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New Relational Opportunities for Mothers and Babies: Parental Mentalization-Based Interventions for Vulnerable Parents through Pregnancy and Infancy

DPhil Thesis submitted in fulfilment of the Doctorate in Philosophy in Social Intervention and Policy Evaluation by stand-alone papers at the University of Oxford.

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Thesis abstract

Background: The prenatal period and infancy represent significant developmental periods in terms of the long-term wellbeing of children. However, the prevalence of abuse during this period is high and its impact on the long-term development of the child are far-reaching making it a significant public health issue. In the last twenty years a number of interventions have been developed to support vulnerable parents with infants at risk during these important periods, with the most recent interventions being underpinned by mentalization theory. While recent research highlights the potential importance of maternal mentalizing capacities in the occurrence of maltreatment during this period, little is currently known in terms of the effectiveness and mechanisms of change of mentalization-based interventions aiming to improve outcomes for vulnerable parents at risk of child maltreatment.

Objectives: This research aimed to enhance global initiatives in preventing child maltreatment by concentrating on the crucial period spanning from pregnancy to infancy, which has been identified as an important window of opportunity for effective prevention measures. The objectives of this research were to: systematically review the effectiveness of interventions offered to mothers during the perinatal period that explicitly aim to improve their mentalization, as well as to identify their most common intervention components; qualitatively analyse the perceptions of key stakeholders regarding the impact and mechanisms of change of one such perinatal mentalization-based intervention for pregnant women at-risk of child removal (The Daisy Programme); and to identify the mechanisms of change and parents' contexts that influence the outcomes of a mentalization-based intervention offered to parents of infants at risk of child maltreatment (The Lighthouse Parenting Programme).

Methods: This thesis employed three methodological approaches to address these objectives. First, a systematic review and meta-analysis was conducted to examine the effects of mentalization-based interventions offered to mothers from pregnancy to the first year postnatal. This analysis examined the effectiveness of interventions in improving maternal mentalization and parent-infant interaction; moreover, it aimed to identify the components of mentalization based interventions in the perinatal

period using thematic analysis. Second, a thematic analysis of a series of in-depth interviews with service users, practitioners, and other stakeholders (primary data) was carried out to explore the impact and mechanisms of change of, the Daisy Programme, a perinatal mentalization-based programme for mothers at risk of having their children removed. Third, a realist evaluation was conducted analysing secondary data from the Supporting Parents Programme RCT study (which evaluated the Lighthouse Parenting Programme) using a mixed methods approach, which included pre- and post-intervention data and a qualitative analysis of end-of-treatment interviews to identify context-mechanism-outcome patterns associated with best and worst outcomes.

Results: (1) The systematic review and metanalysis of twelve studies (RCTs), provided a total of 829 participants. Meta-analyses showed that mentalization based interventions during the perinatal period had a small significant effect in improving parