML, FG, QH, FC, CF, and LC providing guidance on the analysis approach. MS drafted the manuscript, with JML and FG contributing. All authors approved the final manuscript.

5.2 Abstract

Background: Intimate partner violence (IPV) and violence against children (VAC) are global issues with severe consequences. Intersections shared by the two forms of violence have led to calls for joint programming efforts that prevent both IPV and VAC. Parenting programmes have been identified as a key entry point for addressing multiple forms of family violence.

Building on the IPV prevention material that has been integrated into the parenting programme ParentText, a digital parenting chatbot, this pilot study seeks to explore parents' engagement with the IPV prevention content in ParentText, and explore preliminary changes in IPV and IPV-related outcomes following the intervention.

Objective: This study aimed to assess parents' and caregivers' level of engagement with the IPV prevention material in the ParentText chatbot and explore preliminary indications of the chatbot's impact on experiences and perpetration of IPV, attitudes toward IPV, and gender-equitable behaviours following the intervention.

Methods: Caregivers of children 0-18 years were recruited through convenience sampling by research assistants in Cape Town in South Africa and by UNICEF Jamaica staff in three parishes in Jamaica. Quantitative data from women (N=47) and, in South Africa, men (N=21) caregivers were collected electronically via weblinks sent to users' phones using Open Data Kit. The primary outcome was IPV experience (women) and perpetration (men), with secondary outcomes including gender-equitable behaviours and attitudes toward IPV. Descriptive statistics were used to report sociodemographic characteristics and engagement outcomes. Linear, Poisson, and logistic regression models were used to investigate potential changes in IPV outcomes between pre- and post-test.

Results: The average daily interaction rate with the programme was 0.57 and 0.59 interactions per day for women and men in South Africa, and 0.21 for women in Jamaica. The rate of completion of at least one IPV prevention topic was 25% (5/20) for women and 5% (1/20) for men in South Africa, and 21% (6/28) for women in Jamaica. Exploratory analyses detected significant pre-post reductions in overall IPV experience among women and in men's overall harmful IPV attitudes.

Conclusion: This pilot study is the first to our knowledge that investigates user engagement with and indicative outcomes of a digital parenting intervention with integrated IPV

prevention content. Study findings provide valuable insights into user interactions with the chatbot and shed light on challenges related to low levels of chatbot engagement. Indicative results which suggest reductions in IPV and improvements in attitudes after the programme are promising, yet, modest. Further research using a randomized controlled trial is warranted to establish causality.

Key words: text messaging; intimate partner violence; chatbot; user engagement; parenting; violence

5.3 Background

Violence against women (VAW) and violence against children (VAC) are global issues with severe, long-lasting consequences, which affect individuals and communities worldwide. Global reports have revealed alarmingly high rates of both forms of violence (Whitten et al., 2023; WHO, 2021b). Prevalence estimates of intimate partner violence (IPV), which is the most common form of VAW, have found that over 27% of ever-partnered women aged over 15 years have experienced physical and/or sexual IPV at least once in their life (WHO, 2021b). Reports of VAC are also of great concern, with systematic review findings suggesting that over 50% of all children worldwide, that is, over 1 billion children globally, have experienced past-year violence (Hillis et al., 2016; WHO, 2020). Research findings also indicate that prevalence rates are higher for both forms of violence in low and middle-income countries (Cerna-Turoff et al., 2021; WHO, 2013).

A growing body of evidence shows that IPV and VAC frequently co-occur in the same families (Pearson et al., 2022). The intersections between IPV and VAC have in recent years received increasing attention, with a growing demand for prevention efforts that target both forms of violence concurrently (Guedes et al., 2016). Intersections shared by both IPV and VAC include common risk factors, such as acceptability of family violence and parental history of physical abuse (Alhusen et al., 2014; Gracia et al., 2017); similar short- and long-term consequences, including mental and physical health problems (Chisholm et al., 2017); and various intergenerational effects (Guedes & Mikton, 2013). In the past, despite their overlaps, the fields of IPV and VAC prevention research have predominantly been separate (Guedes et al., 2016). Initiatives that seek to address these common risk factors may therefore help shift violence prevention efforts from a siloed approach, to one which targets multiple types of violence simultaneously. By targeting multiple and intergenerational forms of

violence, this strategy is likely to be more sustainable long-term, helping to reduce costs, and increasing opportunities for scale-up and impact (Edwards et al., 2023).

In the field of IPV prevention, researchers and practitioners are increasingly adopting what are known as gender-transformative approaches in programmes that aim to address multiple forms of violence, that is, both VAW and VAC (Levy et al., 2020). More specifically, gender-transformative approaches can be defined as those which aim to address harmful social and gender norms and are 'designed specifically to encourage men and boys to adopt and enact gender-equitable, nonviolent attitudes and behaviours' (8, p.1635–1636). Many programmes that adopt this approach include activities and modules that focus on topics such as improving interpersonal skills, redefining responsibilities in the home, and changing perceptions around gender roles and violence (Levy et al., 2020). Emerging evidence suggests that gender-transformative approaches offer promising results in preventing IPV perpetration, shifting restrictive gender norms, and promoting gender-equitable behaviours and attitudes (Casey et al., 2018; Doyle et al., 2023; Marcos-Marcos et al., 2023). Gender-transformative approaches are being adopted in family and sexual health interventions, further highlighting the shift toward a more holistic approach toward violence prevention and recognition of the intergenerational elements of family violence and shared risk factors (Ruane-Mcateer et al., 2020; van den Berg et al., 2013).

Alongside gender-transformative interventions, in the field of VAC, parenting programmes have been identified as a major strategy for reducing and preventing violence (WHO, 2022). Findings from a recent systematic review of parenting programmes for reducing child maltreatment in low- and middle-income countries identified several promising results across both child, parent, and family outcomes, with meta-analyses results revealing reductions in

child maltreatment and harsh parenting (Backhaus et al., 2023). One programme that has integrated both VAC and IPV prevention content includes the gender-transformative Bandebereho programme in Rwanda, which engaged men and partners with the aim of encouraging healthier couple relationships and enhancing caregiving skills (Doyle et al., 2018). The programme used fatherhood as an avenue to promote gender equality and foster positive shifts in men's relations with both their children and partners (Doyle et al., 2023). A randomised controlled trial of the programme found promising short- and long-term effects, with reductions in IPV and physical punishment of children at both 21 months post-test and at a 6-year follow-up (Doyle et al., 2023).

Despite the promising potential of parenting programmes to tackle multiple forms of family violence, scaling up parenting interventions remains a challenge (Sanders et al., 2021). In order to address barriers to scale, digital parenting interventions have been gaining momentum as a means to increase reach, engagement, and accessibility (Harris et al., 2020). One such programme, developed by Parenting for Lifelong Health (PLH) (Cluver et al., 2018; Ward et al., 2020), is a chatbot intervention called ParentText that provides caregivers with social learning-based parenting content that seek to improve parent-child interaction and prevent child maltreatment (Schafer et al., 2023). Given the emerging evidence base on the potential to integrate parenting and gender-transformative approaches to prevent multiple forms of family violence, the present study seeks to explore how users engage with a parenting chatbot that contains integrated IPV prevention material. Building on the development of IPV prevention material designed and integrated into the ParentText intervention in 2021 (Schafer et al., 2023), the purpose of the present pilot study was to examine user engagement with the IPV prevention content in the chatbot, as well as explore preliminary indications of the chatbot's impact on IPV.

Objectives

The overarching aim of this pilot study is two-fold: first, it seeks to assess parents' and caregivers' level of engagement with the integrated IPV prevention material in the ParentText chatbot. Second, it aims to conduct exploratory analyses of preliminary pre-post changes in experiences and perpetration of IPV and related outcomes, including attitudes toward IPV and gender-equitable behaviours following the intervention.

As such, this study seeks to answer the following research questions:

1. What is the level of user engagement with the IPV prevention content integrated in the parenting chatbot, ParentText, amongst low-income parents and caregivers in South Africa and Jamaica?

2. What are the indicative impacts of the ParentText chatbot on experiences and perpetration of IPV (primary outcomes) and related risk factors including attitudes toward IPV and gender-equitable behaviours (secondary outcomes) with low-income caregivers in South Africa and Jamaica?

5.4 Methods

5.4.1 Study setting

The focus of this research study was to explore the integration of IPV prevention content in a parenting chatbot seeking to prevent multiple forms of family violence, with the present paper focusing specifically on IPV. Accordingly, the study was conducted in two countries where IPV is particularly widespread: South Africa and Jamaica. South Africa has one of the highest rates of IPV globally, with studies revealing prevalence rates of 20% to 50% in which women report having experienced IPV sometime during their life (Gordon, 2016; Sere et al.,

2021; Shai & Sikweyiya, 2015). In Jamaica, rates of violence against women are also alarming, with 24% of women having experienced physical and/or sexual violence from an intimate partner sometime in their life (OECD, 2023b). These high rates of violence underscore that urgent prevention efforts that seek to prevent and reduce violence are crucial. The present study was conducted in three parishes in Jamaica: Kingston, St. Catherine, St. Elizabeth, and in Cape Town, South Africa.

5.4.2 Participants and recruitment

Participants were recruited through convenience sampling by local research assistants through the organisation Clowns Without Borders South Africa (CWBSA) in Cape Town, South Africa and by members of UNICEF Jamaica staff through community and school visits in Jamaica. In South Africa, recruitment mainly took place in neighbourhoods, townships, and communities in urban Cape Town. In Jamaica, while the aim was originally to recruit both men and women, due to resource constraints, in the end, only women were recruited. Participants in Jamaica were recruited primarily at schools and at women's centres for adolescent mothers in both urban and rural communities. Inclusion criteria for participants were being over 18 years old in South Africa and over 16 years old in Jamaica (where adolescent parents over 16 years of age were also recruited), currently caring for a child between the ages of 0 to 17 years, being in a relationship (defined as either having a partner or being married – see Additional file 2: IPV Assessment for further details), having access to a phone that could receive messages on WhatsApp or Telegram and that could connect to 3G or the internet, provided consent to participate in the study, and able to speak either English or isiXhosa (South Africa only). Exclusion criteria were participants who were not currently in a partnered relationship and participants who were not caregivers, parents, or currently caring for a child. As an initial pre-post evaluation, the present study was not designed to

detect significant intervention effects but rather to assess user engagement and conduct exploratory analyses of intervention outcomes (Thabane et al., 2019). Accordingly, power calculations were not performed (Billingham et al., 2013; Leon et al., 2011).

5.4.3 Intervention

ParentText is a chatbot intervention for parents and caregivers of children aged 0 to 17 years (Schafer et al., 2023). The technical architecture is open source and available for developers through GitHub. The digital parenting intervention sends automated messages to users through social messaging platforms such as WhatsApp, Telegram, and Facebook messenger, and is also available via SMS for individuals without smartphone access. The parenting content of ParentText is derived from the in-person Parenting for Lifelong Health programmes (Cluver et al., 2018; Ward et al., 2020) and was collaboratively developed with local implementing organisations and parents/caregivers in several low- and middle-income countries (LMICs), including in South Africa, Jamaica, the Philippines, Malaysia, and Sri Lanka, to ensure the material is culturally relevant. The content was translated into the local languages of the implementing countries. Enrolled users receive 23 days of daily ParentText messages personalised for their chosen child's development stage (0–23 months, 2–9 years, 10–17 years). Content is provided using a range of formats including text, image, video, and audio. Structured and sequential parenting content is derived from common elements of social learning theory-based programmes along two main themes: 1) positive relationship building and 2) limit setting and nonviolent discipline (Kaehler et al., 2016). Further topics include stress reduction for parents and caregivers, child development, online child safety, sexual violence prevention, children living with disabilities, and family budgeting. In addition, content specifically targeting positive partner relationships and IPV prevention for users in partnered relationships was integrated into the chatbot by drawing on gender-

transformative material from a range of interventions found to reduce IPV and improve gender-equitable attitudes (Ashburn et al., 2017; Doyle et al., 2018; Kapiga et al., 2019). It is the engagement with this content which is the primary focus of the present study. In brief, the IPV prevention content is divided into five topics: (1) Treat each other as equals; (2) Become a confident parent and supportive spouse; (3) Share family responsibilities; (4) Resolve conflict peacefully; (5) Listen and talk to each other. For further details on development of the IPV prevention content and theory of change, see Schafer et al. (Schafer et al., 2023) and Additional file 3: Overview of ParentText IPV prevention content. For example, the sequencing of ParentText messages, see Figure 13 and Figure 14.

Figure 13. IPV Topic Message Flow (added after submission to journal)

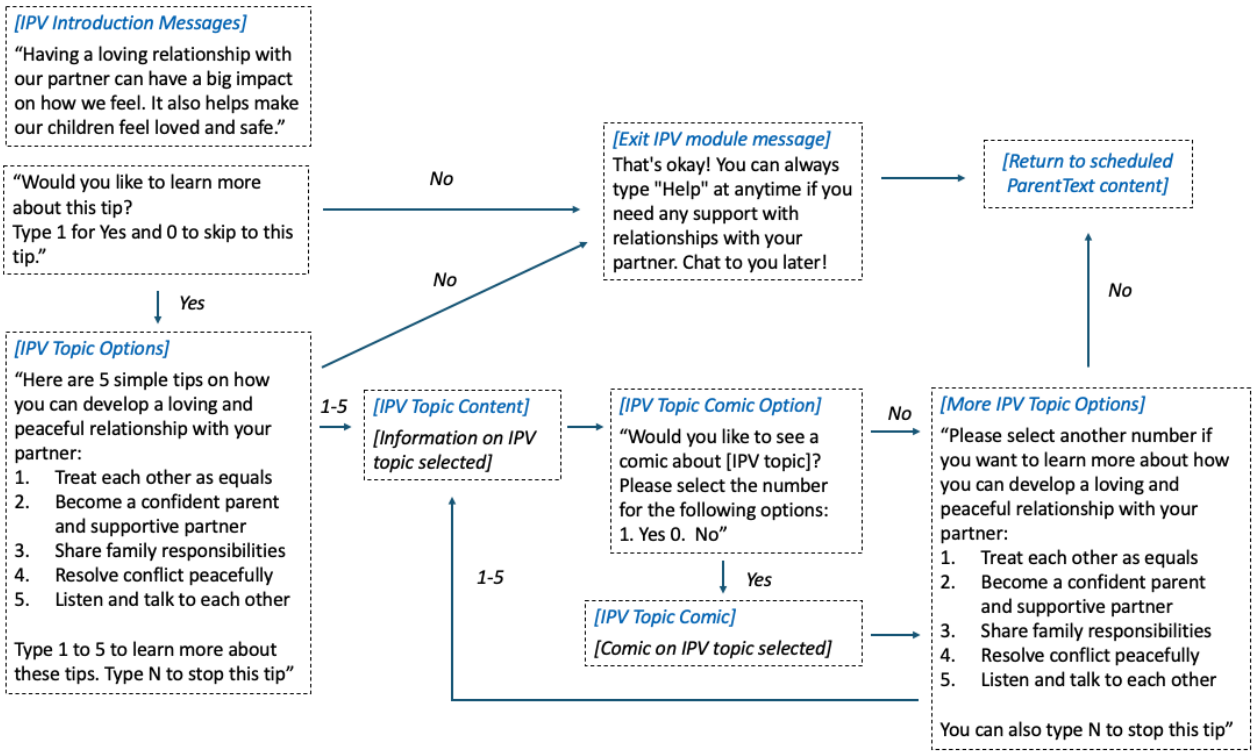
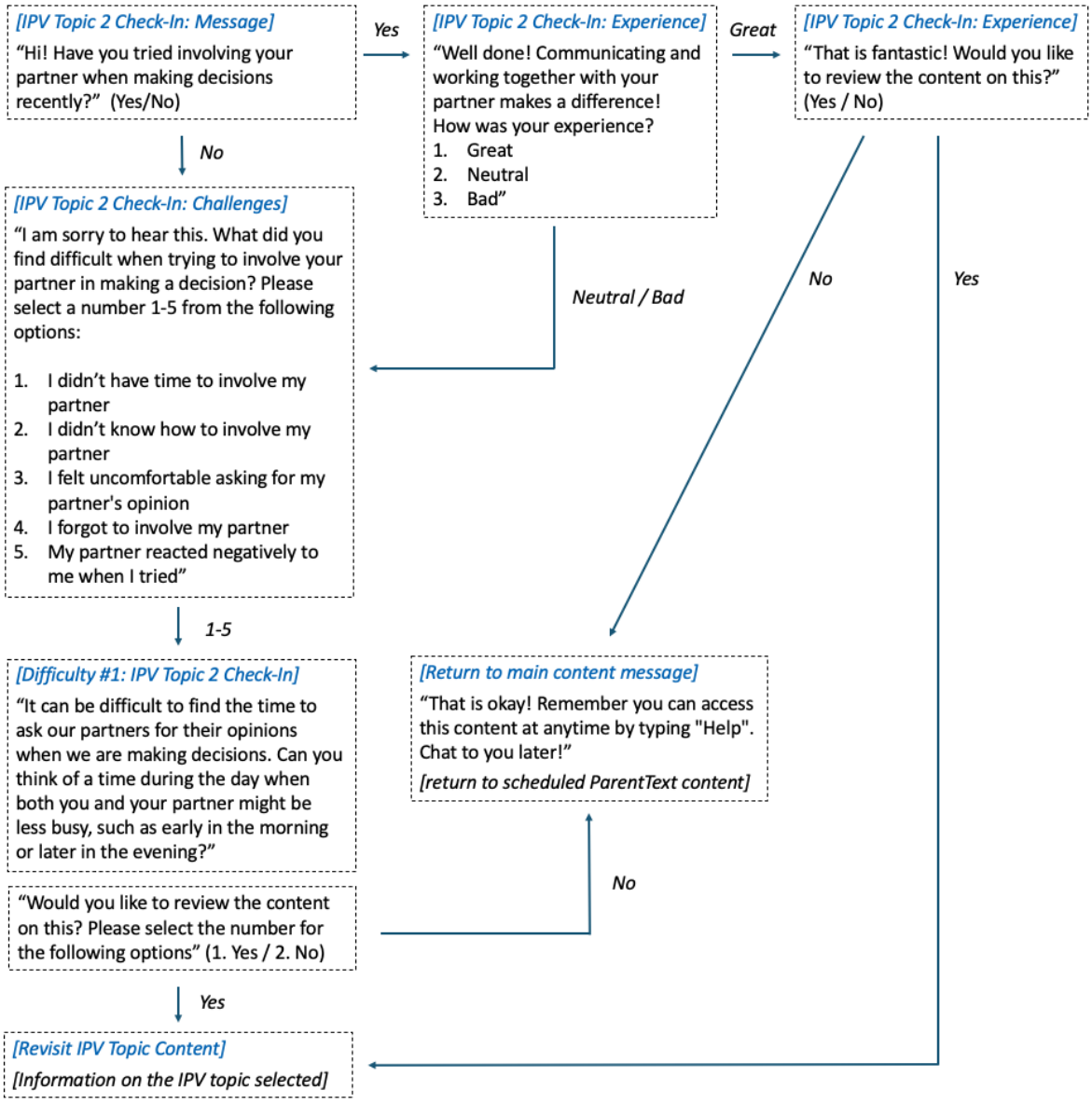


Figure 14. IPV Topic 2 Check-In Message Flow (added after submission to journal)



(*Note:* For a full overview of all the Check-In messages for each IPV topic see Appendix 7).

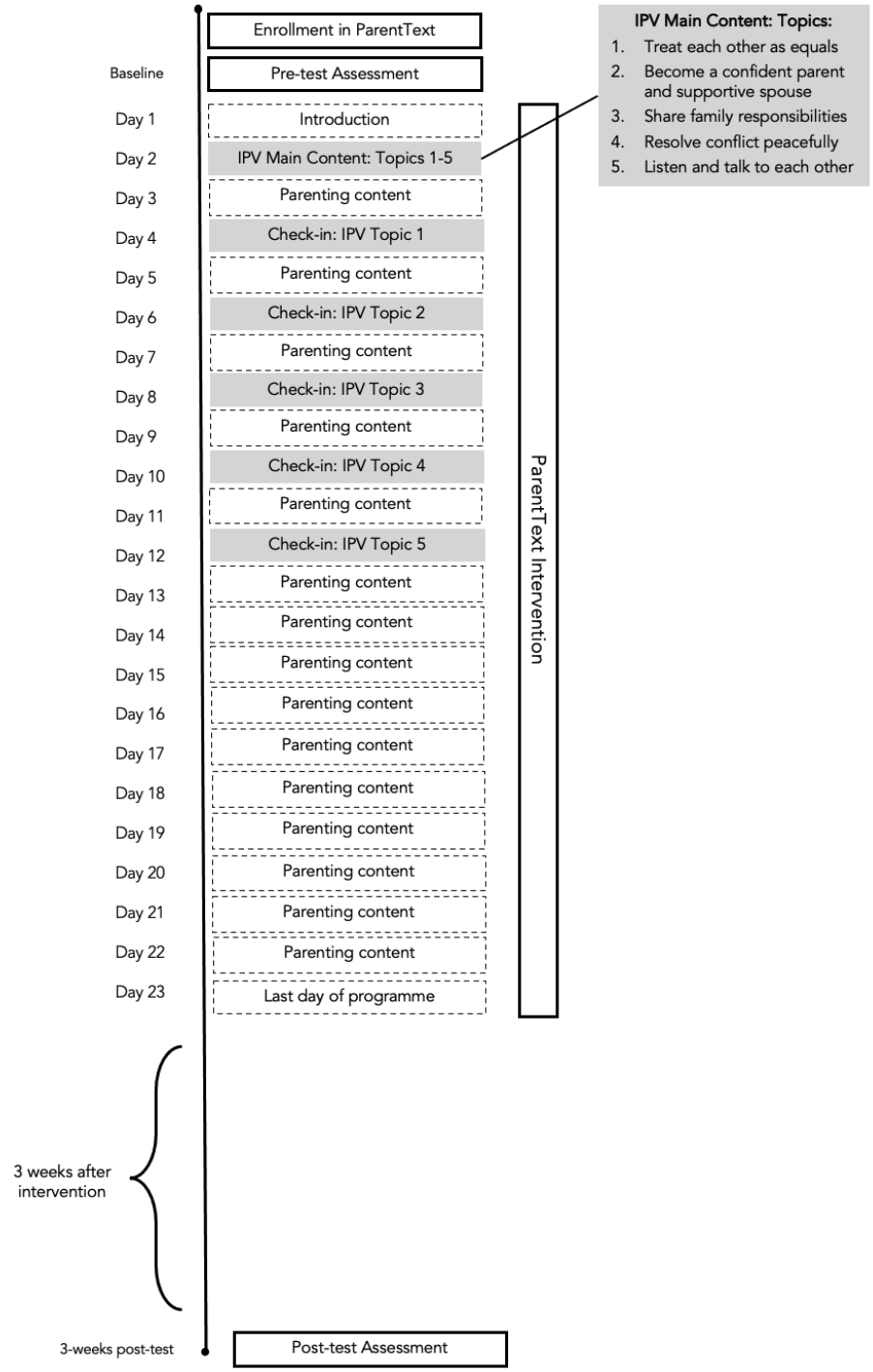
5.4.4 Design and procedures

The present study employed a repeated-measures, single-arm design. Pre-and post-test assessments were conducted at baseline (pre-intervention) and at 6 weeks after baseline (i.e. 3 weeks after the end of the intervention) using the application Open Data Kit (ODK) (see the Measures section and Additional file 2: IPV Assessment for more details on the IPV

assessment). The post-test was planned as a 1-month post-test (1 month after end of intervention), however, due to fieldwork challenges that arose and time constraints, it needed to be changed to 6 weeks after baseline (see Figure 15).

Reporting follows the CONSORT 2010 guidelines extension to randomized pilot and feasibility trials (Eldridge et al., 2016) (see Additional file 4 for the CONSORT checklist). Recruitment, delivery, and assessments in South Africa and Jamaica were conducted on a rolling basis from September 2022 to March 2023. During recruitment, participants received a message which included a link to the programme embedded within a WhatsApp/Telegram business account. After clicking the link, participants were directed to the ParentText chatbot account and asked to select their preferred language for the programme. In Jamaica, in keeping with recommendations from the formative research (Schafer et al., 2023) the language was set to English and in South Africa the options were English and isiXhosa. Participants were asked if they consented to participate in the intervention and evaluation and were provided with a link to a more detailed information sheet. Participants who did not consent exited the intervention. Participants who enrolled in the intervention received data credit using a local service provider to ensure they would have access to 3G during the intervention.

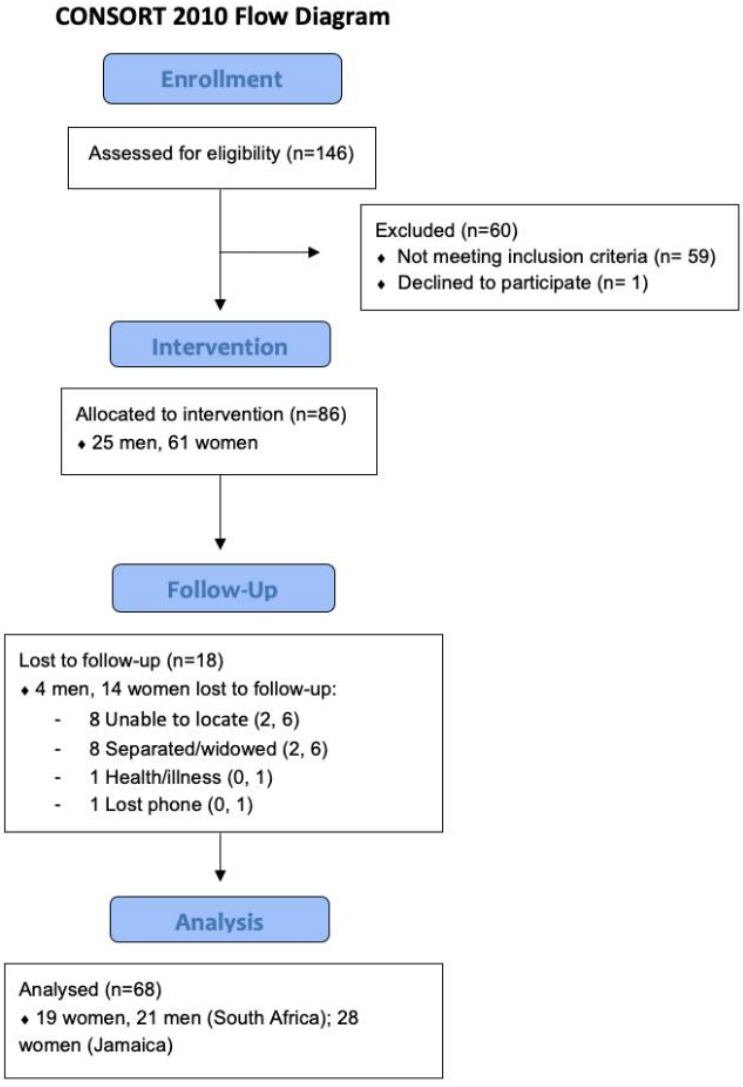
Figure 15. Overview of ParentText timeline



At baseline, participants were invited to complete the IPV assessment on a secure external server, via Oxford's Linux virtual machine using ODK to make sure responses were not saved on their mobile devices. Participants provided their phone number when completing the IPV survey for their responses to be recorded and linked with a unique user ID. These

data were then de-identified, exported as comma-separated value (CSV) files, and uploaded to a secure server in Oxford, which was only accessible by the research team and password-protected. Participants were asked to provide details on their family composition, age, gender, and additional sociodemographic characteristics. All personal identifying data were deleted once endline data collection was completed. The IPV assessments were optional, and participants were reminded their answers were completely private and that they could refuse to answer and still receive ParentText messages. Participants were invited to respond to the IPV assessment at 3-week post-intervention via the phone number they provided when completing the IPV assessment at baseline. A study flow diagram is provided in Figure 16.

Figure 16. Study flow diagram



5.4.5 Measures

The user engagement, demographic, primary, and secondary outcomes are described below and a summary is provided in Table 10.

Table 10. Outcome measurements

Outcomes	Study Measurement	Items
Engagement Outcomes		
Number of days in the ParentText programme	Measured by final day participant used the chatbot subtracted by the first day the participant used the chatbot (including inactive days)	1
Number of active days user actively interacted with the chatbot	Number of days participants actively interacted with ParentText as measured by chatbot interactions (excluding inactive days)	1
Chatbot interaction rate	Measured by number of interactions logged per day divided by total number of days participant actively interacted with ParentText	1
Engagement per IPV topic	Measured based on the number of participants who viewed each IPV topic	5
Completion rate of IPV topics	Number of IPV topics completed out of the total five topics (measured by number of IPV topics participants viewed)	5
Completion rate of ParentText parenting modules	Number of parenting modules completed (measured by number of modules viewed)	1
Primary Behavioural Outcomes		
Women's experiences of IPV	WHO Violence Against Women Instrument (VAWI) and WHO Multi-Country Study on Domestic Violence (WHO-MCS) (García-Moreno et al., 2005)	5
Men's perpetration of IPV	Items adapted from WHO Violence Against Women Instrument (VAWI) and WHO Multi-Country Study on Domestic Violence (WHO-MCS) (García-Moreno et al., 2005)	5

Secondary Behavioural Outcomes		
Men's experiences of IPV	Items adapted from Abramsky et al. (Abramsky et al., 2020)	2
Women's perpetration of IPV	Items adapted from Abramsky et al. (Abramsky et al., 2020)	2
Women's positive partner interactions	Items adapted from Abramsky et al. (Abramsky et al., 2020)	1
Men's positive partner interactions	Items adapted from Abramsky et al. (Abramsky et al., 2020)	1
Gender equitable behaviours	Items adapted from questionnaires used in previous violence prevention interventions (Abramsky et al., 2020; Doyle et al., 2018)	4
Attitudes toward gender roles and IPV	WHO Multi-Country Study on Domestic Violence (WHO-MCS) (García-Moreno et al., 2005)	6
Demographic Variables		
Parental gender, age, relationship status, living with partner, education level, employment status, partner employment status, number of children	Sociodemographic information	8 (1 item each)
Women's past-year IPV experience	Item adapted from WHO Violence Against Women Instrument (VAWI) (García-Moreno et al., 2005)	1
Men's past-year IPV perpetration	Item adapted from WHO Violence Against Women Instrument (VAWI) and WHO Multi-Country Study on Domestic Violence (WHO-MCS) (García-Moreno et al., 2005)	1

User engagement outcomes

User engagement was tracked using chatbot interactions logged via RapidPro, the software used to build and run ParentText. Measurements of user engagement were examined based on user length in programme and interaction with programme content, using the engagement measures outlined below.

Number of days participants stayed in the ParentText programme

The number of days participants stayed in the ParentText programme was measured by the final day participant used the chatbot subtracted by the first day the participant used the chatbot, and included any inactive days.

Number of days users actively interacted with the chatbot

This outcome was measured using the number of days participants interacted with ParentText, based on chatbot interactions logged via RapidPro, and did not include inactive days.

Overall chatbot interaction rate

The overall chatbot interaction rate was measured based on number of interactions logged per day divided by the total number of days the participant actively interacted with the ParentText programme.

Participant engagement with each IPV topic

Participant engagement with each IPV topic was measured based on the number of participants who viewed each IPV topic, which is in line with existing digital parenting intervention research where module viewing is frequently used as proxy measure for level of participant engagement (Breitenstein et al., 2014; Collins et al., 2019)

Completion rate per IPV topics

This outcome was based on the number of IPV topics completed out of the total five topics, measured by number of IPV topics participants viewed that were recorded via RapidPro.

Overall completion rate of the general ParentText modules

This outcome was assessed based on the number of parenting modules completed, as measured by number of parenting modules logged via the RapidPro software.

Demographic measures

Sociodemographic variables

Baseline demographic measures included gender, age, relationship status, whether the participant was living with their partner, education level, employment status, partner employment status, and number of children the parent had or cared for.

Women's past-year IPV experience

Women's past-year female IPV experience was measured at baseline by self-report using one item adapted from the WHO's Violence Against Women Instrument (VAWI) (García-Moreno et al., 2005) and the core questionnaire in the WHO Multi-Country Study on Domestic Violence (García-Moreno et al., 2005). The item asks, "How many times, in the past 12 months, did your partner do one of the following: insult or shout at you, hit or shove you, or force you to have sex?". Female parents/caregivers were asked to give a frequency score on a scale of 0 to 8 or more times. Due to the skewed response patterns in the data for IPV, responses for IPV were dichotomously recoded where 1 indicated any experience of IPV and 0 indicated no experience of IPV in the past year (McNaughton Reyes et al., 2021). The assessment measured past-year IPV experience and was administered at baseline.

Men's past-year IPV perpetration

Men's past-year IPV perpetration was measured at baseline by self-report using one item adapted from the WHO Violence Against Women Instrument (VAWI) (García-Moreno et al.,

2005) the core questionnaire in the WHO Multi-Country Study on Domestic Violence (García-Moreno et al., 2005). The item asks, "How many times, in the past 12 months, did you: insult or shout at your partner, hit or shove your partner, or force your partner to have sex?". Male parents/caregivers were asked to give a frequency score on a scale of 0 to 8 or more times. Responses were dichotomously recoded such that 1 indicated any perpetration and 0 indicated no perpetration in the past 12 months. The assessment measured past-year IPV perpetration and was administered at baseline.

Primary behavioural outcomes

Women's experiences of IPV

Women's experiences of IPV were measured by self-report using items adapted from the WHO Violence Against Women Instrument (VAWI) (García-Moreno et al., 2005) and items from the core questionnaire in the WHO Multi-Country Study on Domestic Violence (García-Moreno et al., 2005). The female IPV experience assessment included physical violence (1 item), psychological abuse (1 item), sexual abuse (1 item), coercion (1 item), and economic abuse (1 item). Parents/caregivers were asked to give a frequency score on a scale of 0 to 8 or more times. The original VAWI tool measures past-year experiences of IPV (García-Moreno et al., 2005), however, a one-year reporting time frame surpasses the duration of the intervention. The reporting timeframe and the response codes were therefore adapted from past-year (once, a few times, many times) to number of experiences of IPV in the past month (0, 1, 2, 3, 4, 5, 6, 7, 8+), to enhance the sensitivity of measuring changes in experiences of IPV. These adjustments in time frame and in response codes are similar to those made to measure child maltreatment with the ICAST-Trial measurement by Meinck and colleagues (Meinck et al., 2018). The use of a past-month time frame when measuring IPV has also been used in other similar pieces of research, such as a study by Ebert and Steinert (Ebert & Steinert, 2021),

which investigated experiences of IPV during COVID-19 in Germany. Responses were dichotomously recoded where 1 indicated any experience of each subsequent type of IPV and 0 indicated no experience of each type of IPV in the past month (McNaughton Reyes et al., 2021).

Men's perpetration of IPV

Men's perpetration of IPV was measured by self-report using items adapted from the WHO's Violence Against Women Instrument (VAWI) (García-Moreno et al., 2005) and items from the core questionnaire in the WHO Multi-Country Study on Domestic Violence (García-Moreno et al., 2005). The male IPV perpetration assessment included physical violence (1 item), psychological abuse (1 item), sexual abuse (1 item), coercion (1 item), and economic abuse (1 item). Male parents/caregivers are asked to give a frequency score on a scale of 0 to 8 or more times, with responses dichotomized into any perpetration of IPV in the past month.

Secondary outcome measures

Women's perpetration of IPV

Women's perpetration of IPV was measured by self-report using two items adapted from a questionnaire developed by researchers at the London School of Hygiene and Tropical Medicine (LSHTM) for an RCT of a violence prevention intervention in Tanzania (Abramsky et al., 2020). The items included: "During any potential times that you were hit in the past month, did you ever fight back physically to defend yourself?" and "In the past month, have you ever hit or physically mistreated your partner when they were not hitting or physically mistreating you?". Female parents/caregivers were asked to give a frequency score on a scale

of 0 to 8 or more times, with responses dichotomized into any perpetration of IPV in the past month.

Men's experiences of IPV

Men's experiences of IPV were measured by self-report using two items adapted from Abramsky et al.'s questionnaire (Abramsky et al., 2020). The items include: "In the past month, during any potential times that you may have used violence against your partner, did they ever fight back physically to defend themselves?" and "In the past month, have you ever been hit or physically mistreated by your partner when you were not hitting or physically mistreating them?". Parents/caregivers were asked to give a frequency score on a scale of 0 to 8 or more times, with responses dichotomized into any experience of IPV in the past month.

Positive partner interactions

Positive partner interactions were assessed by self-report using one item adapted from Abramsky et al. (Abramsky et al., 2020). The item asks female participants: "How many times in the past month did your partner show you they cared and respected your feelings even though they disagreed with you?" and asks male participants: "How many times in the past month did you show your partner you cared and respected their feelings even though you disagreed?". Participants were asked to give a frequency score on a scale of 0 to 8 or more times.

Attitudes towards gender roles and IPV

Attitudes towards gender roles and IPV was measured by self-report using six items included in the 'Attitudes toward gender roles' section of the WHO Multi-Country Study on Domestic Violence (García-Moreno et al., 2005). These items included statements such as "A woman should obey her husband's wishes even if she disagrees". Parents/caregivers were asked to

indicate whether they agree or disagree with the statements provided based on a Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). Negative items were reverse-coded so that higher scores denoted more gender-equitable attitudes. The scores were summed for all items for the overall attitude score. The possible score for overall attitude ranged from 6 – 30.

Gender equitable behaviours

Gender equitable behaviours was measured using four items adapted from questionnaires used in previous violence prevention studies (Abramsky et al., 2020; Doyle et al., 2018). Three items are adapted from Abramsky et al. (Abramsky et al., 2020). These items included questions on couple communication, joint decision-making, and partner conflict resolution, with questions such as: "In the past week, how many times did you and your partner talk about your worries and feelings?" and "In the past week, how many times did you and your partner make a decision together?". The fourth item is adapted from a questionnaire developed by researchers of an RCT of a gender-transformative violence prevention intervention in Rwanda (Doyle et al., 2018). The item asks: "In the past week, how many times did you and your partner share housework and caregiving tasks equally?". Parents/caregivers are asked to report on whether in the past week the specific behaviour occurred on a scale of 0 (never) to 3 (many times). The scores were summed for all items for the overall gender equitable behaviour score. The possible score for overall gender-equitable behaviours ranged from 0 – 12.

5.4.6 Statistical analysis

Data analyses were conducted using R. Descriptive statistics and frequencies were used to describe sociodemographic characteristics of participants and to report engagement

outcomes, summarised using means (standard deviation), medians (range), and N (%). To investigate changes in outcomes between pre- and post-test, a series of linear (for continuous outcomes), Poisson (for outcomes measured in frequency) and logistic regressions (for dichotomous outcomes) were conducted to obtain regression coefficients (β), incidence rate ratios (IRR), and odds ratios (OR), with corresponding 95% confidence intervals (CIs) and p-values (Huang & Cornell, 2012). Assumptions of linear, Poisson, and logistic regression were examined to confirm no violations existed. Data were analysed using complete case analysis.

5.4.7 Ethical Considerations

The following ethical procedures were followed to ensure the safety and welfare of study participants. At the start of the IPV assessment, screening procedures ensured that men and women from the same household were not both interviewed about IPV. This is based on WHO's violence against women (VAW) research guidelines (WHO, 2016a) and ethical and safety recommendations for intervention research on VAW (García-Moreno et al., 2005), to prevent putting women at risk. As such, men who responded that their partner was taking part in the intervention were not asked the IPV items in the IPV assessment and were only asked instead the questions on attitudes toward IPV and gender roles and on gender-equitable behaviours. Participants who disclosed experiences of IPV were automatically provided referrals to local services, customized to their regional context, that supported individuals experiencing violence. Local referral information could also be accessed by writing "Help Me" and choosing "Other Support" in the ParentText free text field. In line with UNICEF Risk Communication and Community Engagement (RCCE) Guidelines (UNICEF, 2020a), ParentText is also formatted to detect high-risk keywords to identify potential disclosure of dangerous situations via the free text field. Following detection, ParentText automatically offers the participant an empathetic and empowering reply with referral details that

customised to the country, which supports parent and child safety (e.g., hotlines, police, ambulance).

Further ethical considerations that were taken within the research project include recognitions surrounding power and limitations of positionality (Leung et al., 2019). For instance, it is worth noting that while collaborators and members of the research team came from several countries, the primary author of the present paper is from and is part of a research institution in the global north. Efforts to address limitations associated with this positionality were put in place, including integrating reflexivity across the stages of the research process (Jamieson et al., 2023). For example, during the research design and data collection planning phase, members of local grassroots organisations, communities, and stakeholders in Jamaica and South Africa were continuously consulted to review and revise the IPV prevention content and assessment materials (Schafer et al., 2023). Integrating these embedded consultations and opportunities for research amendments with members of the local community were a pivotal part of the research project, particularly, given the first author's positionality as an 'outsider' (Jamieson et al., 2023).

Ethical approval was obtained by the Department Research Ethics Committee (DREC) at the University of Oxford (CUREC 2 Ref No: R69569/RE009). All methods were carried out in accordance with relevant guidelines and regulations. Informed consent to participate in the study was obtained from all participants prior to enrolling the study and the intervention.

5.5 Results

5.5.1 Participant characteristics

Participant characteristics are provided in Table 11 by country and with an overall summary. The average age of participants across both countries was 34.4 years (SD = 8.74; range: 16-57). The average age of women in South Africa was 34.9 years of age (SD = 6.77; range: 25–49) and men 28.8 years (SD = 2.68; range: 25–36). In Jamaica, where only women were recruited into the study, the average age of women was 39.9 years of age (SD = 11.52; range: 16-57). The majority of participants, across both countries, were partnered but not married (48/68; 70.6%). On average, participants had 2.23 children (SD = 1.19). Approximately half of participants across both countries had a secondary education (36/68, 52.9%), and 7.4% (5/68) had only primary education or less. In South Africa, among women participants, 42% (8/19) were working and 58% (11/19) were unemployed or looking for work. Among men, slightly more were working (13/21, 62%), with 29% (6/21) unemployed or looking for work. In Jamaica, among women participants, this was similar, with 43% (12/28) working and 54% (15/28) unemployed or looking for work. Across both countries, the employment of partners was high (50/68, 73.5%), with only 17.6% (12/68) with partners who were unemployed or looking for work. Experience of IPV (women-report only due to safety reasons) at baseline was high: 21% (4/19) of women participants in South Africa and 28.6% (8/28) of women in Jamaica had experienced some form of IPV in the past year, respectively.

Table 11. Demographic characteristics expressed as % and count, and mean and SD

	South Africa		Jamaica	Overall
	Female	***Male***	***Female***	***Total***
	N = 19	**N = 21**	**N = 28**	**N = 68**
Gender, n (%)				
Female	19 (47.5%)	–	28 (100%)	47 (69.12%)
Male	–	21 (52.5%)	–	21 (30.88%)
Age, mean (SD)	34.9 (6.77)	28.8 (2.68)	39.9 (11.52)	34.4 (8.74)
Relationship, n (%)				
Married	6 (32%)	2 (9.5%)	12 (43%)	20 (29.4%)
Partnered but not married	13 (68%)	19 (90%)	16 (57%)	48 (70.6%)
Number of children, n (%)	2.53 (1.17)	1.19 (0.68)	2.61 (1.25)	2.23 (1.19)
Education, n (%)				
Primary	1 (5.3%)	0 (0%)	4 (14%)	5 (7.4%)
Secondary	9 (47%)	10 (48%)	17 (61%)	36 (52.9%)
Higher	9 (47%)	11 (52%)	7 (25%)	27 (39.7%)
Employment, n (%)				
Working	8 (42%)	13 (62%)	12 (43%)	33 (48.5%)
Unemployed / looking for work	11 (58%)	6 (29%)	15 (54%)	32 (47.1%)
Student	0 (0%)	2 (9.5%)	0 (0%)	2 (2.9%)
Retired	0 (0%)	0 (0%)	1 (3.6%)	1 1.5%)
Partner's employment, n (%)				
Working	11 (58%)	17 (81%)	22 (79%)	50 (73.5%)
Unemployed / looking for work	7 (37%)	2 (9.5%)	3 (11%)	12 (17.6%)
Student	0 (0%)	2 (9.5%)	0 (0%)	2 (2.9%)
Retired	0 (0%)	0 (0%)	2 (7.1%)	2 (2.9%)
Refuse to answer	1 (5.3%)	0 (0%)	1 (3.6%)	2 (2.9%)
Experience of IPV, n (%)				
Experienced IPV in the past year [a]	4 (21.00%)	NA	8 (28.60%)	12 (25.50) [b]

[a] For safety reasons, men were not asked this question at baseline

[b] Overall IPV here only includes women

5.5.2 User engagement outcomes

Overall engagement outcomes are provided in Table 12. The ParentText programme lasted a total of 23 days, with the main IPV prevention content delivered on Day 2 and check-in messages delivered within the first 12 days (see Additional file 3, which provides an overview of the programme content delivered each day). In terms of engagement, in South Africa, the average number of days in the programme was 13 (SD 23.90) and 3 (SD 3.78) days for men and women respectively. The average number of days users interacted with the chatbot was 3 days (SD 1.58) for women and 2.6 (SD 1.52) days for men, each with an average interaction rate of 0.57 interactions (SD 0.26) and 0.59 interactions per day (SD 0.17), respectively. In Jamaica, the average number of days in the programme was 27 days (SD 23.10) and the average total number of number of days users interacted with the chatbot was 5.2 days (SD = 5.45). The average interaction rate in Jamaica was 0.21 interactions per day (SD = 0.20). In terms of engagement across the five relationship topics, there was a greater engagement with topics in Jamaica where engagement with each topic ranged from 11-29% (3/28 to 8/28) compared to in South Africa where it ranged from 0-11% (0 – 2/19). In terms of completion rates, in South Africa, 25% (5/20) and 5% (1/20) of women and men completed one out of the five the IPV topics, and 5% (1/20) and 0% completed all five IPV topics, respectively. In comparison to the completion rate of overall ParentText modules, 16% (3/19) and 9% (2/21) of women and men, completed all of the parenting (i.e., the non-IPV) ParentText modules in South Africa. In contrast, in Jamaica, 21% (6/28) completed one out of the five the IPV topics, 11% (3/28) completed all five IPV topics, and 18% (5/28) completed all of the parenting ParentText modules.

Table 12. ParentText user-engagement outcomes of the 23-day programme

	South Africa		*Jamaica*
	Female	**Male**	**Female**
Overall retention			
Average number of days in programme *Mean (SD)* [a]	13 days (23.90)	3 days (3.78)	27 days (23.10)
Average number of active days user interacted with the chatbot *Mean (SD)* [b]	3 days (1.58)	2.6 days (1.52)	5.2 days (5.45)
Average interactions [c] *Mean (SD) number of interactions per day*	0.57 (0.26 SD)	0.59 (0.17 SD)	0.21 (0.20 SD)
Engagement per IPV topic [d]			
Participants who viewed each IPV topic *(n, % of total sample)*			
Relationship Topic 1 'Treat each other as equals' (under, total times viewed)	2 (11%)	2 (10%)	7 (25%)
Relationship Topic 2 'Become a confident parent and supportive spouse'	2 (11%)	0 (0%)	4 (14%)
Relationship Topic 3 'Share family responsibilities'	2 (11%)	1 (5%)	5 (18%)
Relationship Topic 4 'Resolve conflict peacefully'	2 (11%)	1 (5%)	3 (11%)
Relationship Topic 5 'Listen and talk to each other'	2 (11%)	1 (5%)	8 (29%)
All Relationship Topics (Viewed all relationship topics)	1 (5%)	0 (0%)	3 (11%)
Completion rate *(% of IPV topics completed)* [e]			
Completed one IPV topic	5 (25%)	1 (5%)	6 (21%)
Completed two IPV topics	0 (0%)	0 (0%)	3 (11%)
Completed three IPV topics	0 (0%)	0 (0%)	1 (4%)

Completed four IPV topics	0 (0%)	1 (5%)	0 (0%)
Completed all five IPV topics	1 (5%)	0 (0%)	3 (11%)
Average completion rate of ParentText parenting modules *Mean (SD)*	16% (0.19)	9% (0.06)	18% (0.20)

[a] Measured by final day participant used the chatbot subtracted by the first day the participant used the chatbot (note: this measure includes inactive days)
[b] Number of days participants actively interacted with ParentText (note: this measure excludes inactive days)
[c] Measured by number of interactions logged per day divided by total number of days participant actively interacted with ParentText
[d] Measured based on the number of participants who viewed each IPV topic
[e] Number of IPV topics completed out of the total five topics

5.5.3 Behavioural outcomes

Experiences and perpetration of IPV

Table 13 presents the descriptive results of the IPV outcomes, summarizing experiences of IPV among women and perpetration of IPV among men using past-month frequencies at pre- and post-test, as well as the odds ratios (ORs) and p-values for each outcome. At post-test, 73.3% (11/15) of women in South Africa and 72.2% (13/18) of women in Jamaica reported experiencing some form of IPV, compared to 84.2% (16/19) and 96.0% (23/24) at baseline, respectively. This corresponds to an odds ratio of 0.54 (CI 0.10 to 2.66; *P*=0.45), which was non-significant in South Africa, but significant in Jamaica (OR 0.15; CI 0.01 to 0.86, *P*=0.03). Experiences of all sub-types of IPV for women in both South Africa and Jamaica also demonstrated reductions at post-test, and so did acts of self-defence and perpetration (see Additional Table 1 and Additional Table 2). For perpetration of IPV among men, at post-test, 75% (9/12) of men in South Africa perpetrated some form of IPV, compared to 84.6% (11/13) at baseline. While the odds of perpetrating any form of violence post-test was non-significant for overall perpetration of IPV (OR 0.56; CI 0.08 to 3.14; *P*=0.51), and most of the sub-types of IPV, for economic violence (see Additional Table 3), the reduction was significant (OR

0.18; CI 0.03 to 0.87; *P*=0.03). Detailed tables of the primary and secondary outcomes are provided in Additional file 5.

Table 13. Primary behavioural outcomes

	Baseline overall IPV N (%)[d]	Post-test overall IPV N (%)	OR[e]	CI[f]	*P* value
Women's experience of overall IPV (past month)					
South Africa					
Women (n=19) [a]	16 (84.21%)	11 (73.33%)	OR 0.54	0.10, 2.66	*P*=0.45
Jamaica					
Women (n=24) [b]	23 (96.00%)	13 (72.22%)	OR 0.15	0.01, 0.86	*P*=0.03
Men's perpetration of overall IPV (past month)					
South Africa					
Men (n=13)	11 (84.62%)	9 (75.00%)	OR 0.56	0.08, 3.14	*P*=0.51

[a]At post-test n=15
[b]At post-test n=18
[c]At post-test n=12
[d] % used are proportional to the baseline and post-test samples respectively
[e]OR: Odds ratio
[f]CI: Confidence intervals

Positive partner interactions

Table 14 presents outcomes on positive partner interactions measured through respectful behaviours, summarised using means and standard deviations for pre- and post-test along with beta coefficients with p-values. There were no significant effects detected for change in positive partner interactions reported by men or women.

Attitudes toward (harmful) gender roles and IPV

Table 14 summarizes means and standard deviations for the attitude outcomes at pre- and post-test, with beta coefficients and p-values for each attitude outcome also provided. Analyses indicate a significant reduction in harmful attitudes toward IPV and gender roles

reported by men in South Africa (β=–3.03; 95% CI –0.50 to –0.09; *P*=<0.01), however, no effects were reported among women in South Africa (β=0.00; CI –0.21 to 0.20; *P*=0.98) or in Jamaica (β=0.50; CI –1.32 to 2.31; *P*=0.59).

Table 14. Secondary behavioural outcomes

	Baseline N	Post-test N	Baseline Mean (SD)	Post-test Mean (SD)	β / IRR[d]	CI[e]	*P* value
Positive partner interactions							
South Africa							
Women	19	15	4.74 (2.84)	4.14 (2.98)	IRR 0.87	0.63, 1.21	*P*=0.43
Men	12	12	3.92 (2.50)	5.67 (2.46)	IRR 1.45	1, 2.11	*P*=0.05
Jamaica							
Women	24	15	5.08 (2.60)	3.89 (2.54)	IRR 0.77	0.57, 1.02	*P*=0.07
Overall attitude[a] toward gender roles and IPV[c]							
South Africa							
Women	19	14	10.11 (2.71)	10.13 (3.89)	β 0.03	-2.19, 2.25	*P*=0.98
Men	17	16	11.90 (3.82)	8.88 (2.63)	β -3.03	-5.22, -0.84	*P* = <0.01
Jamaica							
Women	27	15	11.39 (3.45)	11.89 (2.35)	β 0.50	-1.32, 2.31	*P*=0.59
Overall gender-equitable behaviours[b]							
South Africa							
Women	19	15	7.37 (2.95)	7.93 (3.53)	IRR 1.08	0.84, 1.37	*P*=0.55
Men	17	16	7.81 (1.94)	9.75 (1.61)	IRR 1.25	1.00, 1.55	*P*=0.05
Jamaica							
Women	26	15	7.14 (3.49)	7.39 (2.85)	IRR 1.03	0.83, 1.29	*P*=0.76

[a] A lower score indicates less harmful attitudes toward IPV and gender roles
[b] A higher score indicates more gender-equitable behaviours
[c] IPV: intimate partner violence
[d] IRR: incidence risk ratio
[e] CI: confidence intervals

Gender-equitable behaviours

Analyses found a borderline significant increase in gender-equitable behaviours for men (IRR 1.25; CI 1.00 to 1.55; *P*=0.05) (see Table 14). No significant effects were detected for women in South Africa (IRR 1.08; CI 0.84 to 1.37; *P*=0.55) or in Jamaica (β=0.03; CI –0.19 to 0.25; *P*=0.76).

5.6 Discussion

Summary of findings

This pre-post pilot study is the first to our knowledge that examines user engagement and indicative outcomes in a digital parenting intervention with integrated IPV prevention content (Backhaus et al., 2023). The study offers valuable, preliminary insights across two countries on user engagement with a digital parenting intervention with integrated IPV prevention, as well as provides exploratory, indicative results on IPV experience and perpetration, attitudes toward IPV, and gender-equitable behaviour outcomes. First, key findings on levels of user engagement. While the average daily interaction rate was higher in South Africa (0.57 and 0.59 interactions per day for women and men respectively) compared to Jamaica (0.21 interactions per day), the average number of days users stayed in the programme in Jamaica was greater (27 days), compared to South Africa (13 and 3 days for women and men respectively). Due to WhatsApp messaging restrictions, 'push' messaging was paused after 24 hours of user inactivity, until user activity resumed. Given research findings which highlight the importance of messaging reminders in digital interventions (Richardson et al., 2020), this restriction may have contributed to some of the low engagement levels observed.

The completion rate of engaging with at least one IPV topic in the programme was lower than expected across the intervention, with completion rates of 5% (1/20) for men and 25% (5/20)

for women in South Africa and 21% (6/28) for women in Jamaica. The completion rates of all five IPV topics was much lower, with 0% of men and 5% (1/20) of women in South Africa and 11% (3/28) of women in Jamaica completing all five IPV prevention topics. Even though user engagement and retention rates have been noted as a challenge in digital interventions (Dadds et al., 2019), completion rates in the present study were lower than anticipated in comparison to findings in the field. For example, a review on digital interventions for parents with young children, found that attrition rates in digital parenting programmes ranged from 30-50% (Hall & Bierman, 2015). Accordingly, the low completion rates of the IPV topics observed in ParentText raise questions whether user engagement in the programme was sufficient to change complex behaviours and deeply rooted attitudes surrounding violence and gender roles.

There are various possible reasons for the low levels of engagement with the IPV content observed in ParentText. First is the format of the programme schedule. On Day 2 of the ParentText programme, participants were provided with a list of all five of the different IPV prevention topics, which they could choose to explore. After selecting a topic to view, users were given the option to view one of the other IPV topics. It is possible, however, that viewing more than one IPV prevention topic per day may have been overwhelming for users. This may therefore have inhibited users from engaging with multiple of the IPV topics in the programme. Another element that may have affected engagement was the timing of the programme 'Check-in' reminders. Participants received 'Check-in' messages (see Figure 15) in the latter part of the programme (Days 4 - Day 12) (see Additional file 1), where they were encouraged to re-visit and explore the IPV topics they had not yet engaged with. However, given the already low average number of days that participants remained in the programme, it is likely that many participants did not receive these messages. These findings raise important

questions on how to increase engagement with the IPV modules integrated in the ParentText. Amending the timing of content delivery, for example, might be one way to increase engagement. For example, a study assessing a text-messaging intervention focusing on promoting health relationships found that the timing of message delivery played a key role in programme engagement, and that if delivered at the wrong time, users might be less likely to engage with the text-messages (Guillot-Wright et al., 2018).

Taken together, these study results give valuable insight into how users engage with IPV content integrated in a chatbot and suggest that rather than interacting with the chatbot content on a daily basis, users appear to interact with the chatbot at their own pace. As such, providing more options for user-led selection of programme content would be important for future iterations of the chatbot, to make sure users can access and re-visit the information they needed more readily. The importance of user-led content delivery has also been underscored by other digital parenting intervention research. For instance, findings from a study on the digital fatherhood programme 'SMS4Dads' revealed that the length of time between users receiving a text-message with a link to programme content to that of users clicking the link was, on average, 2.11 days (Fletcher et al., 2017). This highlights how engagement with digital intervention content is often not instantaneous, but rather asynchronous and driven by users' schedule (Fletcher et al., 2017). Accordingly, in future versions of ParentText, combining 'push' notification reminders with user-led selection of programme content, might help increase user engagement. Notably, since the present trial of ParentText in South Africa and Jamaica, newer versions of the WhatsApp settings have been released which allow future iterations of the programme to override the 24-hour limit inhibiting 'push' messages after user inactivity.

More broadly, the relatively low levels of user engagement found in the present pilot study raise questions as to whether a digital modality is sufficient when delivering intervention content related to complex gender equitable beliefs and behaviours. It may be the case that a hybrid approach, combining both digital content delivery and in-person sessions, might be necessary. For instance, a study on enhancing father engagement in parenting programs revealed that in terms of intervention delivery, fathers prefer less intensive and low dose programmes, including Internet-based interventions (Lechowicz et al., 2019). However, a recent systematic review of interventions promoting gender equality noted that in various studies it was found that dialogue was critical for driving change in gender norms (Guthridge et al., 2022). The importance of dialogue is further underscored by research examining men's engagement in family and health interventions, revealing that men value and often seek the opportunity to connect with other men to discuss parenting and fatherhood, even though cultural norms sometimes hinder this (Zielke et al., 2023). Together, these findings suggest that a combination of digitally delivered content and in-person discussion opportunities, might be needed.

The exploratory analyses of the behavioural outcomes, while only preliminary, are also important to discuss. In terms of IPV, women in Jamaica reported a significant reduction in overall experiences of IPV at post-test. These tentative findings are in line with results from other parenting and gender-transformative programmes that have found reductions in both IPV experience at post-test and even at follow-up (Ashburn et al., 2017; Doyle et al., 2018, 2023). For example, findings from a randomized controlled trial of a gender-transformative intervention in Rwanda, found that, compared to the control, women in the intervention group reported reductions in both physical and sexual IPV following the intervention (Doyle et al., 2018).

In contrast to the significant reductions in IPV experience amongst women, no significant effects for overall IPV perpetration were detected amongst men in South Africa, with the exception of economic violence. Indeed, analyses of IPV sub-types found significant reductions in economic violence amongst men in South Africa (see Additional Table 3). The overall lack of change in IPV perpetration might be related to the low level of male engagement. Notably, the user engagement and the IPV completion rate of men in South Africa was 50% less than that of women. Hence, the limited interaction men had with the chatbot may therefore not have been sufficient to change these behaviours.

It may also be the case that more interactive engagement is needed to shift these complex behaviours. For instance, emerging findings suggest that content modality can impact digital intervention outcomes (Breitenstein et al., 2014), as highlighted in a recent study on 'ChattyCuz', a chatbot intervention which aims to support young women in navigating intimate relationships in South Africa (De Filippo et al., 2023). Interestingly, an RCT of 'ChattyCuz' found that while the gamified version of the chatbot (treatment 1) led to modest but significant reductions in IPV experience compared to those without treatment, in the narrative treatment, there was no effect on IPV experience (De Filippo et al., 2023). The authors hypothesise that the lack of measurable effect on IPV experience in the narrative treatment arm of the study might be related to the lack of user interaction, and that greater engagement with intervention content is necessary for behaviour change and that an information-only approach is insufficient (De Filippo et al., 2023). These findings highlight how low levels of user engagement in ParenText might play a role in the lack of behaviour changes detected and underscore that amendments to the programme modality might be needed to make the content more interactive in order to shift behaviours.

The present study also revealed a significant overall reduction in harmful attitudes toward IPV as well as a significant increase in overall gender-equitable behaviours among men in South Africa. These indicative effects are promising, and while caution is warranted given the small sample, the findings align with other interventions that have observed reductions in harmful attitudes among men at post-test and detected increases in gender equitable behaviours following gender-transformative interventions (Falb et al., 2023; Halim et al., 2019).

Strengths and limitations

The study has various strengths worth noting. As the first study of a digital parenting intervention with integrated IPV prevention content, the present research makes a valuable contribution to the field of violence prevention and targeted efforts seeking to address VAC and IPV concurrently. With a growing emphasis in policy and research on preventing multiple forms of violence simultaneously (UNICEF, 2021b), this study sheds light on preliminary behavioural outcomes and how users engage in IPV prevention content that has been integrated into a digital parenting intervention. Another strength of the study is the use of data from two countries. By delivering the programme in two different regions and cultures, the present study offers an insight into important considerations to bear in mind before scaling up the intervention. For instance, the challenges with male recruitment in Jamacia, compared to South Africa, suggest that alternative recruitment strategies might be needed when scaling up the intervention in the Caribbean region.

The study also has various limitations. The first relates to the lack of a control group, without which causality cannot be established from the pre-post data. The study also had a small

sample size, which means that the research findings need to be interpreted with caution given that there is insufficient statistical power to detect pre-post intervention effects. As such, the next step is a fully powered RCT to establish effectiveness. Future research should also include follow-up assessments to examine whether intervention effects remain, become reduced, or delayed over time (van Aar et al., 2017), seeing as the current study was limited to a 6-week post-test due to resource and time constraints. In addition, the study used a convenience sampling approach, which may limit the generalisability of the study findings. For example, it is possible that caregivers who opted to take part in the parenting programme were more willing to change, which may bias the results.

Another important limitation is that while in the current study participants were provided with mobile credit, this may not always be realistic in a real-world setting. While access to the internet and mobile data are increasing globally (OECD, 2023a), it is important to explore potential options of being able to use the programme without mobile data, especially when planning strategies for scale up and delivery. One digital intervention that has explored this is the parenting programme 'ParentApp for Teens', which is a mobile application designed for offline use that targets parents of teenagers (Awah et al., 2022; Janowski et al., 2023). There are also important assessment limitations related to the self-report measurements used in the current study. Given the sensitive nature surrounding IPV and attitudes toward violence, it is possible that participants were hesitant to disclose violence due to stigma or fear of being endangered, leading to under-reporting and consequently leading to undetected changes in behaviours (Cullen, 2023). Similarly, social-desirability bias may have also impacted the measurement of behavioural outcomes, particularly the measurement of IPV perpetration, which has been found to be more prone to social-desirability bias than reports of IPV experience (Visschers et al., 2015).

5.7 Conclusion

The current research presents the first-ever attempt to research the integration of IPV and parenting content into a digital intervention. Some of the preliminary results of the intervention are promising, such as the significant reductions in overall IPV amongst women and the decrease in harmful IPV attitudes amongst men. However, the high rates of IPV experiences and perpetration reported at post-test are still concerning and suggest that greater intervention efforts and programmatic amendments are likely necessary in order to tackle deep-rooted attitudes and harmful behaviours. Additionally, the unexpected low levels of engagement in the intervention raise questions about whether interactions with the chatbot were sufficient to shift behaviours and attitudes, and suggests that a hybrid approach to programme delivery might be necessary. Given the urgent need for scalable prevention efforts that can tackle multiple forms of violence concurrently (Bott et al., 2020), more research is necessary to further explore how to increase chatbot user engagement and achieve greater reductions in IPV and harmful attitudes toward gender roles and IPV.

Article information

Acknowledgements

This research was funded in whole, or in part, by the UKRI [ES/P000649/1]. For the purpose of Open Access, the author has applied a CC BY public copyright licence to any Author Accepted Manuscript version arising from this submission. This research was also funded by UNICEF Jamaica and the Economic and Social Research Council (ESRC) Grand Union Doctoral Training Partnership in collaboration with the University of Oxford Saven European Scholarship and the Balliol College Dervorguilla Scholarship in Social Sciences. This study is part of the Global Parenting Initiative, which is funded by The LEGO Foundation, Oak Foundation, the World Childhood Foundation (16191), The Human Safety Net, and the UK

Research and Innovation Global Challenges Research Fund (ES/S008101/1). Aside from UNICEF's involvement in guiding the selection of research site and study timeframe, none of the funders were involved in study design, data collection, data analysis and interpretation, or the writing of the manuscript. We thank those who made this research possible: the respondents who participated in this study, UNICEF Jamaica, the research assistants, the study funders, the researchers and stakeholders who provided input during intervention development and delivery, and the Department of Social Policy and Intervention at the University of Oxford for administrative support.

Authors' Contributions

MS, JML, and FG participated in the design of the study and oversaw data collection and cleaning. MS managed the data collection process, with support from PZ, FC, GHR, and RS. MS designed the statistical analysis, with JML, FG, QH, FC, CF, and LC providing guidance on the analysis approach. MS drafted the paper, with JML and FG contributing. All authors approved the final manuscript.

Conflicts of interest

MS is a researcher at the University of Oxford and JML and FG are employed as staff at the University. In addition, JML is the CEO of Parenting for Lifelong Health (PLH), a charitable organization based in the United Kingdom that developed the ParentText intervention. MS, JML, PZ, QH, FC, GHR, and FG have participated/are participating in several research studies involving the program as investigators, and the Universities of Oxford, Cape Town, and Glasgow. CF and LC are employees of IDEMS International, a technology development company that co-developed the ParentText intervention and provided support on data analysis of user engagement. RS is an employee at UNICEF and provided support on data collection.

Conflict is avoided by declaring these potential conflicts of interest and by conducting and disseminating rigorous, transparent, and impartial evaluation research on both this and other similar parenting programs. No profits will be made from this programme.

5.8 Paper 2 Additional files

5.8.1 Paper 2 Additional file 1: Structure of ParentText 23-day version

Day	Morning	Main	Evening
1	**IPV Baseline assessment**	Welcome	
2	**Content: IPV Main Material**	Supportive: Activities	
3	Supportive: Praise/Calm	Content: One on one time child	Supportive: Development
4	Supportive: Sharing	Content: Take a pause	**Check-in: IPV Topic 1 - Treat each other as equals**
5	Supportive: Praise/Calm	Content: Positive instructions	Supportive: Praise/Calm
6	Content: Take a pause	Supportive: Positive instructions	**Check-in: IPV Topic 2 - Become a confident parent and supportive spouse**
7	Check-in: Connection	Content: Praise	Supportive: Praise/Calm
8	Supportive: Praise/Calm	Content: Routines	**Check-in: IPV Topic 3 - Share family responsibilities**
9	Supportive: Praise/Calm	Supportive: Praise/Calm	Supportive: Praise/Calm
10	Supportive: Praise/Calm	Content: Positive rules	**Check-in: IPV Topic 4 - Resolve conflict peacefully**
11	Check-in: Covid	Content: Education	Supportive: Praise/Calm
12	Supportive: Praise/Calm	Content: Online	**Check-in: IPV Topic 5 - Listen and talk to each other**
13	Check-in: Rules	Content: Redirection	Supportive: Share
14	Supportive: Praise/Calm	Content: Behaviour / Crying	Content: Anger management 1
15	Check-in: Online	Content: Consequences	Check-in: One on one time
16	Supportive: Praise/Calm	Content: Ignore	Supportive: Praise/Calm
17	Supportive: Praise/Calm	Content: Emotion	Check-in: Praise
18	Check-in: Community safety	Supportive: Praise/Calm	Supportive: Praise/Calm
19	Supportive: Praise/Calm	Content: Budget with children	Supportive: Praise/Calm
20	Supportive: Praise/Calm	Supportive: Praise/Calm	Check-in: Positive
21	Check-in: Emotions	Content: Relax	Check-in: Ignore
22	Supportive: Praise/Calm	Content: Anger management 2	Supportive: Praise/Calm
23	Supportive: Praise/Calm	Check-in: Budget with children	Content: Safety
	Celebrate finishing programme		

This outline is the structure of the 23-day version of the ParentText Intervention. IPV prevention content is noted in bold font. Types of messages include in the programme include Content messages, Check-in messages and Supportive messages.

5.8.2 Paper 2 Additional file 2: IPV Assessment

IPV Assessment

[Invitation via RapidPro to participate in the IPV survey]:

[Invitation to participate in external survey]:

Can we ask you a few more quick questions about your relationship with your partner? Everything you say will be completely private.

If you do not want to answer any questions, it is completely okay.
Type "1" if you are happy to answer some questions. Type "0" if you want to skip this.

[Response to "0"]:

That's okay! It is alright if you do not want to answer these questions. Chat to you later!

[Response to "1"]:

To answer these questions, click this link to take you to an external site for extra privacy:

[URL]

[IPV survey via an external secure server]:

[Assessment Introduction]

Our Relationships

Introduction [Women and Men]

Thank you very much for taking the time to complete this survey about relationships!

Remember that your name, telephone number, and answers to these questions will be kept private. If there are any questions you do not feel comfortable answering, you do not have to answer them.

- Please enter today's date

About You [Women and Men]

- What is your telephone number?
  If you have multiple phone numbers, please use the one linked to the parenting text messages (e.g. WhatsApp number if receiving messages via WhatsApp)

- What is your gender?
  1. Female
  2. Male
  3. Other

- What is your relationship status?[1]
  4. Single (not in a relationship)
  5. Married
  6. Partnered but not married[2]
  7. Divorced or separated
  8. Widowed

- Are you currently living with your partner?
  (Choice options: Yes; No; Don't know)

- How old are you in years?
  (Choice option: *Open numeric answer*)

- What is the highest level or grade you have completed at school?
  1. Never went to school
  2. Primary
  3. Secondary
  4. Higher
  5. Don't know
  6. Refuse to answer

- What is your current employment status?
  1. Working
  2. Unemployed / looking for work
  3. Retired
  4. Student
  5. Refuse to answer

- What is your partner's current employment status?
  1. Working
  2. Unemployed / looking for work
  3. Retired
  4. Student
  5. Refuse to answer

[1] In Jamaica for participants 16-18 years old the relationship status options were: "Single (not in a relationship)" and "In a relationship"

[2] Following feedback received during the consultation stage with stakeholders in Jamaica during the formative evaluation, this response option was changed to "In a relationship / common-law relationship / visiting relationship" in Jamaica

- How many children do you have or care for (including those who may not be directly yours)?
  (Choice option: *Open numeric answer*)

- Is your partner also receiving ParentText messages on their own device?* [*only men were asked this question]
  (Choice options: Yes; No; Don't know)

[Section 1A: Attitudes and Beliefs]

<u>Views and beliefs</u> [Women and Men]

In the community and beyond, people have different ideas about families and what is acceptable behaviour for men and women in the home. For the following statements I would like your views on what is acceptable. There are no right or wrong answers.

Please indicate whether you agree or disagree with the following statements:

(Strongly Agree=1; Agree=2; Neutral=3; Disagree=4; Strongly Disagree=5; Refuse to answer)

1. A woman should obey her husband's wishes even if she disagrees.
2. A couple should decide together things that affect the health and well-being of the family.
3. Fathers would benefit if they were more involved in caring for their children.
4. It is natural and right that men have more power than women in the family.
5. A man has a good reason to hit his wife if she disobeys him.
6. It's a wife's obligation to have sex with her husband even if she doesn't want to.

[Section 1B: Relationships]

Our Relationships [Women and Men]

When two people are in a relationship or live together, they usually have both good and bad moments. For the following questions, think about things you may have experienced with your partner. (Choice options: Never; Once; Few times; Many times; Refuse to answer)

- In the past week, how many times did you and your partner talk about your worries and feelings?
- In the past week, how many times did you and your partner make a decision together?
- In the past week, how many times did you and your partner share housework and caregiving tasks equally?
- In the past week, how many times did you explain your side of a disagreement to your partner in a respectful way?

[Section 2: IPV Survey + Referral Info] [Women]

Experiences [Women]

Being in a relationship with another adult can be challenging. No matter how well adults get along, there are times when they want different things and disagree. Some of the following questions might be hard. Please feel free to answer as truthfully as possible. Remember nobody in your family or community will ever see these answers. For the following questions, think about things you may have experienced from your partner IN THE PAST MONTH. (Choice options: 0, 1, 2, 3, 4, 5, 6, 7, 8+ times; Refuse to answer).

- How many times in the past month did your partner show you they cared and respected your feelings even though they disagreed with you?
- How many times in the past month did your partner insist on knowing where you were at all times?
- How many times in the past month did your partner refuse to give you money for household expenses, even when they had money for other things?
- How many times in the past month did your partner insult, shout, yell, or swear at you?
- How many times in the past month did your partner slap, shove, push, or hit you?
- How many times in the past month did your partner use threats or force to make you have sex?

We appreciate your honesty in responding to these questions. We would now like to ask about your experiences in the PAST 12 MONTHS. (Choice options: 0, 1, 2, 3, 4, 5, 6, 7, 8+ times; Refuse to answer).

- How many times, in the past 12 months, did your partner do one of the following: insult or shout at you, shove or hit you, or force you to have sex?

It is common for adults who are in a relationship to have both good and bad moments. For the following questions, think about how your partner's actions may have impacted you. For these questions think about your experiences with your partner IN THE PAST MONTH. (Choice options: 0, 1, 2, 3, 4, 5, 6, 7, 8+ times; Refuse to answer).

- During any potential times that you were hit in the past week, did you ever fight back physically to defend yourself?
- In the past week, have you ever hit or physically mistreated your partner when they were not hitting or physically mistreating you?

<u>Thank you!</u> [End of IPV Assessment – Women]

Thank you very much for answering these questions! We really appreciate it.

You have the right to be treated with dignity and respect, and live free from fear and violence. If you or someone you know is experiencing any type of abuse, there are many organisations that can help you:

- Domestic Abuse National Hotline: [telephone]
- Link to domestic abuse support services in your area: [URL]
- If you are in an emergency situation, call [999]

[Section 2: IPV Survey + Referral Info] [Men*]

*[*men were only assessed when their partner is not using the chatbot]*

<u>Experiences</u> [Men]

Being in a relationship with another adult can be challenging. No matter how well adults get along, there are times when they disagree, get frustrated with each other, have difficult moments, or want different things. Some of the following questions might be hard. Please feel free to answer as truthfully as possible. Remember nobody in your family or community

will ever see these answers. For the following questions, think about things you may have experienced from your partner IN THE PAST MONTH. (Choice options: 0, 1, 2, 3, 4, 5, 6, 7, 8+ times; Refuse to answer)

- How many times in the past month did you show your partner you cared and respected their feelings even though you disagreed?
- How many times in the past week did you insist on knowing where your partner was at all times?
- How many times in the past month did you refuse to give your partner money for household expenses, even when you had money for other things?
- How many times in the past month did you insult, shout, yell, or swear at your partner?
- How many times in the past month did you slap, shove, push, or hit your partner?
- How many times in the past month did you use threats or force to make your partner have sex?

Remember that your answers will be completely private. Nobody in your family or home will see them. We would now like to ask about your experience in the PAST 12 MONTHS. (Choice options: 0, 1, 2, 3, 4, 5, 6, 7, 8+ times; Refuse to answer).

- How many times, in the past 12 months, did you: insult or shout at your partner, hit or shove your partner, or force your partner to have sex?

It is common for adults who are in a relationship to have both good and bad moments. For the following questions, think about the actions of your partner and the things you may have experienced from them IN THE PAST MONTH. (Choice options: 0, 1, 2, 3, 4, 5, 6, 7, 8+ times; Refuse to answer).

- During any potential times that you may have used violence against your partner, did they ever fight back physically to defend themselves?
- Have you ever been hit or physically mistreated by your partner when you were not hitting or physically mistreating them?

<u>Thank you!</u> [End of IPV Assessment – Men]

Thank you very much for answering these questions! We really appreciate it.

Being in a relationship or married can be difficult sometimes. If you are experiencing challenges and would like advice or support, there are organisations that can help you:

- Relationship and marital support hotline: [telephone]
- Link to marital counselling services in your area: [URL]

[End of Assessment]

<u>The future</u> [Women and Men]

Thank you for responding to these questions!

5.8.3 Paper 2 Additional file 3: Overview of ParentText IPV prevention content

A summary of the topics that are part of the IPV prevention material in ParentText is provided below. An example message corresponding with each topic is also provided. See Supplementary table 17 and 18 for a full overview of the IPV prevention content in ParentText, including mother and gender-neutral versions of the material).

IPV Prevention Content and Example Messages in *ParentText*

Topic	Content	Example message (fathers)
1	Treat each other as equals	*"Family and friends might tell you how a husband or a father should act. But both men and women benefit when they talk to each other and make decisions together. For example, next time a decision needs to be made, involve your partner, and ask what they think!"*
2	Become a confident parent and supportive spouse	*"Get involved! When fathers are engaged in parenting their children, both the child, mother, and father benefit. Set aside some time today to spend with the children."*
3	Share family responsibilities	*"Sharing family responsibilities with your partner can make life less stressful. Think of ways you can share the workload. Doing tasks together can also make them more fun."*
4	Resolve conflict peacefully	*"All adults have disagreements sometimes. But fighting is not an effective way to solve issues. Instead, if you start feeling angry, take a deep breath first and then respond in a calmer way."*
5	Listen and talk to each other	*"Listening and talking to those around us are key to a more peaceful home. Talking to your partner about issues before they become bigger problems can help avoid arguments from building up."*

5.8.4 Paper 2 Additional file 4: CONSORT Checklist

Supplementary table 7: CONSORT checklist

CONSORT 2010 checklist of information to include when reporting a randomised trial*

Section/Topic	Item No	Checklist item	Reported on page No
Title and abstract			
	1a	Identification as a randomised trial in the title	NA
	1b	Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts)	2
Introduction			
Background and objectives	2a	Scientific background and explanation of rationale	3-5
	2b	Specific objectives or hypotheses	4-5
Methods			
Trial design	3a	Description of trial design (such as parallel, factorial) including allocation ratio	4-5
	3b	Important changes to methods after trial commencement (such as eligibility criteria), with reasons	5-6
Participants	4a	Eligibility criteria for participants	5
	4b	Settings and locations where the data were collected	5
Interventions	5	The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	5-7
Outcomes	6a	Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	8-14
	6b	Any changes to trial outcomes after the trial commenced, with reasons	6
Sample size	7a	How sample size was determined	24
	7b	When applicable, explanation of any interim analyses and stopping guidelines	NA
Randomisation:			
Sequence generation	8a	Method used to generate the random allocation sequence	NA
	8b	Type of randomisation; details of any restriction (such as blocking and block size)	NA
Allocation concealment mechanism	9	Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	NA
Implementation	10	Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	NA
Blinding	11a	If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how	NA
	11b	If relevant, description of the similarity of interventions	NA
Statistical methods	12a	Statistical methods used to compare groups for primary and secondary outcomes	14
	12b	Methods for additional analyses, such as subgroup analyses and adjusted analyses	14
Results			
Participant flow (a diagram is strongly recommended)	13a	For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analysed for the primary outcome	8; 19-20
	13b	For each group, losses and exclusions after randomisation, together with reasons	8
Recruitment	14a	Dates defining the periods of recruitment and follow-up	6
	14b	Why the trial ended or was stopped	6
Baseline data	15	A table showing baseline demographic and clinical characteristics for each group	16
Numbers analysed	16	For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	19-20
Outcomes and estimation	17a	For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	19-20
	17b	For binary outcomes, presentation of both absolute and relative effect sizes is recommended	NA
Ancillary analyses	18	Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	NA
Harms	19	All important harms or unintended effects in each group (for specific guidance see CONSORT for harms)	21-24
Discussion			
Limitations	20	Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses	24-25
Generalisability	21	Generalisability (external validity, applicability) of the trial findings	24-25
Interpretation	22	Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	20-24
Other information			
Registration	23	Registration number and name of trial registry	2
Protocol	24	Where the full trial protocol can be accessed, if available	2
Funding	25	Sources of funding and other support (such as supply of drugs), role of funders	24

Citation: Schulz KF, Altman DG, Moher D, for the CONSORT Group. CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. BMC Medicine. 2010;8:18.
© 2010 Schulz et al. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/2.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*We strongly recommend reading this statement in conjunction with the CONSORT 2010 Explanation and Elaboration for important clarifications on all the items. If relevant, we also recommend reading CONSORT extensions for cluster randomised trials, non-inferiority and equivalence trials, non-pharmacological treatments, herbal interventions, and pragmatic trials. Additional extensions are forthcoming: for those and for up-to-date references relevant to this checklist, see www.consort-statement.org.

5.8.5 Paper 2 Additional file 5: Detailed primary and secondary outcome tables

5.8.6 Additional Table 1. Women's experiences of IPV (past month): South Africa

Supplementary table 8: Women's experiences of IPV (past month): South Africa

	Baseline (n = 19 women)	**Post-test (n = 14 women)**	**OR[b] [CI][c] *P* value**
Type of IPV experience [a]			
Coercive control	15 (78.95%)	6 (46.15%)	OR 0.25 [0.05, 1.07] *P*=0.06
Economic violence	8 (42.11%)	5 (35.71%)	OR 0.78 [0.19, 3.08] *P*=0.73
Psychological violence	7 (36.84%)	2 (13.33%)	OR 0.31 [0.05, 1.43] *P*=0.14
Physical violence	1 (5.26%)	1 (6.67%)	OR 1.28 [0.10, 16.99] *P*=0.84
Sexual violence	1 (5.26%)	0 (0%)	OR 0.40 [0.00, 8.02] *P*=0.56
Overall IPV	16 (84.21%)	11 (73.33%)	OR 0.54 [0.10, 2.66] *P*=0.45
Self-dense and perpetration [a]			
Self defence	2 (10.53%)	1 (7.14%)	OR 0.78 [0.07, 6.56] *P*=0.82
Mistreatment	2 (10.53%)	0 (0%)	OR 0.23 [0.00, 3.06] *P*=0.29

[a] % used are proportional to the baseline and post-test sample respectively

[b]OR: Odds ratio

[c]CI: Confidence intervals

5.8.7 Additional Table 2. Women's experiences of IPV (past month): Jamaica

Supplementary table 9: Women's experiences of IPV (past month): Jamaica

	Baseline (n = 24 women)	**Post-test (n = 15 women)**	**OR[b] [CI][c] *P* value**
Type of IPV experience [a]			
Coercive control	20 (74.07%)	12 (70.59%)	OR 0.83 [0.22, 3.18] *P*=0.78
Economic violence	9 (37.50%)	3 (20%)	OR 0.46 [0.10, 1.82] *P*=0.27
Psychological violence	11 (44%)	3 (17.65%)	OR 0.30 [0.07, 1.15] *P*=0.08
Physical violence	0 (0%)	0 (0%)	OR 1.71 [0.01, 323.32] *P*=0.79
Sexual violence	1 (3.70%)	1 (5.88%)	OR 1.61 [0.12, 21.06] *P*=0.69
Overall IPV	24 (96%)	13 (72.22%)	OR 0.15 [0.01, 0.86] *P*=0.03
Self-dense and perpetration [a]			
Self defence	0 (0%)	0 (0%)	OR 1.69 [0.01, 320.13] *P*=0.65
Mistreatment	1 (3.85%)	0 (0%)	OR 0.49 [0.00, 9.66] *P*=0.65

[a] % used are proportional to the baseline and post-test sample respectively

[b]OR: Odds ratio

[c]CI: Confidence intervals

5.8.8 Additional Table 3. Men's perpetration of IPV (past month): South Africa

Supplementary table 10: Men's perpetration of IPV (past month): South Africa

	Baseline (n = 12 men)	**Post-test (n = 12 men)**	**OR[b] [CI][c] *P* value**
Type of IPV perpetration [a]			
Coercive control	10 (83.33%)	9 (75%)	OR 0.61 [0.09, 3.51] *P*=0.59
Economic violence	9 (75%)	4 (33.33%)	OR 0.18 [0.03, 0.87] *P*=0.03
Psychological violence	2 (16.67%)	3 (20%)	OR 0.76 [0.10, 5.79] *P*=0.78
Physical violence	0 (0%)	0 (0%)	OR 0.79 [0.00, 151.95] *P*=0.91
Sexual violence	0 (0%)	0 (0%)	OR 0.79 [0.00, 151.95] *P*=0.91
Overall IPV	11 (84.62%)	9 (75%)	OR 0.56 [0.08, 3.14] *P*=0.51
Type of IPV experience [a]			
Self defence	0 (0%)	0 (0%)	OR 1.00 [0.01, 191.81] *P*=1.00
Mistreatment	0 (0%)	0 (0%)	OR 0.93 [0.00, 177.33] *P*=0.97

[a] % used are proportional to the baseline and post-test sample respectively

[b]OR: Odds ratio

[c]CI: Confidence intervals

5.8.9 Additional Table 4. Descriptive statistics of attitudes toward IPV

Supplementary table 11: Descriptive statistics of attitudes toward IPV

	South Africa				Jamaica	
	Women		*Men*		*Women*	
	Baseline (n = 19)	**Post-test** (n = 14)	**Baseline** (n = 17)	**Post-test** (n = 16)	**Baseline** (n = 27)	**Post-test** (n = 18)
Disagreement attitude: A woman should obey her husband's wishes even if she disagrees.	2.58 (1.39)	1.93 (1.21)	2.82 (1.19)	1.94 (1.06)	2.67 (1.30)	2.67 (1.08)
Decision-making attitude: A couple should decide together things that affect the health and well-being of the family.	1.26 (0.45)	2.00 (1.20)	1.71 (0.85)	1.13 (0.34)	1.21 (0.42)	1.28 (0.46)
Caregiving attitude: Fathers would benefit if they were more involved in caring for their children.	1.42 (0.51)	1.53 (0.52)	1.35 (0.61)	1.13 (0.34)	1.39 (0.50)	1.39 (0.50)
Equality attitude: It is natural and right that men have more power than women in the family.	2.37 (1.12)	2.40 (1.55)	3.24 (1.52)	2.25 (1.39)	2.79 (1.34)	2.83 (0.99)
Violence attitude: A man has a good reason to hit his wife if she disobeys him.	1.21 (0.42)	1.20 (0.41)	1.53 (0.51)	1.13 (0.34)	1.33 (0.68)	1.67 (1.14)
Sex attitude: It's a wife's obligation to have sex with her husband even if she doesn't want to.	1.26 (0.45)	1.20 (0.41)	1.88 (0.60)	1.31 (0.60)	2.14 (1.27)	2.06 (1.00)
Overall attitude: Overall attitude toward gender roles and IPV	10.11 (2.71)	10.13 (3.89)	11.90 (3.82)	8.88 (2.63)	11.39 (3.45)	11.89 (2.35)

Note: A lower score indicates more gender-equitable attitude

5.8.10 Additional Table 5. Inferential statistics of attitudes toward IPV

Supplementary table 12: Inferential statistics of attitudes toward IPV

	South Africa		Jamaica
	Women (n = 14)	*Men (n = 17)*	*Women (n = 18)*
	Beta [CI][a] *P* value	**Beta [CI][a] *P* value**	**Beta [CI][a] *P* value**
Disagreement attitude: A woman should obey her husband's wishes even if she disagrees.	Beta -0.65 [-1.56, 0.26] *P*=0.16	Beta -0.89 [-1.66, 0.12] *P*=0.02	Beta 0.00 [-0.73, 0.73] *P*=1.00
Decision-making attitude: A couple should decide together things that affect the health and well-being of the family.	Beta 0.74 [0.15, 1.32] *P*=0.01	Beta -0.58 [-1.03, 0.13] *P*=0.01	Beta 0.06 [-0.19, 0.32] *P*=0.63
Caregiving attitude: Fathers would benefit if they were more involved in caring for their children.	Beta 0.11 [-0.32, 0.46] *P*=0.52	Beta -0.23 [-0.57, 0.11] *P*=0.19	Beta 0.00 [-0.30, 0.29] *P*=0.98
Equality attitude: It is natural and right that men have more power than women in the family.	Beta 0.03 [-0.86, 0.93] *P*=0.94	Beta -0.99 [-1.98, 0.01] *P*=0.05	Beta 0.05 [-0.67, 0.77] *P*=0.90
Violence attitude: A man has a good reason to hit his wife if she disobeys him.	Beta -0.01 [-0.29, 0.27] *P*=0.94	Beta -0.40 [-0.70, 0.10] *P*=<0.01	Beta 0.33 [-0.20, 0.86] *P*=0.22
Sex attitude: It's a wife's obligation to have sex with her husband even if she doesn't want to.	Beta -0.06 [-0.36, 0.23] *P*=0.67	Beta -0.57 [-0.98, 0.16] *P*=<0.01	Beta -0.09 [-0.78, 0.61] *P*=0.81
Overall attitude: Overall attitude toward gender roles and IPV	Beta 0.03 [-2.19, 2.25] *P*=0.98	Beta -0.29 [-0.50, -0.09] *P*=<0.01	Beta 0.50 [-1.32, 2.31] *P*=0.59

Note: A lower score indicates more gender-equitable attitude

[a] CI: Confidence intervals

5.8.11 Additional Table 6. Descriptive statistics of gender-equitable behaviours

Supplementary table 13: Descriptive statistics of gender-equitable behaviours

	South Africa				Jamaica	
	Women		*Men*		*Women*	
	Baseline (n = 19)	**Post-test** (n = 15)	**Baseline** (n = 17)	**Post-test** (n = 16)	**Baseline** (n = 26)	**Post-test** (n = 18)
Feelings How many times did you and your partner talk about your worries and feelings?	2.00 (0.94)	1.87 (1.30)	1.94 (0.83)	2.19 (0.66)	1.88 (0.95)	1.83 (1.04)
Joint decisions How many times did you and your partner make a decision together?	2.16 (0.90)	2.47 (0.83)	2.00 (0.79)	2.67 (0.49)	2.12 (1.07)	1.83 (1.10)
Housework How many times did you and your partner share housework and caregiving tasks equally?	1.67 (0.91)	2.21 (1.05)	1.88 (1.11)	2.69 (0.48)	1.77 (1.18)	1.89 (1.08)
Respect How many times did you explain your side of a disagreement to your partner in a respectful way?	1.63 (1.07)	1.53 (1.25)	1.65 (0.93)	2.38 (0.81)	1.85 (0.91)	1.83 (0.86)
Overall Overall gender-equitable behaviours	7.37 (2.95)	7.93 (3.53)	7.81 (1.94)	9.75 (1.61)	7.14 (3.49)	7.39 (2.85)

Note: A higher score indicates more gender-equitable behaviours in the past week

5.8.12 Additional Table 7. Inferential statistics of gender-equitable behaviours

Supplementary table 14: Inferential statistics of gender-equitable behaviours

	South Africa		Jamaica
	Women (n = 14)	*Men (n = 17)*	*Women (n = 18)*
	IRR[a] [CI][b] *P* value	**IRR[a] [CI][b] *P* value**	**IRR[a] [CI][b] *P* value**
Feelings How many times did you and your partner talk about your worries and feelings?	IRR 0.93 [0.57, 1.52] *P*=0.78	IRR 1.13 [0.70, 1.82] *P*=0.62	IRR 0.97 [0.62, 1.51] *P*=0.90
Joint decisions How many times did you and your partner make a decision together?	IRR = 1.14 [0.73, 1.78] *P*=0.56	IRR 1.33 [0.84, 2.12] *P*=0.22	IRR 0.87 [0.56, 1.33] *P*=0.52
Housework How many times did you and your partner share housework and caregiving tasks equally?	IRR 1.33 [0.8, 2.2] *P*=0.27	IRR = 1.43 [0.91, 2.27] *P*=0.13	IRR = 1.07 [0.68, 1.66] *P*=0.77
Respect How many times did you explain your side of a disagreement to your partner in a respectful way?	IRR 0.94 [0.54, 1.61] *P*=0.82	IRR 1.44 [0.89, 2.37] *P*=0.14	IRR 1.14 [0.73, 1.78] *P*=0.56
Overall Overall gender-equitable behaviours	IRR 1.08 [0.84, 1.37] *P*=0.55	IRR 1.25 [1, 1.55] *P*=0.05	IRR 1.03 [0.83, 1.29] *P*=0.76

Note: A higher score indicates more gender-equitable behaviours in the past week

[a] IRR: Incidence rate ratio

[b] CI: Confidence intervals

6 Paper 3 – Using a digital parenting intervention to prevent intimate partner violence and promote gender equitable behaviours in South Africa and Jamaica: A qualitative study exploring partnered parents' experiences of ParentText

The following chapter has been submitted to an academic journal. This paper has been written in alignment with the journal's submission guidelines. Supplementary materials for this paper are available in Paper 3 Additional files. Figures and tables are numbered in alignment with the overall thesis.

Schafer, M.,[1] Lachman, J.M., [1,2,3,4] Zinser, P., [1] Calderon, F., [1] Han, Q.,[1] Facciola, C., [5] Clements, L., [5] Haupt Ronnie, G.,[3] Kame, Z.,[6] Ntentema, Z.,[3] Sheil, R.,[7] Harris, J.,[7] Coore, C.,[7] Gardner, F., [1]

[1] Centre for Evidence Based Intervention, Department of Social Policy and Intervention, University of Oxford, [2] Social and Public Health Sciences Unit, University of Glasgow, [3] Centre for Social Science Research, University of Cape Town, [4] Parenting for Lifelong Health, Oxford, UK [5] IDEMS International, [6] Social Worker, Cape Town, South Africa [7] UNICEF Jamaica

Corresponding Author: Moa Schafer, Centre for Evidence Based Intervention, Department of Social Policy and Intervention, University of Oxford, moa.schafer@spi.ox.ac.uk

The final published version of this chapter is now available as the following Open Access article:

Schafer, M., Lachman, J., Zinser, P., Calderon, F., Han, Q., Facciola, C., ... & Gardner, F. Using a Digital Parenting Intervention to Prevent Intimate Partner Violence and Promote Gender Equitable Behaviors in South Africa and Jamaica: A Qualitative Study Exploring Partnered Parents' Experiences of ParentText. *Violence Against Women*.

https://doi.org/10.1177/10778012251329363

Journal website link: https://journals.sagepub.com/doi/full/10.1177/10778012251329363

© 2025 The Author(s). This article is distributed under the terms of the Creative Commons Attribution 4.0 License (https://creativecommons.org/licenses/by/4.0/), which permits any use, reproduction, and distribution of the work without further permission, provided the original work is attributed as specified on the SAGE Open Access page (https://us.sagepub.com/en-us/nam/open-access-at-sage).

6.1 My role and statement of authorship

I confirm that I carried out the majority of the work in this research study. I conceptualised of the study, developed the IPV prevention content used in the intervention, and designed the qualitative instruments. I also liaised with research partner staff from partner organizations assisting with programme implementation and with the arrangements for the interviews and focus group discussions. I carried out in-person interviews and focus group discussions, conducted the English transcriptions, as well as planned and conducted the qualitative data analyses. I also drafted and revised the present manuscript. In summary, MS, JML and FG participated in the design of the study, with guidance from ZP, CF, HQ, and FC. MS carried out the qualitative in-person data collection and the qualitative data analysis with support from HRG, KZ, NZ, SR, HJ, and CC. MS drafted the manuscript, with JML and FG contributing. All authors approved the final manuscript.

6.2 Abstract

This qualitative study explores caregivers' experiences of using a pre-programmed, chatbot parenting intervention with integrated intimate partner violence (IPV) prevention content. The intervention aims to address the challenge of scale-up that in-person parenting programmes often face, whilst seeking to reduce both IPV and violence against children simultaneously. Conducted in South Africa and Jamaica, individual interviews and focus group discussions exploring the chatbot IPV prevention content were held with male and female caregivers. The thematic analysis revealed that caregivers perceived the chatbot to be accessible and observed positive changes in relationship dynamics, while also noting some technological barriers and limitations.

Keywords*:* intimate partner violence, violence against women, family violence, digital intervention, parenting

6.3 Background

Violence against women (VAW) is a public health issue with severe consequences that affects individuals worldwide (World Health Organization (WHO), 2021). Research estimates have revealed that over 27% of women aged over 15 years in intimate partnerships have experienced physical and/or sexual IPV at least once in their lives, underscoring the prevalence of intimate partner violence (IPV), the most common form of VAW (WHO, 2021). In recent years, there has been an increasing awareness surrounding the co-occurrence of IPV and other forms of violence in the family such as violence against children (VAC) (Pearson et al., 2022). Indeed, IPV and VAC share numerous risk factors, including acceptance of family violence and parental history of abuse, and both forms of violence also have similar short- and long-term consequences (Alhusen et al., 2014; Gracia et al., 2017). Notably, despite historically being addressed separately, with a growing awareness of the intersections between IPV and VAC, there have been increasing calls for combined prevention efforts that target both forms of violence simultaneously in order to achieve more sustainable impact (Guedes et al., 2016).

Amongst prevention efforts seeking to address IPV, there is a growing trend toward gender-transformative approaches, which seek to challenge harmful gender norms and promote equitable, nonviolent behaviours and attitudes (Levy et al., 2020). These approaches have shown promise in shifting restrictive gender norms and reducing IPV perpetration (Casey et al., 2018; Doyle et al., 2023; Marcos-Marcos et al., 2023). For instance, a randomised controlled trial (RCT) of the gender-transformative couples-intervention 'Bandebereho' in Rwanda found that, in comparison to the control group, women in the intervention arm reported less past-year physical IPV, and men and women in the intervention arm also reported less child physical punishment (Doyle et al., 2018). Similarly, an RCT of Stepping Stones and Creating Futures, combining a gender transformative and economic strengthening approach, found that

at 2-year follow-up, in the intervention group, men's self-reported past year IPV perpetration was lower (Gibbs et al., 2020).

In the field of VAC, parenting programs have emerged as a key strategy for prevention of family violence, with studies demonstrating promising results in reducing child maltreatment and harsh parenting practices (Backhaus et al., 2023; WHO, 2022). In addition to addressing VAC, parenting programmes have also been gaining momentum as an entry point for addressing other forms of violence in the family, such as IPV (UNICEF Innocenti et al., 2023). However, despite robust evidence, scaling up in-person parenting programmes poses many challenges, especially in low- and middle-income countries (LMICs) where there are often limited financial resources for development and implementation, limiting the reach of intervention (Sanders et al., 2021). As such, recognizing the potential of using technology and mobile devices to overcome barriers to scale up, digital parenting interventions have started gaining traction (Awah et al., 2022; David et al., 2024). Indeed, within the field of prevention science, an increasing number of digital and text-messaging based interventions are being adopted to deliver behaviour change interventions (Hall et al., 2015). However, despite the growing use of technology in programme delivery, there is a very limited evidence base on digitally delivered programmes seeking to prevent IPV (Anderson et al., 2019).

Notably, one newly created digital intervention that has integrated IPV prevention material is ParentText, a digital chatbot intervention, that builds on the in-person Parenting for Lifelong Health (PLH) parenting programme (Cluver et al., 2018; Ward et al., 2020), which seeks to improve child wellbeing and prevent violence against children. Indeed, with the goal of addressing multiple forms of family violence concurrently, content seeking to prevent IPV has

therefore been developed and integrated into the ParentText chatbot (Schafer et al., 2023). The ParentText chatbot with the integrated IPV prevention material has recently been piloted in a formative research study conducted in Jamaica and South Africa, two countries where rates of IPV are particularly concerning. South Africa exhibits one of the highest global rates of IPV, with studies indicating lifetime IPV prevalence ranging from 20% to 50% (Gordon, 2016; Sere et al., 2021; Shai & Sikweyiya, 2015). In Jamaica, rates of violence against women are also alarming, with 24% of women reporting experiences of physical and/or sexual violence from an intimate partner at some stage in their lives (OECD, 2023).

Preliminary findings from the formative pilot study in Jamaica and South Africa revealed tentative, yet significant, pre-post reductions in overall IPV experience among women, as well as reductions in men's overall harmful IPV attitudes (Schafer et al., 2024). The formative pilot study seeking to embed IPV prevention content in ParentText, is also part of a wider project, the Global Parenting Initiative (GPI), which includes programme implementation and randomised trials in a number of countries. The GPI is supported by UNICEF and other funders, and is conducted in collaboration with national government departments, aiming to scale up the ParentText chatbot and other digital applications, in several countries, including Malaysia, the Philippines, and Mexico. It is within this wider study, which the present qualitative study is nested. Indeed, building on these preliminary, yet promising, findings the present qualitative study sets out to better understand parents' experiences of using the chatbot, in order to understand how the chatbot and the IPV content is perceived, and any potential changes participants observe following the intervention. As such, the present paper seeks to answer the overarching research question: How do partnered parents in South Africa and Jamaica perceive their experience interacting with a chatbot parenting intervention? More specifically, it seeks to address the following research questions:

1. What are partnered parents' experiences of using a chatbot parenting intervention in terms of improving the quality of their partner relationships, reducing conflict, and preventing intimate partner violence?
2. What are the perceptions of partnered parents on the content and structure of ParentText, especially with respect to the ParentText content on relationships?

6.4 Methods

6.4.1 Study design

This qualitative study is embedded in a larger research project guided by the Medical Research Council (MRC) framework (Skivington et al., 2021) on the development and testing of the ParentText chatbot intervention, delivered in Jamaica and South Africa (Schafer et al., 2024). The overall aim of the project which this qualitative study is nested within is to examine the feasibility and preliminary effectiveness of the intervention on preventing IPV (Schafer et al., 2024). In the study, after participants had been enrolled, they received ParentText messages over the course of three weeks, with the main IPV prevention material delivered on Day 2 (see Additional file 1 for the intervention schedule). Check-in messages that remind parents of activities and provide troubleshooting support were also provided, along with one check-in message per IPV prevention topic sent every two days. A summary of the IPV prevention topics and material is available in Additional file 2. For more information on the ParentText intervention content see Schafer et al. (2023) and Schafer et al. (2024).

6.4.2 Study sites and participants

The current research was conducted at an urban site in Cape Town in the Western Cape province, in South Africa, and at one urban site and two rural sites across three parishes

(Kingston, St. Catherine, St. Elizabeth) in Jamaica. Participants were recruited to take part in ParentText through convenience sampling by local research assistants in Cape Town and by members of country office UNICEF staff in Jamaica. In South Africa, recruitment primarily took place in neighbourhoods, townships, and communities in urban Cape Town. In Jamaica, recruitment took place through community and school outreach efforts, and while the aim was to recruit both men and women, due to resource restrictions and challenges reaching men, as described further in the discussion, only women were recruited in Jamaica. Caregivers were eligible for inclusion in the study if they were: over 18 years old in South Africa and over 16 years old in Jamaica (visits to centres for adolescent mothers in Jamaica meant that adolescent parents aged over 16 years old were also included in Jamaica); currently caring for a child between the ages of 0 to 17 years; being in a relationship (defined as having a partner or being married); having access to a phone that could receive messages on WhatsApp or Telegram and that could connect to the internet or use 3G; provided consent to participate in the study; and able to speak English or isiXhosa (South Africa only).

6.4.3 The intervention

ParentText is a chatbot intervention designed for parents and caregivers of children aged 0 to 17 years, which utilises automated pre-programmed messaging through platforms such as WhatsApp, Telegram, Facebook Messenger, and SMS for those without smartphones. The parenting content within ParentText is drawn from the in-person Parenting for Lifelong Health parenting programmes (Cluver et al., 2018; Ward et al., 2020), which has been adapted together with local partners in various low- and middle-income countries (LMICs), including South Africa, Jamaica, Sri Lanka, Malaysia, and the Philippines to ensure cultural relevance. The content has also been translated into the countries' local languages. Participants enrolled in the intervention receive ParentText messages over three weeks, tailored to their children's

developmental stages. The content is delivered in various formats including text, images, audio, and video, depending on the digital needs of the user, with text-based options to suit phones with less storage space and data, and audio-video content available for users with greater access to data and phone storage. Troubleshooting messages are also provided to participants, encouraging them to practise skills and address any challenges encountered. The parenting content in ParentText focuses on three themes: 1) building relationships through quality time, 2) positive reinforcement, and 3) stress reduction for caregivers. Additionally, the chatbot covers topics such as child development, family finances, and partner relationships, which is the focus of this study. The IPV prevention content in ParentText was developed in a separate study (see Schafer et al. (2023)) and is based on addressing key risk factors associated with IPV and includes the topics: (1) Treat each other as equals; (2) Become a confident parent and supportive spouse; (3) Share family responsibilities; (4) Resolve conflict peacefully; (5) Listen and talk to each other (see Additional file 2 for further details).

6.4.4 Data collection

In total, 20 in-person individual interviews (IDs) were conducted, with 13 in South Africa (n=8 women; n=5 men) and 7 in Jamaica (n=7 women). In South Africa, four in-person focus groups discussions (FGDs) were held, two groups with men (n=7 men) and two groups with women (n=9 women). Male interviews and FGDs in South Africa were conducted in English and Xhosa by a male local research assistant. Female interviews and FGDs were conducted in English by the first author with assistance from a local female research assistant interpreter who spoke Xhosa and English. In Jamaica, the female interviews were primarily conducted in English by the first author with interpretation assistance from female and male UNICEF Jamaica staff who spoke English and Jamaican Patois. Interviews and FGDs were audio recorded with consent from participants. Interviews and FGDs in South Africa were

anonymised and transcribed and translated into English by a locally hired transcriber who spoke English and Xhosa. Interviews in Jamaica were transcribed and anonymised by the first author.

6.4.5 Data analysis

Thematic analysis was conducted following Braun and Clarke's (2006) six-phase processes in NVivo 14 (QRS International, 2023). These six steps involve: (1) familiarisation with the data; (2) generating initial codes, (3) generating themes; (4) reviewing potential themes; (5) defining and naming themes; and (6) producing the report (Braun and Clarke, 2006). A combined inductive and deductive method was used by drawing upon pre-existing theory to interpret the data, whilst also adopting a data-driven approach throughout the analysis (Braun & Clarke, 2021). As such, while the analysis was data-driven, it is important to acknowledge that the themes which were developed drew upon theoretical assumptions related to literature on gender equality and violence prevention. Thematic analysis was conducted by the first author, who also discussed the findings with the ParentText research assistants from South Africa and Jamaica who supported with data collection and interpretation.

6.4.6 Trustworthiness and rigour

Lincoln and Guba's (1985) framework was used to ensure trustworthiness of the data collected and analysed. More specifically, the four criteria for assessing trustworthiness proposed by Lincoln and Guba (1985), namely, credibility, transferability, dependability, and confirmability, were used to improve the rigour of the research. To establish credibility, a combination of both individual interviews and FGDs were conducted across the two study contexts as a form of triangulation, and debriefing sessions with the research assistants and

interpreters were used to discuss themes to investigate credibility (Rohleder & Lyons, 2017). Transferability was improved by providing a thick description of the participants and the research process, including the setting, sample, demographic characteristics, and inclusion criteria of the study (Korstjens & Moser, 2018). To enhance dependability, an audit trail was maintained throughout the study to record analytical decisions made and to check that data were accurately recorded and stored, with memos written after each data collection and analysis session to keep track of relevant information (Given, 2008). The primary author also kept a reflexive journal with notes to reflect on the influence of their background, interests, and perceptions on the research process (Burke, 2021). Indeed, practicing reflexivity throughout all stages of the research was a critical part of the study. Further documented reflections and considerations surrounding the primary author's positionality is provided in the positionality section.

6.4.7 Ethics

Ethical approval was obtained by the Department Research Ethics Committee (DREC) at the University of Oxford (CUREC 2 Ref No: R69569/RE009). Informed consent to participate in the study was obtained from all participants prior to enrolment in the chatbot and before the interviews and FGDs. Confidentiality procedures were also discussed at length with participants prior to the interviews and FGDs, to ensure participants felt safe and comfortable to share their thoughts in front of other participants and the interviewer. Pseudonyms are used to protect confidentiality. Following the interviews and FGDs, participants were automatically provided information on how to access local services which supported individuals experiencing violence. In accordance with UNICEF Risk Communication and Community Engagement Guidelines (UNICEF, 2020), ParentText is also designed to detect high-risk keywords to identify potential disclosure of dangerous situations through the free

text field. After detection, ParentText automatically provides participants with an empathetic and empowering reply with referral details customised to the country, which supports parent and child safety (e.g., hotlines).

6.4.8 Positionality

The primary author of this study was responsible for designing the study, interviewing most participants, analysing transcripts, and interpreting the findings. She is a cisgender, Caucasian woman, who grew up in southeast Asia, carried out her higher education in Europe, and is currently part of a research institution in the Global North. As such, adopting an open-ended, semi-structured interview and focus group design, was therefore an important aspect of building rapport with participants. Throughout data analysis, the author actively considered how her own identity as a Caucasian woman, and as someone in a position of social privilege as a researcher part of an academic institution in the Global North, impacted her data interpretations in a study involving men and women living in the Global South.

6.5 Results

6.5.1 Participant characteristics

In total, 28 participants in relationships (N=16; 53.6% female) took part in the interviews and focus groups (see characteristics summarised in Table 15). The mean age of participants was 32.5 years. Amongst women, the majority were married (71.4% in South Africa; 75.0% in Jamaica), and amongst men a greater proportion were partnered but not married (83.3%). On average, participants had two children, with a majority working (53.6%) and with a partner who was working (67.9%).

Table 15. Participant demographic characteristics across the two countries and overall

	Demographics expressed as percentages, count, mean, and SD			
	South Africa		**Jamaica**	**Overall**
Demographic characteristic	**Female (*n* = 7)**	**Male (*n* = 12)**	**Female (*n* = 8)**	**Total (*n* = 28)**
Gender, n (%)				
Female	7 (100%)	–	8 (100%)	16 (57.1 %)
Male	–	12 (100%)	–	12 (46.4 %)
Age, mean (SD)	36 (5.35)	30.1 (3.4)	31.6 (18.2)	32.5 (10.3)
Relationship, n (%)				
Married	5 (71.4%)	2 (16.7%)	6 (75.0%)	13 (46.4%)
Partnered but not married	2 (28.6%)	10 (83.3%)	2 (25.0%)	15 (53.6%)
Living with partner (%)	6 (85.7%)	6 (41.7%)	5 (62.5%)	17 (60.7%)
Number of children, mean (SD)	3.43 (0.9)	1.33 (0.8)	1.88 (0.8)	2.07 (1.2)
Education, n (%)				
Primary	1 (14.3%)	0 (0%)	4 (50.0%)	5 (17.9%)
Secondary	2 (42.9%)	6 (50.0%)	2 (25.0%)	11 (39.2%)
Higher	4 (28.6%)	6 (50.0%)	2 (25.0%)	9 (32.1%)
Employment, n (%)				
Working	4 (57.1%)	8 (66.7%)	3 (37.5%)	15 (53.6%)
Unemployed / looking for work	3 (42.9%)	4 (33.3%)	1 (12.5%)	9 (32.1%)
Student	0 (0%)	0 (0%)	3 (37.5%)	3 (10.7%)
Retired	0 (0%)	0 (0%)	1 (12.5%)	1 (3.6%)
Partner's employment, n (%)				
Working	4 (57.1%)	11 (91.7%)	4 (50.0%)	19 (67.9%)
Unemployed / looking for work	3 (42.6%)	1 (33.3%)	2 (25.0%)	7 (25.0%)
Student	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Retired	0 (0%)	0 (0%)	1 (12.5%)	1 (3.6%)
Refuse to answer	0 (0%)	0 (0%)	1 (12.5%)	1 (3.6%)

Note. SD: standard deviation

6.5.2 Themes

The thematic analysis identified three main themes: (1) accessible and non-judgemental perception of chatbot; (2) changes in relationship dynamics; (3) barriers and design limitations (see Table 16).

Table 16. Overview of themes

Themes	Sub-theme
Accessible and non-judgemental perception of chatbot	Flexibility of chatbot and ease of access Anonymity encourages chatbot use
Changes in relationship dynamics	Improved communication and reduced conflict Changes in division of workload Gender role perceptions and changes
Barriers and design limitations	Technological and community barriers Joint chatbot use

Accessible and non-judgemental perception of chatbot

Flexibility of chatbot and ease of access.

One primary theme that was identified surrounding the chatbot was the convenience of the programme, and its ease of access:

> It was the convenience of the programme because I'm more of a person who is always on the phone, so it was convenient for me, even if I'm busy with something, then just, to check the text, just read, just for a full minute, then maybe answer, and get back to what I was doing. It is really convenient. (Sifiso, 27-year-old man, South Africa)

Being able to access the chatbot when travelling was also highlighted by participants: "On the road I had access to it" (Alvita, 57-year-old woman, Jamaica). Multiple participants emphasised the ease of access of having the programme content delivered via their phone: "Because on your phone it's not a specific time that I have to now dress up, and be in that place at this one time, then, it's anytime in my phone." (Vathiswa, 33-year-old woman, South Africa). In addition, participants expressed that even if they had a support network, the chatbot was convenient because it was accessible in instances when their support network

was unavailable or busy: “Sometimes people don't have the time to really sit down and hear what you're going through, cause everybody busy, busy. … It made me feel like somebody cares.” (Jayden, 49-year-old woman, Jamaica)

Anonymity encourages chatbot use.

Many participants, particularly men, shared how they often felt they did not have people around them to turn to for help, and that receiving advice and support via the chatbot made them feel like they could receive information without being judged:

> Most of us we struggle to talk about our stuff, in like personally to people, because you don’t know what the person is going to say next, so it’s better talking to a computer because it won’t judge you, it won’t give you a certain attitude or look (Zolani, 27-year-old man, South Africa)

This sense of comfort was echoed by other participants: “I have nobody that I trust that I usually speak to. So, communicating on my phone was, it was, very comfortable (Luniko, 32-year-old man, South Africa). The anonymity of the chatbot was also emphasised by participants as something that made them more open to take onboard new advice:

> I don’t really have, like, a person I could say that I talk to … The nice thing is that, just, it goes on your phone, and you can’t say who it was …who that just sent you a text, you know, just to motivate you, and … when you’re getting advice from something anonymous, you’re like, ‘Oh, that’s a good point’ (Luniko, 32-year-old man, South Africa)

Changes in relationship dynamics

Another theme identified included changes in relationship dynamics which participants experienced after the programme.

Improved communication and reduced conflict.

Participants highlighted improved communication and emotion regulation in times of conflict as a major change after using the chatbot, with some even sharing that the content in the intervention helped them avoid using violence:

> I learned that whenever we are having a conflict, I can leave for a couple of minutes to give my partner time to think about what we are fighting about, and also for me to cool down, because if we continue to argue or fight in the household, nothing will be resolved … I learned to deal with conflict in a positive manner, thus avoiding raising a hand on my partner (Thembile, 32-year-old man, South Africa)

Others explained how the content on emotion regulation and conflict resolution in the chatbot helped them learn how to communicate better during difficult conversations, and instead of reverting to yelling, how they learned to take a pause, and calm down first: “the breathing exercise, that one is good, especially when I've been frustrated … it's helping me take a minute to breathe” (Cedella, 27-year-old woman, Jamaica). Learning to take a pause during conflict was a skill that other participants explained that they had learned from the chatbot too:

> It helped us change how we resolved our conflict. We used to yell and shout, however, now if I can see that she is angry, I wait for her to calm down so that we can talk and we manage to resolve our issues in a proper manner, after we’ve calmed down (Luniko, 32-year-old man, South Africa)

This participant also shared how their own behaviour change and approach to conflict, encouraged their partner to change as well:

> When she saw that I'm approaching things more differently, then she started following my actions. That's why I said it taught us both. … Once you see that, 'Oh there's a different approach now' … in tasks that we usually do, we start sitting down and talking about it, and engaging more with each other than … even with decisions that we usually make. (Luniko, 32-year-old man, South Africa)

This experience was echoed by multiple participants: "He's been changing, he's not getting angry. And I'm not getting angry … Yes. That was good. Before, anything I said to him, we'd get angry and annoyed, frustrated, but now with ParentText, I'm learning a different approach" (Cedella, 27-year-old woman, Jamaica).

Changes in division of workload.

Participants also shared how they had adjusted their approach to housework and sharing responsibilities following the intervention: "We made a list to help with the house chores, of who should do the dishes, or who will sweep the house. Therefore that has helped us to adjust better and allowed us to resolve the household chores" (Luniko, 32-year-old man, South Africa). This was reiterated by multiple participants, sharing experiences of more equal approaches to housework after using the chatbot: "There's a change, you know. So, while I'm doing the laundry, he'll be sweeping up outside" (Cedella, 27-year-old woman, Jamaica). Another participant explained how even planning the workload was no longer done by only one person, but rather done together after the programme:

> After with the program, I managed to share more tips of talking about stuff and then definitely the change has been there … now we started doing things together instead of

me telling them what I want or what needed to be done. (Vathiswa, 33-year-old woman, South Africa)

Participants also shared perceptions about how the chatbot helped them recognise circumstances where the workload was unequal, which led to more support in the home:

> The program helped me, especially with the part where I would do everything alone. This would put pressure on me because I would come back home tired and still try to do everything alone. From cleaning to doing dishes, everything. So this would make me always yell and shout but then with the texts from the programme, there was a part where it said, 'Do you talk to your partner about certain things? Do you share?' So when I started to do that, everyone started to come up with suggestions (Bongeka, 40-year-old woman, South Africa)

Gender role perceptions and changes.

Participants also discussed how they felt their perspectives toward gender roles changed following the digital intervention despite prevailing cultural norms:

> There is a cultural myth in our culture that if you help your partner with household chores then they will perceive you in another way. But I've learned that no there is no such a thing, and sharing workload with your partner, when she's cooking, you are doing washing. (Ntobeko, 34-year-old man, South Africa)

This shift in perspective toward gender and roles in the home was reiterated by other participants as well: "It removed the mentality that 'women should stick to the kitchen', that the 'department of women' is the kitchen and cooking and stuff. Me, 'I can't do that', you know, and 'You, do shopping and stuff' (Vuyile, 36-year-old man, South Africa). Positive

shifts in relationships and gender dynamics were expressed by multiple participants, where improved communication and respect was also perceived to be associated with less conflict:

> Communication became stronger and with better communication the respect also started to grow. And I stopped looking down on women. I now look at my partner as my equal. The more respect there is, the more you become happy. With less conflict. (Mandla, 32-year-old man, South Africa)

Participants also explained how they started to make more joint decisions after interacting with the ParentText chatbot: “I can see that the program has changed this. That now I know that when I make a decision, I know that I shouldn’t make that decision alone; I must sit down with her and then we will decide.” (Bongani, 28-year-old man, South Africa).

Barriers and design limitations

Despite the benefits and positive changes experienced by participants, there were also various barriers to access and design limitations faced, which was the third theme that was identified.

Technological and community barriers.

To prevent challenges with lack of storage space and access to data, ParentText was designed with different data and storage options in mind (Schafer et al., 2023). More specifically, participants were able to choose whether to use a text-only or multi-media (i.e. text accompanied by audio, illustrations, or video) version of the intervention. Despite these options, various participants expressed that they faced technological barriers, including challenges with accessing data and limited phone storage: “That was a problem for me, the data, and storing on my phone (Cedella, 27-year-old woman, Jamaica). This was echoed by others as well, who tried to delete other content on their phone to free up more space: “It fills up my phone. Yeah, that's why. So sometimes I'm like delete, delete, delete” (Martisha, 53-year-old woman, Jamaica).

Participants also shared other environmental problems they experienced, such as challenges charging their phone due to lack of electricity during periodic national blackouts: “I would also experience a problem with the electricity while I’m busy with the programme, then the battery would be low. In our streets the electricity can usually go off for up to like four days” (Amahle, 43-year-old woman, South Africa). In light of these barriers, and other limitations, such as limited phone use during work hours, participants expressed a desire to be able to schedule the timing of messages: “The reason I was behind in the program is that we are not allowed to answer our phones in the workplace.” (Zintle, 45-year-old woman, South Africa). The request to schedule messages was also highlighted by others: “It’d be lovely to choose the time” (Vathiswa, 33-year-old woman, South Africa), which was reiterated by others: ‘it’d be better if … it sent messages after six because … if I’m busy I’m not able to pay attention to my phone. But if you do it after six, then I’ll be free and able to” (Mandla, 32-year-old man, South Africa).

In addition to technological barriers, some parents noted that they faced certain cultural barriers while using the chatbot. One participant, for example, shared an instance where despite seeing progress within the home, they still experienced harmful gender roles and attitudes:

> Yes, he cooks now, even though sometimes when I remind him that today it’s his turn to cook, he’ll be complaining and reminding me that I am a wife and it’s my duty to cook in the household (Zintle, 45-year-old woman, South Africa)

Other participants shared examples where they experienced positive changes in their relationship, but where, harmful gender roles and attitudes returned in contexts outside of the immediate family:

> But now the other day, there was his sister in the house, normally … he would change nappies but when the sister is there, it is like, 'No, you do this.' Yes, I was very angry. I couldn't even, I couldn't talk about it, but later on when we were talking, he is ashamed to do the things that you were supposed to do … those things in front of his family (Bongeka, 40-year-old woman, South Africa)

The strong influence of extended family on relationship dynamics was emphasised further by this participant: "Extended family, that's why we feel that it would have been beneficial to include that too, because we cannot run away from the fact that they have influences on the decisions, and how we make decisions." (Bongeka, 40-year-old woman, South Africa).

Joint chatbot use.

Many participants also perceived that they would have found it more beneficial if their partner also took part in the digital intervention: "If we were in this together and then he would also have that ownership of 'Okay, let's do this now, let's, you know.' I really think it would have been best if he had taken, actually taken, part in it." (Vathiswa, 33-year-old woman, South Africa). While some participants preferred for both partners to do it, others, and particularly men, expressed a preference for partners to do the digital intervention separately: "I think it's good to do it on your own, but it would be beneficial to do it like, like separately, your partner does it on her phone and you do it on your phone" (Zolani, 27-year-old man, South Africa).

6.6 Discussion

This is the first study, to our knowledge, that explores partnered parents' perceptions and experiences of using a digital parenting intervention with integrated IPV prevention content. The study highlights the benefits of using a digital parenting programme and the perceived

shifts in relationship dynamics, whilst recognising some of the technological challenges of a chatbot. Three key themes were identified, which were related to the accessible and non-judgemental perception of the chatbot, the perceived changes in relationship dynamics, and technological barriers and limitations.

The benefits associated with accessing parenting and relationship material via a chatbot was highlighted as a major advantage by participants. Interestingly, male participants emphasised how the digital modality of the chatbot allowed them to seek advice they would not have sought from any in-person sources. This is particularly notable given that male caregivers are often underrepresented in parenting interventions (Burn et al., 2019) and have, in past research, often been found to be difficult to involve in parenting programmes (Stahlschmidt et al., 2013). The preference toward the digital format amongst the male caregivers in the present study is in line with existing research, which has found that internet-based and brief parenting programs were the most preferred delivery modalities amongst fathers (Frank et al., 2015; Tully et al., 2017). Indeed, flexibility and the option to schedule programmes has been identified as a key element to encourage male caregiver engagement (Jensen et al., 2021). Research has also highlighted that barriers such as stigma and concerns about being judged are often associated with lack of help-seeking (Tully et al., 2017). Given that stigma has been reported to be predictive of lower levels of help-seeking amongst low-income caregivers of children with behavioural problems (Dempster et al., 2015), flexible modalities, such as digital interventions, may offer an entry point to reach parents, including male caregivers, who might not otherwise seek support.

The relationship changes that participants perceived after using the chatbot, such as improved communication and reduced conflict, are also encouraging. These positive findings are in line

with other gender-transformative interventions, such as the Indashyikirwa programme in Rwanda, which found a reduction in conflict and improved trust and communication following an in-person intervention (Dunkle et al., 2020). The shared experiences of improvements in division of household labour and decision-making in the present study are also in line with findings reported by other parenting interventions addressing VAW and VAC, such as the Bandebereho programme in Rwanda (Doyle et al., 2023b). Of note, however, the present study also revealed certain elements that were more resistant to change, such as perceptions around gender roles or equitable behaviours around extended family. These findings suggest that more deep-rooted beliefs surrounding gender roles, behaviours, and attitudes, may require additional content and engagement, for example through a hybrid or community approach, in order to achieve long-term change.

One programme focused on gender-based violence prevention which adopts this type of community approach to behaviour change is Parenting for Respectability (PfR), a community-based parenting programme (Wight et al., 2022). Indeed, while the digital format of ParentText offers many advantages over in-person programmes, such as lower costs and greater reach, more deeply rooted norms and attitudes may require a hybrid approach to achieve behaviour change. This finding is underscored by results from a randomised trial of the digital intervention 'ChattyCuz', a relationship chatbot seeking to support young women in romantic relationships in South Africa (De Filippo et al., 2023). The authors found that only the gamified version of the chatbot led to significant, albeit modest, reductions in IPV, in comparison to the no treatment group, which found no changes, and the narrative treatment group (that involved less engagement) which also had no effect on IPV (De Filippo et al., 2023).

The findings in the present study surrounding some of the technological limitations of the chatbot are also in line with existing research on digital interventions. Whilst many participants expressed that acceptability was a major benefit of the chatbot, there were also some limitations such as storage issues or lack of access to electricity which were seen as barriers. Notably, technical issues with digital interventions have been reported by other studies on digital interventions (Awah et al., 2022). As such, future studies should more closely examine how some of these more technical and structural barriers can be addressed in future research.

Taken together, the findings from this study offer valuable insights into caregivers' experiences of engaging with a chatbot and changes participants perceived in relationship dynamics following the programme. In particular, this study sheds light on the promising potential of digital parenting interventions with integrated IPV prevention content, in encouraging healthy relationships and promoting gender-equality. The perceived positive changes in relationship dynamics in the present study underscore the potential of these type of interventions to foster healthier communication, improve gender equitable behaviours, and reduce conflict within households, in an effort to reduce and prevent IPV and related risk factors.

This study also has limitations. The first relates to the selective sampling within the intervention and study. It is likely that caregivers choosing to take part in a digital parenting programme are already more willing to change their behaviours then caregivers who may not have taken part. This sampling bias raises questions regarding how to reach caregivers who would benefit from the programme, but who might be less willing to engage. The lack of male caregivers in the Jamaica sample also represents another limitation. The challenges with

male caregiver recruitment in Jamaica meant that only female caregivers took part. In Jamaica, participant recruitment was primarily conducted near schools, where, notably, mostly female caregivers ended up being the ones to pick up and drop off children. As such, in future research, until more male caregivers are present at school pick-up and drop-off, it would be important to include settings where more male caregivers are frequently present (e.g. barbershops and sports centres).

Furthermore, whilst the interviews and focus groups conducted in South Africa were originally planned to be held in a meeting hall in a peri-urban township, due to safety concerns they were moved and held in a university meeting room. The university setting of the interviews and focus groups, may have contributed to an increase in social desirability bias amongst participants, who may have not felt comfortable expressing less favourable experiences of the programme whilst in an academic location. However, attempts to mitigate this were put in place by explicitly telling participants that there were no right or wrong answers, and that any information they shared was useful. In a similar vein, it is also important to take into account the identity of the primary author, a Caucasian woman from a research institution in the global north, who conducted the female interviews. Whilst the interviews were always carried out together with a local research assistant or local member of staff, it is possible that participants may still not have felt comfortable sharing some of their experiences. Likewise, given that some of the interviews were not conducted in English, and were translated, it is also possible that some elements of the information shared were not captured. Efforts to address this were taken by checking translations with the local research assistants and translators, however, it is still possible certain nuances may not have been conveyed.

6.7 Conclusion

The present research is the first qualitative study, to our knowledge, to examine caregivers' experiences of engaging with a digital parenting intervention that includes integrated IPV prevention content. Findings from this study offer valuable insights into the potential of digital parenting interventions, with notable advantages identified including accessibility, anonymity, and perceived positive relationship changes. Technological limitations and barriers reported by participants pose certain challenges that raise important questions for consideration in future studies. The present study also highlights circumstances where a hybrid approach might be more beneficial, such as with more deep-rooted beliefs surrounding gender roles and equality, in order to achieve long-term and sustainable change.

Article information

Competing interests

MS is a researcher at the University of Oxford and JML and FG are employed as staff at the University. In addition, JML is the CEO of Parenting for Lifelong Health (PLH), a charitable organization based in the United Kingdom that developed the ParentText intervention. MS, JML, PZ, QH, FC, GHR, FG, ZK, and ZN, have participated/are participating in several research studies involving the program as investigators, and the Universities of Oxford, Cape Town, and Glasgow. CF and LC are employees of IDEMS International, a technology development company that co-developed the ParentText intervention and provided support on data analysis of user engagement. RS and JH are employees at UNICEF and provided support on data collection. Conflict is avoided by declaring these potential conflicts of interest and by conducting and disseminating rigorous, transparent, and impartial evaluation research on both this and other similar parenting programmes. No profits will be made from this programme.

Funding

This research was funded by UNICEF Jamaica and the Economic and Social Research Council (ESRC) Grand Union Doctoral Training Partnership in collaboration with the University of Oxford Saven European Scholarship and the Balliol College Dervorguilla Scholarship in Social Sciences. This research is part of the Global Parenting Initiative, which is funded by The LEGO Foundation, Oak Foundation, the World Childhood Foundation, and The Human Safety Net.

Authors' contributions

MS, JML, and FG participated in the design of the study and intervention development and oversaw data collection and cleaning. MS managed the data collection process, with support from PZ and FC. MS designed the statistical analysis, with JML, FG, QH, FC, and LC providing guidance on the analysis approach. MS drafted the paper, with JML and FG contributing. All authors approved the final manuscript.

6.8 Paper 3 Additional files

6.8.1 Paper 3 Additional file 1: Structure of ParentText Intervention 23-day version

Supplementary table 15: Structure of ParentText Intervention 23-day version

Day	Morning	Main	Evening
1	**IPV Baseline assessment**	Welcome	
2	**Content: IPV Main Material**	Supportive: Activities	
3	Supportive: Praise/Calm	Content: One on one time child	Supportive: Development
4	Supportive: Sharing	Content: Take a pause	**Check-in: IPV Topic 1 - Treat each other as equals**
5	Supportive: Praise/Calm	Content: Positive instructions	Supportive: Praise/Calm
6	Content: Take a pause	Supportive: Positive instructions	**Check-in: IPV Topic 2 - Become a confident parent and supportive spouse**
7	Check-in: Connection	Content: Praise	Supportive: Praise/Calm
8	Supportive: Praise/Calm	Content: Routines	**Check-in: IPV Topic 3 - Share family responsibilities**
9	Supportive: Praise/Calm	Supportive: Praise/Calm	Supportive: Praise/Calm
10	Supportive: Praise/Calm	Content: Positive rules	**Check-in: IPV Topic 4 - Resolve conflict peacefully**
11	Check-in: Covid	Content: Education	Supportive: Praise/Calm
12	Supportive: Praise/Calm	Content: Online	**Check-in: IPV Topic 5 - Listen and talk to each other**
13	Check-in: Rules	Content: Redirection	Supportive: Share
14	Supportive: Praise/Calm	Content: Behaviour / Crying	Content: Anger management 1
15	Check-in: Online	Content: Consequences	Check-in: One on one time
16	Supportive: Praise/Calm	Content: Ignore	Supportive: Praise/Calm
17	Supportive: Praise/Calm	Content: Emotion	Check-in: Praise
18	Check-in: Community safety	Supportive: Praise/Calm	Supportive: Praise/Calm
19	Supportive: Praise/Calm	Content: Budget with children	Supportive: Praise/Calm
20	Supportive: Praise/Calm	Supportive: Praise/Calm	Check-in: Positive
21	Check-in: Emotions	Content: Relax	Check-in: Ignore
22	Supportive: Praise/Calm	Content: Anger management 2	Supportive: Praise/Calm
23	Supportive: Praise/Calm	Check-in: Budget with children	Content: Safety
	Celebrate finishing programme		

Note. This outline is the structure of the 23-day version of the ParentText Intervention. IPV prevention content is noted in bold font. Types of messages include in the programme include Content messages, Check-in messages and Supportive messages.

6.8.2 Paper 3 Additional file 2: ParentText IPV prevention content

A summary of the topics included in IPV prevention content in ParentText is provided below. For each topic, there is also an example text-message included.

Supplementary table 16: ParentText IPV prevention content (fathers)

Topic	Content	Example message (fathers)
1	Treat each other as equals	*"Family and friends might tell you how a husband or a father should act. But both men and women benefit when they talk to each other and make decisions together. For example, next time a decision needs to be made, involve your partner, and ask what they think!"*
2	Become a confident parent and supportive spouse	*"Get involved! When fathers are engaged in parenting their children, both the child, mother, and father benefit. Set aside some time today to spend with the children."*
3	Share family responsibilities	*"Sharing family responsibilities with your partner can make life less stressful. Think of ways you can share the workload. Doing tasks together can also make them more fun."*
4	Resolve conflict peacefully	*"All adults have disagreements sometimes. But fighting is not an effective way to solve issues. Instead, if you start feeling angry, take a deep breath first and then respond in a calmer way."*
5	Listen and talk to each other	*"Listening and talking to those around us are key to a more peaceful home. Talking to your partner about issues before they become bigger problems can help avoid arguments from building up."*

Supplementary table 17: ParentText IPV prevention content (mothers)

Topic	Content	Example message (mothers)
1	Treat each other as equals	*"Family and friends might tell you how a wife or a mother should act compared to a husband or father. But both men and women benefit when they talk to each other and make decisions together. For example, next time a decision needs to be made, involve your partner, and ask what they think."*
2	Become a confident parent and supportive spouse	*"When mothers and fathers are both engaged in parenting their children, everyone benefits, including the children. Show your partner that you appreciate it when they spend quality time with your children."*

3	Share family responsibilities	*"Sharing family responsibilities with your partner can make life less stressful. Think of ways you can share the workload. Doing tasks together can also make them more fun."*
4	Resolve conflict peacefully	*"All adults have disagreements sometimes. But fighting is not an effective way to solve issues. Instead, if you start feeling angry, take a deep breath first and then respond in a calmer way."*
5	Listen and talk to each other	*"Listening and talking to those around us are key to a more peaceful home. Talking to your partner about issues before they become bigger problems can help avoid arguments from building up."*

Supplementary table 18: ParentText IPV prevention content (gender-neutral)

Topic	Content	Example message (gender-neutral)
1	Treat each other as equals	*"Family and friends might tell you how a partner or a parent should act. But both men and women benefit when they talk to each other and make decisions together. For example, next time a decision needs to be made, involve your partner, and ask what they think."*
2	Become a confident parent and supportive spouse	*"When mothers and fathers are both engaged in parenting their children, everyone benefits, including the children. Show your partner that you appreciate it when they spend quality time with your children."*
3	Share family responsibilities	*"Sharing family responsibilities with your partner can make life less stressful. Think of ways you can share the workload. Doing tasks together can also make them more fun."*
4	Resolve conflict peacefully	*"All adults have disagreements sometimes. But fighting is not an effective way to solve issues. Instead, if you start feeling angry, take a deep breath first and then respond in a calmer way."*
5	Listen and talk to each other	*"Listening and talking to those around us are key to a more peaceful home. Talking to your partner about issues before they become bigger problems can help avoid arguments from building up."*

7 General Discussion

This chapter presents an overview of the dissertation by providing: (7.1) an overview of the overall research findings; (7.2) a discussion of the strengths and limitations of the research; (7.3) an exploration of potential future areas of research; (7.4) a review of the research implications for policy and practice; and (7.5) a summary of the research impact and ways in which the dissertation results have been disseminated.

7.1 Overview of research findings

7.1.1 Summary of findings from each paper

This DPhil project aimed to expand the evidence base on violence prevention interventions, specifically those addressing multiple forms of family violence, by integrating IPV prevention material into the digital parenting intervention 'ParentText'. More specifically, the present research sought to develop and integrate IPV prevention content into ParentText and explore levels of user engagement with the chatbot and examine preliminary changes in IPV and IPV-related outcomes following the intervention.

The three objectives of this project, each linked to a corresponding paper for publication, were as follows:

DPhil Paper 1: Develop, create, and evaluate IPV prevention content embedded in the ParentText chatbot intervention

DPhil Paper 2: Quantitatively assess the engagement of low-income parents and caregivers in the ParentText chatbot with integrated IPV prevention material, and examine preliminary

pre-post changes in experiences and perpetration of IPV and related outcomes, including attitudes toward IPV and gender-equitable behaviours following the ParentText intervention

DPhil Paper 3: Qualitatively explore partnered parents' experience of using the ParentText chatbot parenting intervention in terms of the quality of their partner relationship, and explore the opinions of partnered parents on the content and structure of ParentText, especially with respect to the ParentText content on relationships

Linked to each research objective were the following research questions that this thesis aimed to answer:

1. What is the retention rate and level of user engagement with IPV prevention content developed and integrated into the digital intervention ParentText for low-income parents and caregivers in Jamaica? (*DPhil Paper 1*)
2. What are the indicative impacts of the digital intervention ParentText on experiences and perpetration of IPV (primary outcomes) and related risk factors including attitudes toward IPV and gender-equitable behaviours (secondary outcomes) with low-income caregivers in Jamaica and South Africa? (*DPhil Paper 2*)
3. How do partnered parents in South Africa and Jamaica perceive their experience interacting with the digital intervention ParentText in terms of the quality of their partner relationships? (*DPhil Paper 3*)

In summary, this thesis involved the design, development, and mixed methods assessment of IPV prevention content embedded in the digital intervention ParentText. In *DPhil Paper 1,* the thesis first described and evaluated the development of the IPV prevention content produced for the digital parenting intervention ParentText. This development process used the

steps in the 6SQuiD intervention development model (Wight et al., 2016), which draws on the MRC UK framework for developing and evaluating complex health interventions (Craig et al., 2013). Building on this paper, *DPhil Paper 2* quantitatively explored pre-post changes in IPV experience and perpetration, and IPV-related outcomes including IPV attitudes and gender-equitable behaviours following the intervention. Findings from the exploratory analysis of change experienced during the intervention revealed significant pre-post reductions in overall IPV experience among women and reductions in men's overall harmful IPV attitudes. Furthermore, the qualitative findings of *DPhil Paper 3* highlighted caregivers' experience of using ParentText as well as the benefits and challenges of integrating IPV prevention content into a digital parenting intervention. This study revealed parents' perception of the intervention as an accessible and judgement-free tool, with caregivers' sharing experiences of positive changes in relationship dynamics, while also noting some of the technological barriers and limitations they faced with the programme.

7.1.1.1 Paper 1 intervention development and user-testing

Using the 6SQuiD intervention development model (Wight et al., 2016), *Paper 1* demonstrates how IPV prevention content can be developed and integrated into a digital parenting programme. This paper details the processes of using a targeted literature search for key studies to determine causal factors associated with IPV and identifying those with greatest scope for change to address in the intervention. The results from this search were used to develop the IPV intervention prevention content and design the intervention theory of change. Using the causal factors identified, five topics were selected as the focus for the ParentText IPV prevention content: 1) Equitable relationships; 2) Supportive co-parenting; 3) Share responsibilities; 4) Nonviolent conflict resolution; 5) Empathetic communication. The identified factors were mapped on a causal pathway, linking the selected factors, the IPV

prevention topics in the intervention, and behaviour change domains. Specific intervention content was then created for each modifiable risk factor identified. This content included a set of core text messages along with multimedia content, such as comics and videos scripted by the primary author. Findings from the formative evaluation of the IPV prevention integrated into the ParentText chatbot in Jamaica revealed an average user-engagement length of 14 days, 0.50 chatbot interactions per day, and that over half of participants selected to view additional relationship content. The implications of these findings are discussed in more depth in the next section.

7.1.1.2 Paper 2 quantitative pre-post pilot study

Paper 2 examined user engagement with ParentText, as well as changes in IPV experience and perpetration outcomes and related IPV outcomes reported by participants after the intervention. Findings on user engagement demonstrated that the average daily interaction rate with the programme was 0.57 and 0.59 interactions per day for women and men in South Africa, and 0.21 interactions per day for women in Jamaica. The average number of days in the programme in South Africa was 13 days (SD 23.90) and 3 days (SD 3.78) for men and women respectively, and in Jamaica, it was 27 days (SD 23.10). The average number of days users interacted with the chatbot in South Africa was 3 days (SD 1.58) for women and 2.6 days (SD 1.52) for men, and in Jamaica, it was 5.2 days (SD = 5.45). Results also revealed that the rate of completion of at least one IPV prevention topic was 26% for women and 5% for men in South Africa, and 21% for women in Jamaica. While these user engagement rates were lower than expected, findings reveal important insights on the levels of engagement content by users in a parenting chatbot, providing valuable information for the refinement of future iterations of the chatbot and the use of digital modalities for preventing IPV.

Exploratory analyses of pre-post change detected significant reductions in overall IPV experience among women, and reductions in men's overall harmful IPV attitudes. More specifically, 72.2% of women in the Jamaica sample reported experiencing some form of past-month IPV at the 3-week post-test, compared to 96.0% at baseline, corresponding to a statistically significant odds ratio of 0.15 (CI 0.01 to 0.86, p=0.03). Findings also indicated a significant reduction in harmful attitudes toward IPV and gender roles reported by men in South Africa (Beta = –3.03; 95% CI –0.50 to –0.09; p<.01). These reductions in violence and reductions in harmful attitudes following the intervention, while promising, need to be interpreted with caution, given the absence of a control group and the low engagement rates. Nevertheless, the findings offer a preliminary insight into the potential of integrating IPV prevention in digital parenting interventions and highlight areas that warrant further research. The findings are discussed in more depth in the section Discussion of findings.

7.1.1.3 Paper 3 qualitative study

Paper 3 qualitatively examines caregivers' experiences of using a chatbot parenting intervention with integrated intimate partner violence (IPV) prevention content. Individual interviews and focus group discussions were conducted in South Africa and Jamaica with male and female caregivers who had enrolled in the ParentText intervention. They explored caregivers' experiences of using ParentText in terms of improving the quality of their partner relationships, reducing conflict, and preventing intimate partner violence. Caregivers' perceptions of the content and the structure of ParentText, and in particular the content on relationships, was also explored. Thematic analysis identified the following themes and sub-themes: (1) Accessible and non-judgemental perception of the chatbot; (2) Changes in relationship dynamics; and (3) Barriers and design limitations. These findings highlight the potential of digital interventions in addressing some of the risk factors associated with IPV,

whilst also uncovering some of the challenges associated with implementing a digital intervention and some of the potential limitations of a chatbot. In particular, they also highlight areas where potentially a more hybrid approach might be needed in order to change more deep-rooted beliefs and behaviours surrounding gender roles and violence attitudes. This is discussed in greater detail in the next section.

7.1.2 Discussion of findings

7.1.2.1 Intervention development: design, delivery, and safety

Results from *Paper 1* demonstrate how, guided by the 6SQuID model (Wight et al., 2016), malleable risk factors associated with IPV (identified from a targeted literature search) can be used to create intervention content to deliver mechanisms of change that aim to prevent and reduce IPV. The factors identified were: (1) gender-equitable behaviours and attitudes; (2) involved and equitable co-parenting; (3) equally distributed workload; (4) conflict resolution skills; and (5) effective communication. The study results illustrate how these identified factors can be integrated into an existing digital parenting intervention in a variety of different formats including, text, images, audio, and video. Findings also reveal how ethical considerations regarding privacy and safety can be deliberately and thoughtfully addressed when designing a digital intervention addressing family violence. For instance, ParentText participants are able to access local referral details by texting “Help Me” and selecting “Other Support” in the chatbot free text field. The chatbot was also designed to identify high-risk keywords to identify potential disclosure of dangerous situations in the free text field, a common approach within automated digital interventions (Tielman et al., 2019). After detection, ParentText was automated to provide the user with an empathetic and empowering response which provides referral contact details that are localised to the country that supports parents and child safety (e.g., police, ambulance, hotlines). Incorporating the functionality of

screening free text input for keywords and phrases related to risk in order to provide referrals to support networks and emergency services is a safety protocol that has been used by other chatbot interventions (Haque & Rubya, 2023; Hungerbuehler et al., 2021; Kretzschmar et al., 2019).

Similarly, the IPV assessments integrated in ParentText were also developed with ethics, privacy, and safety at the forefront of their design. Questions have been raised surrounding data collection designs developed during the pandemic, with researchers highlighting concerns regarding insufficient considerations of safeguarding and ethical protocols (Peterman et al., 2023). It is worth highlighting the steps that were taken to ensure that appropriate, rigorous, violence-specific safeguarding measures and ethical protocols were followed throughout this thesis. For instance, the IPV survey in ParentText was held on a secure external server, via Oxford's Linux virtual machine using Online Data Kit (ODK) to make sure responses were not saved on users' mobile devices. In addition, at the beginning of the IPV assessment integrated in ParentText, participants were screened to make sure that men and women from the same household were not both interviewed about IPV. This is in line with WHO's violence against women (VAW) research guidelines (WHO, 2016a) and ethical and safety recommendations for intervention research on VAW to minimise any risk of harm (Garcia-Moreno et al., 2001). As such, men who reported that their partner was participating in the programme were not asked the IPV questions from the IPV survey and instead were only asked questions on gender-equitable behaviours and on attitudes toward IPV and gender roles. Users who reported IPV experiences were also automatically provided with referrals to services supporting individuals experiencing violence, which were all customised to their local context. As discussed in the Methods chapter, the complexity of conducting remote and mobile data collection on intimate partner violence during COVID-19

required careful and detailed considerations surrounding ethics, safety, and privacy, critical considerations that have been raised by key researchers in the field of violence against women and violence against children (Bhatia et al., 2020, 2022; Peterman et al., 2020).

7.1.2.2 User engagement with the digital parenting chatbot

The results on chatbot user engagement from the user-testing study in *Paper 1* revealed findings that were in line with other studies on digital interventions. The length of engagement in the programme was similar in both the formative evaluation conducted in Jamaica and in the user-testing study conducted in both Jamaica and South Africa. In the formative evaluation in Jamaica (*Paper 1*) the average length in the programme was 14 days (56.42), 13 days (23.90) in the user-testing study (*Paper 2*), and 3 days (3.78) for men and 27 days (23.10) for women in South Africa. Similarly, the average number of interactions per day were also similar between the formative evaluation and the user-testing study. To put these figures into perspective, these rates are similar to findings in other mobile-based digital interventions, with rates of intervention engagement reported ranging from 0.39 interactions per day (11 out of 28 days of engagement) (Nour et al., 2019) to 0.61 interactions per day (11 out of 18 days of engagement) (Lockwood et al., 2022). However, due to discrepancies in measurements of user engagement in the digital intervention literature (Molloy & Anderson, 2021), comparisons between user engagement warrant a degree of caution. While objective engagement is often reported in studies, research has highlighted that it is also important to note the difference between active and passive engagement in digital interventions, particularly since studies have found that the latter may not be associated with improvement in behavioural outcomes (Schlosser et al., 2017).

In terms of average length in the ParentText programme, in the formative evaluation in South Africa it was 3 days (3.78) for men and 27 days (23.10) for women, and in Jamaica it was 13 days (23.90) for women. These figures were lower than desired and varied more than anticipated between the country samples. The findings, however, are in line with discrepancies in findings on engagement data on programme length from other digital interventions. Similar studies on mobile-based and digital interventions, report a relatively wide range in average user length in programmes, with figures varying from 6 days (Jessen et al., 2021) to 29 days (Wu et al., 2022). The user engagement for each IPV topic also varied quite substantially between the formative evaluation and the user-testing study, with a much lower level of user engagement with IPV topics in the latter study, even though engagement rates were lower than expected in both studies. In the formative evaluation in Jamaica, 15% of participants viewed all of the IPV prevention topics, however, in the user-testing study, only 11% of participants in Jamaica, and 5% of women and 0% of men, in South Africa viewed the IPV prevention topics. Notably, whilst these figures are low, these findings are similar to those reported in a systematic review on the real-world uptake and engagement with digital interventions, which revealed completion rates ranging from 0.5% to 28.6% in terms of completing all modules of a programme (Fleming et al., 2018).

Whilst in line with other research studies, the low rates of user engagement in both the formative evaluation (*Paper 1*) and the user-testing study (*Paper 2*), raise important questions regarding possible reasons for low engagement, which are explored in the paragraphs below. Prior to discussing these, it is also worth noting that, while Paper 2 was not designed to test efficacy, given its pre-post design and single-arm format, it is possible that the low engagement rates may be one of the reasons for the lack of preliminary effects on IPV observed. In other words, the lack of changes at post-test might be due to insufficient

engagement with the programme content, rather than lack of change due to the *content* of the programme itself.

The qualitative study (*Paper 3*) offers some potential reasons for the low engagement levels observed. One of the themes in the qualitative study (Paper 3) was 'barriers and design limitations' associated with the chatbot. Some participants highlighted that due to environmental challenges such as lack of access to electricity, they were not able to access the chatbot material regularly. Notably, however, these types of structural barriers would persist even in a hybrid context. Participants also explained that sometimes they were not able to use the chatbot because they were unable to charge their phone, or in other cases because of limited phone access during work hours. Participants expressed this meant they sometimes felt behind in the programme. This may explain some of the low engagement rates with the chatbot content, if for instance, this content was sent while the participant was unable to charge their phone or whilst at work. Not being able to view chatbot content at certain times of day, such as during working hours, has been highlighted in other studies as well (Alphonse et al., 2022). One chatbot design request in Paper 3 that participants emphasised was the ability to control when they received messages. As such, a potential way to overcome this design barrier would be in future iterations to allow participants to set message delivery times and schedules. Adopting this feature, might therefore be one way to overcome this low level of engagement. The ability to choose the time of day to receive messages has been highlighted as an important feature by participants in other studies on digital interventions (Milward et al., 2015). This finding is also echoed in a systematic review on uptake and engagement of health and wellbeing based digital interventions, where functionalities that allow users to choose the time and frequency of messages is noted as a key recommendation (Szinay et al., 2020).

It may also be possible that the low level of user engagement with the IPV prevention topic was due to other factors. For instance, the low rates of engagement might be due to the format of the programme. The IPV content in ParentText was only delivered on one specific day, after which only check-in messages were sent (for Figure 15 an overview of the content delivery schedule and Figure 13 for a flowchart of the content). As elaborated in the discussion of Paper 2, it is possible that receiving the option to view *all* of the IPV content on the same day may have been overwhelming for participants. This may have reduced user engagement rates due to intervention fatigue (Nahum-Shani et al., 2018), which is cognitive or emotional weariness resulting from competing demands of intervention engagement and other burdens in daily life (Heckman et al., 2015), and has been linked to intervention adherence. Two considerations for future iterations of ParentText could be to: 1) deliver all of the content automatically (since optional and supplemental content in digital interventions is often associated with low engagement (Hanno, 2023)); and 2) adjust the timing of content and deliver the IPV content more spread out to allow mental rests in between new material, strategies that have been suggested to reduce intervention fatigue (Nahum-Shani et al., 2018). Notably, this is already an amendment that future iterations of ParentText is currently implementing, such as in a trial of an updated version of ParentText in Malaysia (Cooper et al., 2023). This integrated approach of implementing IPV prevention content beyond a single module is a strategy that is favoured and advocated by gender-transformative approaches, and is one which is being advocated for more broadly in the parenting field (UNICEF Innocenti et al., 2023b).

In addition to revising the scheduling of the digital content, adjusting the delivery of the intervention by adopting a hybrid approach, combining both in-person and digital

modalities, may also help improve engagement. For example, using an in-person onboarding process to explain the purpose of the intervention or using in-person check-ins, in addition to the digital check-ins, to discuss potentially difficult topics may help reduce some of the low engagement and resistance observed in Paper 2 and 3. Studies suggest that using face-to-face recruitment and participatory, peer-engaged methods is an effective approach for engaging parents, and in particular, fathers (Jeong et al., 2023; Yaremych & Persky, 2023). Studies have shown that providing opportunities to critically discuss and engage in dialogues with others, especially on difficult topics, plays a valuable role not only in terms of engagement but also in terms of creating change and shifting harmful gender attitudes (Casey et al., 2018; Guthridge et al., 2022; Jeong et al., 2023). However, while these hybrid amendments may improve engagement, they will also increase intervention costs and limit scalability, which are some of the benefits of digital-only interventions (Sanders et al., 2021).

7.1.2.3 Indicative changes in IPV, attitudes toward IPV, and gender-equitable behaviours

Changes in IPV experience and perpetration

The analyses examining preliminary changes in IPV following the intervention revealed a significant reduction in IPV experience among women in Jamaica at post-test, a finding in line with other parenting and gender-transformative programmes (Ashburn et al., 2017; Doyle et al., 2018, 2023). However, no significant result for IPV experience or perpetration was detected among women and men, respectively, in South Africa. The lack of change observed might be linked with the low level of male engagement and general user engagement in South Africa, as discussed in the preceding section on user engagement (see Engagement with a digital parenting chatbot). It is also possible that the lack of change is an internal validity issue, given the small sample size of the pilot study (Anglin et al., 2024).

Another reason for the lack of change observed might be due to the modality of the chatbot intervention. It may be possible that one-way engagement with a chatbot is insufficient to create change in more deep-rooted behaviours and attitudes amongst users, and that more interactive engagement is needed to shift behaviours and beliefs. It can be useful to draw upon the integrative ecological framework proposed by Heise (1998) in the field of IPV, which comprises of four nested levels of violence-related factors: individual, micro-system (interpersonal level), exo-system (community level), and macro-system (societal level), as discussed in the Literature Review chapter (see Figure 4). As highlighted by Heise (1998), it is the *interplay* of these various factors that is crucial, rather than the consideration of a single-factor model and explanation for IPV. In this way, it is possible that individual engagement (individual level) with IPV prevention material via a chatbot, may not be sufficient to create change, and that greater engagement with the micro-system (i.e., the interpersonal level of the ecological model) is also needed, through for example, conversations with peers, family, and social networks (Malhotra et al., 2019). This is reiterated by results from a systematic review on interventions promoting gender equality where findings indicated that dialogue was critical to changing in gender norms (Guthridge et al., 2022).

Recent studies have demonstrated the strong impact that interpersonal relationships have on gender attitudes, underscoring the need for interventions to not only target individuals, but also social networks such as peers and family members, through for example critical reflection and dialogue among social groups (Kågesten et al., 2016). Research also suggests that programmes that have shown evidence of change in gender norms involve engagement of stakeholders at different levels of the social ecological model and include activities that allow for active participation and promote critical awareness (Levy et al., 2020). As such, it is

possible that greater interactive engagement is needed in order to see greater changes in IPV experience and perpetration.

Changes in attitudes toward IPV and gender-equitable behaviours

Findings from *Paper 2* revealed a significant overall reduction in harmful attitudes toward IPV and a significant increase in overall gender-equitable behaviours among men in South Africa. Even though it is important to interpret these preliminary findings with caution, given the small sample size, these indicative results are in line with other interventions that have found reductions in harmful attitudes among men at post-test and noted increases in gender equitable behaviours after gender-transformative interventions (Falb et al., 2023; Halim et al., 2019). The lack of change observed in harmful attitudes amongst women, and the absence of significant changes in gender-equitable behaviours, however, warrant further attention. In a similar vein to the preceding discussion about the lack of change seen in IPV experience and perpetration, it is possible that greater engagement is needed to shift certain attitudes and behaviours, and that a hybrid approach – combining chatbot material and in-person sessions – is needed to change more complex beliefs. Using a hybrid-approach with in-person sessions which involve a facilitator, would likely both increase intervention engagement, and also help increase retention (Winter et al., 2022). This is underscored by research which indicates that digital interventions that use facilitator-led engagement-strategies have higher retention rates (Winter et al., 2022).

It might also be possible that the IPV prevention content needs to be expanded beyond a single module in ParentText in order to see significant changes in attitudes and behaviours. For instance, results from a systematic review on interventions designed to shift attitudes and behaviours related to restrictive gender stereotypes and norms, revealed that multi-session

interventions are more likely to lead to significant outcomes compared to one-off or single-session interventions (Stewart et al., 2021). This finding underscores that a single IPV module with follow-up check-in messages may not be sufficient in a parenting intervention to create significant changes in gender-inequitable attitudes and behaviours, and that multiple modules, delivered across an intervention might be needed.

It is interesting to note, however, that even though there were no significant quantitative changes in gender-equitable behaviours detected in the quantitative pre-post study in *Paper 2*, the qualitative findings in *Paper 3* suggest that participants *perceived* to experience changes in their relationship dynamics. In particular, participants shared that they appeared to experience improvements in communication and reductions in partner conflict. Issues with internal validity in Paper 2 may be one potential reason for the different results between Paper 2 and 3. For instance, methodological limitations, such as the small sample size and lack of power, might explain the lack of change observed. Additionally, there is also a possibility that there were issues with measurement validity which meant changes were not observed (Hoxmeier et al., 2024). The present study was not able to measure gender norms due to space constraints in the digitally administered survey and due to participant burden concerns (as discussed in the Methods chapter). However, to better understand any potential changes that might be occurring, future research would benefit from also measuring gender norms, in addition to attitudes. For instance, research on the measurement of attitudes and gender norms has highlighted that it is possible for individuals to have an individual attitude whilst simultaneously behaving in a manner that juxtaposes that attitude in order to conform with a social norm (Ben Cislaghi & Heise, 2016). A study by McLean et al. (2020) on the gender-transformative programme Indashyikirwa in Rwanda, for example, found that while some shifts in individual beliefs were observed among participants, more deep-rooted gender

norms seemed to remain. McLean et al. (2020) highlight that the relationship between behaviours, norms, and individual beliefs is not always linear, and in their study, the authors point out that some beliefs changed even despite the persistence of some gender norms associated with male authority and gender roles. This underscores the need for a RCT and mediator analyses (as discussed in section on Suggestions for future research), which would ideally also measure gender norms, in order to better understand the mechanisms of change in the intervention.

Another possible explanation for the lack of observed change in the study is that it could be that these shifts in behaviours that took place were not substantial enough to have been quantitatively detected in *Paper 2*. With higher levels of user engagement, expanded IPV prevention content, and a hybrid approach in delivery, it might be possible to create more significant changes in behaviours and attitudes. For instance, in a recent RCT of the chatbot intervention ChattyCuz, which supports young women with intimate relationships in South Africa, significant reductions in IPV experience were only detected in in the gamified treatment group of the study, and not the narrative treatment group, further highlighting the need for more interactive engagement (De Filippo et al., 2023).

7.1.2.4 Resistance to change and hybrid chatbot options

Another key finding revealed in *Paper 3* was the resistance exhibited amongst some participants in terms of changes in restrictive attitudes about gender roles and equitable behaviours. For instance, participants shared experiences where husbands continued to express that they believed it is a wife's duty to cook, or instances where husbands started adopting more gender-equitable behaviours, but when extended family were present, they reverted to their previous behaviours. This suggests that there may be limitations in terms of

the type of changes that are possible through a chatbot-only approach. These results suggest that certain behaviours and attitudes with restrictive gender roles, might necessitate a greater level of engagement, for instance through a community or hybrid approach, in order to create sustainable change. Given that studies have shown the influence that peer groups and family have on gender attitudes (Kågesten et al., 2016), in order to overcome resistance to change, incorporating conversations not only within couples, but also with wider social networks, might be necessary to create change. Interestingly, one of the other findings from *Paper 3* was male caregivers expressing the absence of social support when it came to discussing family and relationships concerns. As such, adopting a hybrid approach, combining chatbot content with peer groups for fathers, could potentially help foster social learning and critical reflections amongst male caregivers (Jeong et al., 2023). This approach might not only reduce resistance, but also enhance engagement and retention of men (Jeong et al., 2023). Adopting an approach that considers broader social networks would also allow for informal kinship care networks to be included, which have shown to play a key role in certain contexts, such as for children and families from low socio-economic backgrounds (Simone et al., 2024).

7.1.2.5 Opportunities with digital interventions

Another major finding across the three studies includes the various advantages that a digital intervention provides. While there exist certain challenges with user engagement when using digital modalities, as discussed in the section above, adopting digital interventions presents a range of unique opportunities for engagement with parents and caregivers. Many of these benefits and opportunities were highlighted in *Paper 3,* where participants expressed the various advantages which they identified when engaging with relationship material via a digital chatbot. One of these advantages included the flexibility and ease of access to which participants could engage with the programme material, a major benefit of chatbot

interventions which has also been highlighted in the literature (Viduani et al., 2023). As highlighted in the parenting intervention literature, structural barriers such as scheduling difficulties, transport, and childcare commitments, may often prevent parents from attending organised parenting programme sessions (Duppong-Hurley et al., 2016). Thus, being able to receive parenting and relationship content through a digital device, which does not require a user to go to a specific location and at a specific time, removes a major barrier from participation, which might allow more parents to participate.

In addition to logistical reasons, findings from *Paper 3* also highlighted emotional and psychological benefits associated with using a digital intervention to access parenting and relationship material. This finding is also underscored by findings in the literature, which have found that digital interventions can promote emotional connections that facilitate trust, particularly in stigmatising circumstances (Coghlan et al., 2023). In *Paper 3,* men expressed that the anonymity of the chatbot offered an opportunity for them to receive guidance and support, which they felt they were not able to receive, or would not feel comfortable to seek in-person. Contrasting this positive finding, it is noteworthy to also keep in mind the low engagement rates exhibited by men in *Paper 2*, which suggests there may be a discrepancy in the quantitative engagement results and the positive qualitative experiences expressed by male caregivers. Even though many of the men expressed appreciation for the anonymity of the chatbot, perhaps this discomfort and being unwilling to speak with peers about family concerns, is precisely what underscores the *need* for a hybrid version with a supportive, in-person male peer support group, since many of the men expressed that they were unable to lean on their own support network. As such, it might be that a hybrid approach, combining the use of a chatbot *and* in-person sessions is necessary not only to attain sufficient male

engagement, but also shifts in behaviours and beliefs (Jeong et al., 2023; Orchowski & Berkowitz, 2022)

7.2 Strengths and limitations

This doctoral thesis has various strengths and limitations worth discussing. The study-specific strengths and limitations are considered in the discussion section of each empirical paper (DPhil Paper 1, DPhil Paper 2, and DPhil Paper 3) in Chapters 4-6. Some of the major strengths and limitations associated with the measurements and study designs are also covered in the Methods chapter (Chapter 3). The discussion that follows focuses on the overarching strengths and limitations of the doctoral thesis as a whole.

7.2.1 Limitations of research

There are several overarching limitations and challenges that warrant discussion, including contextual challenges and limitations with internal and external validity.

7.2.1.1 Contextual challenges

Global WhatsApp outage impact of programme delivery and data collection

One major challenge that arose during programme delivery was the occurrence of a global WhatsApp outage (Hern, 2022) that impacted programme onboarding and delivery and participant recruitment in Jamaica. This disruption had a number of negative consequences, including Meta (previously Facebook) being unable to apply UNICEF Jamaica with free WhatsApp credits to participants. This meant that participants were unable to sign up to the intervention on WhatsApp. When the global outage first arose, UNICEF Headquarters were unable to receive a timeline from Meta when the issue would be resolved. The outage

occurred whilst UNICEF Jamaica members of staff had already travelled out to schools to recruit participants, and with no possibility to access WhatsApp and free credits, it was not possible to enrol participants in ParentText. This outage also resulted in the cancellation of planned recruitment at multiple of the study sites in Jamaica because while UNICEF Jamaica staff (who assisted with on-the-ground recruitment) could get parents to sign up, ensuring that all parents who signed up received credits once the outage was over would be logistically challenging and was outside the capacity of the UNICEF Jamaica team.

In an effort to mitigate the impacts of the outage, there was a last-minute rescheduling of the intervention rollout dates, participant recruitment timeline, and the qualitative fieldwork. Despite this rescheduling, however, due to restricted capacity in the UNICEF Jamaica team, and due to scheduling issues with the partnering schools, some of the schools that had identified for participant recruitment were no longer viable options for participant recruitment. In the end, efforts to reduce the impact of these challenges included re-scheduling the qualitative data collection and the fieldwork dates, as well as implementing changes to the pre-post quantitative survey timeline and timeframe. Due to financial, logistical, and time constraints, and limited staff capacity at UNICEF Jamaica, it was not possible to reschedule the qualitative fieldwork for later than March 2023. Accordingly, the pre-post survey was re-designed to measure changes 3-weeks post-intervention, as opposed to the original 4-week post intervention planned measurement.

Conducting an international study during the COVID-19 pandemic and contextual challenges

Due to the COVID-19 pandemic and high levels of travel restrictions to both South Africa (Devlin et al., 2021) and Jamaica (Jamaica Tourist Board, 2021), a large extent of the programme implementation and data collection had to take place remotely. The primary

author was thus highly reliant on research partners in both countries for support with on-the-ground participant recruitment and intervention enrolment. Whilst some of the qualitative data collection took place in person, this phase of the research project also faced certain challenges. For instance, in Cape Town, there was a large taxi strike that took place on the planned days of data collection, as such the qualitative interviews and focus groups had to be re-scheduled due to safety concerns and transport restrictions as a result of the strike. Additionally, whilst the interviews and focus groups conducted in South Africa were originally planned to be held in a meeting hall in a peri-urban township, due to safety concerns following a recent carjacking and violent crime at the meeting hall venue, the location was moved and held in a university meeting room instead. This required a range of logistical adjustments in terms of arranging transport for participants and research assistants, and unfortunately meant that some participants who were due to attend the focus groups were unable to since the new venue was located further away.

7.2.1.2 Limitations of internal validity

Quantitative data

There are also a number of factors which may have impacted the internal validity of the study which are worth discussing. First, given that this research was a pilot study and exploratory in nature, the relatively small sample size means that the study findings in *Paper 2* need to be interpreted with caution since there was insufficient statistical power to detect pre-post intervention effects. Second, the study's pre-post design and the absence of a control group, limits the ability to draw causal attributions about interventions effects. Given the uncontrolled design, it is possible that changes in outcomes might be a result of natural fluctuations over time, spontaneous changes or other additional factors such as receiving attention through the intervention (Hoffmann et al., 2014). Future studies would benefit from

a larger sample with a randomized controlled trial (RCT) design, to allow for more precise conclusions about causality. An RCT with multiple follow-up assessments would also allow for more insights about the underlying mechanisms of change in the interventions and help better understand which intervention content had the most utility (McCoy et al., 2021). Third, given that the outcomes were self-reported, they may be subject to disclosure bias, recall bias, and social desirability bias, leading to under-reporting of unfavourable behaviours and over-reporting of what might be perceived as desirable answers. However, given that the self-reports were carried out on participants' phones and participants were told the reports were fully anonymised, this will likely have reduced desirability bias in the quantitative surveys. However, it is not possible to know whether participants were able to complete the surveys in complete privacy. Fourth, due to time constraints, the follow-up assessments were carried out three weeks post-intervention. The length of this follow-up time may have been too short to capture the change of the intervention. Furthermore, the long-term sustainability of the observed changes remains unclear, highlighting the need for a longer follow-up period.

Qualitative data

There are also limitations associated with the qualitative data collected. First, even though all of the interviews and focus groups were conducted with local research assistants, it is possible that the primary author may have been viewed as an outsider, which may have subjected participant replies to social desirability bias. Participants may have attempted to give answers that were deemed desirable, rather than providing answers which they resonated more with. Second, focus group and interview dynamics may also have been impacted by the differences in education level of the interpreters and participants. However, efforts were made to mitigate this, by holding training sessions with the interpreters and research assistants on conducting ethical qualitative research prior to the interviews and focus groups. Where

possible, interviews and focus groups were also conducted with interviewers of the same gender. All interviews and focus groups with women were conducted by women, and the interviews and focus groups with men were either led by a man, and in some of the sessions the primary author (a woman) was present to due to lack of human resources. This may have influenced the interview and focus groups, however, efforts were made to make sure participants were comfortable, by for instance choosing settings familiar to participants.

In Jamaica, all of the interviews and focus groups took place in settings where the participants normally resided (in enclosed spaces in community centres or outside schools). In South Africa, whilst the research was planned to be held in a meeting hall in a peri-urban township, as a result of safety concerns, the interviews and focus groups were moved and held in a university meeting room. The academic setting may have contributed to an increase in social desirability bias, since participants may have felt less comfortable sharing unfavourable experiences of the programme whilst in a university location. However, efforts to address this were made by explicitly telling participants that there were no right or wrong answers, and that all experiences and pieces information shared were useful. Third, given that the interviews and focus groups conducted in isiXhosa (in South Africa) were translated into English, it is possible some nuances of the information shared by participants were not captured. Steps were taken to address this by checking translations with the local interpreters and research assistants, however, there remains a possibility that some subtleties may not have been adequately conveyed.

7.2.1.3 Limitations of external validity

There are also aspects of this research that may impact the external validity of the study. First, while the study was conducted in multiple settings (Jamaica and South Africa), findings from

the research may not be generalisable to other contexts within those countries (e.g., other parishes in Jamaica and other areas of South Africa), as well as outside of those countries. Further research in other contexts is needed to better understand how ParentText may function in other contexts and countries. Second, it is also important to note that men were underrepresented in the study. A challenge that arose in Jamaica was the recruitment of male participants. Whilst recruitment of male caregivers is a known difficulty with parenting interventions (McGirr et al., 2020), and it was possible to recruit male caregivers in South Africa, there ended up being only female caregivers in Jamaica, primarily due to the global WhatsApp outage and recruitment delays. The lack of male caregivers in both the quantitative and qualitative analysis mean that certain experiences may have been under-estimated due to the low number of fathers included. This challenge also highlights the need in future studies to make sure greater efforts are taken to adopt recruitment strategies that ensure men are also included. Third, given that participants in the present research were provided with mobile data in order to use the chatbot, this also limits the generalisability of the study findings and its applicability and scalability in real-world conditions, when data is not provided. As such, it is important for future research to further test how the intervention can be disseminated beyond the conditions of a user-testing and pilot study.

7.2.2 Overarching strengths

The overarching strengths of this doctorate include the novelty of integrating IPV prevention content in a digital parenting intervention, the topical nature of the evidence, the multi-country research, and the mixed methods data collection.

7.2.2.1 Novelty of integrating IPV prevention in a digital parent intervention

One of the main strengths of this thesis is its novelty. To the candidate's knowledge, this is the first intervention and study to integrate IPV prevention content into a digital parenting programme. This is particularly valuable for two key reasons. One, despite the high rates of IPV globally, there is a lack of IPV primary perpetration prevention efforts (Anderson et al., 2019). Two, even though emerging evidence highlights the value of integrating multiple violence prevention efforts in programming, it is only very recently that IPV and VAW prevention material has started being integrated in parenting programmes (UNICEF Innocenti et al., 2023b). As such, the present research provides not only much needed evidence on how IPV prevention content can be integrated into a digital intervention, but also offers preliminary findings on the potential benefits and opportunities this type of programming offers.

7.2.2.2 Timely evidence for joint prevention of VAW and VAC

Recent policy developments, such as UNICEF's new Gender Policy 2021-2030 (UNICEF, 2021c) and UNICEF's Gender Action Plan (UNICEF, 2021b), and the release of programming reports such as UNICEF's evidence briefs on Parenting Programmes to Reduce Violence Against Women and Children (UNICEF Innocenti et al., 2023b), highlight the recent shift in both policy and practice toward an integrated approach of violence prevention. Moreover, integrating joint violence prevention efforts using digital technology is also particularly topical given the rise in use of digital technologies to improve impact and delivery of social interventions (Iyamu et al., 2022).

7.2.2.3 Intervention delivery in multiple countries

Conducting the present research in two different cultural contexts is also major strength. Delivering the intervention in two different countries (Jamaica and South Africa) provides unique insights into how violence prevention efforts can be implemented in two separate contexts. Notably, in the field of parenting programmes, a major gap in knowledge surrounds how to sustain programs with quality at scale (Lansford et al., 2022). Whilst technology offers promising potential to tackle the challenge of scaling up parenting programmes, exploring how digital interventions might operate in different contexts is vital. As such, the present pilot studies, which were carried out in two different contexts, therefore offer unique insights into the opportunities and challenges associated with implementing a digital parenting intervention.

7.2.2.4 Digital mixed methods data collection

The mixed methods approach used is another major strength of the present research. In the area of families and relationships, mixed methods research has been noted as particularly beneficial (Thomeer et al., 2024). The mixed methods approach facilitated triangulation of data, which can help reach more robust conclusions, particularly in an area where there might be gaps in knowledge (Thomeer et al., 2024). The present research also used a range of quantitative measurements in the exploratory analysis, including not only IPV experience and perpetration, but also associated risk factors such as attitudes toward IPV and gender-equitable behaviours. By including a variety of outcome measurements, this thesis was able to gain insights not only on changes in IPV experience and perpetration, but also key related risk factors. The present study also utilised technology to conduct remote data collection, offering insights on the benefits of digital methods of collecting data. For instance, using digital devices such as Audio-Computer Assisted Self- Interview (ACASI), particularly with sensitive research topics such as sexual health and behaviours, has been suggested to reduce

social desirability bias which may occur in face-to-face interviews (Falb et al., 2017; Metzger et al., 2000). Whilst the present research used digital surveys on phones, rather than ACASI, it is still likely that using this digital method of data collection may have reduced some social desirability bias that may occur face-to-face, highlighting another strength of the triangulation of methods used.

7.3 Suggestions for future research

7.3.1 Randomised controlled trials

Given that the present exploratory study employed a pre-post design, in the future, the use of a large, sufficiently powered, randomised controlled trial (RCT) research design would be beneficial in order to test causal effects of the intervention on IPV outcomes. Furthermore, with an RCT, mediation analyses could be conducted to examine how mechanisms in ParentText contributed to potential changes in IPV experience and perpetration in the intervention compared to the control group (Strayhorn et al., 2021). Understanding the mechanisms of change underlying the effectiveness of the intervention, would be particularly valuable when seeking to scale up an intervention and increase reach (Levtov et al., 2022). For instance, using data from an RCT of the gender-transformative Bandebereho intervention in Rwanda, Levtov et al. (2022) constructed structural equation models to analyse the role of different mediating variables on the impact of the intervention on IPV. In their study, the findings showed that multiple underlying mechanisms accounted for the effects of the intervention (Levtov et al., 2022). Their finding that multiple mechanisms, including the shifting of gender attitudes, improving joint decision-making, and developing communication skills, all played key role in driving intervention effects, is in line with other gender-transformative studies (Levtov et al., 2022; Stern et al., 2022). It is likely this reflects the holistic, multicomponent design of the programme. Interestingly, however, other intervention

studies have found that for men, attitudes toward the acceptability of IPV, seem to be stronger mediators of reductions in violence than attitudes toward more general gender norms (Abramsky et al., 2016). This underscores the need for more research on the mechanisms of change in prevention programmes in order to better understand what underlying mechanisms reduce IPV and different types of IPV (Pearson et al., 2022).

Future research would also benefit from incorporating a factorial experiment design, which can be used to examine which specific intervention components have an effect on outcomes and which components interact with each other (Collins, 2018). Knowing which components should be kept in order to sustain impact when taking an intervention to scale or delivering it in a new setting is critical, especially when considering programme length and implementation costs (Starmann et al., 2017). Likewise, given that certain populations, such as adolescents, young women, and women with disabilities, are at heightened risk of experiencing IPV (Decker et al., 2014; Meyer et al., 2023; Nyemgah et al., 2024), future studies would also benefit from further research on moderator effects to better understand how this might moderate intervention effects. Equally, given research on how mental health, alcohol consumption, and male demographic characteristics, may influence male-perpetrated IPV (Kuchukhidze et al., 2023; Oyekunle et al., 2023; Shubina et al., 2023), subgroup analyses would also be beneficial to better understand potential moderation effects.

7.3.2 Father and male engagement

Given the challenges with male recruitment and engagement in the present study, future research would benefit from examining this further. Research suggests that using digital technology in parenting interventions can help address some of the barriers that fathers face when seeking caregiving support and advice (Xie et al., 2023). Despite its potential,

challenges remain with male recruitment and father engagement in family healthcare (Watkins et al., 2024). As such, exploring further strategies to recruit more fathers and maintain male engagement in parenting programmes is a key priority. Making sure fathers and male caregivers are involved is also important in order to make sure that programmes are not unintentionally reinforcing power imbalances and gender stereotypes (Equimundo, 2021; UNICEF Innocenti et al., 2023a). Ensuring that men are engaged is also particularly valuable given the opportunity that parenting interventions offer to address multiple forms of violence (Bacchus et al., 2024). Fatherhood provides a unique entry-point to engage men in making positives changes in their relationship with their partners and children, as well as transforming harmful gender dynamics and redistributing care and domestic work (Doyle et al., 2014, 2023). In terms of overcoming the challenge of recruiting and retaining men in programmes, there is emerging research that suggests more father-specific approaches need to be adopted (Gonzalez et al., 2023; Lechowicz et al., 2019; Panter-Brick et al., 2014). For example, future research would benefit from using more language-specific recruitment strategies, such as specifically using the word 'father' rather than 'parent', as research findings indicate that fathers frequently assume the word 'parent' is interchangeable with 'mother'(McGirr et al., 2020; Vollmer et al., 2019; Yaremych & Persky, 2023).

Despite the challenges associated with engaging fathers in parenting programmes (Gonzalez et al., 2023), research indicates that digital parenting interventions offer a unique opportunity to reach men (Liverpool et al., 2023; Tully et al., 2017). For example, findings from a study by Tully et al. (2017) on parenting interventions and fathers' preferences and barriers to participation found that internet-based parenting programmes and brief parenting interventions were the most preferred delivery modalities. This is reiterated by results from a systematic review on father-inclusive interventions in LMICs by Jeong et al. (2023), which

found that flexible scheduling, providing program content using existing delivery platforms, and engaging community members, are key enablers of program engagement and success. There is also evidence which underscores the value of emotional support and community in facilitating engagement and shifting gender norms, which suggests that to engage men and initiate change, a hybrid strategy combining both digital and in-person approaches is needed (Miller et al., 2020; Zielke et al., 2023).

7.4 Implications for policy and practice

7.4.1 Joint prevention of VAW and VAC agenda

The present research has multiple implications for both policy and practice. First, given the growing interest in joint prevention efforts that seek to target both IPV against women and violence against children (VAC) concurrently, the findings of the present research has relevance for shaping policies and practices that promote integrated approaches to violence prevention. Policy documents, funding investments, and actions plans, such as the EU-UN Spotlight Initiative to eliminate violence against women and girls (Spotlight Initative, 2022) and the UNICEF Gender Action Plan (UNICEF, 2021b) have emphasized the urgency of addressing VAW and VAC comprehensively, recognizing the interconnections between them. Integrating IPV prevention into parenting programmes aligns with these joint prevention agendas by addressing shared risk factors of violence within families.

The importance of integrating IPV and VAW prevention in programmes is also highlighted in the recently released UNICEF parenting briefs focused on integrating IPV and VAC (UNICEF Innocenti et al., 2023b). By integrating IPV prevention into parenting programmes, practitioners and policymakers can foster collaboration between VAW and VAC prevention efforts, leading to more comprehensive interventions that address violence across the

lifespan. Integrating IPV prevention material in parenting programmes, also directly addresses the Sustainable Development Goals (SDG) 5.2 which aims to eliminate all forms of violence against women and girls in public and private spheres, thereby also accelerating progress towards broader SDG goals (United Nations, 2024).

7.4.2 Scaling up interventions: use of digital technology and safety

Another key contribution of this thesis includes its implications for scaling up interventions though the use of digital technology and ensuring safety in programme delivery. As access to digital technology and phones becomes more prevalent, leveraging digital devices to delivery parenting programs can increase their reach and accessibility, facilitating scale-up (McCool et al., 2022). However, it is vital to prioritise privacy and safety measures, especially when carrying out remote data collection and addressing sensitive topics such as violence prevention (Bhatia et al., 2020). The present research provides valuable insights which illustrate both how IPV prevention content can be integrated into a digital parenting programme, and demonstrates how various safeguarding measures, such as referral procedures and privacy, can be implemented to ensure the safety of users. Integrating IPV prevention content into digital parenting programmes therefore presents an opportunity to harness technology for scaling up multi-component interventions while prioritising user safety.

7.5 Dissemination and impact

Dissemination of findings from this thesis include peer reviewed publications, policy briefs, and presentations at conferences, institutions, and online webinars. Paper 1 has been published in *BMC Public Health* and has also been converted into a policy brief. Paper 2 has been submitted to the *Journal of Medical Internet Research (JMIR) Formative Research* and

Paper 3 has been submitted to *Violence Against Women*. The candidate has presented findings of the thesis at the following meetings and conferences: (1) University of Oxford, Department of Social Policy and Intervention (DSPI), Centre for Evidence-Based Intervention (CEBI) Seminar (2021); (2) University of Oxford, DSPI, Violence Research Group (2021); (3) The Prevention Collaborative Webinar: Lessons on virtual violence prevention and response programmes (2022); (4) University of Oxford, Nuffield College, Symposium for Early Researchers in Social Policy and Intervention (SERSPI) (2022, 2023); (5) University of Oxford, St Anne's College, The Economic and Social Research Council (ESRC) Grand Union Doctoral Training Partnership Annual Conference (2022); (6) The Sexual Violence Research Initiative (SVRI) Forum, Mexico (2022); (7) The International Society for the Prevention of Child Abuse and Neglect (ISPCAN) Edinburgh Congress (2023); and (8) The European Institute of Gender (EIGE) (2023). The candidate will also be presenting the findings of the thesis at the following upcoming meetings and conferences: UNICEF Jamaica Webinar; (2024; forthcoming); ISPCAN Sweden Congress, Uppsala, Sweden (2024; forthcoming); The Sexual Violence Research Initiative (SVRI) Forum, Cape Town, South Africa (2024; forthcoming).

The content and measurements have been incorporated into several studies in Tanzania (Baerecke et al., 2024), South Africa (Ambrosio et al., 2023), and Malaysia (Cooper et al., 2023), led by the Global Parenting Initiative (GPI), a research collaboration of universities, foundations and implementing partners seeking to provide free, evidence-based parenting support to parents around the world (Davids & Oppler, 2022). The IPV prevention material has, to date, been translated into over eight languages in five countries (Jamaica, South Africa, Sri Lanka, Tanzania, and Malaysia). This research is the first instance of integrating IPV prevention content into a parenting chatbot and has had a major impact on the field and

the capacity to address VAW and VAC in a scalable way. Given the emerging policy and research interest in IPV prevention (European Commission, 2023; UNICEF, 2023; United Nations, 2022b; WHO, 2019) and joint intervention efforts addressing IPV and VAC (Bacchus et al., 2024; UN Women, 2024; UNICEF, 2021a), the present thesis therefore offers a preliminary, yet timely, contribution to the field, highlighting how IPV prevention content can be integrated into a digital parenting intervention.

8 Conclusion

> *'Violence against women and girls is preventable. To prevent violence, mitigate the risk factors and amplify the protective factors.'*
> *– WHO (2019, p.5)*

In conclusion, the present thesis offers a unique insight into the development, integration, and preliminary testing of IPV prevention content integrated into a digital parenting programme. The findings of this research make a valuable contribution both to the field of violence prevention, specifically IPV, and to field of digital intervention research. IPV is a serious and pervasive issue that impacts millions of individuals worldwide, leading to severe physical, psychological and emotional harm (WHO, 2021c). The alarming rates of IPV globally underscore the urgent need for prevention efforts that can be disseminated widely and brought to scale (Sanders et al., 2021; Sardinha et al., 2022). The present research provides preliminary, yet important, insights into how digital platforms can be used to deliver crucial prevention content, reaching a wider population than in-person methods. This thesis also highlights areas that warrant further research and consideration, such as questions on how to improve involvement of fathers, enhance programme retention and engagement, and options for hybrid modalities.

Findings of the present research come at a time of particular importance, given the growing interest in both policy and practice, toward integrating IPV prevention in parenting programmes that seek to prevent violence against children (European Commission, 2023; UN Women, 2024; UNICEF Innocenti et al., 2023b). As such, this study contributes to the growing body of evidence surrounding the role of digital interventions in violence prevention

efforts (Sanders et al., 2021). The findings from this thesis demonstrate how IPV prevention content can be integrated into a digital parenting programme, and provides exploratory, preliminary results indicating reductions in overall IPV experience, perpetration, and harmful attitudes toward IPV among men, and an increase in gender-equitable behaviours, along with an insight into participants' experience of the intervention.

In summary, this thesis contributes to the field of violence prevention by demonstrating how to integrate IPV prevention content into digital parenting programme as well as highlights how technology can be leveraged to scale up joint violence prevention efforts. The insights gained from this research pave the way for future research and digital innovations in violence prevention efforts, with the ultimate goal of creating safer, more equitable family relations free from violence.

References

Abebe, K. Z., Jones, K. A., Culyba, A. J., Feliz, N. B., Anderson, H., Torres, I., Zelazny, S., Bamwine, P., Boateng, A., Cirba, B., Detchon, A., Devine, D., Feinstein, Z., Macak, J., Massof, M., Miller-Walfish, S., Morrow, S. E., Mulbah, P., Mulwa, Z., … Miller, E. (2018). Engendering healthy masculinities to prevent sexual violence: Rationale for and design of the Manhood 2.0 trial. *Contemporary Clinical Trials*, *71*(January), 18–32. https://doi.org/10.1016/j.cct.2018.05.017

Abramsky, T., Devries, K., Kiss, L., Francisco, L., Nakuti, J., Musuya, T., Kyegombe, N., Starmann, E., Kaye, D., Michau, L., & Watts, C. (2012). A community mobilisation intervention to prevent violence against women and reduce HIV/AIDS risk in Kampala, Uganda (the SASA! Study): study protocol for a cluster randomised controlled trial. *Trials*, *13*(1), 1–22. https://doi.org/10.1186/1745-6215-13-96/FIGURES/7

Abramsky, T., Devries, K., Kiss, L., Nakuti, J., Kyegombe, N., Starmann, E., Cundill, B., Francisco, L., Kaye, D., Musuya, T., Michau, L., & Watts, C. (2014). Findings from the SASA! Study: A cluster randomized controlled trial to assess the impact of a community mobilization intervention to prevent violence against women and reduce HIV risk in Kampala, Uganda. *BMC Medicine*, *12*(1), 1–17. https://doi.org/10.1186/S12916-014-0122-5/TABLES/5

Abramsky, T., Devries, K. M., Michau, L., Nakuti, J., Musuya, T., Kiss, L., Kyegombe, N., & Watts, C. (2016). Ecological pathways to prevention: How does the SASA! community mobilisation model work to prevent physical intimate partner violence against women? *BMC Public Health*, *16*(1), 15–17. https://doi.org/10.1186/s12889-016-3018-9

Abramsky, T., Kapinga, I., Mshana, G., Lees, S., Hansen, C. H., Hashim, R., Stöckl, H., Kapiga, S., & Harvey, S. (2020). Couples data from north-western Tanzania: Insights

from a survey of male partners of women enrolled in the MAISHA cluster randomized trial of an intimate partner violence prevention intervention. *PLoS ONE*, *15*(10 October), 1–21. https://doi.org/10.1371/journal.pone.0240112

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation.* https://psycnet.apa.org/record/1980-50809-000

Aiyegbusi, O. L., Cruz Rivera, S., Roydhouse, J., Kamudoni, P., Alder, Y., Anderson, N., Baldwin, R. M., Bhatnagar, V., Black, J., Bottomley, A., Brundage, M., Cella, D., Collis, P., Davies, E. H., Denniston, A. K., Efficace, F., Gardner, A., Gnanasakthy, A., Golub, R. M., … Calvert, M. J. (2024). Recommendations to address respondent burden associated with patient-reported outcome assessment. *Nature Medicine*, *30*(3), 650–659. https://doi.org/10.1038/s41591-024-02827-9

Alhusen, J. L., Ho, G. W. K., Smith, K. F., & Campbell, J. C. (2014). Addressing Intimate Partner Violence and Child Maltreatment: Challenges and Opportunities. In J. E. Korbin & R. D. Krugman (Eds.), *Handbook of Child Maltreatment*. SpringerN.

Alhusen, J. L., Ray, E., Sharps, P., & Bullock, L. (2015). Intimate Partner Violence During Pregnancy: Maternal and Neonatal Outcomes. *Https://Home.Liebertpub.Com/Jwh*, *24*(1), 100–106. https://doi.org/10.1089/JWH.2014.4872

Ali, P. A., & Naylor, P. B. (2013a). Intimate partner violence: A narrative review of the feminist, social and ecological explanations for its causation. *Aggression and Violent Behavior*, *18*(6), 611–619. https://doi.org/10.1016/j.avb.2013.07.009

Ali, P. A., & Naylor, P. B. (2013b). Intimate partner violence: A narrative review of the biological and psychological explanations for its causation. *Aggression and Violent Behavior*, *18*(3), 373–382. https://doi.org/10.1016/J.AVB.2013.01.003

Aloyce, D., Mshana, G., Peter, E., Malibwa, D., Buller, A. M., Mchome, Z., Kapiga, S., &

Stöckl, H. (2024). Pathways of romantic jealousy to intimate partner violence in Mwanza, northern Tanzania. *Family Relations*, *73*(2), 843–857. https://doi.org/10.1111/fare.12880

Aloyce, D., Stöckl, H., Malibwa, D., Peter, E., Mchome, Z., Dwarumpudi, A., Buller, A. M., Kapiga, S., & Mshana, G. (2023). Men's Reflections on Romantic Jealousy and Intimate Partner Violence in Mwanza, Tanzania. *Violence Against Women*, *29*(6–7), 1299–1318. https://doi.org/10.1177/10778012221108421

Alphonse, A., Stewart, K., Brown, J., & Perski, O. (2022). Exploring Users' Experiences With a Quick-Response Chatbot Within a Popular Smoking Cessation Smartphone App: Semistructured Interview Study. *JMIR Formative Research*, *6*(7), e36869. https://doi.org/10.2196/36869

Alsina, E., Browne, J. L., Gielkens, D., Noorman, M. A. J., & de Wit, J. B. F. (2023). Interventions to Prevent Intimate Partner Violence: A Systematic Review and Meta-Analysis. *Violence Against Women*. https://doi.org/10.1177/10778012231183660

Ambrosio, M., Lachman, J., Zinzer, P., Gwebu, H., Vyas, S., Vallance, I., Calderon, F., Gardner, F., Markle, L., Stern, D., Facciola, C., Schley, A., Danisa, N., Brukwe, K., & Melendez-Torres, G. J. (2023). *A factorial randomised controlled trial to optimise user engagement in a chatbot-led parenting intervention in South Africa: Study protocol for the ParentText Optimisation Trial (Preprint)*. https://doi.org/10.2196/preprints.52145

Anderson, E. J., McClelland, J., Meyer Krause, C., Krause, K. C., Garcia, D. O., & Koss, M. P. (2019). Web-based and mHealth interventions for intimate partner violence prevention: A systematic review protocol. *BMJ Open*, *9*(8), 1–5. https://doi.org/10.1136/bmjopen-2019-029880

Anderson, J. F., & Kras, K. (2008). Revisiting Albert Bandura's Social Learning Theory to Better Understand and Assist Victims of Intimate Personal Violence. *Women &*

Criminal Justice, *17*(1), 99–124. https://doi.org/10.1300/J012V17N01_05

Anderson, K., & van Ee, E. (2018). Mothers and children exposed to intimate partner violence: a review of treatment interventions. *International Journal of Environmental Research and Public Health*, *15*(9). https://doi.org/10.3390/ijerph15091955

Andrews, J. A., Fosterb, S. L., Capaldi, D., & Hops, H. (2000). Adolescent and family predictors of physical aggression, communication, and satisfaction in young adult couples: A prospective analysis. *Journal of Consulting and Clinical Psychology*, *68*(2), 195–208. https://doi.org/10.1037/0022-006X.68.2.195

Anglin, K., Liu, Q., & Wong, V. C. (2024). A primer on the validity typology and threats to validity in education research. *Asia Pacific Education Review*, *2002*. https://doi.org/10.1007/s12564-024-09955-4

Ashburn, K., Kerner, B., Ojamuge, D., & Lundgren, R. (2017). Evaluation of the Responsible, Engaged, and Loving (REAL) Fathers Initiative on Physical Child Punishment and Intimate Partner Violence in Northern Uganda. *Prevention Science*, *18*(7), 854–864. https://doi.org/10.1007/s11121-016-0713-9

Awah, I., Green, O., Baerecke, L., Janowski, R., Klapwijk, J., Chetty, A. N., Wamoyi, J., & Cluver, L. D. (2022). 'It provides practical tips, practical solutions!': acceptability, usability, and satisfaction of a digital parenting intervention across African countries. *Psychology, Health & Medicine*, *27*(sup1), 107–123. https://doi.org/10.1080/13548506.2022.2113106

Bacchus, L. J., Colombini, M., Contreras Urbina, M., Howarth, E., Gardner, F., Annan, J., Ashburn, K., Madrid, B., Levtov, R., & Watts, C. (2017). Exploring opportunities for coordinated responses to intimate partner violence and child maltreatment in low and middle income countries: a scoping review. *Psychology, Health and Medicine*, *22*, 135–165. https://doi.org/10.1080/13548506.2016.1274410

Bacchus, L. J., Colombini, M., Pearson, I., Gevers, A., Stöckl, H., & Guedes, A. C. (2024). Interventions that prevent or respond to intimate partner violence against women and violence against children: a systematic review. *The Lancet Public Health*, *9*(5), 326–338. https://doi.org/10.1016/S2468-2667(24)00048-3

Backhaus*, S., Gardner*, F., Melendez-Torres, G., Schafer, M., Knerr, W., & Lachman, J. (2023). *WHO Guidelines on parenting interventions to prevent maltreatment and enhance parent–child relationships with children aged 0–17 years: Report of the Systematic Reviews of Evidence.*

Backhaus, S., Gardner, F., Schafer, M., Melendez-Torres, G. J., Knerr, W., & Lachman, J. M. (2023). *Parenting interventions to prevent child maltreatment and enhance parent-child relationships with children aged 0-17 years. Report of the systematic reviews of evidence.* https://cdn.who.int/media/docs/default-source/documents/violence-prevention/systematic_reviews-for-the-who-parenting-guideline-jan-27th-2023.pdf?sfvrsn=158fd424_3

Backhaus, Sophia, Leijten, P., Jochim, J., Melendez-Torres, G. J., & Gardner, F. (2023). Effects over time of parenting interventions to reduce physical and emotional violence against children: a systematic review and meta-analysis. *EClinicalMedicine*, *60*, 102003. https://doi.org/10.1016/j.eclinm.2023.102003

Baerecke, L., Ornellas, A., Wamoyi, J., Wambura, M., Klapwijk, J., Chetty, A. N., Simpson, A., Janowski, R., de Graaf, K., Stern, D., Clements, L., te Winkel, E., Christine, L., Mbosoli, G., Nyalali, K., Onduru, O. G., Booij, A., Mjwara, S. N., Tsoanyane, S., … Cluver, L. D. (2024). A hybrid digital parenting programme to prevent abuse of adolescents in Tanzania: study protocol for a pragmatic cluster-randomised controlled trial. *Trials*, *25*(1), 1–19. https://doi.org/10.1186/s13063-023-07893-x

Bailey, D. H., Duncan, G. J., Cunha, F., Foorman, B. R., & Yeager, D. S. (2020). Persistence

and Fade-Out of Educational-Intervention Effects: Mechanisms and Potential Solutions. *Psychological Science in the Public Interest*, *21*(2), 55–97. https://doi.org/10.1177/1529100620915848

Bandara, P., Knipe, D., Munasinghe, S., Rajapakse, T., Page, A., & Author, C. (2021). Socioeconomic and Geographic Correlates of Intimate Partner Violence in Sri Lanka: Analysis of the 2016 Demographic and Health Survey: *Https://Doi.Org/10.1177/08862605211055146*, *0*(0), 088626052110551. https://doi.org/10.1177/08862605211055146

Bandura, A. (1973). *Aggression: A social learning analysis.* Prentice-Hall. https://psycnet.apa.org/record/1974-00914-000

Barlow, J. (2014). Preventing child maltreatment and youth violence using parent training and home-visiting programmes. In P. D. Donnelly & C. L. Ward (Eds.), *Oxford Textbook of Violence Prevention: Epidemiology, Evidence, and Policy*. Oxford University Press.

Barlow, J., Bergman, H., Kornør, H., Wei, Y., & Bennett, C. (2016). Group-based parent training programmes for improving emotional and behavioural adjustment in young children. *Cochrane Database of Systematic Reviews*, *8*. https://doi.org/10.1002/14651858.CD003680.pub3

Baudry, C., Tarabulsy, G. M., Atkinson, L., Pearson, J., & St-Pierre, A. (2017). Intervention with Adolescent Mother–Child Dyads and Cognitive Development in Early Childhood: a Meta-Analysis. *Prevention Science*, *18*(1), 116–130. https://doi.org/10.1007/S11121-016-0731-7/TABLES/3

Baumann, A. A., Mejia, A., Lachman, J. M., Parra-Cardona, R., López-Zerón, G., Amador Buenabad, N. G., Vargas Contreras, E., & Domenech Rodríguez, M. M. (2018). Parenting Programs for Underserved Populations in Low- and Middle-Income

Countries: Issues of Scientific Integrity and Social Justice. *Global Social Welfare 2018 6:3*, *6*(3), 199–207. https://doi.org/10.1007/S40609-018-0121-0

Baumel, A., Muench, F., Edan, S., & Kane, J. M. (2019). Objective User Engagement With Mental Health Apps: Systematic Search and Panel-Based Usage Analysis. *Journal of Medical Internet Research*, *21*(9), e14567. https://doi.org/10.2196/14567

Bayley, J., Wallace, L. M., & Choudhry, K. (2009). Fathers and parenting programmes: barriers and best practice. *Community Practitioner*, *82*(4).

Bean, D. M. (2022). Looking Back to Move Forward. In R. Biholar & D. L. Leslie (Eds.), *Critical Caribbean Perspectives on Preventing Gender-Based Violence*. Routledge. https://www-taylorfrancis-com.ezproxy-prd.bodleian.ox.ac.uk/chapters/edit/10.4324/9781003255208-2/looking-back-move-forward-dalea-marie-bean?context=ubx&refId=096c8470-cfe9-4fbe-b957-d3b52d7059c4

Beauclair, R., Meng, F., Deprez, N., Temmerman, M., Welte, A., Hens, N., & Delva, W. (2013). Evaluating audio computer assisted self-interviews in urban south African communities: Evidence for good suitability and reduced social desirability bias of a cross-sectional survey on sexual behaviour. *BMC Medical Research Methodology*, *13*(1), 1–7. https://doi.org/10.1186/1471-2288-13-11/TABLES/3

Belsky, J. (1980). Child maltreatment: an ecological integration. *American Psychologist*, *35*(4), 320.

Berger, R. (2015). Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qualitative Research*, *15*(2), 219–234. https://doi.org/10.1177/1468794112468475

Bhatia, A., Fabbri, C., Cerna-Turoff, I., Turner, E., Lokot, M., Warria, A., Tuladhar, S., Tanton, C., Knight, L., Lees, S., Cislaghi, B., Bhabha, J., Peterman, A., Guedes, A., &

Devries, K. (2021). Violence against children during the COVID-19 pandemic. *Bulletin of the World Health Organization*, *99*(10), 730. https://doi.org/10.2471/BLT.20.283051

Bhatia, A., Peterman, A., & Guedes, A. (2020). *Remote data collection on violence against children during COVID-19: A conversation with experts on research priorities, measurement and ethics (Part 2)*. UNICEF Innocenti. https://www.unicef-irc.org/article/2004-collecting-remote-data-on-violence-against-children-during-covid-19-a-conversation.html

Bhatia, A., Turner, E., Akim, A., Mirembe, A., Nakuti, J., Parkes, J., Datzberger, S., Nagawa, R., Kung'u, M., Babu, H., Kabuti, R., Kimani, J., Beattie, T. S., D'Oliveira, A. F., Rishal, P., Nyakuwa, R., Bell, S., Bukuluki, P., Cislaghi, B., … Devries, K. (2022). Remote methods for research on violence against women and children: lessons and challenges from research during the COVID-19 pandemic. *BMJ Global Health*, *7*(11). https://doi.org/10.1136/bmjgh-2022-008460

Biholar, R. (2022). Critical Inquiries of Gender-Based Violence in the Anglophone Caribbean. In R. Biholar & D. L. Leslie (Eds.), *Critical Caribbean Perspectives on Preventing Gender-Based Violence*. Routledge. https://www-taylorfrancis-com.ezproxy-prd.bodleian.ox.ac.uk/chapters/edit/10.4324/9781003255208-1/critical-inquiries-gender-based-violence-anglophone-caribbean-ramona-biholar?context=ubx&refId=5c5be2d8-f8d7-44cc-868b-9a34961f16c8

Billingham, S. A., Whitehead, A. L., & Julious, S. A. (2013). An audit of sample sizes for pilot and feasibility trials being undertaken in the United Kingdom registered in the United Kingdom Clinical Research Network database. *BMC Medical Research Methodology*, *13*(1), 1–6. https://doi.org/10.1186/1471-2288-13-104/TABLES/3

Bolarinwa, O. A., Tessema, Z. T., Okyere, J., Ahinkorah, B. O., & Seidu, A.-A. (2023). Spatial distribution and predictors of lifetime experience of intimate partner violence

among women in South Africa. *PLOS Global Public Health*, *3*(1), e0000920. https://doi.org/10.1371/journal.pgph.0000920

Bornstein, M. H., Cluver, L., Deater-Deckard, K., Hill, N. E., Jager, J., Krutikova, S., Lerner, R. M., & Yoshikawa, H. (2022). The Future of Parenting Programs: I Design. *Https://Doi.Org/10.1080/15295192.2022.2087040*, *22*(3), 201–234. https://doi.org/10.1080/15295192.2022.2087040

Bott, S., Guedes, A., Subrahmanian, R., Chowdhury, S., Rumble, L., & Daban, R. A. (2020). Gender Dimensions of Violence Against Children and Adolescents. *United Nations Children's Fund (UNICEF), New York, NY 10017, USA*.

Bowlby, J. (1969). Attachment and Loss. Vol. 1, Attachment. New York: Basic, 1982. *Attachment and Loss*, *2*.

Breitenstein, S. M., Gross, D., & Christophersen, R. (2014). Digital Delivery Methods of Parenting Training Interventions: A Systematic Review. *Worldviews on Evidence-Based Nursing*, *11*(3), 168–176. https://doi.org/10.1111/WVN.12040

Brush, L. D., & Miller, E. (2019). Trouble in Paradigm: "Gender Transformative" Programming in Violence Prevention. *Violence Against Women*, *25*(14), 1635–1656. https://doi.org/10.1177/1077801219872551

Buller, A. M., Pichon, M., Chevalier, C., & Treves-Kagan, S. (2023). The role of gender and romantic jealousy in intimate partner violence against women, a mixed-methods study in Northern Ecuador. *Culture, Health and Sexuality*, *25*(2), 223–240. https://doi.org/10.1080/13691058.2022.2031299

Burke, E., Watson, K., Eva, G., Gold, J., Garcia-Moreno, C., & Amin, A. (2024). Is addressing violence against women prioritised in health policies? Findings from a WHO policies database. *PLOS Global Public Health*, *4*(2), e0002504. https://doi.org/10.1371/JOURNAL.PGPH.0002504

Cameranesi, M., & Piotrowski, C. C. (2020). Critical review of theoretical frameworks elucidating the mechanisms accounting for the adverse developmental outcomes observed in children following exposure to intimate partner violence. *Aggression and Violent Behavior*, *55*, 101455. https://doi.org/10.1016/J.AVB.2020.101455

Campbell, J. C., Glass, N., Sharps, P. W., Laughon, K., & Bloom, T. (2007). Intimate partner homicide: Review and implications of research and policy. *Trauma, Violence, and Abuse*, *8*(3), 246–269. https://doi.org/10.1177/1524838007303505

Cao, J., Lee, C. Y., Liu, X., & Gonzalez-Guarda, R. M. (2023). Risk and Protective Factors Associated With Intimate Partner Violence Against Chinese Women: A Systematic Review. *Trauma, Violence, and Abuse*, *24*(2), 407–419. https://doi.org/10.1177/15248380211030235

Casey, E., Carlson, J., Two Bulls, S., & Yager, A. (2018). Gender Transformative Approaches to Engaging Men in Gender-Based Violence Prevention: A Review and Conceptual Model. *Trauma, Violence, and Abuse*, *19*(2), 231–246. https://doi.org/10.1177/1524838016650191

Cerna-Turoff, I., Fang, Z., Meierkord, A., Wu, Z., Yanguela, J., Bangirana, C. A., & Meinck, F. (2021). Factors Associated With Violence Against Children in Low- and Middle-Income Countries: A Systematic Review and Meta-Regression of Nationally Representative Data. *Trauma, Violence & Abuse*, *22*(2), 219. https://doi.org/10.1177/1524838020985532

Chan, K. L., Brownridge, D. A., Fong, D. Y. T., Tiwari, A., Leung, W. C., & Ho, P. C. (2012). Violence against pregnant women can increase the risk of child abuse: A longitudinal study. *Child Abuse & Neglect*, *36*(4), 275–284. https://doi.org/10.1016/J.CHIABU.2011.12.003

Chang, L. W., Kagaayi, J., Arem, H., Nakigozi, G., Ssempijja, V., Serwadda, D., Quinn, T.

C., Gray, R. H., Bollinger, R. C., & Reynolds, S. J. (2011). Impact of a mhealth intervention for peer health workers on AIDS care in rural Uganda: A mixed methods evaluation of a cluster-randomized trial. *AIDS and Behavior*, *15*(8), 1776–1784. https://doi.org/10.1007/S10461-011-9995-X/FIGURES/3

Chen, M., & Chan, K. L. (2016). Effects of Parenting Programs on Child Maltreatment Prevention: A Meta-Analysis. *Trauma, Violence & Abuse*, *17*(1), 88–104. https://doi.org/10.1177/1524838014566718

Chisholm, C. A., Bullock, L., & Ferguson, J. E. (Jef. (2017). Intimate partner violence and pregnancy: epidemiology and impact. *American Journal of Obstetrics and Gynecology*, *217*(2), 141–144. https://doi.org/10.1016/j.ajog.2017.05.042

Cislaghi, Ben, & Heise, L. (2016). *Measuring Gender-related Social Norms: Report of a Meeting, Baltimore. Maryland, June 14-15, 2016. Learning Group on Social Norms and Gender-based Violence of the London School of Hygiene and Tropical Medicine.* (Issue June). https://researchonline.lshtm.ac.uk/id/eprint/4646972/1/Baltimore norms meeting report_GREEN VoR.pdf

Cislaghi, Beniamino, & Heise, L. (2018a). Four avenues of normative influence: A research agenda for health promotion in low and mid-income countries. *Health Psychology*, *37*(6), 562–573. https://doi.org/10.1037/hea0000618

Cislaghi, Beniamino, & Heise, L. (2018b). Theory and practice of social norms interventions: Eight common pitfalls. *Globalization and Health*, *14*(1), 1–10. https://doi.org/10.1186/s12992-018-0398-x

Cislaghi, Beniamino, & Heise, L. (2020). Gender norms and social norms: differences, similarities and why they matter in prevention science. *Sociology of Health & Illness*, *42*(2), 407–422. https://doi.org/10.1111/1467-9566.13008

Cislaghi, Beniamino, Weber, A. M., Shakya, H. B., Abdalla, S., Bhatia, A., Domingue, B.

W., Mejía-Guevara, I., Stark, L., Seff, I., Richter, L. M., Baptista Menezes, A. M., Victora, C. G., & Darmstadt, G. L. (2022). Innovative methods to analyse the impact of gender norms on adolescent health using global health survey data. *Social Science and Medicine*, *293*(April 2021). https://doi.org/10.1016/j.socscimed.2021.114652

Clark, C. J., Ferguson, G., Shrestha, B., Shrestha, P. N., Oakes, J. M., Gupta, J., McGhee, S., Cheong, Y. F., & Yount, K. M. (2018). Social norms and women's risk of intimate partner violence in Nepal. *Social Science & Medicine*, *202*, 162–169. https://doi.org/10.1016/J.SOCSCIMED.2018.02.017

Cluver, L. D., Meinck, F., Steinert, J. I., Shenderovich, Y., Doubt, J., Romero, R. H., Lombard, C. J., Redfern, A., Ward, C. L., Tsoanyane, S., Nzima, D., Sibanda, N., Wittesaele, C., De Stone, S., Boyes, M. E., Catanho, R., Lachman, J. M. L., Salah, N., Nocuza, M., & Gardner, F. (2018). Parenting for lifelong health: A pragmatic cluster randomised controlled trial of a non-commercialised parenting programme for adolescents and their families in South Africa. *BMJ Global Health*, *3*(1), 1–15. https://doi.org/10.1136/bmjgh-2017-000539

Cluver, L., Lachman, J. M., Sherr, L., Wessels, I., Krug, E., Rakotomalala, S., Blight, S., Hillis, S., Bachman, G., Green, O., Butchart, A., Tomlinson, M., Ward, C. L., Doubt, J., & McDonald, K. (2020). Parenting in a time of COVID-19. *The Lancet*, *395*(10231), e64. https://doi.org/10.1016/S0140-6736(20)30736-4

Cluver, L., Yakubovich, A., Doubt, J., Redfern, A., Ward, C., Salah, N., De Stone, S., Petersen, T., Mpimpilashe, P., Romero, R. H., Ncobo, L., Lachman, J., Tsoanyane, S., Shenderovich, Y., Loening, H., Byrne, J., Sherr, L., Kaplan, L., & Gardner, F. (2016). Reducing child abuse amongst adolescents in low- and middle-income countries: A pre-post trial in South Africa. *BMC Public Health*, *16*(1). https://doi.org/10.1186/S12889-016-3262-Z

Coghlan, S., Leins, K., Sheldrick, S., Cheong, M., Gooding, P., & D'Alfonso, S. (2023). To chat or bot to chat: Ethical issues with using chatbots in mental health. *Digital Health*, *9*. https://doi.org/10.1177/20552076231183542

Collins, D. A. J., Tully, L. A., Piotrowska, P. J., Hawes, D. J., & Dadds, M. R. (2019). Perspectives on ParentWorks: Learnings from the development and national roll-out of a self-directed online parenting intervention. *Internet Interventions*, *15*, 52–59. https://doi.org/10.1016/J.INVENT.2018.12.002

Collins, L. M. (2018). Optimization of behavioral, biobehavioral, and biomedical interventions. *Cham: Springer International Publishing*, *10*(1007), 973–978.

Cooper, H., Nadzri, F. Z. M., Vyas, S., Juhari, R., Ismail, N., Arshat, Z., Rajandiran, D., Markle, L., Calderon, F., Vallance, I., Melendez-Torres, G. J., Facciolà, C., Senesathith, V., Gardner, F., & Lachman, J. M. (2023). A hybrid digital parenting programme delivered within the Malaysian preschool system: Protocol for a feasibility study of a small scale cluster randomised factorial trial (Preprint). *JMIR Research Protocols*, *13*. https://doi.org/10.2196/55491

Coore Desai, C., Reece, J. A., & Shakespeare-Pellington, S. (2017). The prevention of violence in childhood through parenting programmes: a global review. *Psychology, Health & Medicine*, *22*, 166–186. https://doi.org/10.1080/13548506.2016.1271952

Cork, C., White, R., Noel, P., & Bergin, N. (2020). Randomized Controlled Trials of Interventions Addressing Intimate Partner Violence in Sub-Saharan Africa: A Systematic Review. *Trauma, Violence, and Abuse*, *21*(4), 643–659. https://doi.org/10.1177/1524838018784585

Cox, M. J., Paley, B., & Harter, K. (2001). Interparental Conflict and Parent–Child Relationships. In F. D. Fincham & J. H. Grych (Eds.), *Interparental Conflict and Child Development: Theory, Research and Applications* (pp. 249–272). Cambridge University

Press. https://doi.org/DOI: 10.1017/CBO9780511527838.011

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2013). Developing and evaluating complex interventions: The new Medical Research Council guidance. *International Journal of Nursing Studies*, *50*(5), 587–592. https://doi.org/10.1016/J.IJNURSTU.2012.09.010

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., Petticrew, M., Health, P., Unit, S., Michie, S., Nazareth, I., & Petticrew, M. (2008). Developing and evaluating complex interventions : new guidance. *BMJ (Clinical Research Ed.)*, *337*(September), a1655. https://doi.org/10.1136/bmj.a1655

Cullen, C. (2023). Method Matters: The Underreporting of Intimate Partner Violence. *The World Bank Economic Review*, *37*(1), 49–73. https://doi.org/10.1093/WBER/LHAC022

Dadds, M. R., Sicouri, G., Piotrowska, P. J., Collins, D. A. J., Hawes, D. J., Moul, C., Lenroot, R. K., Frick, P. J., Anderson, V., Kimonis, E. R., & Tully, L. A. (2019). Keeping Parents Involved: Predicting Attrition in a Self-Directed, Online Program for Childhood Conduct Problems. *Journal of Clinical Child & Adolescent Psychology*, *48*(6), 881–893. https://doi.org/10.1080/15374416.2018.1485109

Davids, N., & Oppler, A. (2022). *Global Parenting Initiative helps children thrive*. https://www.news.uct.ac.za/article/-2022-12-08-global-parenting-initiative-helps-children-thrive

Day, J., Freiberg, K., Hayes, A., & Homel, R. (2019). Towards Scalable, Integrative Assessment of Children's Self-Regulatory Capabilities: New Applications of Digital Technology. *Clinical Child and Family Psychology Review 2019 22:1*, *22*(1), 90–103. https://doi.org/10.1007/S10567-019-00282-4

De Coster, S., & Heimer, K. (2021). Unifying Theory and Research on Intimate Partner Violence: A Feminist Perspective: *Https://Doi.Org/10.1177/1557085120987615*, *16*(3),

286–303. https://doi.org/10.1177/1557085120987615

De Filippo, A., Bellatin, P., Tietz, N., Grant, E., Whitefield, A., Nkopane, P., Devereux, C., Crawford, K., Vermeulen, B., & Hatcherid, A. M. (2023). Effects of digital chatbot on gender attitudes and exposure to intimate partner violence among young women in South Africa. *PLOS Digital Health*, *2*(10), e0000358. https://doi.org/10.1371/JOURNAL.PDIG.0000358

De Silva, M. J., Breuer, E., Lee, L., Asher, L., Chowdhary, N., Lund, C., & Patel, V. (2014). Theory of Change: A theory-driven approach to enhance the Medical Research Council's framework for complex interventions. *Trials*, *15*(1), 1–13. https://doi.org/10.1186/1745-6215-15-267/FIGURES/2

Decker, M. R., Peitzmeier, S., Olumide, A., Acharya, R., Ojengbede, O., Covarrubias, L., Gao, E., Cheng, Y., Delany-Moretlwe, S., & Brahmbhatt, H. (2014). Prevalence and health impact of intimate partner violence and non-partner sexual violence among female adolescents aged 15-19 years in vulnerable urban environments: A multi-country study. *Journal of Adolescent Health*, *55*(6), S58–S67. https://doi.org/10.1016/j.jadohealth.2014.08.022

DeKeseredy, W. S., & Dragiewicz, M. (2007). Understanding the complexities of feminist perspectives on woman abuse: A commentary on Donald G. Dutton's Rethinking domestic violence. *Violence against Women*, *13*(8), 874–884.

Demeke, M. G., & Shibeshi, E. T. (2022). Intimate partner violence against women of reproductive age and associated factors during COVID-19 pandemic in Northern Ethiopia, 2021: A community-based cross-sectional study. *Frontiers in Global Women's Health*, *3*(February), 1–17. https://doi.org/10.3389/fgwh.2022.977153

Department of Women Youth and Persons with Disabilities South Africa. (2020). *National Strategic Plan (NSP) on Gender-Based Violence and Femicide*.

https://www.justice.gov.za/vg/gbv/nsp-gbvf-final-doc-04-05.pdf

Devlin, H., Sample, I., & Elgot, J. (2021, November 21). *South Africa to be put on England's travel red list over new Covid variant | Coronavirus | The Guardian*. https://www.theguardian.com/world/2021/nov/25/scientists-call-for-travel-code-red-over-covid-variant-found-in-southern-africa

Devries, K. M., Kishor, S., Johnson, H., Stöckl, H., Bacchus, L. J., Garcia-Moreno, C., & Watts, C. (2010). Intimate partner violence during pregnancy: analysis of prevalence data from 19 countries. *Https://Doi.Org/10.1016/S0968-8080(10)36533-5*, *18*(36), 158–170. https://doi.org/10.1016/S0968-8080(10)36533-5

Devries, K. M., Mak, J. Y., Bacchus, L. J., Child, J. C., Falder, G., Petzold, M., Astbury, J., & Watts, C. H. (2013). Intimate Partner Violence and Incident Depressive Symptoms and Suicide Attempts: A Systematic Review of Longitudinal Studies. *PLOS Medicine*, *10*(5), e1001439. https://doi.org/10.1371/JOURNAL.PMED.1001439

Dishion, T. J., & Snyder, J. (2015). *The Oxford Handbook of Coercive Relationship Dynamics* (T. J. Dishion & J. Snyder (eds.)). Oxford University Press. https://doi.org/10.1093/OXFORDHB/9780199324552.001.0001

Dobash, R. E., & Dobash, R. (1979). *Violence against wives: A case against the patriarchy*. Free Press New York.

Doyle, K., Kato-Wallace, J., Kazimbaya, S., & Barker, G. (2014). Transforming gender roles in domestic and caregiving work: preliminary findings from engaging fathers in maternal, newborn, and child health in Rwanda. *Gender & Development*, *22*(3), 515–531. https://doi.org/10.1080/13552074.2014.963326

Doyle, K., Levtov, R. G., Barker, G., Bastian, G. G., Bingenheimer, J. B., Kazimbaya, S., Nzabonimpa, A., Pulerwitz, J., Sayinzoga, F., Sharma, V., & Shattuck, D. (2018). Gender-transformative bandebereho couples' intervention to promote male engagement

in reproductive and maternal health and violence prevention in Rwanda: Findings from a randomized controlled trial. *PLoS ONE*, *13*(4), 1–17. https://doi.org/10.1371/journal.pone.0192756

Doyle, K., Levtov, R. G., Karamage, E., Rakshit, D., Kazimbaya, S., Sayinzoga, F., Sibomana, H., Ngayaboshya, S., Rutayisire, F., & Barker, G. (2023). Long-term impacts of the Bandebereho programme on violence against women and children, maternal health-seeking, and couple relations in Rwanda: a six-year follow-up of a randomised controlled trial. *EClinicalMedicine*, *64*, 102233. https://doi.org/10.1016/j.eclinm.2023.102233

Dunkle, K., Stern, E., Chatterji, S., & Heise, L. (2020). Effective prevention of intimate partner violence through couples training: A randomised controlled trial of Indashyikirwa in Rwanda. *BMJ Global Health*, *5*(12). https://doi.org/10.1136/bmjgh-2020-002439

Duppong-Hurley, K., Hoffman, S., Barnes, B., & Oats, R. (2016). Perspectives on Engagement Barriers and Alternative Delivery Formats from Non-completers of a Community-Run Parenting Program. *Journal of Child and Family Studies*, *25*(2), 545–552. https://doi.org/10.1007/s10826-015-0253-0

Dutton, D. G. (2006). *Rethinking Domestic Violence*. UBC Press.

Dutton, D. G., & White, K. R. (2012). Attachment insecurity and intimate partner violence. *Aggression and Violent Behavior*, *17*(5), 475–481. https://doi.org/10.1016/J.AVB.2012.07.003

Dworkin, S. L., & Barker, G. (2019). Gender-Transformative Approaches to Engaging Men in Reducing Gender-Based Violence: A Response to Brush & Miller's "Trouble in Paradigm." *Violence Against Women*, *25*(14), 1657–1671. https://doi.org/10.1177/1077801219872555

Dwyer, S. C., & Buckle, J. L. (2023). Cultural insider-outsider: reflecting on positionality in shared and differing identities. *Handbook of Qualitative Cross-Cultural Research Methods*, 85–99. https://doi.org/10.4337/9781800376625.00014

Ebert, C., & Steinert, J. I. (2021). Prevalence and risk factors of violence against women and children during COVID-19, Germany. *Bulletin of the World Health Organization*, *99*(6), 429.

Edwards, K. M., Kumar, M., Waterman, E. A., Mullet, N., Madeghe, B., & Musindo, O. (2023). Programs to Prevent Violence Against Children in Sub-Saharan Africa: A Systematic Review. *Trauma, Violence, & Abuse*. https://doi.org/10.1177/15248380231160742

El Morr, C., & Layal, M. (2020). Effectiveness of ICT-based intimate partner violence interventions: A systematic review. *BMC Public Health*, *20*(1), 1372. https://doi.org/10.1186/s12889-020-09408-8

Eldridge, S. M., Chan, C. L., Campbell, M. J., Bond, C. M., Hopewell, S., Thabane, L., Lancaster, G. A., Altman, D., Bretz, F., Campbell, M., Cobo, E., Craig, P., Davidson, P., Groves, T., Gumedze, F., Hewison, J., Hirst, A., Hoddinott, P., Lamb, S. E., … Tugwell, P. (2016). CONSORT 2010 statement: Extension to randomised pilot and feasibility trials. *The BMJ*, *355*. https://doi.org/10.1136/bmj.i5239

Elliott, K., & Roberts, S. (2020). Balancing generosity and critique: reflections on interviewing young men and implications for research methodologies and ethics. *Qualitative Research*, *20*(6), 767–783. https://doi.org/10.1177/1468794120904881

Entenberg, G. A., Dosovitsky, G., Aghakhani, S., Mostovoy, K., Carre, N., Marshall, Z., Benfica, D., Mizrahi, S., Testerman, A., Rousseau, A., Lin, G., & Bunge, E. L. (2023). User experience with a parenting chatbot micro intervention. *Frontiers in Digital Health*, *4*(January), 1–10. https://doi.org/10.3389/fdgth.2022.989022

Entenberg, Guido A., Mizrahi, S., Walker, H., Aghakhani, S., Mostovoy, K., Carre, N., Marshall, Z., Dosovitsky, G., Benfica, D., Rousseau, A., Lin, G., & Bunge, E. L. (2023). AI-based chatbot micro-intervention for parents: Meaningful engagement, learning, and efficacy. *Frontiers in Psychiatry*, *14*, 1–10. https://doi.org/10.3389/fpsyt.2023.1080770

Equimundo. (2021). *Promoting Men's Engagement in Early Childhood Development A Programming and Influencing Package*.

European Commission. (2023). *EU and UN Women to boost women's rights coalitions on ending violence against women*. https://international-partnerships.ec.europa.eu/news-and-events/news/eu-and-un-women-boost-womens-rights-coalitions-ending-violence-against-women-2023-09-18_en

Falb, K. L., Asghar, K., Blackwell, A., Baseme, S., Nyanguba, M., Roth, D., & Hategekimana, J. D. D. (2023). Improving family functioning and reducing violence in the home in North Kivu, Democratic Republic of Congo: a pilot cluster-randomised controlled trial of Safe at Home. *BMJ Open*, *13*(3). https://doi.org/10.1136/bmjopen-2022-065759

Falb, K., Tanner, S., Asghar, K., Souidi, S., Mierzwa, S., Assazenew, A., Bakomere, T., Mallinga, P., Robinette, K., Tibebu, W., & Stark, L. (2017). Implementation of Audio-Computer Assisted Self-Interview (ACASI) among adolescent girls in humanitarian settings: feasibility, acceptability, and lessons learned. *Conflict and Health*, *10*(1), 1–8. https://doi.org/10.1186/S13031-016-0098-1/TABLES/1

Farmer, A., & Tiefenthaler, J. (1997). An economic analysis of domestic violence. *Review of Social Economy*, *55*(3), 337–358. https://doi.org/10.1080/00346769700000004

Farré, L., & Vella, F. (2013). The Intergenerational Transmission of Gender Role Attitudes and its Implications for Female Labour Force Participation. *Economica*, *80*(318), 219–247. https://doi.org/10.1111/ECCA.12008

Fisher, J., de Mello, M. C., Patel, V., Rahman, A., Tran, T., Holton, S., & Holmesf, W. (2012). Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. *Bulletin of the World Health Organization*, *90*(2), 139. https://doi.org/10.2471/BLT.11.091850

Fleming, P. J., McCleary-Sills, J., Morton, M., Levtov, R., Heilman, B., & Barker, G. (2015). Risk Factors for Men's Lifetime Perpetration of Physical Violence against Intimate Partners: Results from the International Men and Gender Equality Survey (IMAGES) in Eight Countries. *PLOS ONE*, *10*(3), e0118639. https://doi.org/10.1371/JOURNAL.PONE.0118639

Fleming, T., Bavin, L., Lucassen, M., Stasiak, K., Hopkins, S., & Merry, S. (2018). Beyond the Trial: Systematic Review of Real-World Uptake and Engagement With Digital Self-Help Interventions for Depression, Low Mood, or Anxiety. *J Med Internet Res 2018;20(6):E199 Https://Www.Jmir.Org/2018/6/E199*, *20*(6), e9275. https://doi.org/10.2196/JMIR.9275

Fletcher, R., Kay-Lambkin, F., May, C., Oldmeadow, C., Attia, J., & Leigh, L. (2017). Supporting men through their transition to fatherhood with messages delivered to their smartphones: A feasibility study of SMS4dads. *BMC Public Health*, *17*(1), 1–10. https://doi.org/10.1186/S12889-017-4978-0/TABLES/6

Flett, J. A. M., Hayne, H., Riordan, B. C., Thompson, L. M., & Conner, T. S. (2019). Mobile Mindfulness Meditation: a Randomised Controlled Trial of the Effect of Two Popular Apps on Mental Health. *Mindfulness*, *10*(5), 863–876. https://doi.org/10.1007/S12671-018-1050-9/FIGURES/2

Florean, I. S., Dobrean, A., Păsărelu, C. R., Georgescu, R. D., & Milea, I. (2020). The Efficacy of Internet-Based Parenting Programs for Children and Adolescents with Behavior Problems: A Meta-Analysis of Randomized Clinical Trials. *Clinical Child and*

Family Psychology Review, *23*(4), 510–528. https://doi.org/10.1007/s10567-020-00326-0

Fulu, E., Liou, C., Xian, W., Miedema, S., & Rachel, J. (2013). *Replicating the UN Multi-Country Study on Men and Violence: Understanding Why Some Men Use Violence Against Women and How We Can Prevent It – Preferred Terminology*. https://www.partners4prevention.org/sites/default/files/preferred_terminology_final.pdf

Gani, J. K., & Khan, R. M. (2024). Positionality Statements as a Function of Coloniality: Interrogating Reflexive Methodologies. *International Studies Quarterly*, *68*(2). https://doi.org/10.1093/isq/sqae038

García-Moreno, C., Jansen, H. A., Ellsberg, M., Heise, L., & Watts, C. (2005). World Health Organization Multi-country Study on Women's Health and Domestic Violence against Women Initial results on prevalence, health outcomes and women's responses Full Report. *World Health Organization*, *January*. https://iris.who.int/bitstream/handle/10665/43309/924159358X_eng.pdf

García-Moreno, C., & Stöckl, H. (2009). Protection of sexual and reproductive health rights: Addressing violence against women. *International Journal of Gynecology and Obstetrics*, *106*(2), 144–147. https://doi.org/10.1016/j.ijgo.2009.03.053

Garcia-Moreno, C., Watts, C., Heise, L., & Ellsberg, M. (2001). *Putting women first: Ethical and safety recommendations for research on domestic violence against women.*

Gardner, F., & Leijten, P. (2017). Incredible Years parenting interventions: current effectiveness research and future directions. *Current Opinion in Psychology*, *15*, 99–104. https://doi.org/10.1016/j.copsyc.2017.02.023

Gass, J. D., Stein, D. J., Williams, D. R., & Seedat, S. (2010). Intimate partner violence, health behaviours, and chronic physical illness among South African women. *South African Medical Journal*, *100*(9), 582–585.

http://www.samj.org.za/index.php/samj/article/view/4274/2938%5Cnhttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed9&NEWS=N&AN=2010557978

Glass, N. E., Perrin, N. A., Hanson, G. C., Bloom, T. L., Messing, J. T., Clough, A. S., Campbell, J. C., Gielen, A. C., Case, J., & Eden, K. B. (2017). The Longitudinal Impact of an Internet Safety Decision Aid for Abused Women. *American Journal of Preventive Medicine*, *52*(5), 606–615. https://doi.org/10.1016/J.AMEPRE.2016.12.014

Gonzalez, J. C., Klein, C. C., Barnett, M. L., Schatz, N. K., Garoosi, T., Chacko, A., & Fabiano, G. A. (2023). Intervention and Implementation Characteristics to Enhance Father Engagement: A Systematic Review of Parenting Interventions. *Clinical Child and Family Psychology Review*, *26*(2), 445–458. https://doi.org/10.1007/s10567-023-00430-x

Gordon, C. (2016). Intimate partner violence is everyone's problem, but how should we approach it in a clinical setting? *South African Medical Journal*, *106*(10), 962–965. https://doi.org/10.7196/SAMJ.2016.V106I10.11408

Gracia, E., Rodriguez, C. M., Martín-Fernández, M., & Lila, M. (2017). Acceptability of Family Violence: Underlying Ties Between Intimate Partner Violence and Child Abuse. *Journal of Interpersonal Violence*, 886260517707310. https://doi.org/10.1177/0886260517707310

Graham, A. L., Papandonatos, G. D., Cha, S., Amato, M. S., Jacobs, M. A., Cohn, A. M., Abroms, L. C., & Whittaker, R. (2022). Effectiveness of an optimized text message and Internet intervention for smoking cessation: A randomized controlled trial. *Addiction*, *117*(4), 1035–1046. https://doi.org/10.1111/ADD.15677

Guedes, A., Bott, S., Garcia-Moreno, C., & Colombini, M. (2016). Bridging the gaps: a global review of intersections of violence against women and violence against children. *Global Health Action*, *9*(1), 31516. https://doi.org/10.3402/gha.v9.31516

Guedes, A., & Mikton, C. (2013). Examining the Intersections between Child Maltreatment and Intimate Partner Violence. *Western Journal of Emergency Medicine*, *14*(4), 377. https://doi.org/10.5811/WESTJEM.2013.2.16249

Guillot-Wright, S. P., Lu, Y., Torres, E. D., Le, V. D., Hall, H. R., & Temple, J. R. (2018). Design and Feasibility of a School-Based Text Message Campaign to Promote Healthy Relationships. *School Mental Health*, *10*(4), 428–436. https://doi.org/10.1007/S12310-018-9255-6/TABLES/1

Gupta, G. R. (2000). *Gender, sexuality, and HIV/AIDS: The what, the why, and the how.* https://doi.org/10.1300/j091v10n03_01

Guthridge, M., Kirkman, M., Penovic, T., & Giummarra, M. J. (2022). Promoting Gender Equality: A Systematic Review of Interventions. *Social Justice Research*, *35*(3), 318–343. https://doi.org/10.1007/s11211-022-00398-z

Ha, T., Van Ryzin, M. J., & Elam, K. K. (2021). Socialization processes within adolescents' relationships with parents and peers predicting couples' intimate partner violence in adulthood: A social learning perspective. *Development and Psychopathology*, 1–14.

Halim, N., Steven Mzilangwe, E., Reich, N., Badi, L., Simmons, E., Servidone, M., Bingham Holmes, N., Kawemama, P., & Messersmith, L. J. (2019). Together to end violence against women in Tanzania: Results of a pilot cluster randomized controlled trial to evaluate preliminary effectiveness of interpersonal and community level interventions to address intimate partner violence. *Global Public Health*, *14*(12), 1653–1668. https://doi.org/10.1080/17441692.2019.1609062

Hall, C. M., & Bierman, K. L. (2015). Technology-assisted interventions for parents of young children: Emerging practices, current research, and future directions. *Early Childhood Research Quarterly*, *33*, 21–32. https://doi.org/10.1016/J.ECRESQ.2015.05.003

Hanno, E. C. (2023). Nudging Early Educators' Knowledge, Beliefs, and Practices: An

Embedded Randomized Controlled Trial of Text Message Supports. *Early Education and Development*, *34*(2), 530–550. https://doi.org/10.1080/10409289.2022.2053476/SUPPL_FILE/HEED_A_2053476_SM3956.PDF

Haque, M. D. R., & Rubya, S. (2023). An Overview of Chatbot-Based Mobile Mental Health Apps: Insights From App Description and User Reviews. *JMIR MHealth and UHealth*, *11*. https://doi.org/10.2196/44838

Harris, M., Andrews, K., Gonzalez, A., Prime, H., & Atkinson, L. (2020). Technology-Assisted Parenting Interventions for Families Experiencing Social Disadvantage: a Meta-Analysis. *Prevention Science*, *21*(5), 714–727. https://doi.org/10.1007/S11121-020-01128-0/FIGURES/4

Head, K. J., Noar, S. M., Iannarino, N. T., & Grant Harrington, N. (2013). Efficacy of text messaging-based interventions for health promotion: A meta-analysis. *Social Science & Medicine*, *97*, 41–48. https://doi.org/10.1016/J.SOCSCIMED.2013.08.003

Heckman, B. W., Mathew, A. R., & Carpenter, M. J. (2015). Treatment burden and treatment fatigue as barriers to health. *Current Opinion in Psychology*, *5*, 31–36. https://doi.org/10.1016/j.copsyc.2015.03.004

Heise, L. (1998). Violence against women: An integrated, ecological framework. *Violence against Women*, *4*(3), 262–290. https://doi.org/10.1177/1077801298004003002

Heise, L. (2011). *What Works to Prevent Partner Violence? An Evidence Overview* (Issue December). http://researchonline.lshtm.ac.uk/21062/1/Heise_Partner_Violence_evidence_overview.pdf

Heise, L., Garcia-Moreno, C., & others. (2002). Violence by intimate partners. *World Report on Violence and Health*, *1*, 87–113.

Heise, L., & Manji, K. (2016). *Social Norms. GSDRC Professional Development Reading Pack no. 31*. https://assets.publishing.service.gov.uk/media/597f335640f0b61e48000023/Social-Norms_RP.pdf

Henry, J. B., Julion, W. A., Bounds, D. T., & Sumo, J. (2020). Fatherhood Matters: An Integrative Review of Fatherhood Intervention Research. *Journal of School Nursing*, *36*(1), 19–32. https://doi.org/10.1177/1059840519873380/ASSET/IMAGES/LARGE/10.1177_1059840519873380-FIG2.JPEG

Hern, A. (2022, October 25). WhatsApp messaging platform back online after global outages. *The Guardian*. https://www.theguardian.com/technology/2022/oct/25/whatapp-goes-down-for-users-globally

Heyman, R. E., & Foran, H. M. (2013). Theories of Intimate Partner Violence. In *Handbook of family theories: A content-based approach* (p. 190). Routledge.

Hillis, S., Mercy, J., Amobi, A., & Kress, H. (2016). Global prevalence of past-year violence against children: A systematic review and minimum estimates. In *Pediatrics* (Vol. 137, Issue 3). American Academy of Pediatrics. https://doi.org/10.1542/peds.2015-4079

Hoffmann, D., Halsboe, L., Eilenberg, T., Jensen, J. S., & Frostholm, L. (2014). A pilot study of processes of change in group-based acceptance and commitment therapy for health anxiety. *Journal of Contextual Behavioral Science*, *3*(3), 189–195. https://doi.org/10.1016/j.jcbs.2014.04.004

Hong, S., Rhee, T. G., & Piescher, K. N. (2018). Longitudinal association of child maltreatment and cognitive functioning: Implications for child development. *Child Abuse and Neglect*, *84*, 64–73. https://doi.org/10.1016/j.chiabu.2018.07.026

Hoxmeier, J. C., Casey, E. A., Carlson, J., & Willey-Sthapit, C. (2024). A Critical Review of

Measures of Gender Equitable Attitudes: Recommendations for Conceptualization and Future Assessment. *Sex Roles*, *90*(2), 231–249. https://doi.org/10.1007/s11199-024-01441-w

Huang, F. L., & Cornell, D. G. (2012). Pick Your Poisson: A Tutorial on Analyzing Counts of Student Victimization Data. *Journal of School Violence*, *11*(3), 187–206. https://doi.org/10.1080/15388220.2012.682010

Humbert, A. L., Strid, S., Hearn, J., & Balkmar, D. (2021). Undoing the 'Nordic Paradox': Factors affecting rates of disclosed violence against women across the EU. *PLOS ONE*, *16*(5), e0249693. https://doi.org/10.1371/JOURNAL.PONE.0249693

Hungerbuehler, I., Daley, K., Cavanagh, K., Claro, H. G., & Kapps, M. (2021). Chatbot-based assessment of employees' mental health: Design process and pilot implementation. *JMIR Formative Research*, *5*(4). https://doi.org/10.2196/21678

International Telecommunication Union (ITU). (2021). *Connectivity in the Least Developed Countries Status report 2021*. https://www.itu.int/itu-d/reports/statistics/connectivity-in-the-least-developed-countries-status-report-2021/

Iyamu, I., Gómez-Ramírez, O., Xu, A. X. T., Chang, H. J., Watt, S., Mckee, G., & Gilbert, M. (2022). Challenges in the development of digital public health interventions and mapped solutions: Findings from a scoping review. *Digital Health*, *8*. https://doi.org/10.1177/20552076221102255

Jäggi, L., Aguilar, L., Alvarado Llatance, M., Castellanos, A., Fink, G., Hinckley, K., Huaylinos Bustamante, M. L., McCoy, D. C., Verastegui, H., Mäusezahl, D., & Hartinger Pena, S. M. (2023). Digital tools to improve parenting behaviour in low-income settings: A mixed-methods feasibility study. *Archives of Disease in Childhood*, *108*(6), 433–439. https://doi.org/10.1136/archdischild-2022-324964

Jamaica Tourist Board. (2021). *Jamaica's UK Travel Ban To Be Lifted Starting May 1*.

https://jis.gov.jm/jamaicas-uk-travel-ban-to-be-lifted-starting-may-1/

Jamieson, M. K., Govaart, G. H., & Pownall, M. (2023). Reflexivity in quantitative research: A rationale and beginner's guide. *Social and Personality Psychology Compass*, *17*(4), e12735. https://doi.org/10.1111/SPC3.12735

Janowski, R., Green, O., Shenderovich, Y., Stern, D., Clements, L., Wamoyi, J., Wambura, M., Lachman, J. M., Melendez-Torres, G. J., Gardner, F., Baerecke, L., Te Winkel, E., Booij, A., Setton, O., Tsoanyane, S., Mjwara, S., Christine, L., Ornellas, A., Chetty, N., … Cluver, L. D. (2023). Optimising engagement in a digital parenting intervention to prevent violence against adolescents in Tanzania: protocol for a cluster randomised factorial trial. *BMC Public Health*, *23*(1), 1–19. https://doi.org/10.1186/S12889-023-15989-X/FIGURES/3

Jeong, J., Sullivan, E. F., McCann, J. K., McCoy, D. C., & Yousafzai, A. K. (2023). Implementation characteristics of father-inclusive interventions in low- and middle-income countries: A systematic review. *Annals of the New York Academy of Sciences*, *1520*(1), 34–52. https://doi.org/10.1111/nyas.14941

Jessen, S., Mirkovic, J., Halvorsen Brendmo, E., & Solberg Nes, L. (2021). Evaluating a Strengths-Based mHealth Tool (MyStrengths): Explorative Feasibility Trial. *JMIR Formative Research*, *5*(11), e30572. https://doi.org/10.2196/30572

Jewkes, R., Flood, M., & Lang, J. (2015). From work with men and boys to changes of social norms and reduction of inequities in gender relations: a conceptual shift in prevention of violence against women and girls. *The Lancet*, *385*(9977), 1580–1589. https://doi.org/10.1016/S0140-6736(14)61683-4

Jewkes, R., Willan, S., Heise, L., Washington, L., Shai, N., Kerr-Wilson, A., Gibbs, A., Stern, E., & Christofides, N. (2021). Elements of the design and implementation of interventions to prevent violence against women and girls associated with success:

Reflections from the what works to prevent violence against women and girls? Global programme. *International Journal of Environmental Research and Public Health*, *18*(22), 1–16. https://doi.org/10.3390/ijerph182212129

Johnson, M. P. (1995). Patriarchal terrorism and common couple violence: Two forms of violence against women. *Journal of Marriage and the Family*, *57*(2), 283. https://doi.org/http://dx.doi.org/10.2307/353683

Johnson, M. P. (2006). Conflict and control: Gender symmetry and asymmetry in domestic violence. *Violence against Women*, *12*(11), 1003–1018.

Johnson, M. P. (2008). *A typology of domestic violence [electronic resource] : intimate terrorism, violent resistance, and situational couple violence*. Northeastern University Press ; Published by University Press of New England.

Jouriles, E. N., Mcdonald, R., Slep, A. M. S., Heyman, R. E., & Garrido, E. (2008). Child Abuse in the Context of Domestic Violence: Prevalence, Explanations, and Practice Implications. *Violence and Victims*, *23*(2). https://doi.org/10.1891/0886-6708.23.2.221

Kaehler, L. A., Jacobs, M., & Jones, D. J. (2016). Distilling Common History and Practice Elements to Inform Dissemination: Hanf-Model BPT Programs as an Example. *Clinical Child and Family Psychology Review*, *19*(3), 236–258. https://doi.org/10.1007/S10567-016-0210-5

Kågesten, A., & Chandra-Mouli, V. (2020). Gender-transformative programmes: implications for research and action. *The Lancet Global Health*, *8*(2), e159–e160. https://doi.org/10.1016/S2214-109X(19)30528-5

Kågesten, A., Gibbs, S., Blum, R. W., Moreau, C., Chandra-Mouli, V., Herbert, A., & Amin, A. (2016). Understanding factors that shape gender attitudes in early adolescence globally: A mixed-methods systematic review. *PLoS ONE*, *11*(6), 1–36. https://doi.org/10.1371/journal.pone.0157805

Kapiga, S., Harvey, S., Mshana, G., Hansen, C. H., Mtolela, G. J., Madaha, F., Hashim, R., Kapinga, I., Mosha, N., Abramsky, T., Lees, S., & Watts, C. (2019). A social empowerment intervention to prevent intimate partner violence against women in a microfinance scheme in Tanzania: findings from the MAISHA cluster randomised controlled trial. *The Lancet Global Health*, *7*(10), e1423–e1434. https://doi.org/10.1016/S2214-109X(19)30316-X

Kato-Wallace, J., Barker, G., Garg, A., Feliz, N., Levack, A., Ports, K., & Miller, E. (2019). Adapting a Global Gender-Transformative Violence Prevention Program for the U.S. Community-Based Setting for Work with Young Men. *Global Social Welfare*, *6*(2), 121–130. https://doi.org/10.1007/s40609-018-00135-y

Kirk, L., Terry, S., Lokuge, K., & Watterson, J. L. (2017). Effectiveness of secondary and tertiary prevention for violence against women in low and low-middle income countries: A systematic review. *BMC Public Health*, *17*(1), 1–21. https://doi.org/10.1186/S12889-017-4502-6/TABLES/5

Klapow, M., Zinser, P., Lachman, J., Facciola, C., Han, Q., Ambrosia, M., Calderon, F., Brukwe, K., Sheil, R., & Van Winden, Y. (2023). Optimising and re-designing a digital parenting programme for reducing violence against children in lmics using the 6squid framework. *Population Medicine*, *5*, 377–377.

Kohlbrenner, B., & Stoll, B. (2023). *Qualitative Methods for Global Health in Operational, Implementation and Health Systems Research*. 535–539. https://doi.org/10.1007/978-3-031-33851-9_83

Kola, L., Abiona, D., Oladeji, B. D., Ayinde, · Olatunde, Toyin Bello, ·, & Gureje, · Oye. (2021). Theory-driven development of a mobile phone supported intervention for adolescents with perinatal depression. *Social Psychiatry and Psychiatric Epidemiology 2021*, *1*, 1–10. https://doi.org/10.1007/S00127-021-02198-3

Kretzschmar, K., Tyroll, H., Pavarini, G., Manzini, A., Singh, I., & NeurOx Young People's Advisory Group. (2019). Can Your Phone Be Your Therapist? Young People's Ethical Perspectives on the Use of Fully Automated Conversational Agents (Chatbots) in Mental Health Support. *Biomedical Informatics Insights*, *11*, 117822261982908. https://doi.org/10.1177/1178222619829083

Kuchukhidze, S., Panagiotoglou, D., Boily, M.-C., Diabaté, S., Imai-Eaton, J. W., Stöckl, H., Mbofana, F., Wanyenze, R. K., & Maheu-Giroux, M. (2023). Characteristics of male perpetrators of intimate partner violence and implications for women's HIV status: A pooled analysis of cohabiting couples from 27 countries in Africa (2000–2020). *PLOS Global Public Health*, *3*(9), e0002146. https://doi.org/10.1371/journal.pgph.0002146

Kyegombe, N., Stern, E., & Buller, A. M. (2022). "We saw that jealousy can also bring violence": A qualitative exploration of the intersections between jealousy, infidelity and intimate partner violence in Rwanda and Uganda. *Social Science and Medicine*, *292*(June 2021), 114593. https://doi.org/10.1016/j.socscimed.2021.114593

Lachman, J. M., Nurova, N., Chetty, A. N., Fang, Z., Swartz, A., Sherr, L., Mebrahtu, H., Mwaba, K., Green, O., Awah, I., Chen, Y., & Cluver, L. (2024). Innovate! Accelerate! Evaluate! Harnessing implementation science to inform the evaluation of an inter-agency scale-up of parenting resources during COVID-19 to more than 210.5 million people. *In Review.*

Lachman, J.M., Cluver, L., Ward, C. L., Hutchings, J., Mlotshwa, S., Wessels, I., & Gardner, F. (2017). Randomized controlled trial of a parenting program to reduce the risk of child maltreatment in South Africa. *Child Abuse & Neglect*, *72*, 338–351.

Lachman, Jamie M., Alampay, L. P., Jocson, R. M., Alinea, C., Madrid, B., Ward, C., Hutchings, J., Mamauag, B. L., Garilao, M. A. V. F. V., & Gardner, F. (2021). Effectiveness of a parenting programme to reduce violence in a cash transfer system in

the Philippines: RCT with follow-up. *The Lancet Regional Health - Western Pacific*, *17*, 100279. https://doi.org/10.1016/J.LANWPC.2021.100279/ATTACHMENT/1850D3FC-A401-4B74-9FF3-B3336B35A97E/MMC1.DOCX

Lachman, Jamie M., Heinrichs, N., Jansen, E., Brühl, A., Taut, D., Fang, X., Gardner, F., Hutchings, J., Ward, C. L., Williams, M. E., Raleva, M., Båban, A., Lesco, G., & Foran, H. M. (2019). Preventing child mental health problems through parenting interventions in Southeastern Europe (RISE): Protocol for a multi-country cluster randomized factorial study. *Contemporary Clinical Trials*, *86*, 105855. https://doi.org/10.1016/J.CCT.2019.105855

Lansford, J. E., Betancourt, T. S., Boller, K., Popp, J., Pisani Altafim, E. R., Attanasio, O., & Raghavan, C. (2022). The Future of Parenting Programs: II Implementation. *Parenting*, *22*(3), 235–257. https://doi.org/10.1080/15295192.2022.2086807

Lawson, J. (2012). Sociological Theories of Intimate Partner Violence. *Journal of Human Behaviour in the Social Environment*, *22*(5), 572–590. https://doi.org/10.1080/10911359.2011.598748

Lechowicz, M. E., Jiang, Y., Tully, L. A., Burn, M. T., Collins, D. A. J., Hawes, D. J., Lenroot, R. K., Anderson, V., Doyle, F. L., Piotrowska, P. J., Frick, P. J., Moul, C., Kimonis, E. R., & Dadds, M. R. (2019). Enhancing Father Engagement in Parenting Programs: Translating Research into Practice Recommendations. *Australian Psychologist*, *54*(2), 83–89. https://doi.org/10.1111/AP.12361

Leight, J. (2022). Intimate partner violence against women: a persistent and urgent challenge. *The Lancet*, *399*(10327), 770–771. https://doi.org/10.1016/S0140-6736(22)00190-8

Leon, A. C., Davis, L. L., & Kraemer, H. C. (2011). The role and interpretation of pilot studies in clinical research. *Journal of Psychiatric Research*, *45*(5), 626–629. https://doi.org/10.1016/J.JPSYCHIRES.2010.10.008

Leon, N., Namadingo, H., Bobrow, K., Cooper, S., Crampin, A., Pauly, B., Levitt, N., & Farmer, A. (2021). Intervention development of a brief messaging intervention for a randomised controlled trial to improve diabetes treatment adherence in sub-Saharan Africa. *BMC Public Health*, *21*(1). https://doi.org/10.1186/S12889-020-10089-6

Leslie, D. L. (2022). Conclusion: Towards Ending All Forms of GenderBased Violence in the Anglophone Caribbean. In R. Biholar & D. L. Leslie (Eds.), *Critical Caribbean Perspectives on Preventing Gender-Based Violence*. Routledge. https://www-taylorfrancis-com.ezproxy-prd.bodleian.ox.ac.uk/chapters/edit/10.4324/9781003255208-12/conclusion-dacia-leslie?context=ubx&refId=88072d95-032a-4056-a076-161213c1ddff

Leung, L., Miedema, S., Warner, X., Homan, S., & Fulu, E. (2019). Making feminism count: integrating feminist research principles in large-scale quantitative research on violence against women and girls. *Gender & Development*, *27*(3), 427–447. https://doi.org/10.1080/13552074.2019.1668142

Levtov, Ruti G., Doyle, K., Bingenheimer, J. B., Lahiri, S., Kazimbaya, S., Karamage, E., Sayinzoga, F., Mutoni, M., Rubayita, C. H., & Barker, G. (2022). Improved Relationship Quality, Equitable Gender Attitudes, and Reduced Alcohol Abuse as Key Mechanisms to Reduce Intimate Partner Violence in the Bandebereho Couples' Randomized Trial in Rwanda. *Prevention Science*, *23*(8), 1495–1506. https://doi.org/10.1007/s11121-022-01445-6

Levtov, Ruti Galia, Barker, G., Contreras-Urbina, M., Heilman, B., & Verma, R. (2014). Pathways to Gender-equitable Men: Findings from the International Men and Gender Equality Survey in Eight Countries. *Http://Dx.Doi.Org/10.1177/1097184X14558234*, *17*(5), 467–501. https://doi.org/10.1177/1097184X14558234

Levy, J. K., Darmstadt, G. L., Ashby, C., Quandt, M., Halsey, E., Nagar, A., & Greene, M. E.

(2020). Characteristics of successful programmes targeting gender inequality and restrictive gender norms for the health and wellbeing of children, adolescents, and young adults: a systematic review. *The Lancet Global Health*, *8*(2), e225–e236. https://doi.org/10.1016/S2214-109X(19)30495-4

Li, M., D'Arcy, C., & Meng, X. (2016). Maltreatment in childhood substantially increases the risk of adult depression and anxiety in prospective cohort studies: Systematic review, meta-analysis, and proportional attributable fractions. In *Psychological Medicine* (Vol. 46, Issue 4, pp. 717–730). Cambridge University Press. https://doi.org/10.1017/S0033291715002743

Linardon, J., & Fuller-Tyszkiewicz, M. (2020). Attrition and adherence in smartphone-delivered interventions for mental health problems: A systematic and meta-analytic review. *Journal of Consulting and Clinical Psychology*, *88*(1), 1–13. https://doi.org/10.1037/CCP0000459

Liverpool, S., Eisenstadt, M., Smith, A. M., & Kozhevnikova, S. (2023). An App to Support Fathers' Mental Health and Well-Being: User-Centered Development Study. *JMIR Formative Research*, *7*, 1–18. https://doi.org/10.2196/47968

Lockwood, J., Williams, L., Martin, J. L., Rathee, M., & Hill, C. (2022). Effectiveness, User Engagement and Experience, and Safety of a Mobile App (Lumi Nova) Delivering Exposure-Based Cognitive Behavioral Therapy Strategies to Manage Anxiety in Children via Immersive Gaming Technology: Preliminary Evaluation Study. *JMIR Mental Health*, *9*(1). https://doi.org/10.2196/29008

Lokot, M., Bhatia, A., Kenny, L., & Cislaghi, B. (2020). Corporal punishment, discipline and social norms: A systematic review in low- and middle-income countries. *Aggression and Violent Behavior*, *55*(January), 101507. https://doi.org/10.1016/j.avb.2020.101507

Lundahl, B. W., Tollefson, D., Risser, H., & Lovejoy, M. C. (2007). A Meta-Analysis of

Father Involvement in Parent Training: *Http://Dx.Doi.Org/10.1177/1049731507309828*, *18*(2), 97–106. https://doi.org/10.1177/1049731507309828

Machisa, M. T., Christofides, N., & Jewkes, R. (2016). Structural Pathways between Child Abuse, Poor Mental Health Outcomes and Male-Perpetrated Intimate Partner Violence (IPV). *PLOS ONE*, *11*(3), e0150986. https://doi.org/10.1371/JOURNAL.PONE.0150986

Malhotra, A., Amin, A., & Nanda, P. (2019). Catalyzing Gender Norm Change for Adolescent Sexual and Reproductive Health: Investing in Interventions for Structural Change. *Journal of Adolescent Health*, *64*(4), S13–S15. https://doi.org/10.1016/j.jadohealth.2019.01.013

Marcos-Marcos, J., Nardini, K., Briones-Vozmediano, E., & Vives-Cases, C. (2023). Listening to stakeholders in the prevention of gender-based violence among young people in Spain: a qualitative study from the positivMasc project. *BMC Women's Health*, *23*(1), 1–13. https://doi.org/10.1186/S12905-023-02545-3/PEER-REVIEW

Marcus, R., Rivett, J., & Kruja, K. (2020). How far do parenting programmes help change norms underpinning violence against adolescents? Evidence from low and middle-income countries. *Https://Doi.Org/10.1080/17441692.2020.1776364*, *16*(6), 820–841. https://doi.org/10.1080/17441692.2020.1776364

Marshall, A. D., Feinberg, M. E., & Daly, K. A. (2019). Children's emotional and behavioral reactions to interparental aggression: The role of exposure to within-incident, cross-dyad aggression spillover. *Journal of Family Psychology*, *33*(5), 617–628. https://doi.org/10.1037/fam0000525

Matjasko, J. L., Vivolo-Kantor, A. M., Massetti, G. M., Holland, K. M., Holt, M. K., & Dela Cruz, J. (2012). A systematic meta-review of evaluations of youth violence prevention programs: Common and divergent findings from 25 years of meta-analyses and

systematic reviews. *Aggression and Violent Behavior*, *17*(6), 540–552. https://doi.org/10.1016/J.AVB.2012.06.006

Matsuno, E., & Israel, T. (2021). The Parent Support Program: Development and Acceptability of an Online Intervention Aimed at Increasing Supportive Behaviors Among Parents of Trans Youth. *Https://Doi.Org/10.1080/1550428X.2020.1868369*, *17*(5), 413–431. https://doi.org/10.1080/1550428X.2020.1868369

McCool, J., Dobson, R., Whittaker, R., & Paton, C. (2022). *Mobile Health (mHealth) in Low- and Middle-Income Countries*. 525–539.

McCoy, A., Lachman, J. M., Ward, C. L., Tapanya, S., Poomchaichote, T., Kelly, J., Mukaka, M., Cheah, P. Y., & Gardner, F. (2021). Feasibility pilot of an adapted parenting program embedded within the Thai public health system. *BMC Public Health*, *21*(1), 1–19. https://doi.org/10.1186/s12889-021-11081-4

McGirr, S., Torres, J., Heany, J., Brandon, H., Tarry, C., & Robinson, C. (2020). Lessons Learned on Recruiting and Retaining Young Fathers in a Parenting and Repeat Pregnancy Prevention Program. *Maternal and Child Health Journal*, *24*(s2), 183–190. https://doi.org/10.1007/s10995-020-02956-w

McLean, L., Heise, L. L., & Stern, E. A. (2020). Shifting and transforming gender-inequitable beliefs, behaviours and norms in intimate partnerships: the Indashyikirwa couples programme in Rwanda. *Culture, Health and Sexuality*, *22*(sup1), 13–30. https://doi.org/10.1080/13691058.2019.1679394

McNaughton Reyes, H. L., Maman, S., Chen, M. S., Groves, A. K., & Moodley, D. (2021). Patterns of Intimate Partner Violence Victimization Among South African Women and Their Relation to Emotional Distress During Pregnancy and Postpartum. *Journal of Interpersonal Violence*, *36*(7–8), NP4230–NP4249. https://doi.org/10.1177/0886260518786738

Meiksin, R., Bonell, C., Bhatia, A., Melendez-Torres, G. J., Kyegombe, N., & Kohli, A. (2024). Social Norms About Dating and Relationship Violence and Gender Among Adolescents: Systematic Review of Measures Used in Dating and Relationship Violence Research. *Trauma, Violence, and Abuse*, *25*(1), 448–462. https://doi.org/10.1177/15248380231155526

Meinck, F., Boyes, M. E., Cluver, L., Ward, C. L., Schmidt, P., DeStone, S., & Dunne, M. P. (2018). Adaptation and psychometric properties of the ISPCAN Child Abuse Screening Tool for use in trials (ICAST-Trial) among South African adolescents and their primary caregivers. *Child Abuse and Neglect*, *82*, 45–58. https://doi.org/10.1016/J.CHIABU.2018.05.022

Metzger, D. S., Koblin, B., Turner, C., Navaline, H., Valenti, F., Holte, S., Gross, M., Sheon, A., Miller, H., Cooley, P., & Seage, G. R. (2000). Randomized Controlled Trial of Audio Computer-assisted Self-Interviewing: Utility and Acceptability in Longitudinal Studies. *American Journal of Epidemiology*, *152*(2), 99–106. https://doi.org/10.1093/AJE/152.2.99

Meyer, S. R., Mosha, N. R., Shakespeare, T., Kuper, H., Mtolela, G., Harvey, S., Kapiga, S., Mshana, G., & Stöckl, H. (2023). Disability and intimate partner violence: A cross-sectional study from Mwanza, Tanzania. *Disability and Health Journal*, *16*(2). https://doi.org/10.1016/j.dhjo.2022.101404

Meyer, S, & Frost, A. (2019). *Domestic and family violence: A critical introduction to knowledge and practice*. Routledge.

Meyer, Sarah, Hardt, S., Brambilla, R., Page, S., & Stöckl, H. (2024). Explaining intimate partner violence through economic theories: A systematic review and narrative synthesis. *Aggression and Violent Behavior*, *77*(February). https://doi.org/10.1016/j.avb.2024.101929

Mikton, C., & Butchart, A. (2009). Child maltreatment prevention: a systematic review of reviews. *Bulletin of the World Health Organization*, *87*(5), 353. https://doi.org/10.2471/BLT.08.057075

Miller, E., Jones, K. A., Culyba, A. J., Paglisotti, T., Dwarakanath, N., Massof, M., Feinstein, Z., Ports, K. A., Espelage, D., Pulerwitz, J., Garg, A., Kato-Wallace, J., & Abebe, K. Z. (2020). Effect of a Community-Based Gender Norms Program on Sexual Violence Perpetration by Adolescent Boys and Young Men: A Cluster Randomized Clinical Trial. *JAMA Network Open*, *3*(12), 1–14. https://doi.org/10.1001/jamanetworkopen.2020.28499

Milward, J., Day, E., Wadsworth, E., Strang, J., & Lynskey, M. (2015). Mobile phone ownership, usage and readiness to use by patients in drug treatment. *Drug and Alcohol Dependence*, *146*(1), 111–115. https://doi.org/10.1016/j.drugalcdep.2014.11.001

Mitnick, D. M., Lorber, M. F., Smith Slep, A. M., Heyman, R. E., Xu, S., Bulling, L. J., Nichols, S. R., & Eddy, J. M. (2021). Self-report measures of coercive process in couple and parent–child dyads. *Journal of Family Psychology*, *35*(3), 388–398. https://doi.org/10.1037/fam0000729

Molloy, A., & Anderson, P. L. (2021). Engagement with mobile health interventions for depression: A systematic review. *Internet Interventions*, *26*(June), 100454. https://doi.org/10.1016/j.invent.2021.100454

Moodley, J. (2019). The Significance of Intersectionality in Mental Health-Care Policy in South Africa. In *The Palgrave Handbook of Intersectionality in Public Policy*. Palgrave Macmillan. https://link.springer.com/chapter/10.1007/978-3-319-98473-5_29

Mootz, J. J., Stark, L., Meyer, E., Asghar, K., Roa, A. H., Potts, A., Poulton, C., Marsh, M., Ritterbusch, A., & Bennouna, C. (2019). Examining intersections between violence against women and violence against children: Perspectives of adolescents and adults in

displaced Colombian communities. *Conflict and Health*, *13*(1), 1–12. https://doi.org/10.1186/S13031-019-0200-6/FIGURES/1

Morton, B., Vercueil, A., Masekela, R., Heinz, E., Reimer, L., Saleh, S., Kalinga, C., Seekles, M., Biccard, B., Chakaya, J., Abimbola, S., Obasi, A., & Oriyo, N. (2022). Consensus statement on measures to promote equitable authorship in the publication of research from international partnerships. *Anaesthesia*, *77*(3), 264–276. https://doi.org/10.1111/anae.15597

Mrazek, P. J., & Haggerty, R. J. (1994). Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research. *Reducing Risks for Mental Disorders*. https://doi.org/10.17226/2139

Murphy, J. (2023). Gender-Based Violence Helpline and Sexual Harassment Investigation Units Officially Launched. *The Jamaica Information Service – Government of Jamaica*. https://jis.gov.jm/gender-based-violence-helpline-and-sexual-harassment-investigation-units-officially-launched/

Nahum-Shani, I., Smith, S. N., Spring, B. J., Collins, L. M., Witkiewitz, K., Tewari, A., & Murphy, S. A. (2018). Just-in-time adaptive interventions (JITAIs) in mobile health: Key components and design principles for ongoing health behavior support. *Annals of Behavioral Medicine*, *52*(6), 446–462. https://doi.org/10.1007/s12160-016-9830-8

Nour, M., Chen, J., & Allman-Farinelli, M. (2019). Young adults' engagement with a self-monitoring app for vegetable intake and the impact of social media and gamification: Feasibility study. *JMIR Formative Research*, *3*(2), 1–20. https://doi.org/10.2196/13324

Nyemgah, C. A., Ranganathan, M., & Stöckl, H. (2024). Intimate partner violence during pregnancy against adolescents in sub-Saharan Africa: a systematic review. *Injury Prevention*, 177–182. https://doi.org/10.1136/ip-2023-044985

O'Doherty, L. J., MacMillan, H., Feder, G., Taft, A., Taket, A., & Hegarty, K. (2014).

Selecting outcomes for intimate partner violence intervention trials: Overview and recommendations. *Aggression and Violent Behavior*, *19*(6), 663–672. https://doi.org/10.1016/J.AVB.2014.09.010

OECD. (2023a). *OECD broadband statistics update - OECD*. https://www.oecd.org/digital/broadband/broadband-statistics-update.htm

OECD. (2023b). *Violence against women (indicator)*. https://doi.org/10.1787/f1eb4876-en

Olofsson, V., Skoog, T., & Tillfors, M. (2016). Implementing group based parenting programs: A narrative review. *Children and Youth Services Review*, *69*, 67–81. https://doi.org/10.1016/J.CHILDYOUTH.2016.07.004

Orchowski, L. M. (2019). "Trouble in Paradigm" and the Social Norms Approach to Violence Prevention. *Violence Against Women*, *25*(14), 1672–1681. https://doi.org/10.1177/1077801219872561

Orchowski, L. M., & Berkowitz, A. D. (2022). Engaging Boys and Men in Sexual Assault Prevention: Theory, Research, and Practice. *Engaging Boys and Men in Sexual Assault Prevention: Theory, Research, and Practice*, 1–482. https://doi.org/10.1016/C2018-0-05008-2

Owen, J., Gray-Burrows, K. A., Eskytė, I., Wray, F., Bhatti, A., Zoltie, T., Staples, A., Giles, E., Lintin, E., West, R., Pavitt, S., McEachan, R. R. C., Marshman, Z., & Day, P. F. (2022). Co-design of an oral health intervention (HABIT) delivered by health visitors for parents of children aged 9–12 months. *BMC Public Health*, *22*(1). https://doi.org/10.1186/S12889-022-14174-W

Oyekunle, V., Gibbs, A., & Tomita, A. (2023). Assessing the role of depression in reducing intimate partner violence perpetration among young men living in urban informal settlements using a mediation analysis of the Stepping Stones and Creating Futures intervention. *Global Health Action*, *16*(1).

https://doi.org/10.1080/16549716.2023.2188686

Panter-Brick, C., Burgess, A., Eggerman, M., McAllister, F., Pruett, K., & Leckman, J. F. (2014). Practitioner Review: Engaging fathers – recommendations for a game change in parenting interventions based on a systematic review of the global evidence. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *55*(11), 1187. https://doi.org/10.1111/JCPP.12280

Patrick, K., Hekler, E. B., Estrin, D., Mohr, D. C., Riper, H., Crane, D., Godino, J., & Riley, W. T. (2016). The Pace of Technologic Change: Implications for Digital Health Behavior Intervention Research. *American Journal of Preventive Medicine*, *51*(5), 816–824. https://doi.org/10.1016/J.AMEPRE.2016.05.001

Patterson, G. R., & Reid, J. B. (1982). *Coercive family process*. Castalia Publishing Company.

Pearson, I., Page, S., Zimmerman, C., Meinck, F., Gennari, F., Guedes, A., & Stöckl, H. (2022). The Co-Occurrence of Intimate Partner Violence and Violence Against Children: A Systematic Review on Associated Factors in Low- and Middle-Income Countries. *Trauma, Violence, and Abuse*. https://doi.org/10.1177/15248380221082943/ASSET/IMAGES/LARGE/10.1177_15248380221082943-FIG2.JPEG

Pederson, A., Greaves, L., & Poole, N. (2015). Gender-transformative health promotion for women: A framework for action. *Health Promotion International*, *30*(1), 140–150. https://doi.org/10.1093/heapro/dau083

Pérez-Martínez, V., Marcos-Marcos, J., Cerdán-Torregrosa, A., Briones-Vozmediano, E., Sanz-Barbero, B., Davó-Blanes, Mc., Daoud, N., Edwards, C., Salazar, M., La Parra-Casado, D., & Vives-Cases, C. (2023). Positive Masculinities and Gender-Based Violence Educational Interventions Among Young People: A Systematic Review.

Trauma, Violence, and Abuse, *24*(2), 468–486. https://doi.org/10.1177/15248380211030242

Peterman, A., Bhatia, A., & Guedes, A. (2020). *Remote data collection on violence against women during COVID-19: A conversation with experts on ethics, measurement & research priorities (Part 1)*. UNICEF Innocenti. https://www.unicef-irc.org/article/1997-remote-data-collection-on-violence-against-women-during-covid-19-a-conversation-with.html

Peterman, A., Devries, K., Guedes, A., Chandan, J. S., Minhas, S., Lim, R. Q. H., Gennari, F., & Bhatia, A. (2023). Ethical reporting of research on violence against women and children: A review of current practice and recommendations for future guidelines. *BMJ Global Health*, *8*(5). https://doi.org/10.1136/bmjgh-2023-011882

Phaswana, E. D. (2021). Women, Gender, and Race in Post-Apartheid South Africa. In O. Yacob-Haliso & T. Falola (Eds.), *The Palgrave Handbook of African Women's Studies* (pp. 1–19). Palgrave Macmillan Cham. https://doi.org/10.1007/978-3-319-77030-7_141-1

Philbrick, W., Milnor, J., Deshmukh, M., & Mechael, P. (2022). Information and communications technology use to prevent and respond to sexual and gender-based violence in low- and middle-income countries: An evidence and gap map. *Campbell Systematic Reviews*, *18*(4), e1277. https://doi.org/10.1002/CL2.1277

Pulerwitz, J., & Barker, G. (2008). Measuring attitudes toward gender norms among young men in Brazil: Development and psychometric evaluation of the GEM scale. *Men and Masculinities*, *10*(3), 322–338. https://doi.org/10.1177/1097184X06298778

Ranganathan, M., Heise, L., Peterman, A., Roy, S., & Hidrobo, M. (2021). Cross-disciplinary intersections between public health and economics in intimate partner violence research. *SSM-Population Health*, *14*, 100822.

Richardson, B. P., van der Linde, J., Pillay, B., & Swanepoel, D. W. (2020). Do text messages about health and development in young children affect caregiver behaviour and child outcomes? A systematic review. *Https://Doi.Org/10.1177/0017896920965992*, *80*(2), 225–237. https://doi.org/10.1177/0017896920965992

Roberts, G. L., Williams, G. M., Lawrence, J. M., & Raphael, B. (1998). How does domestic violence affect women's mental health? *Women & Health*, *28*(1), 117–129. https://doi.org/10.1300/J013V28N01_08

Ruane-Mcateer, E., Gillespie, K., Amin, A., Aventin, Á., Robinson, M., Hanratty, J., Khosla, R., & Lohan, M. (2020). Gender-transformative programming with men and boys to improve sexual and reproductive health and rights: a systematic review of intervention studies. *BMJ Global Health*, *5*(10), e002997. https://doi.org/10.1136/BMJGH-2020-002997

Ruiz-Pérez, I., & Plazaola-Castaño, J. (2005). Intimate partner violence and mental health consequences in women attending family practice in Spain. *Psychosomatic Medicine*, *67*(5), 791–797.

Sanders, M. R., Divan, G., Singhal, M., Turner, K. M. T., Velleman, R., Michelson, D., & Patel, V. (2021). Scaling Up Parenting Interventions is Critical for Attaining the Sustainable Development Goals. *Child Psychiatry and Human Development*, 1–12. https://doi.org/10.1007/S10578-021-01171-0/TABLES/2

Sardinha, L., Maheu-Giroux, M., Stöckl, H., Meyer, S. R., & García-Moreno, C. (2022). Global, regional, and national prevalence estimates of physical or sexual, or both, intimate partner violence against women in 2018. *The Lancet*, *399*(10327), 803–813. https://doi.org/10.1016/S0140-6736(21)02664-7

Schafer, M., Lachman, J. M., Gardner, F., Zinser, P., Calderon, F., Han, Q., Facciola, C., & Clements, L. (2023). Integrating intimate partner violence prevention content into a

digital parenting chatbot intervention during COVID-19: Intervention development and remote data collection. *BMC Public Health*, *23*(1), 1–17. https://doi.org/10.1186/S12889-023-16649-W

Schlosser, D. A., Campellone, T. R., Truong, B., Anguera, J. A., Vergani, S., Vinogradov, S., & Arean, P. (2017). The feasibility, acceptability, and outcomes of PRIME-D: A novel mobile intervention treatment for depression. *Depression and Anxiety*, *34*(6), 546–554. https://doi.org/10.1002/DA.22624

Selin, A., DeLong, S. M., Julien, A., MacPhail, C., Twine, R., Hughes, J. P., Agyei, Y., Hamilton, E. L., Kahn, K., & Pettifor, A. (2019). Prevalence and Associations, by Age Group, of IPV Among AGYW in Rural South Africa. *SAGE Open*, *9*(1). https://doi.org/10.1177/2158244019830016

Sere, Y., Roman, N. V., & Ruiter, R. A. C. (2021). Coping With the Experiences of Intimate Partner Violence Among South African Women: Systematic Review and Meta-Synthesis. *Frontiers in Psychiatry*, *12*, 522. https://doi.org/10.3389/FPSYT.2021.655130/BIBTEX

Shai, N. J., & Sikweyiya, Y. (2015). Programmes for change - addressing sexual and intimate partner violence in South Africa. *SA Crime Quarterly*, *51*. https://doi.org/http://dx.doi.org/10.4314/sacq.v51i1.4

Shenderovich, Y., Ward, C. L., Lachman, J. M., Wessels, I., Sacolo-Gwebu, H., Okop, K., Oliver, D., Ngcobo, L. L., Tomlinson, M., Fang, Z., Janowski, R., Hutchings, J., Gardner, F., & Cluver, L. (2020). Evaluating the dissemination and scale-up of two evidence-based parenting interventions to reduce violence against children: study protocol. *Implementation Science Communications*, *1*(1), 1–11. https://doi.org/10.1186/s43058-020-00086-6

Sherr, L., Mebrahtu, H., Mwaba, K., Nurova, N., Chetty, A. N., Swartz, A., Cluver, L.,

Steventon Roberts, K. J., & Lachman, J. M. (2022). ‘Tipping the balance’’ – an evaluation of COVID-19 parenting resources developed and adapted for child protection during global emergency responses.’ *Http://Mc.Manuscriptcentral.Com/HPBM*, *10*(1), 676–694. https://doi.org/10.1080/21642850.2022.2104285

Shields, M., Tonmyr, L., Hovdestad, W. E., Gonzalez, A., & MacMillan, H. (2020). Exposure to family violence from childhood to adulthood. *BMC Public Health*, *20*(1), 1–15. https://doi.org/10.1186/S12889-020-09709-Y/TABLES/4

Shockley, B. (2021). Positionality and Access: Doing Surveys and Empirical Research in the Middle East. In *Researching the Middle East*. Routledge. https://doi.org/10.1080/14606925.2022.2088097

Shubina, O., Mshana, G., Sichalwe, S., Malibwa, D., Mosha, N., Hashim, R., Nahay, F., Ayieko, P., Kapiga, S., & Stöckl, H. (2023). The association between alcohol consumption and intimate partner violence in young male perpetrators in Mwanza, Tanzania: a cross-sectional study. *Global Health Action*, *16*(1). https://doi.org/10.1080/16549716.2023.2185967

Shuib, R., Endut, N., Ali, S. H., Osman, I., Abdullah, S., Oon, S. W., Ghani, P. A., Prabakaran, G., Hussin, N. S., & Shahrudin, S. S. H. (2013). Domestic Violence and Women’s Well-being in Malaysia: Issues and Challenges Conducting a National Study Using the WHO Multi-country Questionnaire on Women’s Health and Domestic Violence Against Women. *Procedia - Social and Behavioral Sciences*, *91*, 475–488. https://doi.org/10.1016/J.SBSPRO.2013.08.445

Simone, D., Jenny, P., Amiya, B., Rehema, N., Joan Ritar, K., Brian Junior, M., & Karen, D. (2024). Young people’s experiences of informal kinship care in Luwero, Uganda. *Children and Youth Services Review*, *159*(March), 107527. https://doi.org/10.1016/j.childyouth.2024.107527

Siu, G. E., Wight, D., Seeley, J., Namutebi, C., Sekiwunga, R., Zalwango, F., & Kasule, S. (2017). Men's Involvement in a Parenting Programme to Reduce Child Maltreatment and Gender-Based Violence: Formative Evaluation in Uganda. *European Journal of Development Research*, *29*(5), 1017–1037. https://doi.org/10.1057/s41287-017-0103-6

Skivington, K., Matthews, L., Simpson, S. A., Craig, P., Baird, J., Blazeby, J. M., Boyd, K. A., Craig, N., French, D. P., McIntosh, E., Petticrew, M., Rycroft-Malone, J., White, M., & Moore, L. (2021). A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. *BMJ*, *374*. https://doi.org/10.1136/BMJ.N2061

Spencer, C. M., Topham, G. L., & King, E. L. (2019). Do Online Parenting Programs Create Change?: A Meta- Analysis. *Journal of Family Psychology*, *34*(3), 364–374. https://doi.org/10.1037/fam0000605

Spotlight Initative. (2022). *Spotlight Initative Global Annual Narrative Progress Report 2022* (Issue 2022). https://www.spotlightinitiative.org/sites/default/files/publication/2023-06/2022 SPOTLIGHT GLOBAL ANNUAL REPORT.pdf

Stark, L., & Seff, I. (2021). The role of social norms, violence against women, and measurement in the global commitment to end violence against children. *Peace and Conflict: Journal of Peace Psychology*, *27*(1), 24–27. https://doi.org/10.1037/PAC0000510

Starmann, E., Collumbien, M., Kyegombe, N., Devries, K., Michau, L., Musuya, T., Watts, C., & Heise, L. (2017). Exploring Couples' Processes of Change in the Context of SASA!, a Violence Against Women and HIV Prevention Intervention in Uganda. *Prevention Science*, *18*(2), 233–244. https://doi.org/10.1007/s11121-016-0716-6

Stern, E., Heise, L., Dunkle, K., & Chatterji, S. (2022). How the Indashyikirwa Intimate Partner Violence Prevention Programme in Rwanda Influenced Parenting and Violence

against Children. *Journal of Family Violence*, *37*(2), 195–206. https://doi.org/10.1007/s10896-020-00216-7

Stern, E., Willan, S., Gibbs, A., Myrttinen, H., Washington, L., Sikweyiya, Y., Addo-Lartey, A., Mastonshoeva, S., & Jewkes, R. (2021). Pathways of change: qualitative evaluations of intimate partner violence prevention programmes in Ghana, Rwanda, South Africa and Tajikistan. *Culture, Health and Sexuality*, *23*(12), 1700–1716. https://doi.org/10.1080/13691058.2020.1801843

Stets, J. E., & Straus, M. A. (1989). The marriage license as a hitting license: A comparison of assaults in dating, cohabiting, and married couples. *Journal of Family Violence*, *4*(2), 161–180.

Stewart, R., Wright, B., Smith, L., Roberts, S., & Russell, N. (2021). Gendered stereotypes and norms: A systematic review of interventions designed to shift attitudes and behaviour. *Heliyon*, *7*(4), e06660. https://doi.org/10.1016/j.heliyon.2021.e06660

Stöckl, H., Devries, K., Rotstein, A., Abrahams, N., Campbell, J., Watts, C., & Moreno, C. G. (2013). The global prevalence of intimate partner homicide: a systematic review. *The Lancet*, *382*(9895), 859–865. https://doi.org/10.1016/S0140-6736(13)61030-2

Straus, M. A. (2005). Women's violence toward men is a serious social problem. In *Current Controversies on Family Violence* (pp. 55–78). SAGE Publications Inc. https://doi.org/10.4135/9781483328584.n4

Straus, M. A., Gelles, R. J., & Steinmetz, S. K. (2006). *Behind closed doors: Violence in the American family. New Brunswick*. NJ: Transaction Publishers.

Strayhorn, J. C., Collins, L. M., Brick, T. R., Marchese, S. H., Pfammatter, A. F., Pellegrini, C., & Spring, B. (2021). Using factorial mediation analysis to better understand the effects of interventions. *Translational Behavioral Medicine*, *12*(1), 84–89. https://academic.oup.com/tbm/article/12/1/ibab137/6410604?login=true#no-access-

message#no-access-message

Stubbs, A., & Szoeke, C. (2021). The Effect of Intimate Partner Violence on the Physical Health and Health-Related Behaviors of Women: A Systematic Review of the Literature. *Trauma, Violence & Abuse*, 1524838020985541. https://doi.org/10.1177/1524838020985541

Szinay, D., Jones, A., Chadborn, T., Brown, J., & Naughton, F. (2020). Influences on the uptake of and engagement with health and well-being smartphone apps: Systematic review. *Journal of Medical Internet Research*, *22*(5). https://doi.org/10.2196/17572

Thabane, L., Cambon, L., Potvin, L., Pommier, J., Kivits, J., Minary, L., Nour, K., Blaise, P., Charlesworth, J., Alla, F., Arwidson, P., Bonell, C., Boutron, I., Campbell, R., Carrieri, P., Chauvin, F., Dabis, F., Edwards, N., Ferron, C., … Ninot, G. (2019). Population health intervention research: What is the place for pilot studies? *Trials*, *20*(1), 1–6. https://doi.org/10.1186/S13063-019-3422-4/PEER-REVIEW

The DHS Program. (2018). *Demographic and Health Surveys (DHS): Model Woman's Questionnaire*. https://dhsprogram.com/pubs/pdf/DHSQ7/DHS7-Womans-QRE-EN-17Dec2018-DHSQ7.pdf

The Prevention Collaborative. (2020). *Prevention Foundations Brief 2: Understanding the causes of violence against women.* https://prevention-collaborative.org/wp-content/uploads/2021/08/Prevention-Collaborative_2020_Understanding-Causes-of-VAW.pdf

Thomeer, M. B., Brantley, M., & Hernandez, E. M. (2024). Using mixed methods approaches to study families and relationships. *Journal of Marriage and Family*, *January*, 1–19. https://doi.org/10.1111/jomf.12974

Thongseiratch, T., Leijten, P., & Melendez-Torres, G. J. (2020). Online parent programs for children's behavioral problems: a meta-analytic review. *European Child and Adolescent*

Psychiatry, *29*(11), 1555–1568. https://doi.org/10.1007/s00787-020-01472-0

Tielman, M. L., Neerincx, M. A., Pagliari, C., Rizzo, A., & Brinkman, W. P. (2019). Considering patient safety in autonomous e-mental health systems - Detecting risk situations and referring patients back to human care. *BMC Medical Informatics and Decision Making*, *19*(1), 1–16. https://doi.org/10.1186/s12911-019-0796-x

Timmons, A. C., Han, S. C., Kim, Y., Pettit, C., Perrone, L., Power, K., Vitale, L., & Margolin, G. (2021). Fluctuations in pronoun use in everyday life: Understanding couple aggression in context. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *35*(2), 149–159. https://doi.org/10.1037/FAM0000699

Tran, N. K., Van Berkel, S. R., Van IJzendoorn, M. H., & Alink, L. R. A. (2017). The association between child maltreatment and emotional, cognitive, and physical health functioning in Vietnam. *BMC Public Health*, *17*(1), 1–13. https://doi.org/10.1186/s12889-017-4258-z

Treves-Kagan, S., Peterman, A., Gottfredson, N. C., Villaveces, A., Moracco, K. E., & Maman, S. (2022). Equality in the Home and in the Community: a Multilevel Longitudinal Analysis of Intimate Partner Violence on the Ecuadorian-Colombian Border. *Journal of Family Violence*, *37*(1), 1–14. https://doi.org/10.1007/s10896-020-00218-5

Tully, L. A., Piotrowska, P. J., Collins, D. A. J., Mairet, K. S., Black, N., Kimonis, E. R., Hawes, D. J., Moul, C., Lenroot, R. K., Frick, P. J., Anderson, V., & Dadds, M. R. (2017). Optimising child outcomes from parenting interventions: fathers' experiences, preferences and barriers to participation. *BMC Public Health*, *17*(1), 1–14. https://doi.org/10.1186/S12889-017-4426-1/TABLES/6

Turner, D. T., Riedel, E., Kobeissi, L. H., Karyotaki, E., Garcia-Moreno, C., Say, L., &

Cuijpers, P. (2020). Psychosocial interventions for intimate partner violence in low and middle income countries: A meta-analysis of randomised controlled trials. *Journal of Global Health*, *10*(1). https://doi.org/10.7189/jogh.10.010409

UN General Assembly. (2015). *Resolution adopted by the General Assembly on 25 September 2015: 70/1. Transforming our world: the 2030 Agenda for Sustainable Development*. https://doi.org/10.4324/9781843146575-59

UN Women. (2013). Handbook for Legislation on Violence against Women. *Handbook for Legislation on Violence against Women*. https://doi.org/10.18356/5e37558d-en

UN Women. (2017). *Female genital mutilation/cutting and violence against women and girls: Strengthening the policy linkages between different forms of violence against women and girls*. 20. http://forwarduk.org.uk/wp-content/uploads/2015/07/Policy-note-Female-genital-mutilation-cutting-and-violence-against-women-and-girls-en.pdf

UN Women. (2024). *Are we getting there? A synthesis of UN system evaluations of SDG 5*. https://www.unwomen.org/sites/default/files/2024-05/are-we-getting-there-a-synthesis-of-un-system-evaluations-of-sdg-5-en.pdf

UNDP. (2022). *Country Programme 2022-2026 Jamaica*. https://www.undp.org/sites/g/files/zskgke326/files/2022-06/UNDP MCO in Jamaica CPD 2022 - 2026 with cover_1.pdf

UNICEF. (2020a). *COVID-19 Risk Communication and Community Engagement (RCCE) Guidance Note on Quantitative Data Collection*. https://www.corecommitments.unicef.org/kp/rcce-covid19---quantitative-data-collection-guidance-note.pdf

UNICEF. (2020b). *Economic and Social Council: Country programme document South Africa*. https://doi.org/10.1093/oxfordhb/9780199560103.003.0007

UNICEF. (2020c). *Technical Note on Gender- Transformative Approaches in the Global*

Programme to End Child Marriage Phase 2: A Summary for Practitioners. https://www.unfpa.org/sites/default/files/resource-pdf/Technical_Note_on_Gender-Transformative_Approaches_in_the_GPECM_Phase_II_A_Summary_for_Practitioners-January-2020.pdf

UNICEF. (2020d). *Gender Dimensions of Violence Against Children and Adolescents | UNICEF*. https://www.unicef.org/documents/gender-dimensions-violence-against-children-and-adolescents

UNICEF. (2021a). *Ending Violence Against Women and Children in Asia and the Pacific: Opportunities and Challenges for Collaborative and Integrative Approaches*.

UNICEF. (2021b). *UNICEF Gender Action Plan: 2022–2025*. https://www.unicef.org/executiveboard/documents/UNICEF-Gender-Action-Plan-2022–2025-SRS-2021

UNICEF. (2021c). *UNICEF Gender Policy 2021-2030*. https://www.unicef.org/media/117706/file/Gender Policy 2030.pdf

UNICEF. (2023). *Evidence Brief on Working at the Intersections between Violence Against Women and Children in the Caribbean: Taking Stock of Challenges, Opportunities and Promising Practices* (Issue September). https://www.unicef.org/lac/media/45941/file/Evidence brief on intersections between violence against women and children in the Caribbean.pdf

UNICEF Innocenti, Prevention Collaborative, & Equimundo. (2023a). *Parenting Programmes to Reduce Violence against Children and Women. What gender-transformative programmes look like. Brief 2, UNICEF Innocenti, Florence, 2023.* https://www.unicef-irc.org/publications/1915-brief-2-parenting-programmes-to-reduce-violence-against-women-and-children-what-gender-transformative-programmes-look-like.html

UNICEF Innocenti, Prevention Collaborative, & Equimundo. (2023b). *Parenting Programmes to Reduce Violence against Children and Women. Why it is important. Brief 1, UNICEF Innocenti, Florence, 2023.* https://www.unicef-irc.org/publications/pdf/UNICEF-Innocenti-Parenting-Brief-1-Why-is-it-important-2024.pdf

United Nations. (1993). *Declaration on the Elimination of Violence against Women.*

United Nations. (2020). *Country programme document for South Africa (June 2020-2025)*. https://digitallibrary.un.org/record/3873541?ln=en&v=pdf

United Nations. (2022a). Country programme document: Jamaica. In *UN Economic and Social Council*. https://doi.org/10.1093/oxfordhb/9780199560103.003.0007

United Nations. (2022b). *Intensification of efforts to eliminate all forms of violence against women: Report of the Secretary-General* (Vol. 11054, Issue August). https://www.unwomen.org/sites/default/files/2022-10/A-77-302-SG-report-EVAWG-en.pdf

United Nations. (2024). *Sustainable Development Goals: Goal 5: Achieve gender equality and empower all women and girls*. https://www.un.org/sustainabledevelopment/gender-equality/

United Nations Population Fund. (2020). *United Nations Population Fund : country programme document for South Africa*. https://digitallibrary.un.org/record/3861549?ln=en&v=pdf

UNSD. (2015). *The World's Women 2015: Trends and Statistics*. UN.

Valentine, L., D'Alfonso, S., & Lederman, R. (2022). Recommender systems for mental health apps: advantages and ethical challenges. *AI and Society*, *1*, 1–12. https://doi.org/10.1007/S00146-021-01322-W/METRICS

van Aar, J., Leijten, P., Orobio de Castro, B., & Overbeek, G. (2017). Sustained, fade-out or

sleeper effects? A systematic review and meta-analysis of parenting interventions for disruptive child behavior. *Clinical Psychology Review*, *51*, 153–163. https://doi.org/10.1016/J.CPR.2016.11.006

van den Berg, W., Hendricks, L., Hatcher, A., Peacock, D., Godana, P., & Dworkin, S. (2013). 'One Man Can': shifts in fatherhood beliefs and parenting practices following a gender-transformative programme in Eastern Cape, South Africa. *Gender & Development*, *21*(1), 111–125. https://doi.org/10.1080/13552074.2013.769775

VanderEnde, K. E., Yount, K. M., Dynes, M. M., & Sibley, L. M. (2012). Community-level correlates of intimate partner violence against women globally: A systematic review. *Social Science and Medicine*, *75*(7), 1143–1155. https://doi.org/10.1016/j.socscimed.2012.05.027

Viduani, A., Cosenza, V., Araújo, R. M., & Kieling, C. (2023). Chatbots in the Field of Mental Health: Challenges and Opportunities. *Digital Mental Health: A Practitioner's Guide*, 133–148. https://doi.org/10.1007/978-3-031-10698-9_8/FIGURES/1

Visschers, J., Jaspaert, E., & Vervaeke, G. (2015). Social Desirability in Intimate Partner Violence and Relationship Satisfaction Reports: An Exploratory Analysis. *Journal of Interpersonal Violence*, *32*(9), 1401–1420. https://doi.org/10.1177/0886260515588922

Vollmer, R. L., Adamsons, K., & Mobley, A. R. (2019). Recruitment, Engagement, and Retention of Fathers in Nutrition Education and Obesity Research. *Journal of Nutrition Education and Behavior*, *51*(9), 1121–1125. https://doi.org/10.1016/j.jneb.2019.07.006

Wang, C., & Foronda, C. (2022). Use of Text Messaging to Help Family Caregivers: An Integrative Review. *CIN: Computers, Informatics, Nursing*. https://doi.org/10.1097/CIN.0000000000000982

Wang, L. (2020). Education, Gender, Residence, and Attitude toward Intimate Partner Violence: An Empirical Study. *Journal of Aggression, Maltreatment and Trauma*, *29*(7),

808–825. https://doi.org/10.1080/10926771.2020.1725208

Ward, C. L., Wessels, I. M., Lachman, J. M., Hutchings, J., Cluver, L. D., Kassanjee, R., Nhapi, R., Little, F., & Gardner, F. (2020). Parenting for Lifelong Health for Young Children: a randomized controlled trial of a parenting program in South Africa to prevent harsh parenting and child conduct problems. *Journal of Child Psychology and Psychiatry*, *61*(4), 503–512. https://doi.org/10.1111/jcpp.13129

Ward, C., Sanders, M. R., Gardner, F., Mikton, C., & Dawes, A. (2016). Preventing child maltreatment in low- and middle-income countries. Parent support programs have the potential to buffer the effects of poverty. *Child Abuse and Neglect*, *54*, 97–107. https://doi.org/10.1016/j.chiabu.2015.11.002

Wathen, C. N., & MacMillan, H. L. (2013). Children's exposure to intimate partner violence: Impacts and interventions. *Paediatrics and Child Health (Canada)*, *18*(8), 419–422. https://doi.org/10.1093/pch/18.8.419

Watkins, V., Kavanagh, S. A., Macdonald, J. A., Rasmussen, B., Maindal, H. T., Hosking, S., & Wynter, K. (2024). "I always felt like I wasn't supposed to be there". An international qualitative study of fathers' engagement in family healthcare during transition to fatherhood. *Midwifery*, *130*(January), 103928. https://doi.org/10.1016/j.midw.2024.103928

Weber, A. M., Gupta, R., Abdalla, S., Cislaghi, B., Meausoone, V., & Darmstadt, G. L. (2021). Gender-related data missingness, imbalance and bias in global health surveys. *BMJ Global Health*, *6*(11), 1–7. https://doi.org/10.1136/bmjgh-2021-007405

Weisenmuller, C., & Hilton, D. (2021). Barriers to access, implementation, and utilization of parenting interventions: Considerations for research and clinical applications. *American Psychologist*, *76*(1), 104–115. https://doi.org/10.1037/AMP0000613

Wessells, M. G., & Kostelny, K. (2021). Understanding and ending violence against children:

A holistic approach. *Peace and Conflict: Journal of Peace Psychology*, *27*(1), 3–23. https://doi.org/10.1037/PAC0000475

Whitten, T., Tzoumakis, S., Green, M. J., & Dean, K. (2023). Global Prevalence of Childhood Exposure to Physical Violence within Domestic and Family Relationships in the General Population: A Systematic Review and Proportional Meta-Analysis. *Trauma, Violence, and Abuse*. https://doi.org/10.1177/15248380231179133/ASSET/IMAGES/LARGE/10.1177_15248380231179133-FIG6.JPEG

WHO. (2012). *Understanding and addressing violence against women: Intimate partner violence*. https://doi.org/10.1056/NEJMra1807166

WHO. (2013). *Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence*.

WHO. (2016a). *Ethical and safety recommendations for intervention research on violence against women. Building on lessons from the WHO publication Putting women first: ethical and safety recommendations for research on domestic violence against women.*

WHO. (2016b). *Global Plan of Action*. 76. https://www.who.int/reproductivehealth/publications/violence/global-plan-of-action/en/

WHO. (2019). *RESPECT Women: Preventing violence against women*. https://doi.org/10.4324/9781315612829-7

WHO. (2020). *Global status report on preventing violence against children*. https://www.unicef.org/media/70731/file/Global-status-report-on-preventing-violence-against-children-2020.pdf

WHO. (2021a). *Devastatingly pervasive: 1 in 3 women globally experience violence*. 1–5. https://www.who.int/news/item/09-03-2021-devastatingly-pervasive-1-in-3-women-globally-experience-violence

WHO. (2021b). *Violence against women prevalence estimates, 2018: global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women.* https://www.who.int/publications/i/item/9789240022256

WHO. (2021c). Violence Against Women Prevalence Estimates, 2018 – Executive summary. *World Health Organization*. https://www.who.int/publications/i/item/9789240026681

WHO. (2022). *WHO guidelines on parenting interventions to prevent maltreatment and enhance parent–child relationships with children aged 0–17 years*. https://www.who.int/publications/i/item/9789240065505

Widom, C. S., Czaja, S., & Dutton, M. A. (2014). Child abuse and neglect and intimate partner violence victimization and perpetration: A prospective investigation. *Child Abuse & Neglect*, *38*(4), 650–663. https://doi.org/10.1016/J.CHIABU.2013.11.004

Wight, D., Sekiwunga, R., Namutebi, C., Zalwango, F., & Siu, G. E. (2022). A Ugandan Parenting Programme to Prevent Gender-Based Violence: Description and Formative Evaluation. *Research on Social Work Practice*, *32*(4), 448–464. https://journals.sagepub.com/doi/full/10.1177/10497315211056246

Wight, D., Wimbush, E., Jepson, R., & Doi, L. (2016). Six steps in quality intervention development (6SQuID). *J Epidemiol Community Health*, *70*(5), 520–525. https://doi.org/10.1136/JECH-2015-205952

Williams, C. W. (2016). *Women's Health Survey 2016 Jamaica*. https://caribbean.unwomen.org/en/materials/publications/2018/6/womens-health-survey-2016-jamaica

Winter, N., Russell, L., Ugalde, A., White, V., & Livingston, P. (2022). Engagement Strategies to Improve Adherence and Retention in Web-Based Mindfulness Programs: Systematic Review. *Journal of Medical Internet Research*, *24*(1), e30026.

https://doi.org/10.2196/30026

World Bank. (2023). *Jamaica Gender Assessment Report*. https://documents1.worldbank.org/curated/en/099154502222328619/pdf/P175282042506702e0a7d100b3087a5be64.pdf

World Bank. (2024a). *Macro Poverty Outlook for Jamaica : April 2024 Datasheet (English)*. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099007104052427284/idu1070e8771194ff1425818d581399c0d9d2dfb

World Bank. (2024b). *Macro Poverty Outlook for South Africa: April 2024 (English)*. https://documents1.worldbank.org/curated/en/099613104052410927/pdf/IDU1ffc84f731c8e91470018c4311f71d03092e1.pdf

Wu, H. J., Yu, Y. F., Ku, S. W. W., Tseng, Y. C., Yuan, C. W., Li, C. W., Huang, P. H., Ko, N. Y., Anderson, P. L., & Strong, C. (2022). Usability and effectiveness of adherence monitoring of a mobile app designed to monitor and improve adherence to event-driven and daily HIV pre-exposure prophylaxis among men who have sex with men in Taiwan. *Digital Health*, *8*. https://doi.org/10.1177/20552076221102770/ASSET/IMAGES/LARGE/10.1177_20552076221102770-FIG2.JPEG

Xie, E. B., Jung, J. W., Kaur, J., Benzies, K. M., Tomfohr-Madsen, L., & Keys, E. (2023). Digital Parenting Interventions for Fathers of Infants From Conception to the Age of 12 Months: Systematic Review of Mixed Methods Studies. *J Med Internet Res 2023;25:E43219 Https://Www.Jmir.Org/2023/1/E43219*, *25*(1), e43219. https://doi.org/10.2196/43219

Yaremych, H. E., & Persky, S. (2023). Recruiting Fathers for Parenting Research: An Evaluation of Eight Recruitment Methods and an Exploration of Fathers' Motivations

for Participation. *Parenting*, *23*(1), 1–32. https://doi.org/10.1080/15295192.2022.2036940

Yoshioka, E., Palatino, M., Nazareno, J., & Operario, D. (2020). Intimate Partner Violence and Sexual Agency in a Nationally Representative Sample of Women and Girls in the Philippines. *Journal of Interpersonal Violence*, 886260520976208. https://doi.org/10.1177/0886260520976208

Zark, L., & Satyen, L. (2022). Cross-Cultural Differences in Student Attitudes Toward Intimate Partner Violence: A Systematic Review. *Trauma, Violence, and Abuse*, *23*(3), 1007–1022. https://doi.org/10.1177/1524838020985565

Zegenhagen, S., Ranganathan, M., & Buller, A. M. (2019). Household decision-making and its association with intimate partner violence: Examining differences in men's and women's perceptions in Uganda. *SSM - Population Health*, *8*, 100442. https://doi.org/10.1016/J.SSMPH.2019.100442

Zielke, J., Batram-Zantvoort, S., Razum, O., & Miani, C. (2023). Operationalising masculinities in theories and practices of gender-transformative health interventions: a scoping review. *International Journal for Equity in Health*, *22*(1), 1–22. https://doi.org/10.1186/s12939-023-01955-x

Appendices

Appendix 1: Ethics Forms and Approvals

COVID-19 Playful Parenting CUREC2 Approval

SOCIAL SCIENCES & HUMANITIES
INTERDIVISIONAL RESEARCH ETHICS COMMITTEE

Research Services, University of Oxford, Wellington Square, Oxford OX1 2JD
Tel: +44(0)1865 616576 Fax: +44(0)1865 280467
ethics@socsci.ox.ac.uk



Jamie Lachman
Department of Social Policy and Intervention
University of Oxford

Dear Jamie

Amendment of research ethics application

Ref No: R69569/RE005
Title: COVID-19 Playful Parenting Emergency Response
Number of Amendment: 3
Month notification received: September 2021
Subject of amendment:

- **Updated Study End Date**
- **Revise Information Sheets and Consent Forms**
- **Change to RapidPro/ParentText and ParentText IPV Survey**

The above request for amendment has been reviewed on behalf of the Social Sciences and Humanities Inter-Divisional Research Ethics Committee (IDREC).

I am pleased to inform you that, on the basis of the information provided to the SSH IDREC, this amendment has been judged as meeting appropriate ethical standards.

Yours sincerely,

[redacted]

Jennifer Blaikie
Research Ethics Manager

cc: Paula Zinser, Moa Schafer

COVID-19 Playful Parenting Oxford CUREC2 Amendment Letter

DEPARTMENT OF SOCIAL POLICY AND INTERVENTION
Barnett House, 32 Wellington Square,
Oxford, OX1 2ER, United Kingdom
www.spi.ox.ac.uk

7 June 2022

Re: Update on changes to COVID-19 Playful Parenting CUREC2 form

Dear Research Ethics Committee,

We are writing to request approval for proposed amendments to the COVID-19 Playful Parenting project. This project received original approval from IDREC in June 2020 (CUREC 2 Ref No: R69569/RE001), with the last amendment approved in April 2022 (CUREC 2 Ref No: R69569/RE006).

A summary of proposed amendments is provided below:

1. **Updated study end date**
   The study end date has been updated to 31 December 2022 to reflect delays due to ongoing COVID-19 lockdowns globally.

2. **Added qualitative focus group instrument and updated information sheets and consent forms**
   A Relationship Qualitative Focus Group Instrument (Appendix 18) has been added (to complement the pre-existing Relationship Qualitative Interview Instrument) and this is accompanied by an updated Information Sheet and Consent Forms (also in Appendix 18).

3. **Addition of intensive user-testing group**
   The recruitment of participants invited to take part in ParentText will now also include the recruitment of user-testing groups in Jamaica and South Africa ($N = 30$ participants per country). The user-testing focus groups will be an intensive series of workshops that take place over the course of a week with a small number of participants to get feedback through focus groups and interviews on the usefulness and feasibility of the chatbot. These workshops will also be combined with less intensive user-testing focus groups that seek to pilot the intervention in a more real-world setting and get feedback through focus groups and interviews.

4. **Addition of user-testing study safety protocol**
   A user-testing study safety protocol (Appendix 19) has been added to outline a general procedure that will be implemented to ensure the safety of all staff involved in the user-testing study.

   Revised and new appendices are as follows:

- Appendix 18 ParentText Relationship Focus Group Info Sheet, Consent Form, and Instrument
- Appendix 19 ParentText User-Testing Study Safety Protocol

For completeness, in the CUREC form (Question 8) we have also included additional information on procedures to be followed should participants disclose violent practices towards their children in the qualitative interviews. This information was included in the original protocol and has not been modified.

We have only included amended forms and appendices in this amendment letter (i.e., all other forms and procedures remain the same). All amendments in the CUREC2 form have been highlighted in yellow for ease of identification. Please find reference materials and appendices attached in the email.

Thank you for your consideration.

Sincerely,



Jamie M. Lachman, DPhil

Co-Principal Investigator, COVID-19 Playful Parenting Emergency Response

Department of Social Policy & Intervention

Oxford University, 32 Wellington Square, OX1 2ER

Tel: 1865 270325, Email: jamie.lachman@spi.ox.ac.uk

University of Cape Town Ethics Approval

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 3417
Fax No. (021) 650 4104

25 July 2022

Jamie Lachman
Department of Social Policy and Intervention
Oxford University

Hlengiwe Sacolo Gwebu
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Jamie and Hlengiwe

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for the amendments to your study, *ParentText Optimisation Study: A Chatbot-led Intervention Aimed to Promote Playful Parenting and Prevent Violence Against Children*. The reference number remains PSY2021-038.

I wish you all the best for your study.

Yours sincerely

[redacted]

Lauren Wild (PhD)
Associate Professor
Chair: Ethics Review Committee

Appendix 2: COVID-19 Playful Parenting Oxford CUREC2 Form

CENTRAL UNIVERSITY RESEARCH ETHICS COMMITTEE (CUREC)

CUREC 2 Form

Higher-risk research involving human participants and/or their data

UNIVERSITY OF OXFORD

The University of Oxford places a high value on the knowledge, expertise, and integrity of its members and their ability to conduct research to high standards of scholarship and ethics. The research ethics clearance procedures have been established to ensure that the University is meeting its obligations as a responsible institution. They start from the presumption that all members of the University will take their responsibilities and obligations seriously, and will ensure that their research involving human participants is conducted according to the established principles and good practice in their field and in accordance, where appropriate, with legal requirements.

ONLY TYPE-WRITTEN FORMS WILL BE ACCEPTED

Before completing this application, please work through the guidance on our website to ensure that you do not need to submit a CUREC 1/1A (minimal-risk review) or CUREC 3 (full Committee review for certain applications to the MS IDREC) application instead.

SECTION A. RESEARCH DETAILS	
1. Full title of research	COVID-19 Playful Parenting Emergency Response: Global Child Abuse Prevention Response
2. Short title (for use on participant-facing documents)	COVID-19 Playful Parenting
3. Principal Investigator / Student Supervisor	Dr Jamie Lachman
4. PI's training/experience in research ethics and/or research integrity	Dr Lachman has extensive experience in the area of research ethics and integrity. He has conducted and led numerous studies in low- and middle-income countries with vulnerable families and children. He is also the chair of the Department Research Ethics Committee at the Department of Social Policy and Intervention. Completed ICH Good Clinical Practice E6 (R2).
5. Student name and degree programme (if applicable)	N/A
6. Department/Institute name	Department of Social Policy and Intervention, Oxford University; MRC/CSO Social and Public Health Sciences Unit, University of Glasgow
7. University email address	jamie.lachman@spi.ox.ac.uk
8. University telephone number	+44 1865 270325

9. Funding Source (required for ethics team use)	University of Oxford COVID-19 Research Response Fund; LEGO Foundation
10. Do any researchers have any Conflicts of Interest?	No

SECTION B. RESEARCHERS	
1. Researcher title and name	Professor Lucie Cluver
2. Department / Institute name or affiliation	Department of Social Policy and Intervention, Oxford University; Department of Psychiatry and Mental Health, University of Cape Town
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	Professor Cluver has extensive experience in the area of research ethics and integrity. She has led several studies that have been through rigorous ethics review both through IDREC and local institutions in research sites. She was also the Chair of the Department of Social Policy and Intervention's research ethics committee from 2008 to 2019 and was responsible for the internal review of ethics applications before submission to IDREC. Professor Cluver has also completed the International Conference on Harmonisation Good Clinical Practice E6 (R2) training.
1. Researcher title and name	Professor Frances Gardner
2. Department / Institute name or affiliation	Department of Social Policy and Intervention, Oxford University
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	Professor Gardner has completed the National Institutes of Health and International Conference on Harmonisation Good Clinical Practice E6 (R2) trainings. She has serves on the ethics review board of the Department of Social Policy and Intervention.
1. Researcher title and name	Dr Inge Wessels
2. Department / Institute name or affiliation	Department of Social Policy and Intervention, Oxford University
3. Role in Research	Project Manager
4. Training/Experience in Research Ethics and/or research integrity	Dr Wessels has completed the International Conference on Harmonisation Good Clinical Practice E6 (R2) training.
1. Researcher title and name	Dr Ohad Green

2. Department / Institute name or affiliation	Department of Social Policy and Intervention, Oxford University
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	Dr Ohad Green has training and experience in research ethics and research integrity. He completed his CITI (Collaborative Institutional Training Initiative) training in human research in the US in 2018, under the requirements of the University of South Florida (Record number #2027680).
1. Researcher title and name	Professor Catherine Ward
2. Department / Institute name or affiliation	University of Cape Town, South Africa
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	Training in Research Ethics: Member Research Ethics Committee, Department of Psychology, UCT, 2010-2014; Research Ethics Committee, Human Sciences Research Council, 2005-2008; Departmental Research Ethics Committee, Department of Psychiatry and Mental Health UCT, 2002-2004. NIH CITI training 2010
1. Researcher title and name	Associate Professor Dr Rumaya Juhari
2. Department / Institute name or affiliation	Department of Human Development & Family Studies, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	1. Member of Ethics Committee involving Human Subject (JKEUPM) - (Social Sc. - Primary Reviewer); 2. Workshop on Standard Operating Procedure (April 2017); 3. Workshop on Social Science Research Ethics (May 2018)
1. Researcher title and name	Dr Rosanne Jocson
2. Department / Institute name or affiliation	Department of Psychology, Fr Jaime Bulatao Center for Psychology Services, Ateneo de Manila University, Philippines
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	Graduate level training in conducting psychological research

1. Researcher title and name	Ytske Van Winden
2. Department / Institute name or affiliation	UNICEF Jamaica
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	Has supervised UNICEF-supported research, in accordance with universal ethical principles - including ethical considerations involving research with children.
1. Researcher title and name	Dr David Stern
2. Department / Institute name or affiliation	IDEMS International
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	
1. Researcher title and name	Dr Chiara Facciola
2. Department / Institute name or affiliation	IDEMS International
3. Role in Research	Co-investigator
4. Training/Experience in Research Ethics and/or research integrity	

SECTION C. BASIC INFORMATION	
1. Brief lay summary of research **(Maximum 300 words)**	This study will examine the global dissemination of COVID-19 Playful Parenting resources aimed at preventing violence against children. Approximately 1.58 billion children are out of school or childcare due to COVID-19. Parents and caregivers must provide 24/7 care, alongside increased stress, illness and financial insecurity. UNICEF reports global escalation in child abuse, as seen during school shutdowns of other health emergencies such as Ebola, with severe and lasting public health and economic impacts. An urgent response is essential. The COVID-19 Playful Parenting study is part of an inter-agency coalition

	including WHO, UNICEF, the Global Partnership to End Violence, USAID and the US Centers for Disease Control and Prevention. We have co-developed open-source COVID-19 parenting resources available via online, audio-visual, and print media. These resources have been disseminated to over 174 countries and translated in more than 100 languages. The COVID-19 Playful Parenting study will examine the dissemination of these resources and their impact on the lives of children and families. Data collection will involve 1) online surveys of experts from implementing agencies, 2) in-depth expert interviews and focus groups, 3) anonymous social media/text message surveys of parents/caregivers, and 4) monitoring of internet and social media metrics. Data will be analysed using a mixed-methods approach based on the RE-AIM framework to assess their Reach, Effectiveness, Adoption, Implementation, and Maintenance. Results will inform the ongoing dissemination of resources and the understanding of how large-scale multimedia interventions can prevent violence against children.
2. List all places where research will be conducted (including online)	Online surveys, social media metrics, Google analytics, text messages. Phone, or online calling platform such as Microsoft Teams for in-depth interviews and focus groups. Use of Online Data Kit (ODK) and Oxford Online Surveys to collect retrospective data. The overall project will be available globally. However, we intend to initially pilot the text message system—ParentText-- for use in Malaysia, the Philippines, South Africa, and Jamaica as well as for English-speaking families globally. For the delivery of these messages, UNICEF, our implementing partner, will only use secure platforms, like WhatsApp, Facebook Messenger, Telegram and SMS to reduce internet surveillance. Additionally, research data will be not be linked to personal data and so participants' identities will be protected. Data on engagement and impact will be collected by UNICEF on the RapidPro server, with anonymised data shared with the research team. Participants will also be invited to participate in qualitative interviews and focus groups about their experience of enrolment, engagement and impact of ParentText. If participants indicate willingness to be interviewed and take part in focus groups, they will share their contact information via the secure platform of ODK and be contacted by a member of the research team. Participants will be randomly selected for the interview, and will be interviewed online or via phone. A number of parents/caregivers will also be invited by local partners to opt-in to take part in user-testing focus groups. Participants will also be invited to respond to intimate partner violence assessments via an external secure server, either via the Internet of Good Things or via Oxford's Linux virtual machine using ODK, in order to protect participants by ensuring no responses are saved on their mobile devices. Participants will provide their phone number or IP address when completing the intimate partner violence (IPV) survey in order for their responses to be recorded and linked with a unique user ID. These data will then be de-identified and uploaded to a password-protected secure server in Oxford, which is only accessible by the research team. All personal identifying data will be deleted as soon as end line data collection is completed.
3. Anticipated research start date	April 2020
4. Anticipated research end date (n.b. A maximum of 5	31 December 2022

years approval can be granted)	
5. Please list any CUREC Approved Procedure(s) you will follow	1. AP04 Administration of clinical interviews and questionnaires 2. CUREC 2
6. Please list any CUREC Best Practice Guidance used to develop your research	1. BPG 06 Internet-based research 2. BPG 09 Data collection, protection and management 3. BPG 16 Ethical review of social science-based research overseas
7. Please list any Professional Guidelines used	Social Research Association: Ethical Guidelines
8. Name of departmental / peer reviewer (if applicable)	
9. Will you submit, or have you submitted, this research for ethical review or consideration elsewhere (e.g. local or collaborator's ethics committee, or other local approval)?	All research conducted by the research team will be online and via Microsoft Teams. The ethics committee will be updated if we decide to conduct a more targeted study in a specific country, whereby local ethical approval will be obtained (as well as IDREC approval) prior to research.

SECTION D. PARTICIPANTS (n.b. where there is no contact with human participants (in person or virtual) and no observation of them, but only use of data about them, please omit this section, and complete section I instead)	
1. Age range of participants	For RapidPro/ParentText participants will mostly be over the age of 18, except for Jamaica where participants will also include 16–17-year-olds. We anticipate participants largely being over the age of 18 for the online surveys (although it is not possible to confirm this in the anonymous online survey). In-depth interviews with participants may involve adolescents who are under 18.
2. Are research participants classed as people whose ability to give free and informed consent is in question? e.g. those under 18, prisoners, or adults 'at risk'	Yes, for RapidPro/ParentText in Jamaica, participants will include 16–17-year-olds. Yes – interviews may be done with adolescent participants under 18.
3. Anticipated number of participants	Expert online surveys: *N* = 250; In-depth expert interviews: *N* = 20-30; Parent surveys: *N* = 10,000 to 100,000 depending on take up, in-depth parent interviews *N* = 20 and in-depth adolescents interviews *N = 20.* In-depth interviews related to ParentText chatbot will also be conducted with approximately 50 participants per country. User-testing interviews and focus

	groups related to ParentText chatbot will also be conducted in South Africa and Jamaica with approximately 30 participants (*N* = 30) per country.
4. Inclusion Criteria	Respondents who opt-in to text messages delivered by RapidPro/ParentText and give consent to complete the programme and anonymous surveys. In all participating countries, parents/caregivers must be above 18 to participate, except for Jamaica where parents/caregivers can be as young as 16. Jamaica's UNICEF country office and their partner Women's Centre Jamaica Foundation would also like to offer RapidPro/ParentText to 16- and 17-year-old parents/caregivers as a significant number of parents are teenagers and there is demand for a programme like ParentText. Staff from disseminating partners (i.e., agencies actively either delivering or considering delivering the COVID-19 parenting resources) who consent to completing the online surveys and in-depth interviews. Parents who consent to participating in in-depth interviews and focus groups, and adolescents under the age of 18 who have parental/caregiver consent to participate and also assent to participate in in-depth interviews. ParentText users (all above 18 years) will be invited to participate in qualitative interviews and focus groups. For interviews on user engagement and impact, inclusion criteria include whether the participant has participated in the programme. For user-testing interviews and focus groups on feasibility and engagement, inclusion criteria include whether the participant has enrolled in the programme and whether the participant has a partner.
5. Exclusion criteria	For RapidPro/ParentText, those who do not give consent to participate in the research. In all countries, except for Jamacia, we will exclude participants under the age of 18. For Jamaica, we will exclude participants under the age of 16. Those who do not give consent to participate in the research and adolescents who do not have parental/caregiver consent to participate.
6. Please mark 'X' against all planned recruitment methods Provide copies of all recruitment material for review	Poster advert (shared in previous submission) ☒ Flyer ☒ Email circulation ~~(see Appendix 2)~~ ☒ In-person approach ☒ Website ☒ Social media (e.g. twitter, Facebook) (see example in Appendix 1) ☒ Snowball sampling (recruiting through contacts of existing participants) ☒ Newspapers ☐ Research recruitment sites (e.g. Amazon Turk, Research Now) ☐ Other (please specify below) ☒
	RapidPro is an open-source application serving low-income communities with and without smartphone access either via text messages or social media platforms (e.g., WhatsApp). Recruitment will include messages sent by UNICEF, government, or NGO partners to parents inviting them to enrol in RapidPro/ParentText with a link to the chatbot landing page. Recruitment of participants for the user-testing groups will take place through collaboration with local
7. How will recruitment material be distributed?	In the context of high internet access, the recruitment strategy includes: i) Internet distribution – via links on websites; teachers, schools, employees, government, faith networks, communities of parents; and parenting advice webinars; ii) Social media messages invitations sent out by implementing

	agencies via platforms such as Telegram, WhatsApp, Facebook, LINE, Viber, WeChat, Twitter; iii) via UNICEF's Internet of Good Things. In the context of where internet access if adequate but not high, the recruitment strategy includes: i) print media such as flyers and posters distributed as part of food parcels and in clinics (QR code linking to signing up to RapidPro messages); ii) text message invitations sent by agencies supporting parents/caregivers during COVID-19; and iii) direct phone or in-person invitations by agencies serving parents/caregivers. Recruitment of participants for the user-testing groups will take place through collaboration with local partners that will provide parents with links to the chatbot landing page. Experts from implementing agencies will be recruited via referrals from existing partners of the inter-agency COVID-19 parenting response group (e.g., WHO, UNICEF, CDC, USAID, Global Partnership to End Violence Against Children, Save the Children, LEGO Foundation, World Without Orphans, Clowns Without Borders South Africa, UNODC, UNHCR, etc.). Snowball sampling will be used to also contact other experts who are using the resources who we are not currently aware of.
8. Once identified, how will potential participants be approached and invited to take part?	Parents/caregivers will be invited by local partners to opt-in to the messages through a short invitation message which will include a link to the RapidPro/ParentText landing page either via text message or online social media. For qualitative interviews, if the participant indicates a willingness to be interviewed, they will be taken to the secure platform on the University of Oxford's server and asked to share their contact information, gender and child's age group. We will collect demographical information to ensure that we interview participants from various population groups and maximise variation across the sample. Participants will be purposively selected based on the demographic information provided. Disseminating partner experts will be invited in a short introduction message before starting the online survey. Experts for follow-up individual interviews will be invited based on targeted sampling depending on the answers of the online survey to gain further insight into the dissemination of the resources. A number of parents/caregivers will also be invited by local partners to opt-in to a user-testing group that will receive ParentText messages and surveys.
9. How will consent be obtained from participants in the research or their parents/guardians?	In Jamaica, participants under 18 will need to provide assent and their parents will need to consent to their participation. In-person consent will be obtained at the Women's Centre Jamaica. For new enrollees, the Women's Centre Jamaica will include ParentText information and the consent form in their routine registration form (Appendix 17). For women who are already a part of the Women's Centre, they will be provided with an information and consent form (Appendix 16) to take home and be signed by their parents. Once the Women's Centre has received parental consent, they will provide the participant with the link to the programme, as well as a special keyword to start the ParentText programme. This keyword is specific to the Women's Centre and triggers a version of ParentText to start that is specific to 16–17-year-old caregivers/parents. This keyword will not be shared on any other recruitment material and only participants who have joined the Women's Centre will be given the keyword, to ensure that they have received parental consent. If a participant indicates that they are under 18 on the 18 and above ParentText programme, they will be referred to the Women's Centre Jamaica and will be required to follow the outlined assent and consent procedure.

	Parents completing the brief embedded surveys, including those on UNICEF's Internet of Good Things, RapidPro/ParentText, and Oxford's Linux virtual machine using Open Data Kit (ODK), can only proceed with the surveys if they have read the information provided and choose to proceed with the anonymous survey and this is also the case for parents/caregivers taking part in the user-testing group. Likewise, consent will be sought from disseminating partners before they complete the survey and permission will be sought from partners to use contact details for follow-up interviews and focus groups. Informed consent will also be obtained from parents who are invited to in-depth interviews and focus groups, with parental/caregiver consent for adolescents obtained prior to obtaining adolescent assent to participate in in-depth interviews and focus groups. In addition, oral consent will be obtained from participants of the RapidPro/ParentText intervention who are invited to participate in in-depth interviews and focus groups.

SECTION E. RESEARCH METHODOLOGY

1. Please mark 'X' against the methods that will be used in your research

Ensure you address each method you will use in your informed consent documents and on this form

Use of casual or local workers (e.g. interpreters)	☐	Audio recording of participant – only of implementing partners, not of participating parents	☒
Interview – of selected implementing partners, and participating parents and adolescents	☒	Video recording of contributors	☒
Focus group	☒	Photography of participant	☐
Participant completes questionnaire in hard copy	☐	Physiological recording from participant	☐
Participant completes online questionnaire or other online task	☒	Taking a sample of blood or other bodily fluid from a participant	☐
Use of social media	☒	Participant observation	☐
Analysis of existing records	☐	Covert observation	☐
Participant performs verbal or aural task	☐	Systematic observation	☐
Participant performs paper and pencil task	☐	Observation of specific organisational practices	☐
Participant performs computer-based task	☐	Other (please specify below)	☒
Measurement/recording of motor behaviour	☐	**Google analytics (visit number/duration, location)**	

2. Give an account of the research as experienced by the participants

Experience of parents receiving RapidPro/ParentText messages:

To test user engagement and impact in the RapidPro/ParentText intervention, we have designed a series of experiments based on behaviour economics and engineering principles. Participants will be recruited by UNICEF, NGO, and government partners in each participating country. Users will randomly receive different types of recruitment messages with the aim of identifying the most optimal recruitment message for differing population groups. Each recruitment message will include a link to the intervention embedded within a UNICEF WhatsApp business account. Participants in South Africa and Jamaica (N=30 per country, 60 in total) will also be recruited and invited to opt-in to user-testing groups that will pilot the intervention and examine its feasibility. Participants will be asked to provide consent for participating in the intervention and evaluation with a link to a more detailed information sheet. Participants who do not provide consent will exit the intervention. The user-testing focus groups will be an intensive series of workshops that take place over the course of a week with a small number of participants to get feedback through focus groups and interviews on the usefulness and feasibility of the chatbot.

These workshops will also be combined with less intensive user-testing focus groups that seek to pilot the intervention in a more real-world setting and get feedback through focus groups and interviews. See Appendix 12 and 18 for the consent forms and qualitative instruments developed for further qualitative exploration into participant experiences of ParentText.
Parents who click on this link will be directed to the UNICEF WhatsApp account and asked to select their preferred language to receive parenting advice. Participants will then be asked to provide consent for participating in the intervention and evaluation with a link to a more detailed information sheet (see Appendix 8). Participants who do not provide consent will exit the intervention. Participants who exit the intervention prior to giving consent will be asked if they would be willing to be contacted for a follow up interview. These interviews will be conducted to gain an insight into why individuals did not want to participate in a chatbot-led parenting intervention (see Appendix 11).

Participants who provide consent will be randomly assigned to different experimental conditions aimed at optimising user engagement. These conditions include a) personalisation based on participant and child name/nickname, b) targeting messages based on gender, c) gamification of participant accomplishments, and d) frequency of messages.

On Days 2, 9, 23, 37 and then at 14-day intervals during the intervention participants will be invited to respond to the RapidPro/ParentText survey (see Point 6 below). Participants can only participate in the surveys if they agree to proceed after reading a short summary of what the data will be used for. If they do not want to participate in the surveys, they will immediately start receiving parenting tips. All questions will opt-in with no penalty or impact on the RapidPro/ParentText text delivery intervention.

Parents will be asked brief set of questions on parenting include 7 items related to the following - how many times in the past week they did something fun together with their child(ren), physically disciplined their child(ren), yelled or screamed at their child(ren), and felt very stressed as a parent/caregiver, money-related difficulties, parent sense of efficacy, and protection from child sexual abuse. Participants will also be asked to choose 1 target child to report on and respond to 2 questions regarding child behaviour difficulties. Participants will also be asked to provide details on family composition (e.g., number of household members, their relationship status, number of children as well as their age and gender, other adult caregivers, type of disability for parent/child), the nature of COVID-19 restrictions they might be facing, as well as whether and how they have been affected by COVID-19 (i.e., whether a member of their family has caught COVID/shown symptoms/died and other adverse events such as financial stress). Depending on their responses, participants will be directed to relevant and country-specific referral resources. In Jamaica, there will be specific referral resources for 16-17-year-olds. To reduce risk to participants, this automated text response will be generalised and not specific to challenges that participants has indicated that they have been experiencing. An example of wording is as follows: "It sounds like you are having a really rough time. If you would like extra support, please type 'support' and we will share a list of helpful resources." After each parenting module, parents will be asked how useful they found the resource (Appendix 2).

To measure the participant's acceptability of ParentText, they will be asked questions regarding how they find the delivery and content of the ParentText messages (Appendix 2).

Participants who have enrolled or engaged with the ParentText chatbot will also be asked if they would like to participate in a qualitative interview to further explore their experiences of enrolment and engagement at either their point of exit, or once they have completed the intervention. See Appendix 10 for oral consent forms, and Appendices 11 and 12 for the qualitative instruments designed for further qualitative exploration into participant views on ParentText. Participants will receive a free data bundle worth £2 for participating in the interview.

Participants who indicate that they are either married or partnered will be invited at baseline to respond to IPV assessments (see Appendix 13 for the IPV assessment questions) via an external secure server, either via the Internet of Good Things or via Oxford's Linux virtual machine using Open Data Kit (ODK), in order to protect participants by ensuring no responses are saved on their mobile devices. Participants will provide their phone number or IP address when completing the IPV survey in order for their responses to be recorded and linked with

a unique user ID. These data will then be de-identified and uploaded to a secure server in Oxford, which is only accessible by the research team and which is password protected. All personal identifying data will be deleted as soon as end line data collection is completed.

The IPV assessments are optional, and parents can refuse to answer them but still receive the parenting tips. Before they are invited respond to the IPV assessment, participants will be asked for permission and will be reminded that their answers will be completely private (see Appendix 13). To minimise any risk of harm, at the start of the IPV assessment there is a question to make sure that men and women from the same household are not both interviewed about IPV. This is based on WHO's violence against women (VAW) research guidelines and ethical and safety recommendations for intervention research on VAW, which outline that VAW research should avoid interviewing women and men from the same household on violence in order to prevent putting women at risk. Accordingly, men who report that their partner is participating in the programme will therefore not be asked the IPV questions from the IPV assessment and will instead only be asked questions on gender equitable behaviours and attitudes toward IPV and gender roles. Participants responding to the IPV assessment will also be asked demographic questions including items on their age, gender, relationship status, education level, employment status, the employment status of their partner, whether they are living with their partner, and how many children they have or care for. Participants will also be invited to respond to the IPV assessment at post-test and at a 4-month follow-up.

Participants can exit the intervention in two ways: 1) passive exit by timing out (i.e., 24 hours of not interacting with the chatbot on WhatsApp), or active exit through the help menu. Prior to passive exiting via timing out, the chatbot will send them a random hook message to reengage the participant with the chatbot. The type of message will be sent randomly in order to identify the most effective hook message for retaining participants for different population groups. If participants actively exit the chatbot, they will also receive a random exit message with the same intention to identify the most effective message for retaining participants for different population groups.

Experience of parents receiving other COVID-19 parenting resources:

Parents who have received COVID-19 parenting resources may also be asked 6 retrospective questions on the impact and effects of the resources on their relationship with their children and reducing conflict between them and their children by filling out a survey hosted on ODK. They will also be offered to respond to the same questions 2 weeks later by providing an email address for further contact. All data collected will be anonymous and delinked from IP addresses unless the respondents elect to respond to follow-up surveys. See Appendix 3 and 9 for the retrospective recruitment and survey questions, respectively.

Disseminating partners will be asked to fill in a brief 5-minute online survey – 'Champions of Children Questionnaire' (See Appendix 4) to find out the ways they have been sharing the COVID-19 resources and to ask for any feedback they have received regarding their usefulness and impact. They will be asked how the dissemination of the resources can be improved, and whether they know of other organisations disseminating COVID-19 parenting resources so the team can follow-up with them and find out what they are doing. They will be asked if it is okay to showcase examples of dissemination on the www.covid19parenting.com website page, entitled, "Champions of Children." Their approval (or relevant person in their organisation) will need to provide approval prior to sharing this content, and they will be able to ask for changes or removal of the information at any time. They will also be asked whether they can be contacted for a follow-up interview.

Contributors (not research participants) may film informational videos of the resources, and they will be asked to sign a consent and release form that will allow the video to be shared in RapidPro/ParentText, YouTube, and for any future dissemination activities by the research team (see Appendix 7).

Selected respondents who have agreed to be contacted for a follow-up expert interview will be asked for permission to be interviewed for more in-depth qualitative data collection using the qualitative information sheets, consent forms and instruments in Appendix 6. Before they can participate, respondents will need to sign a consent form, which will be emailed to them in advance of the interview. They will need to return the signed form before the interview can take place. This interview will take between 30 and 60 minutes and will take place online over the phone or an online platform like Microsoft Teams. These interviews aim to learn about the current

dissemination of COVID-19 parenting resources at a country, agency, and community level. Discussions with implementing partners participating in the in-depth qualitative data collection will be audio recorded to ensure views are accurately captured. The interview guide uses an open-ended approach to solicit opinions and feedback from interviewees in a manner that is unbiased and non-judgemental. Questions will be asked to understand the interviewee's individual role relating to the COVID-19 response, the implementation, adaptation and reach of the COVID-19 parenting resources, the adoption of these resources by the agency and other partners, their impact and effectiveness, and strategies to expand their sustainability. After having been exposed to the COVID 19 Parenting Tips, participants will also be invited to engage in further about their experiences, including a retrospective monitoring and evaluation survey. See Appendix 6 for the email templates used to engage potential participants, and Appendix 9 the Retrospective COPPER Survey.

Parents/caregivers who accessed the parenting resources will also be invited to participate in in-depth interviews and focus groups which will be collected by study partners from University College London (UCL), Ateneo de Manila University, University of Cape Town, Universiti Putra Malaysia, and UNICEF Jamaica, and the University of Oxford. This will allow the study to evaluate the impact of the resources on the lives of children and families. The data generated from these interviews and focus groups is seen as vital to gather an understanding of the needs, benefits, and uses of the resources as well as guidance for subsequent development and onward provision of additional resources. The qualitative instruments will be translated into the local language and the translated back into English for analysis. In South Africa, an interpreter will be utilised to conduct the interviews and focus groups so there will be no requirement for translations. Results will inform the ongoing dissemination of resources and the understanding of how large-scale multimedia interventions can prevent family violence and violence against vulnerable children. Parents will be asked about their experiences with parenting under COVID-19 conditions, and where they may have turned to for parenting support/advice. They will then be asked about their use of the parenting tips and how useful they found them or the limitations of the resources. Parents will be asked questions on whether they have shared the tips with others, and what other resources they may like to see, as well as how they accessed the resources and why they felt the need to access the resources. (See Appendix 6 for the interview schedule for in-depth interviews with participating parents). Parents will also be asked about their experience of the ParentText programme in relation to their relationship with other adults in their family or household (see Appendix 12 for a draft interview schedule for the in-depth interviews with participating parents, and Appendix 18 for a draft focus group schedule).

1) Will the research include any audio, video or photographic recordings?

Yes - audio recordings will only be made of selected implementing partners who participate in the in-depth qualitative data collection interviews and focus groups, and of parents who participate in in-depth interviews and focus groups.

2) Please detail any expenses or gifts that will be offered to participants

Participants who take part in ParentText qualitative interviews and focus groups will also be receiving a financial incentive (data bundle valued at approximately £2) to thank them for their participation. Participants who take part in the user-testing group will be receiving a small financial incentive (data bundle valued at approximately £2) to thank them for their participation, and participants in the user-group focus groups will be offered lunch and transport to cover expenses.

SECTION F. ETHICAL CONSIDERATIONS For guidance on ethical issues, please see http://researchsupport.admin.ox.ac.uk/governance/ethics/resources *(N.B. To complete, double click on the check boxes and select 'checked')*		
1. Will the research involve any vulnerable participants (e.g. children, elderly, prisoners, adults "at risk")? **If yes,** please describe how they are defined as vulnerable and detail any CUREC Approved Procedures or guidance that will be applied to the research (for current documents and templates see https://researchsupport.admin.ox.ac.uk/governance/ethics/resources). In particular, please state why either CUREC Approved Procedure 15 or 25 cannot be applied wholly to your research.	Yes ☒	No ☐
Some of the participants may be affected by key vulnerabilities including poverty, physical ill-health, violence, mental health problems etc. However, it will not be possible to know the circumstances of the parent participants who complete the brief acceptability surveys as their data will be automatically fully anonymised by embedded code prior to data sharing by UNICEF partners so cannot be traced back to them. The only exception is with the assessments of intimate partner violence (IPV) which will be pseudo-anonymised, but possible to link back to personal identifying data. Participants who report IPV victimisation will be automatically provided with referrals to services supporting victims of violence customised to their local context. We recognise that the study will be limited in reporting IPV perpetration to legal authorities but will also provide perpetrators with automatic referrals. Where delivery of ParentText is part of a wider system of services in partnership with local government or other service providers, perpetrators and victims of IPV will be referred to the appropriate agency according to local guidelines. Please see the included referral procedure in Appendix 14. CUREC Approved Procedure 25 cannot be applied wholly to our research because it is "for research on children using non-invasive methods in institutional or non-institutional settings". In addition to adult participants, our study will include 16- and 17-year-olds in the sample from Jamaica.		
2. Will unequal relationships exist between participants and those obtaining informed consent? **If yes,** describe the nature of the unequal relationship and how arising ethical issues will be addressed	Yes ☐	No ☒
3. Will the research involve questions and/or discussions of contentious and/or sensitive issues (e.g. information relating to ethnicity, political opinions, religious beliefs, physical/mental health or sexual life)? **If yes,** please justify why this is required and provide the questions (or an outline of them) raising the issues that will be used in your research.	Yes ☒	No ☐
The survey for parents will include an item on parents' frequency over the past 24 hours of using physical discipline with their children and yelling/screaming at them. There are also two questions on difficult child behaviour. The purpose of these questions is to enable us to assess how the resources might change parenting and child behaviours over time. The survey also asks how families have been negatively impacted by COVID-19. It is necessary to include these items to understand whether there is a relationship between the impact of COVID-19 on families and parenting behaviours. Finally, there is also an assessment on intimate partner violence to be able		

to explore how this might impact the possible effect of the parenting resources on relationship behaviours. This assessment includes items on physical violence, psychological abuse, sexual abuse, coercion, and economic abuse, as well as questions on positive partner interactions, gender equitable behaviours, and attitudes toward gender roles and IPV.

The online surveys for parents will be automated with participants offered possible referrals to in-person support from local agencies. The automated text response will be generalised and not specific to challenges that families might be facing, such as intimate partner violence an example of wording is as follows: "It sounds like you are having a really rough time. If you would like extra support, please type 'support' and we will share a list of helpful resources." Referral contacts will be country-specific and link to support from local agencies – for example, in Malaysia, we will include a hotline service for domestic violence run by the Ministry of Women, Family and Community Development (https://www.kpwkm.gov.my/kpwkm/index.php?r=portal/full&id=NGtVYXZIMjRqM3diWmV2K005Mm9Hdz09) as well as links to Childline Malaysia. Additionally, participants that respond to the qualitative interview and focus group requests or IPV assessment will also be provided with referral contact details of country-specific services and agencies.

4. Will taking part in the research put participants under any particular burden and/or risk (including risk of prosecution)? **If yes,** describe how risks will be mitigated. If there is a risk of prosecution to the participant, justify why incriminating data are sought	Yes ☐	No ☒

5. Will the research involve deliberate deception of participants outside the scope of CUREC Approved Procedure 07? **If yes**, justify why deception is used, describe deception and debriefing process, and include debriefing documents in the application	Yes ☐	No ☒

6. Could the proposed research affect your own physical and/or psychological safety as a researcher? **If yes,** describe how you will manage this.	Yes ☐	No ☒
Yes. See Appendix 19 for a user-testing safety protocol that outlines a general procedure that will be implemented to ensure the safety of all staff involved in the user-testing study.		

7. How will you ensure the research is conducted according to the details given in this form?

There will be regular weekly meetings of all the researchers to discuss and plan the study as well as monitor the progress of the proposed study. These meetings will also provide opportunities to discuss and address any issues that come up. The meetings will include the main research partners from Clowns Without Borders South Africa, IDEMS International, and those in participating countries.

8. Please give details of any other ethical and/or safety considerations

Corporal punishment is illegal in many of the countries where the resources are distributed, and parents participating in the RapidPro surveys may report use of physical discipline. However, due to the anonymisation of respondents upon registration in the study, we will not be able to ascertain the personal identity of perpetrators of violence.

Following UNICEF chatbot safeguarding guidelines, ParentText is designed to recognise high-risk keywords to detect possible disclosure of a dangerous situation in free text fields. After detection, the chatbot is automated to

offer the user an empathetic and empowering response and referral contact details localised to the country that supports parents and child safety (e.g., police, ambulance, child hotline, etc). The chatbot also identifies continued bad behaviour (hitting, shouting, etc.) and increased stress disclosed by the user for over three weeks via their responses to the survey. Automated referral contacts will be localised to the country will be provided to offer respondents support with parenting stress and child safety.

Since IPV data will only be pseudo-anonymised and can be linked back to the individual, participants who report IPV victimisation will be automatically provided with referrals to services supporting victims of violence customised to their local context. We recognise that the study will be limited in reporting IPV perpetration to legal authorities but will also provide perpetrators with automatic referrals. Where delivery of ParentText is part of a wider system of services in partnership with local government or other service providers, perpetrators and victims of IPV will be referred to the appropriate agency according to local guidelines. Please see included referral procedure in Appendix 14.

In Jamaica, for participants aged 16 and 17 we will include links that provide information and referrals designed for parents/caregivers aged 16-17.

During qualitative interviews, there is a possibility that participants may disclose violent practices towards their child and/or partner. Within the informed consent form, it will be indicated that some information regarding harmful practices may have to be disclosed without respondents' consent if they pose harm or danger to themselves or family members. If information is disclosed suggesting that a member of the household is at risk of significant harm, the researcher will discuss concerns with the respondent at the end of the interview. If there is reasonable concern, the Primary Investigator and Research Manager will be informed for further guidance. If the household member at risk of harm is a child, the researcher will discuss with the participant the possibilities for referral to child welfare, health organisations, and other services. If the decision is made to act, the participant(s) will be informed, and a referral will be made. If severe abuse is disclosed during the interview, the children of the participant will be immediately referred to social or medical services and the interview will be immediately ended. Weekly supervision meetings with all qualitative project staff will discuss issues that arise concerning harm to research subjects and children. Finally, if we determine that respondents or their families have experienced significant harm as a result of participating in the study (i.e., severe abuse, suicidality, IPV, or other potential psychological or physical injuries), we will cease further activities until these issues can be addressed adequately.

9. How do you propose to deal with / handle any incidental findings?

Such as illegal activity, medical or psychiatric conditions that are discovered unintentionally during the research. We do not anticipate encountering any incidental findings due to the nature of the surveys. Data collected from participating parents will be fully anonymised upon registration into the RapidPro survey and before it is uploaded to the server, except for IPV assessments which will be pseudo-anonymised at the point of data extraction. The survey and interview schedule for disseminating partners only includes questions relating to their organisation's use of the parenting research (i.e., no sensitive data will be collected). Parent in-depth interviews and focus groups will be focused on their parenting experiences, family interactions, and how they found the parenting resources, therefore we do not anticipate encountering incidental findings during the interviews and focus groups. However, local referral contacts will be provided to offer respondents support with parenting stress and child safety, and referral contact details to local implementing partners for intimate partner violence (please see attached referral form in Appendix 14).

10. Will any data or information from this study be provided to individual participants?

Data from the brief surveys for participating parents will be completely or pseudo-anonymous, therefore cannot be traced back to participants by members of the study. Data or information will be fed back to implementing partners during or after the study.

SECTION G. OTHER CONSIDERATIONS

1. Is any part of this research being conducted overseas? **If yes,** please give details below. Ensure you complete and submit a travel risk assessment form to your departmental safety officer, if your department requires this. (This is necessary to ensure the travel/fieldwork is covered by the University's travel insurance – see http://www.admin.ox.ac.uk/finance/insurance/travel/) Please also address any physical or psychological risks for Oxford researchers and local fieldworkers in the 'Ethical Considerations' section above and discuss these with your safety officer.	Yes ☒	No ☐
Resources are disseminated across the world and have already reached at least 174 countries. Acceptability will be assessed using surveys amongst parents and disseminating partners in 65 countries in the Middle East and North Africa, East Asia and Pacific, Americas and Caribbean, Europe, and Central Asia, East and Southern Africa, West and Central Africa, and South Asia. Implementation partners from the different countries will be asked to fill out a survey to understand how they have been sharing the resources.		
2. Does your research raise issues relevant to the Counter-Terrorism and Security Act (the Prevent Duty), which seeks to prevent people from being drawn into terrorism? **If yes,** please say how you plan to address any related risks. Please see advice on this on our Best Practice Guidance Web Page.	Yes ☐	No ☒

SECTION H. DATA MANAGEMENT AND HANDLING

For the purposes of completing this section, all information provided by research participants is considered to be research data. Any research data from which participants can be identified, is known as **personal data***, and if data within this category is sensitive, it is referred to as **special category data****.

Management of **personal data*** and **special category data**** of human participants, either directly or via a third party, will need to comply with the requirements of the General Data Protection Regulation (GDPR) and the Data Protection Act 2018, as set out in the **University's Guidance on Data Protection and Research.** In answering the questions below, please also consider the points raised in the **Data Protection Checklist**. For advice on research data management and security, please consult with the University's Research Data Team (**researchdata@ox.ac.uk)** and/or your local IT department and the University's web pages on research data management.

1. **Please mark 'X' against the data you will collect for your research**

Screening documents	☐	Audio recordings – only of selected implementing partners and participating parents or adolescents who consent to the in-depth qualitative interviews	☒

Consent records including participant name (written consent forms, audio-recorded consent, assent forms (for research involving minors))	☒	Video recordings – only of contributors not of parent participants	☒
Online consent (may be anonymous)	☒	Transcript of audio/video recordings	☒
Opt-out forms	☐	Photographs	☐
Contact details for research purposes only (destroyed when no longer needed for this research)	☒	Information about the health of the participant (including mental health)	☐
Contact details kept for future studies	☐	Physiological test results / measurements	☐
Field notes	☐	MRI scans	☐
Questionnaire answers	☒	Other (please specify below)	☐
Task results (e.g. paper/online tasks, diary completion)	☒		

2. For each of the types of data selected above, state how this will be physically transferred from where it is collected to local storage (and backed up as necessary)

Data security and storage is a high priority. All completed online questionnaires, social media metrics, Google analytics and consent forms will be uploaded to secure servers at the University of Oxford. Audio recordings and transcripts will also be uploaded to secure servers at Oxford, which are backed up internally. Qualitative data collected by local research partners will be stored on secure, password-protected servers and/or external hard-drives in locked cabinets.

3. How and where will each type of data be stored whilst the research is ongoing (until the end of all participant involvement)?

Describe the arrangements for ensuring confidentiality, e.g. location of storage, security arrangements and de-identification of such data.

For ParentText, questionnaire and usage data will be collected on the UNICEF RapidPro server and fully-anonymised prior to sharing with the research team who will store the data on the University's OneDrive. All completed online questionnaires, social media metrics, Google analytics will be uploaded to a secure server in Oxford and password protected. Data from participating parents in the main RapidPro/ParentText survey will be anonymous, except for IPV assessment (see below). Information collected from implementing partners will be securely uploaded to the secure server in Oxford. It will be de-identified before sharing with other research partners.

Contact details of implementing partners and parents/caregivers who agree to participate in follow-up qualitative interviews will be stored securely on the server separately from interview recordings/transcript and will only be used for selected partners and participating parents for the in-depth qualitative interviews and will not be shared with other people (see Appendices 11 and 12 for Instruments). Audio recordings and transcripts collected in Jamaica, Malaysia, and the Philippines will be stored on encrypted, password-protected servers and/or external hard-drives locked in secure cabinets. Similar data collected in South Africa will be stored on Oxford's OneDrive. Only research personnel, with the dedicated password protection, will have access to the data.

Participants will be invited to respond to IPV assessments via an external secure server, via Oxford's Linux virtual machine using Open Data Kit (ODK), in order to protect participants by ensuring no responses are saved on their mobile devices. Participants will provide their phone number or IP address when completing the IPV survey in order for their responses to be recorded and linked with a unique user ID. These data will then be de-identified and uploaded to a secure server in Oxford, which is only accessible by the research team and which is password protected. All personal identifying data will be deleted as soon as end line data collection is completed.

Videos made by contributors (not research data) will be uploaded and stored on a secure server in Oxford and password protected. Contributors filming the videos will be asked to sign a consent and release form before sharing their videos with the research team (see Appendix 7).

4. Will you use a unique participant number on research data instead of participant name?

If yes, state whether or not you will retain a list of participant names against numbers (pseudonymisation via a linkage list). Where will the list be stored, and when will it be destroyed?

Yes; unique participant numbers will be created for users of RapidPro/ParentText. These data will be anonymous at the point of sharing with the research team – no personally identifiable data will be collected for this main survey, with the exception of IPV assessment. Those who participate in the IPV assessments will provide their phone number or IP address in order for their responses to be recorded and linked with a unique user ID. These data will then be de-identified and uploaded to a secure server in Oxford, which is only accessible by the research team and which is password protected. Transcripts from qualitative interviews will be pseudo-anonymised with their personal data removed from transcripts using unique participant numbers. All personal identifying data will be deleted as soon as end line data collection is completed.

5. Who will have access to the research data?

Availability of this data will be limited to researchers on this team and study partners.

6. If research data is to be shared with another organisation, how will it be transferred / disclosed securely?

If research data is to be shared with another organisation, only an anonymised version without any identifiable information will be transferred, unless in the case of online surveys or in-depth interviews of experts who explicitly give permission for personal data to be shared. Any organisation who will want to get access to data will need to complete an official form and commit to adhere to all data protection regulations. They will be given a one-time password in order to download the dataset.

7. When and how will identifiable data (including audio/video recordings & photos) be destroyed or deleted?

NB. Records of consent should be retained for a minimum of three years after publication or public release. Some funders may require longer periods (see http://www.dcc.ac.uk/resources/policy-and-legal/overview-funders-data-policies). If you wish to retain contact details in order to re-approach participants for future studies, you must detail this in information provided to them and obtain their specific consent for this.

For parents/caregivers: there will be no identifiable data from the main survey, as only secondary, anonymised data will shared with the research team by UNICEF. IPV assessments will be pseudo-anonymised at the point of data extraction. For the IPV assessments, all personal identifying data will be deleted as soon as end line data collection is completed. Qualitative data (i.e., recordings and transcripts) will be destroyed by erasing electronic data 3 years after study completion.

For experts: qualitative data will be retained for 3 years after publication or public release.

Videos by contributors will be stored for as long as is needed.

8. Please confirm that you will store other research data safely for at least 3 years after final publication or public release and adhere to any additional research funder policies. For more information about the University policies, please see the University's web pages on research data management. **If 'Yes'**, please give details of who will store the data and on storage format, location and security. **If 'No'**, please provide further details.	Yes ☒	No ☐
Note that open science is encouraged – see https://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science Electronic data will be stored on a password-protected computer. Availability of this data will be limited to lead researchers on this team.		

SECTION I. RESEARCH INVOLVING SECONDARY USE OR DISCLOSURE OF PERSONAL DATA OR SPECIAL CATEGORY DATA

This section of the form is **only to be completed** for research activity (as part or all of the research) where there is no contact with human participants (in person or virtual) and no observation of them, only use of data about them.

Your research must meet the standards laid down in the Data Protection Act 2018 with respect to the collection, use, and storage of personal data about human participants.

1. Will you seek data access agreements for these data? **If yes,** • List the individual(s) or organisation(s) from which the information will be sourced • Attach a copy of the agreement with the individual(s) or organisations in question • Provide details of any conditions imposed by the organisation(s) concerning the release of the information **If no,** please explain how and when the agreement of the disclosing organisation(s) will be obtained	Yes ☒	No ☐
Primary data on RapidPro/ParentText user engagement and outcome surveys will be collected directly by UNICEF country offices in Jamaica, Philippines, Malaysia, and South Africa. These data will be fully anonymised prior to sharing with the research team. A copy of the data sharing agreement is included in Appendix 15. Data based on social media metrics and Google analytics from implementing agencies will only be on the macro level (e.g., number of site visits, downloads, likes, shares).		
2. Could these data be linked back to an individual or individuals? **If yes,** • Please explain why data cannot be collected in a way that prevents linkage with an individual/individuals • Say how individual consent was obtained for the collection, use or disclosure of linkable data **If no,** you do not need to complete the rest of this section	Yes ☐	No ☒
3. How will any personally identifiable data be transferred to you? Please describe the arrangements for any physical transfer of personal data (including paper records and data captured electronically via portable media) from where you are obtaining it to local storage		
4. Where, and for how long, will personally identifiable data be stored during and after the research? Please outline procedures for ensuring confidentiality, e.g. security arrangements, pseudonymisation etc.		

5. Who will have access to the personally identifiable data? If data is to be shared with another organisation, other than the researchers listed, how will it be transferred / disclosed securely
6. When and how will personally identifiable data be destroyed?

SECTION J. PUBLICATION AND DISSEMINATION OF RESULTS	
1. How will you disseminate project outcomes at the end of the research?	Project outcomes will be shared through peer-reviewed publications and actively disseminated to government officials, policymakers, NGOs, and communities within the countries where the resources were disseminated.

SECTION K. ADDITIONAL QUESTIONS FOR APPLICATIONS TO THE MEDICAL SCIENCES IDREC	
1. List any standardised questionnaires that will be utilised (there is no need to send a copy)	Not applicable.
2. List any additional questionnaires designed by the researchers – a copy of these must be sent to the MS IDREC for review	We have designed some additional survey tools and qualitative instruments: 1) A brief questionnaire to be embedded on UNICEF's Internet of Good Things and sent via RapidPro/ParentText assessing acceptability amongst low-income users globally (see Appendix 2 for the amended survey) 2) COOPER Retrospective recruitment and survey questions on the impacts and effects of the resources (Appendix 3) 3) Online survey for implementing partners experts – 'Champions of Children Questionnaire' to find out how they have been sharing the resources (Appendix 4) 4) COPPER Qualitative Data collection Instruments (Appendix 6) 5) A series of Qualitative instruments to explore enrolment and engagement in ParentText (Appendix 11) 6) Additional qualitative instrument for selected parents on relationship experiences - 'Interview Guide for Parents about Relationships' (Appendix 12) 7) A brief survey on intimate partner violence (IPV), with items on IPV victimisation and perpetration, positive partner interactions, gender equitable behaviours, and attitudes toward gender roles and IPV, to be embedded on UNICEF's Internet of Good Things or on Oxford's Linux virtual machine via Open Data Kit Collect (Appendix 13) 8) Additional qualitative focus group instrument for selected parents on relationship experiences - 'Focus Group Guide for Parents about Relationships' (Appendix 18 – combined with information and consent form)
3. Give details of any biological sample(s) that will be taken (e.g. blood, urine, saliva, faeces)	Not applicable.

DECLARATIONS AND SIGNATURES OF RESEARCHERS

The IDRECs accept either direct email endorsements, or that the form be fully-signed, then scanned and sent with Word versions of all documents by email to:

ethics@medsci.ox.ac.uk (for applications from the Medical Sciences and MPLS divisions)
ethics@socsci.ox.ac.uk (for applications from the Social Sciences and Humanities divisions)

Applications from departments with a departmental research ethics committee (DREC) should first be sent for initial review to the relevant DREC.

Pasted images of signatures cannot be accepted

I/We, the researcher(s):

- Understand our responsibilities as outlined on this form and in the CUREC glossary and guidance
- Agree to start this research only after obtaining approval from the IDREC;
- Understand that the Principal Investigator must ensure that all researchers are suitably qualified and trained to conduct the research described, or are appropriately supervised until deemed qualified/trained;
- Agree to provide additional information as requested by the IDREC before approval is secured and as research progresses;
- Agree to maintain the confidentiality of all data collected from or about participants;
- Agree to notify the IDREC in writing immediately of any proposed change to the research, and await approval before proceeding with the proposed change;
- Agree to notify the IDREC if the Principal Investigator changes and supply the name of the successor;
- Will use the data collected only for the research for which approval has been given;
- Will grant access to data only to authorised persons; and
- Have made arrangements to ensure that personal data collected from participants will be held in compliance with the requirements of the GDPR and the Data Protection Act 2018.

Principal Investigator (Name)	Dr Jamie Lachman
Principal Investigator (Signature) (Wet-ink signature, not pasted electronic image)	
Date	22 May 2020
Student (Name)	N/A
Student (Signature) (Wet-ink signature, not pasted electronic image)	N/A
Date	N/A

ACCEPTANCE BY HEAD OF DEPARTMENT/FACULTY OR DESIGNATED NOMINEE*

*Another senior member of the department may sign where the head of department is the Principal Investigator, or where the head of department has appointed a nominee. Example nominees include Deputy Head of Department, Director of Research, and Director of Graduate/Undergraduate Studies.

I have read the research proposal above. On the basis of the information available to me, I:

- consider the Principal Investigator/Supervisor and student researcher (if applicable) to be aware of their ethical responsibilities in regard to this research;
- am satisfied that the proposed design and scientific methodology are sound; the research has been subject to appropriate peer review and is likely to contribute to existing knowledge and/or to the education and training of the researcher(s) and that it is in the public interest.

Head of Department or designated nominee (Name)	
Head of Department or designated nominee (Signature) Wet-ink signature (not pasted electronic image) *or* The Head of Department/nominee can send an email (including PI name and study title) to ethics@medsci.ox.ac.uk or ethics@socsci.ox.ac.uk confirming the above	
Date	

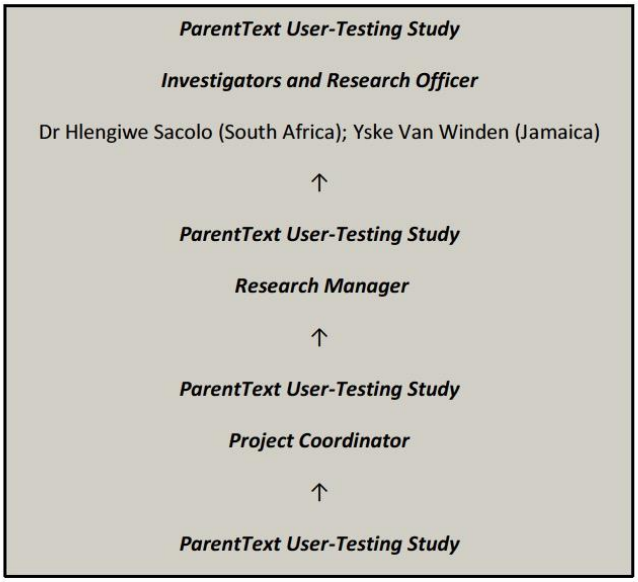
Appendix 3: ParentText User Testing Study Safety Protocol

ParentText User-Testing Study
Safety Protocol

Overview:

This document aims to outline a general procedure that will be implemented to ensure the safety of all *ParentText User-Testing Study* staff. All staff should read this document and sign the declaration included. The structure for the reporting and documenting of any safety issues that might arise is outlined in the diagram below (contact details for the ParentText User-Testing Study Investigators, Research Manager, and Project Coordinator are included at the end of this document). Appended to this document are also procedures put in place regarding personal safety, driving safety, fire and floods (and other natural disasters), as well as climate safety.

Hierarchy for the reporting and documenting of any safety concerns



Procedure:

1. Any staff safety concerns should be raised with the Research Manager immediately. The Research Manager will decide about whether to deal with this immediately, to discuss with the Investigators, or to discuss in the weekly staff meeting at each provincial site.

2. The Research Manager and staff should discuss the issue and any possible safety procedures that could be implemented to address the issue.

3. If a safety procedure is decided upon, the initial concern and the proposed procedure should be documented (using a copy of the attached Safety Documentation Form). This form should be sent to the Investigators. If the Investigators have any suggestions, recommendations, or concerns these will be communicated directly to the Research Manager.

If a safety procedure cannot be decided upon the Investigators should be informed and a conference call will be arranged so that the issue can be discussed between the Investigators and the Research Manager.

4. Once the safety procedure has been approved by the Investigators, the Safety Documentation Form should be appended to the office copy of the safety protocol (this document), this way a record of all safety concerns and staff responses is maintained.

Declaration of agreement:

"I declare that I have read and understood this document. I am aware of the procedure that has been put in place to ensure the safety of *ParentText User-Testing Study* staff."

Name: _____

Site: _____

Signed: _____

Date: _____

***ParentText User-Testing Study* – Safety Procedures**

Many of these safety procedures involve common sense and are relevant across all safety domains

Personal Safety:

- Staff should carry a well-charged cell phone at all times in case of accident or emergency
- Where there is an immediate emergency and the Research Manager or Project Coordinator is not in the field or easily contactable, staff (eg RAs) should inform the project coordinator, who will inform the Research Manager and Project Coordinator
- Always inform another member of the *ParentText User-Testing Study* team about your destination and estimated time of return
- Staff should know the closest location to the local authorities to seek refuge if danger arises
- If possible, never leave a team member behind. It is best to intervene as a team
- If interviewing in a community in which you feel unsafe:
  - Inform the Research Manager and Project Coordinator
  - Form 'Interviewer Groups' (and include a male field worker if possible)
- If needed, staff should discuss emergency SMS code for help with team members or Research Manager and Project Coordinator
- Staff should work in teams of two (preferably with a male RA on each team) and within viewing distance of each other
- Staff should be carrying maps of the areas in which they work to facilitate orientation and giving directions

Dealing with Participants:

- Violent Participants:
  - Staff should **not** solve the matter independently
  - Staff should **not** respond violently (*so as not to promote escalating emotions*)
  - Do not confront a mob
  - Walk away and ignore the accusations
  - Inform Research Manager and Project Coordinator as soon as possible
  - If violent accusations result in physical harm, the Research Manager or Project Coordinator should open an assault case at the police station

- Unhappy Participants:
  - RAs should be aware of escalating emotions
  - When possible, re-address the objectives of the study, privacy guidelines for disclosure, and remind the participants that authorities in the areas are aware of the project study
  - If participant is not satisfied with the explanation, offer to make appointment with the project manager
  - Appease the unhappy participant by ensuring that their concerns will be heard and handled
  - Contact and inform project manager of the encounter

Climate:

- Heat: fieldworkers will be provided with sunscreen, water bottles, and hats during the summer months
- Rain: fieldworkers will be provided with umbrellas and/or rain jackets

Fire, Floods, and Natural Disasters:

- In any case of environmental hazard, consider your own safety and that of your team first
- The Research Manager and Investigators will make a decision, in consultation with the fieldwork team, about how best to deal with these

Medical Conditions of staff members:

- All staff with chronic medical conditions such as epilepsy or diabetes are requested to wear medical alert bracelets
- All staff are responsible to carry their medication with them at all times and show their team members where it is kept and how to administer it in an emergency

Political unrest or violence

- In the event of riots, unrest political violence, we will discuss any safety issues with Project Coordinators. In any case where there is risk to staff, fieldwork will be suspended or move to another area
- All field staff shall immediately be evacuated from field sites in the event of any risk of harm
- All international staff will register with their relevant embassies before departure to Jamaica and South Africa
- All international staff will take out comprehensive emergency evacuation travel and medical insurance
- All staff members are requested to register a telephone number of a relative or friend which can be contacted in case the member of staff is involved in an accident at work. Emergency numbers are to be kept easily accessible for all members of the project.

For Research Manager and Project Coordinator

- Management staff should make sure all field staff have a copy of documented safety procedures amongst field protocols and ask staff to sign for confirmation of having read and accepted adherence to them. Staff should also be encouraged to provide suggestions or highlight guidelines that are not working at team meetings.
- If re-addressing the objectives of the study has not always worked to calm down violent participants:
    - Inform the local leaders about the encounter and request another community meeting
    - Address some of the issues encountered and explicitly and patiently explain the **reason** for each question (i.e., Who lives in my home) if necessary
    - Prior assessments of communities are crucial (get information on safety, crimes, witchcraft, etc.), and know the village and culture
    - Monitor your RAs, violent encounters can be traumatic. Offer psychological counselling (with local psychologists in hospitals) or debrief team members
    - If necessary, give RAs crisis prevention training or safety training.

Safety Concern – Documentation and Response Form

Date concern raised: _____

1) Safety Concern:

2) Proposed Response:

Response approved by PI: Yes/No

Signed by Research Manager: _____

Date Approved: _____

Appendix 4: Checklist for transparent and ethical reporting of violence research

14-item checklist of best practices for the transparent and ethical reporting of violence research accounting for challenges during COVID-19

Checklist from: Peterman, A., Devries, K., Guedes, A., Chandan, J. S., Minhas, S., Lim, R. Q. H., ... & Bhatia, A. (2023). Ethical reporting of research on violence against women and children: a review of current practice and recommendations for future guidelines. BMJ global health, 8(5), e011882.

Domain	No	Item	Description of criteria	Application and notes
Institutional Review Board (IRB)	1	Reports ethical clearance from an IRB?	Any mention of IRB clearance is recorded as 'Yes.' While ideally some studies would have both national and international IRB clearance, this requirement is variable based on location and institutional affiliation of authors. In addition, although national IRB is expected at a minimum, some countries do not have functioning, appropriate IRBs during periods of conflict or depending on disciplinary focus of the study. An international IRB is often preferred, in addition to national IRB, however this would only be sought if at least one co-author is resident outside the country of study. As all studies collect primary data, there should be no IRB exemptions, therefore statements asserting ethical clearance is not needed are treated as 'No'.	Yes; Ethical approval was obtained by the Department Research Ethics Committee (DREC) at the University of Oxford (CUREC 2 Ref No: R69569/RE009) and from the University of Cape Town (see Ethical Approval in Methods Chapter and Appendices)
Interviewer selection, training and support	2	Reports how appropriate interviewers were selected?	This includes prior experience working on similar topics, with specific qualifications (e.g., health or social workers), same-sex interviewers, checks on interviewer criminal records, checks with law enforcement, etc (recorded as NA if web-based).	NA for quantitative web-based IPV assessment. Qualitative interviews: Met to some extent; See Methods Chapter section 'Ethics, safety, and privacy'.
	3	Reports undertaking a dedicated training of interviewers to	Must be beyond general ethics training, to include in-depth modules or specialised trainers/ training to equip interviewers to deal with topic with greater sensitivity, confidentiality,	NA because only violence data was only collected using the digital IPV quantitative assessment.

		collect violence data?	respond to adverse events, etc (reported as NA if web-based).	
	4	Mention support in place to protect safety and health of the study team to avoid vicarious trauma?	This could include debriefs, periodic check-ins or support for adverse events experienced via provision of services or counselling (reported as NA if web-based).	Yes; n.b. violence data was only collected using the digital IPV quantitative assessment. For the qualitative data collection which did not ask about violence safety considerations were still taken into account; this protocol is explained in the Methods chapter in the section 'Researcher safety'.
Sampling and engaging with respondents	5	Describes how sampling was designed to support participant safety?	Includes specific actions such as sampling only one person per household, split-sample approaches, safe/secure devices as an inclusion criteria (for remote surveys), screening approaches for web-surveys to support safety, participant-driven sampling approaches and data security approaches if survivors are purposefully sampled. Must go beyond random sampling or snowball sampling to explain why this was the safest approach taken and safety considerations within these approaches.	Yes; See Methods Chapter the section 'Digital assessment procedures and safety'
	6	Explains informed consent was obtained or the informed consent procedure?	Explicitly mentions informed consent was obtained, consent was sought or explains participants were told their participation is voluntary, the general content of questions and that they are able to stop the interview at any time. For violence in particular, additional components could include safety protocols in approaching participants, and if graduated consent was implemented or the true intent of the study was not disclosed until interviewers were alone with the participant.	Yes; See Methods chapter section 'Participant informed consent' and 'Researcher safety'
	7	For samples focused on interviewing minors: explains process for	For surveys focused on interviewing minors (0–17 years): explains precautions or processes taken in the informed consent/assent process. This could include requests for waivers of parental/guardian consent (if applicable)	Yes; See Methods chapter section 'Participant informed consent'. n.b. Sample

		or waiver of (1) parent/ guardian consent and (2) minor assent?	(NA if the sample does not focus on VAC measures and target minors).	does not focus on VAC measures.
	8	Mentions if participation incentives and/or reimbursement for time were given?	Mentions if participants were given any compensation, incentive or benefits for participating in the data collection, including in-kind (eg, air time, soap) or monetary (eg, mobile money, small payment). Alternatively, mentions if no participant incentive was given.	Yes; Methods chapter sections on 'Recruitment' and 'Data collection
	9	Reports actions taken to obtain privacy and ensure participant safety during the interview/data collection?	Reports on at least one specific action taken to ensure participant privacy and/or safety. Privacy actions could include ensuring participants are interviewed out of listening range of other individuals, or for phone surveys, instructing participant to turn off speaker phone or find a private place to talk at the beginning of the interview. For web-based surveys, indicating script messages were provided at the start of the survey to instruct the participant to complete the survey alone, a protocol or instructions for if privacy is lost or mentioning how challenges of shared technology (computers, phones) and shared access to messages, webpages and texts were considered or dealt with. Safety actions could include periodic safety checks, option to end survey if participants need to quickly exit or drop the call, implementing a safe word for interviewers to understand safety was compromised remotely, describing steps taken to reduce participant distress or increase comfort during the interview itself. This must go beyond informed consent procedures which may generally tell participants that they can exit the interview at any time if they wish.	Yes; See Methods chapter section on 'Digital assessment procedures and safety
	10	Reports whether feedback was collected from respondents on their participation experience?	Includes questions which attempt to assess if the participant felt comfortable answering the questions, had feedback on the interview process, felt safe during the data collection or if they incurred distress, emotional or other repercussions.	To a limited extent; qualitative interview and FGDs included questions about participants' general experience using the

				chatbot; See Methods chapter section on 'Qualitative interviews and FGDs'
Referrals and adverse events	11	Reports providing respondents with referral information, ideally deidentified to maintain privacy and modified to assure services are available during COVID-19?	Includes a reference to standard practice or protocols providing participants with the option of obtaining additional information, assistance to counselling or specialised services, often via a hotline/helpline or physical cards with contact information (ideally all participants regardless of disclosure of violence). As physical cards carry a risk if perpetrators uncover this information—cards are typically deidentified, without clear information as to their purpose, and participants should be warned of this risk. An assessment of if services were functioning or available during COVID-19 lockdowns could accompany this information.	Yes; See Methods chapter section on 'Safeguarding and at-risk participants'
	12	Mention actions taken, an adverse event protocol or response plan for acute cases where participants or family members require short- term follow-up, suitable to be implemented during COVID-19?	Includes mention of how teams identified or addressed cases where participants or family members were in immediate danger or in need of active assistance in accessing services, including facilitating services directly contacting individuals within a short time span (eg, 24 or 48 hours), providing immediate transport to services or conducting a safety follow-up check (via phone or in person). Includes description of protections for individual identifying information and data security issues in cases of disclosure to third parties in monitoring of follow-up to services. Good practice includes monitoring to ensure cases of adverse events and risks are counted, addressed and actioned in a timely manner.	Yes; See Methods chapter section on 'Digital and in-person safeguarding measures'
	13	For samples focused on interviewing minors and measuring VAC, or targeting people with disabilities: report to what extent and how	For samples focused on interviewing minors (0–17 years) and measuring VAC, or targeting people with disabilities: gives additional information on how referrals and help-seeking were facilitated, including help in making calls, transport or accessing information (NA if the sample does not focus on VAC measures	Yes; See Methods chapter sections on 'Participant informed consent' and 'Digital and in-person safeguarding measures'. n.b. Sample does not focus on VAC measures.

		referrals and help seeking were facilitated?	and target minors, or does not target people with disabilities).	
	14	For samples focused on interviewing minors and/ or measuring VAC: report if and how mandatory reporting laws were considered or followed?	For samples focused on interviewing minors (0–17 years) and/or measuring VAC: includes mention of how confidentiality might be limited based on mandatory reporting laws, what steps were actively taken to address (obtain waivers) or comply with law, or why the study is exempt from or does not have to consider these issues (NA if the sample does not focus on VAC measures and target minors).	Yes; See Methods chapter section on 'Digital and in-person safeguarding measures'. n.b. Sample does not focus on VAC measures. 'Digital and in-person safeguarding measures'

Appendix 5: Author Reflexivity Statement

Author Reflexivity Statement

The structure and the questions included in the following reflexivity statement is based on the checklist of questions developed by Morton et al. (2022), which are designed to address specific components of equitable research partnership.

Study conceptualization

1. How does this study address local research and policy priorities?

The rationale of the present study was based on local concerns raised regarding high rates of intimate partner violence (IPV) recorded in both study settings (Jamaica and South Africa). Reports indicate that in Jamaica, one in four women have experienced IPV during their lifetime (Williams, 2016). Local policy priorities in Jamaica, such as the recently launched Gender-Based Violence (GBV) Helpline and Sexual Harassment Investigation Units, developed by the Jamaican Ministry of Culture, Gender, Entertainment and Sport, which were created in response to the high rates of gender-based violence in Jamaica, reflect these priorities (Murphy, 2023). Similarly, in South Africa, estimates suggest that one in three women have experienced IPV in their lifetime (Gass et al., 2010). In light of the high rates of gender-based violence (GBV), policy initiatives such as the Emergency Response Action Plan to address GBV and femicide and the National Gender-based Violence and Femicide Strategic Plan (NSP), have been developed in South Africa, underscoring the issue as a major priority both in policy and practice (Department of Women Youth and Persons with Disabilities South Africa, 2020).

2. How were local researchers involved in study design?

In each of the studies included in this doctoral research, including in the intervention development, local researcher partners and collaborators were consulted (e.g. see Paper 1 Additional file 5: Consultation focal points for consultation focal points which included individuals from local

community organisations and institutions). These consultations helped guide study design decisions from assessment considerations to intervention implementation procedures.

3. How has funding been used to support the local research team?

Each of the studies in this doctoral research were externally funded and included strong partnerships with local research partners and collaborators. Funding was used to, for example, hire local research assistants, interpreters, and translators, for the quantitative and qualitative data collection.

Research management

4. How are research staff who conducted data collection acknowledged?

Research members from study partners and collaborators are included as co-authors in instances where they substantially contributed to intervention implementation, data collection, or analysis. Other key research partners and assistants who were less involved but contributed in some form to study management and data collection were mentioned in the study acknowledgements.

Data acquisition and analysis

5. Do all members of the research partnership have access to study data?

The access to study data is outlined in the Data Management section of the thesis.

6. How was data used to develop analytical skills within the partnership?

As a doctoral thesis, the author of the research project carried data analysis, however, the assessment design and responses used involved consultation with research partners, and the thematic analysis results were discussed with the ParentText research assistants from South Africa and Jamaica who supported with data collection and interpretation.

Data interpretation

7. How have research partners collaborated in interpreting study data?

The interpretation of study data was primarily carried out by the author of this doctoral research project; however, the thematic analysis findings were discussed with the ParentText research assistants from Jamaica and South Africa who supported with data interpretation.

Drafting and revising for intellectual content

8. How were research partners supported to develop writing skills?

As a doctoral thesis, the author of this research project wrote all of the study papers, however, all research partners who were co-authors of the studies reviewed and approved the final versions of manuscripts.

9. How will research products be shared to address local needs?

The research findings will be shared with the UNICEF country offices as well as local collaborating partners to strengthen further local action and discussion. Policy briefs that are open-access have also been made of the research findings in order to make results more accessible to address local needs.

Authorship

10. How is the leadership, contribution and ownership of this work by LMIC researchers recognised within the authorship?

The contribution and ownership of this work by LMIC researchers is recognised within the authorship of the quantitative and qualitative studies, with LMICs researchers listed as co-authors.

11. How have early career researchers across the partnership been included within the authorship team?

Early career researchers are included in the authorship team.

Training

12. How has gender balance been addressed within the authorship?

Study teams were all mixed gender with an average of 70% women on the authorship team of the studies.

13. How has the project contributed to training of LMIC researchers?

As part of this research project, workshops and meetings were held with research team members, including LMIC researchers, during the project planning, intervention development, data collection, and data analysis stages. Accordingly, these meetings and workshops offered LMIC researchers on the team the opportunity to strengthen their research and data collection skills.

Infrastructure

14. How has the project contributed to improvements in local infrastructure?

This doctoral project has not directly contributed to improvements in local infrastructure. However, the research findings include various recommendations for strengthening local investments and responses to violence prevention efforts addressing intimate partner violence.

Governance

15. What safeguarding procedures were used to protect local study participants and researchers?

The safeguarding procedures in place are described in detail in the study manuscripts and in the Methods chapter of the thesis.

Appendix 6: Information sheets, consent forms, and instruments

IPV Assessment information sheet and consent form

IPV Assessment: Information Sheet and Consent Form

The following information sheet and consent form will be integrated directly into the intimate partner violence (IPV) assessment, which is delivered via an external secure server, either via the Internet of Good Things or via Oxford's Linux virtual machine using Online Data Kit (ODK).

Information Sheet and Consent Form:

[Information and Consent]
Can we also ask you a few quick questions about your relationship with your current partner or previous partner? Everything you say will be completely private.

If you do not want to answer any questions, it is completely okay.

Type "1" if you are happy to answer some questions. Type "0" if you want to skip this.

[Response to "0"]:
It is okay if this is not a good time. We will try again tomorrow. Chat later!

[Response to "1"]:
To answer these questions, click this link: [URL]

This will take you to an external site so that no one else will know about your answers.

ParentText Messages and Survey Information Sheet: Jamaica

ParentText Messages Information Sheet and Survey Information Sheet for Parents/Caregivers in Jamaica

You are invited to take part in a study conducted by the University of Oxford.

We are doing this study to learn about what it is like to receive ParentText messages. Before you decide whether you would like to be part of this study, it is important for you to understand why we are doing this research.

WHO CAN TAKE PART?

To take part in the study, you need to be at least 16 years old and taking care of a child between the ages of 0 and 17. You must also agree to take part in the study.

If you are 16 or 17, then you must also share this information sheet with your legal guardian.

DO I HAVE TO TAKE PART?

You do not need to take part in this study. If you do not want to participate, nothing bad will happen to you or your family. You will still receive the text messages if you choose not to answer any questions. You can stop receiving messages at any point by typing "STOP MESSAGES".

WHAT WILL HAPPEN IF I TAKE PART?

Every week we will ask you some questions on how you have found the messages and your experiences with parenting. You can skip questions you do not want to answer. You can stop participating at any time for any (or no) reason?

ARE THERE ANY RISKS OF TAKING PART?

We do not expect any risks in in taking part in this study. If you become upset when answering the questions, you can find local referrals for additional support by typing "Help" and selecting "Other Support". Your involvement will be used to make ParentText better to help parents/caregivers.

WHAT WILL HAPPEN TO THE INFORMATION I PROVIDE?

Everything that you share with us will be completely anonymous. No one will know what information you provide. Only data collected from the surveys about your relationships and experiences with other adults will be completed on an external online site so no one can see your responses on your phone. The anonymous research data that we collect will be stored for an unlimited amount of time and may be shared with other researchers in the future so that we can continue to learn about how chatbots can support families like yours.

WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH?

So that others may learn from this study, we plan on sharing results in academic journals, at conferences, and in policy briefs for governments and other agencies. Your name and any personal information about you and your family will NOT appear in any data, publications, or reports.

WHO HAS REVIEWED THE STUDY?

This study has received ethical approval from the University of Oxford Central University Research Ethics Committee (R69569/RE003).

DATA PROTECTION

The University of Oxford is responsible for ensuring the safe and proper use of any personal information you provide, only for research purposes.

QUESTIONS

Please let us know if you have any questions before providing consent. If you have any additional questions or want to raise a concern, please feel free to contact Dr Jamie Lachman (jamie.lachman@spi.ox.ac.uk; +44 (7) 840 825 892) who is leading this research. If you have any questions or concerns about your rights as a study participant, you can contact Dr. Charlene Coore Desai (ccoore@unicef.org; +1 876 279 8337), Child Protection Specialist at UNICEF Jamaica.

Consent Form for Participant

Name of Participant (Print):

1	I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without any negative consequences for me or my family.
3	I understand that research data collected during the study may be looked at by designated individuals from the University of Oxford where it is relevant to my taking part in this study. I give permission for these individuals to access my data.
4	I understand that this project has been reviewed by and received ethics clearance from the University of Oxford.
5	I understand who will have access to my personal data, how the data will be stored, and what will happen to the data at the end of the project.
6	I understand how this research will be written up and published.
7	I understand how to raise a concern or make a complaint.

Signature:

Date:

ParentText Messages Information Sheet and Survey Information Sheet for Parents of Participating Children below 18

Your child has been invited to take part in a study conducted by the University of Oxford.

We are doing this study to learn about their experience receiving the COVID-19 Parenting text messages developed by Parenting for Lifelong Health (PLH) with the WHO and UNICEF.

ParentText is a text messaging service for parents and caregivers of children aged 0 to 17. It is delivered through SMS and messaging platforms such as Telegram, WhatsApp, and Facebook Messenger. Your child will receive daily positive parenting messages in the form of texts, audios, videos, comics, and gifs over 5 weeks.

ParentText messages focus on different topics, including building a positive relationship with your child, using praise, setting daily routines, and reducing stress for parents and caregivers. Additional content includes support for parents of children living with disabilities, child development, online child safety, talking about COVID19 with children, family budgeting, family harmony, and helping children with schoolwork. ParentText also includes content on sexual violence prevention as well as partner relationships to prevent family violence.

Before your child joins study, it is important for you to understand why the research is being done and what it will involve.

WHO CAN PARTICIPATE?

To take part in the study, your child needs to be above 16 and provide consent to confirm that they are willing to take part in the study and stop participating at any time for any (or no) reason

DOES YOUR CHILD HAVE TO TAKE PART?

Your child does not need to take part in this study. If they decide not to take part, nothing bad will happen to them or their family. They will still receive the text messages if they choose not to answer any questions. They can stop receiving messages at any point by typing "STOP MESSAGES". **WHAT WILL HAPPEN IF THEY TAKE PART?**

Every week they will be asked questions on how they found the messages and their experiences with parenting. They can skip questions they do not want to answer.

ARE THERE ANY BENEFITS OF TAKING PART?

The programme is designed to improve parents' well-being and family relationships. Your child may benefit from this programme but there is no guarantee.

ARE THERE ANY RISKS IN TAKING PART?

We do not expect any risks in taking part in this study. If your child become upset when answering the questions, they can find local referrals for additional support by typing "Help" and selecting "Other Support".

WHAT WILL HAPPEN TO THE INFORMATION YOUR CHILD PROVIDES?

All information will be completely private. Only data collected from the surveys about their relationships and experiences with other adults will be completed on an external online site, which means there will be no record of their responses on their phone. Their name and any personal information about your child and your family will NOT appear in any data, publications, or reports. Research data will be stored indefinitely and may be shared with other researchers in the future.

WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH?

Your child's participation and any information they provide will help us learn about how to support families like yours better. So that others may learn from this study, we plan on publishing results in academic journals, at conferences, and in policy briefs for governments and other agencies. Your name and personal information will not appear in any reports.

WHO HAS REVIEWED THE STUDY?

This study has received ethical approval from the University of Oxford Central University Research Ethics Committee (R69569/RE003).

DATA PROTECTION

The University of Oxford is responsible for ensuring the safe and proper use of any personal information you provide, only for research purposes

QUESTIONS

Please let us know if you have any question or want to raise a concern, please feel free to contact Dr Jamie Lachman (jamie.lachman@spi.ox.ac.uk; +44 (7) 840 825 892) who is leading this research. If you have any questions or concerns about your child's rights as a study participant, you can contact Dr. Charlene Coore Desai (ccoore@unicef.orgccoore@unicef.org; +1 876 279 8337), Child Protection Specialist at UNICEF Jamaica.

Consent Form for Participant

Name of Respondent (Print):

1	I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2	I understand that my child's participation is voluntary and that they are free to withdraw at any time, without giving any reason, and without any negative consequences.
3	I understand that research data collected during the study may be looked at by designated individuals from the University of Oxford.
4	I understand that this project has been reviewed by and received ethics clearance from the University of Oxford.
5	I understand who will have access to personal data provided, how the data will be stored and what will happen to the data at the end of the project.
6	I understand how this research will be written up and published.
7	I understand how to raise a concern or make a complaint.

Signature:

Date:

ParentText Messages and Survey Information Sheet: South Africa

ParentText Messages Information Sheet and Survey Information Sheet for Parents/Caregivers in South Africa

You are invited to take part in a study conducted by the University of Oxford.

We are doing this study to learn about what it is like to receive ParentText messages. Before you decide whether you would like to be part of this study, it is important for you to understand why we are doing this research.

WHO CAN TAKE PART?

To take part in the study, you need to be at least 18 years old and taking care of a child between the ages of 0 and 17. You must also agree to take part in the study.

DO I HAVE TO TAKE PART?

You do not need to take part in this study. If you do not want to participate, nothing bad will happen to you or your family. You will still receive the text messages if you choose not to answer any questions. You can stop receiving messages at any point by typing "STOP MESSAGES".

WHAT WILL HAPPEN IF I TAKE PART?

Every week we will ask you some questions on how you have found the messages and your experiences with parenting. You can skip questions you do not want to answer. You can stop participating at any time for any (or no) reason?

ARE THERE ANY RISKS OF TAKING PART?

We do not expect any risks in in taking part in this study. If you become upset when answering the questions, you can find local referrals for additional support by typing "Help" and selecting "Other Support". Your involvement will be used to make ParentText better to help parents/caregivers.

WHAT WILL HAPPEN TO THE INFORMATION I PROVIDE?

Everything that you share with us will be completely anonymous. No one will know what information you provide. Only data collected from the surveys about your relationships and experiences with other adults will be completed on an external online site so no one can see your responses on your phone. The anonymous research data that we collect will be stored for an unlimited amount of time and may be shared with other researchers in the future so that we can continue to learn about how chatbots can support families like yours.

WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH?

So that others may learn from this study, we plan on sharing results in academic journals, at conferences, and in policy briefs for governments and other agencies. Your name and any personal information about you and your family will NOT appear in any data, publications, or reports.

WHO HAS REVIEWED THE STUDY?

This study has received ethical approval from the University of Oxford Central University Research Ethics Committee (R69569/RE003).

DATA PROTECTION

The University of Oxford is responsible for ensuring the safe and proper use of any personal information you provide, only for research purposes.

QUESTIONS

Please let us know if you have any questions before providing consent. If you have any additional questions or concerns about the study, or have any questions or concerns about your rights as a study participant, please feel free to contact Dr Jamie Lachman (jamie.lachman@spi.ox.ac.uk; +44 (7) 840 825 892) who is leading this research.

Consent Form for Participant

Name of Participant (Print):

1	I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without any negative consequences for me or my family.
3	I understand that research data collected during the study may be looked at by designated individuals from the University of Oxford where it is relevant to my taking part in this study. I give permission for these individuals to access my data.
4	I understand that this project has been reviewed by and received ethics clearance from the University of Oxford.
5	I understand who will have access to my personal data, how the data will be stored, and what will happen to the data at the end of the project.
6	I understand how this research will be written up and published.
7	I understand how to raise a concern or make a complaint.

Signature:

Date:

IPV Survey Referral Messages

IPV Assessment: Information Sheet and Consent Form

The following referral information will be integrated directly into the intimate partner violence (IPV) assessment, which is delivered via an external secure server, either via the Internet of Good Things or via Oxford's Linux virtual machine using Online Data Kit (ODK).

IPV Victimisation Referral message:

You have the right to be treated with dignity and respect, and live free from fear and violence. If you or someone you know is experiencing any type of abuse, there are many organisations that can help you:

Domestic Abuse National Hotline: [telephone]
Link to domestic abuse support services in your area: [URL]
If you are in an emergency situation, call [999]

Type [SOS] to view this information again in the future.

IPV Perpetration Referral message:

It sounds like you are experiencing a difficult time with your partner. There is support available that can help you change this pattern.

There are many organisations that can help you:

Mental health and anger management hotline: [telephone]
Link to batterer intervention programs in your area: [URL]
Substance abuse hotline: [telephone]

If you are in an emergency situation, call [999]

Type [SOS] to view this information again in the future.

PARENTTEXT INFORMATION SHEET AND CONSENT FORM FOR PARTICIPATION IN RELATIONSHIP QUALITATIVE DATA COLLECTION

June 2, 2022

Information sheet

Introduction

Hello, my name is Moa Schafer, and I am a researcher from Oxford University. We are interested in exploring how people interact with and experience the ParentText chatbot. Your responses will help us understand what was helpful to you in engaging with ParentText, as well as the parts of the programme that may need improving or changing.

We are really interested in your personal experience and any thoughts that you have and how ParentText may have had an impact on your family and relationships. There are no right or wrong answers because your whole experience is really important to us.

This information sheet explains our study. You are free to decide whether you wish to participate. Before you decide, it is important that you understand why the research is being done, as well as what it will involve. Please ask me if there is anything that is unclear. If you agree to take part, I will ask you to sign a consent form. It is your right to withdraw from the study at any time.

Why are we doing this study?

ParentText is a chatbot designed to support families in coping with the stresses of the COVID-19 pandemic and enable caregivers to build positive relationships with their children and nurture their development through playful parenting. We are doing this study to learn more about your experience of using ParentText and better understand how it may have impacted your family and relationships. We are curious about how you may have used what you learned in your daily life and in your interactions with others.

If I take part in this study, what will happen?

If you agree to take part in this study, we will ask you some questions about your thoughts, experiences, and perceptions of ParentText. This will be in the format of a focus group discussion with other parents in a private space. The focus group is estimated to last about an hour in total. If you give us permission, the focus group will be audio-recorded and stored on a secure device, and once the study is completed that recording will be deleted.

Do I have to take part in this study?

No, you do not have to take part in this study. If you do not take part, you will not be affected in any way. You can stop taking part in the study at any time, without giving a reason and you can skip any questions you do not want to answer.

What are the possible risks and benefits of taking part?

There is minimal risk involved in your taking part in this study. All information you give us will be kept confidential. We do not anticipate participating in this study to be distressing. However, should you find anything that we talk about upsetting, and would like to talk to someone afterwards, we can help with

this and can provide you with contact details where you can get confidential support. You will not benefit personally from participating in this study. However, by learning about parents' experiences with ParentText, we hope that we can improve the programme in the future. You may also be offered lunch as a token of appreciation for your participation.

How will the information collected during this study be stored and kept confidential?

All information collected on paper (i.e., consent forms and written notes) and audio recordings of the focus groups will be kept securely and confidentially by researchers at Oxford University. Any personal or identifying details will only be available to study staff and will be stored securely. The rest of the information we collect using the Chatbot will be identified on forms and computer files only by a study number, not your name. When we enter your information into a computer, we will keep your identifying details separately, protected by a password, and only restricted study staff will have access. The rest of the information will be entered into another database, identified only by your study number, and we will use only this database to find the answers to our study questions.

If you give us permission to record this focus group, the recording will be stored securely, for possible checking or further analysis, until the end of the study. The Ethics Committee and independent monitors may review study information to check that the study procedures were done correctly, and the information is correct. While we cannot guarantee confidentiality with focus groups, the focus group members taking part will be encouraged to keep what is said in the groups between them only. The information you shared with the research team will remain confidential unless we are required by law to release information. Reports about the study and results that may be published in scientific journals will not include any information which could identify who you are.

Results from the study will be presented to people working in the field of parenting programmes, and other researchers as presentations and publications in academic journals. In all these presentations and reports, it will not be possible to identify people who took part. When the study is finished, we will make information from the study available to other researchers. This will only be done after all the information which identifies people who took part has been removed, so the identities of the people who took part will remain confidential.

What if I have questions about this study?

If you have any questions about this study, please feel free to ask me now. If you have questions later, you may contact Dr Jamie Lachman on [redacted]. The Central University Research Ethics Committee (CUREC) for Oxford University has reviewed this study. If you have any questions or concerns about your rights as a person taking part in a research study, or if you wish to make a complaint about the study, you may contact:

Secretary of the Central University Research Ethics Committee
University of Oxford
Wellington Square
Oxford, OX1 2JD
Email: curec@admin.ox.ac.uk

QUALITATIVE RESEARCH ON PARENTTEXT: INFORMED CONSENT FORM

Informed consent form

	Please initial box
1. I confirm that I have read and understand the information sheet dated 2 June 2022 for the above study. I have had the opportunity to think about the information, ask questions and have had these answered fully.	
2. I understand that my participation in this study is voluntary and that I am free to withdraw at any time, without giving any reason.	
3. I understand that all information gathered from this study will be confidential and anonymity will be ensured as much as is possible with focus group discussions.	
4. I understand that sections of data collected during the study may be looked at by responsible individuals from the research partners listed on the information sheet.	
6. I agree to the researcher(s) recording the focus group and taking notes during the focus group.	
7. I agree to take part in this study.	

Participant name (printed)	Signature	Date
Researcher name (printed)	Signature	Date

If the information sheet and consent form were translated or explained to the participant, enter the name of the translator or facilitator here and their signature:

Translator / witness name (printed)	Signature	Date

QUALITATIVE INSTRUMENT FOR PARENTTEXT PILOTING: FOCUS GROUP GUIDE ABOUT RELATIONSHIPS

FOR USE IN DEDICATED USER-TESTING

SEMI-STRUCTURED FOCUS GROUP GUIDE FOR PARENTS ABOUT RELATIONSHIPS

Step 1: Introduction of focus group

We thank you for your participation in this focus group. We have invited you to participate in this focus group today because we want to learn more about your experience using ParentText and whether it may have had an impact on your family and relationships. More specifically, we are curious about how you may have used what you learned in your daily life and in your interactions with others.

Your response will help us understand what was helpful about this experience and what parts of the programme might need improving or changing.

We are really interested in your personal experience and in any thoughts and feelings that you have about the programme and its content. There are no right or wrong answers because your whole experience is really important to us.

The focus group will take about one hour. With your permission, we will be recording your responses on this audio recorder.

We ask you to respect the privacy of other individuals taking part in this focus group by not sharing any content discussed during this session with other individuals afterwards. Your responses will be confidential and only viewed by the research team. Nobody in your family or community will ever see these answers. Your name and identity will remain private.

You will not be paid for this focus group, but we are happy to offer you a small token of our appreciation for your participation within the next week.

Please remember that you can ask to stop this focus group at any time if you feel like doing so or you can skip any question that you don't want to answer for any reason. Please let us know if you are confused by any questions that we ask you.

If you find anything that we talk about upsetting, and would like to talk to someone afterwards, we can help with this.

Before we begin, do you have any questions?

Once again, we thank you for your participation!

Step 2: Exploring the impact of parent's participation in the programme

Thank you for participating in ParentText! It would help us to know more about your experience with the programme. Each individual's unique experience is important to us. Any responses you give are very helpful!

(Open-ended questions to get a sense of the parents' experiences of the programme and explore how it may have impacted their relationships with their partner).

We would like to know about your experience during the programme and how it has affected your family and relationships.

1. Could you tell me whether only you, or both you and your partner took part in the ParentText programme?
   [Prompts to use to help guide the focus group:]
   - What was your experience with this programme?
   - If your partner also took part, did they tell you anything about their experience taking part in the programme? Why do you think they participated?

2. Did you share what you were learning with anyone?
   [Prompts to use to help guide the focus group:]
   - If yes Probe, Who? What did you share/talk about? Why did you share?
     - How about sharing with your partner?
     - How about sharing the content on relationships advice?
   - If no, why did you keep the learning to yourself?

3. Have you noticed any changes in your relationship with your partner following the programme?
   [Prompts to use to help guide the focus group:]
   - If yes, what changes have you noticed?
   - How about any changes in the way you interact with your partner?
   - How about in the way your partner interacts with you? Please tell me more…

4. Could you tell me a bit more about other parts of your relationship? Have you, for example, noticed any changes after the programme in any of the following areas, such as:
   [Prompts to use to help guide the focus group:]
   a) In sharing the workload of household tasks or childcare with your partner?
   b) In making decisions in the household, whether it be making decisions together with your partner or by yourself?
   c) In experiencing or addressing disagreements or conflicts with your partner?
   d) In talking or listening to your partner?

5. If no, why do you think there hasn't been any changes in your relationship? Please tell me more…

6. Was there any specific part or content in the programme that you liked or that you found helpful, especially in terms of your relationship with your partner? If so, can you tell me more about this?

7. Was there any specific part or content in the programme that you did *not* like or that you found *un*helpful, especially with regards to your relationship with your partner? If

so, can you tell me more about this? Remember there are no right or wrong answers and any responses you give are very helpful.

8. Was there anything that you felt was missing from the programme or that you would have liked to learn more about, particularly in terms of content about relationships?

9. Is there anything else you would like to share about your experience on using ParentText and any potential impact it did or did not have on your relationship with your partner?

Thank you so much again for taking the time to participate in the programme and for taking the time to take part in this focus group. We really appreciate it!

Appendix 7: ParentText IPV Check-In Messages

ParentText IPV Check-In Messages

[Participants will also receive check-in's that correspond to the IPV content to see if they practised the skill, how it went and identify any challenges they might have experienced.]

Check In 1:

Hi! Have you tried involving your partner when making decisions recently? (Yes/No)

Well done! Communicating and working together with your partner makes a difference! How was your experience?
1. Great
2. Neutral
3. Bad

[If they reply "Great":]
That is fantastic! Would you like to review the content on this? (Yes / No)
That is okay! Remember you can access this content at anytime by typing "Help". Chat to you later!

[If they reply "Neutral / Bad":]
I am sorry to hear this. What did you find difficult about involving your partner when making a decision? Please select a number 1-5 from the following options:

1. I didn't have time to involve my partner
2. I didn't know how to involve my partner
3. I felt uncomfortable asking for my partner's opinion
4. I forgot to involve my partner
5. My partner reacted negatively to me when I tried

[Advice responses based on responses 1-5 above]:

[Response 1]:
It can sometimes be difficult to find the time to ask our partners for their opinions when making decisions. Think of a time during the day when both you and your partner might be less busy, such as early in the morning or later in the evening.

[Response 2]:
It can sometimes be hard to know how to involve your partner when making a decision. Sometimes all you need to do is to ask them what they think. This shows them you care and want them to be involved!

[Response 3]:
It can take time to get used to making decisions together. Give yourself time and keep trying. Remember that by communicating with your partner and involving them in decision-making, you will both eventually start to feel more comfortable doing so.

[Response 4]:

It can be hard to remember to involve our partners in decision making, especially when we are used to doing it alone. If you forget, it's important to keep trying. Asking for their opinion shows that you care and want them to be involved.

[Response 5]:
Sorry to hear that your partner reacted negatively. Be proud of yourself for trying and be gentle with yourself. Remember you can always get extra support by typing "Help".

Would you like to review the content on this? (Yes / No)

That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!

Check In 2:

Hi! Have you tried getting more involved with your partner in caregiving or housework recently? (Yes/No)"

"Well done for trying! How was your experience?
1. Great
2. Neutral
3. Bad"

[If they reply "Great":]
Well done! Would you like to review the content on this? (Yes / No)
That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!

[If they reply "Neutral / Bad":]

[For fathers:]
I am sorry to hear this. What did you find difficult when trying to help out with caregiving or housework? Please select a number 1-5 from the following options:

1. I didn't know what activities to do with my children
2. I didn't know how to support my partner
3. I forgot to ask my partner if they needed help
4. I forgot to ask for help
5. I didn't have the time
6. I felt uncomfortable doing tasks I don't normally do

[For mothers:]
I am sorry to hear this. What did you find difficult when trying to involve your partner in caregiving or housework? Please select a number 1-5 from the following options:

1. I didn't know what activities to do with my children
2. I didn't know how to support my partner
3. I forgot to ask my partner if they needed help
4. I forgot to ask for help
5. I didn't have the time
6. I felt uncomfortable doing tasks I don't normally do

[For no specified parent gender:]
What did you find difficult when trying to share responsibilities for caregiving and housework with your partner? Please select a number 1-5 from the following options:

1. I didn't know what activities to do with my children
2. I didn't know how to support my partner
3. I forgot to ask my partner if they needed help
4. I forgot to ask for help with this
5. I didn't have the time
6. I felt uncomfortable doing tasks I don't normally do

[Advice responses based on responses 1-5 above]:

[Response 1]:
Ask your child! By asking your child what their favourite activity is, you are showing them you care. Soon they might also ask you to join them when they're playing!

[Response 2]:
Ask them! By telling your partner you want to help out but don't know how, you are showing you care and are interested in being involved. This can also help family members understand each other better.

[Response 3]:
It can sometimes be difficult to remember to ask what help they need. Once you start offering to help however, they may realise you want to be more involved and may ask for help when they need it!

[Response 4]:
It can be hard to ask for help. Sometimes we expect our partners to know we need help even if we don't ask them. Once you start asking for help however, they will likely start offering to help more often in the future.

[Response 5]:
Sometimes it can be hard to find time during the day. Think of a time when you're less busy. For example, maybe it is easier to help out with housework later in the evening when some of the children have gone to sleep. See what works for you!

[Response 6]:
Be kind to yourself - trying something new is often hard at first! Give yourself time to adjust.
Also remind yourself that helping your partner with these tasks benefits the whole family.

You can also review the content on this. Would you like to review this content? (Yes / No)

That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!

Check In 3:

Hi! Have you tried sharing family responsibilities at home recently? (Yes/No)

"Excellent job! Sharing the workload benefits the whole family. How was your experience?
1. Great

2. Neutral
3. Bad"

[If they reply “Great”:]
That is fantastic! Would you like to review the content on this? (Yes / No)
That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!

[If they reply “Neutral / Bad”:]
"I am sorry to hear this. What was difficult for you about sharing family responsibilities? Please select a number 1-5 from the following options:

1. I forgot to ask my partner if they needed help
2. I didn’t know how to ask my partner if they needed help
3. I forgot to ask for help
4. I didn’t know how to ask for help
5. I didn’t know how to help
6. My partner didn’t have time to help
7. I felt uncomfortable doing tasks I don’t normally do"

[Advice responses based on responses 1-5 above]:

[Response 1]:
This can be hard to remember! Establishing a routine around caregiving or housework tasks can sometimes be helpful. This also lets you talk to your partner about how to share the workload.

[Response 2]:
Talk to them! Talking with your partner about how you can share family responsibilities helps both of you understand each other better. It also shows that you care!

[Response 3]:
It is hard to remember to ask for help. Be kind to yourself if you forget to ask and try again another time. Asking for help and sharing family responsibilities benefits the whole family!

[Response 4]:
It can be difficult to know how to ask for help. Try starting off with suggesting a task you would like help with. Being specific gives your partner a clearer idea of what they can support you with.

[Response 5]:
Trying something new can be hard! To make it easier, ask your partner to do it together with you the first few times. Soon you’ll feel more confident doing it on your own!

[Response 6]:
It can be difficult to find time during the day sometimes! Can you think of a time when your partner might be less busy, such as early in the morning or later in the evening? Creating a routine around housework can also be helpful.

[Response 7]:
Sharing responsibilities in the home benefits everyone! While trying something new can feel hard at first, soon you will start to feel more comfortable. If it helps, ask your partner to join you in the beginning!

You can also review the content on this. Would you like to review this content? (Yes / No)

That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!

Check In 4:

Resolving conflicts isn't always easy. How was your experience?
1. Great
2. Neutral
3. Bad"

[If they reply "Great":]
That is great! Would you like to review the content on this? (Yes / No)
Remember you can access this content at any time by typing "Help". Chat to you later!

[If they reply "Neutral / Bad":]
"Sorry to hear this. What was difficult for you about resolving conflicts between you and your partner? Please select a number 1-4 from the following options:

1. I didn't stay calm during a disagreement
2. I got angry and yelled at my partner
3. My partner got angry and yelled at me
4. I forgot to take a pause when I started feeling angry"

[Advice responses based on responses 1-5 above]:

[Response 1]:
It can be really hard to stay calm when we're having a disagreement with others. Try to think of something that you can do that might help, like taking a couple deep breaths or counting to ten.

[Response 2]:
Taking a pause before responding can help us stay calm and respond better a little later. When you feel yourself getting angry, try taking a pause. You can do this!

[Response 3]:
Sometimes others respond to us negatively when we're having a disagreement. In these situations, especially if you feel fearful or threatened, it may be best to walk away for a bit until those involved have calmed down.

[Response 4]:
It can be easy to forget in the moment, but don't give up! Next time if you start feeling angry, try taking a deep breath or count to ten before responding. You can also try asking your partner for a time out period before talking again.

You can also review the content on this. Would you like to review this content? (Yes / No)
Remember you can access this content at any time by typing "Help". Chat to you later!

Check In 5:

Hi! Have you tried to talk to your partner about your feelings and any difficulties you're facing recently? (Yes/No)

"Good for you! Talking about challenges and our emotions can be hard. How was your experience?
1. Great
2. Neutral
3. Bad"

[If they reply “Great”:]
Well done! Would you like to review the content on this? (Yes / No)
That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!

[If they reply “Neutral / Bad”:]
"I am sorry to hear that. What was hard for you when talking about your feelings and challenges you are facing? Please select a number 1-5 from the following options:

1. I am afraid my partner will think I am weak
2. I felt uncomfortable talking about it
3. My partner felt uncomfortable when I talked about it
4. My partner asked many questions, which made me uncomfortable
5. I felt too stressed or angry to talk about it"

[Advice responses based on responses 1-5 above]:

[Response 1]:
Sharing how we feel and talking about the difficulties we’re facing is actually a sign of strength and can make everyone in the family stronger! By sharing emotions you can better understand and support each other.

[Response 2]:
Talking about our feelings or challenges we’re facing can help others understand and support you better. Emotions and challenges are a part of life and learning how to handle these can help you avoid conflict with loved ones and make life less stressful.

[Response 3]:
Starting something new can be difficult. Give yourself and others time to get used to it. Sharing your emotions and challenges you’re facing sets a good example for others who may become more comfortable sharing too.

[Response 4]:
Sharing your emotions or difficulties you are facing is about making others more aware of how you are feeling. You get to decide how much you want to share. You can also choose to share more at a later time.

[Response 5]:
It’s okay if you don’t want to share at that time. You can choose to share how you’re feeling at a later time once you feel calmer.

You can also review the content on this. Would you like to review this content? (Yes / No)

That is okay! Remember you can access this content at any time by typing "Help". Chat to you later!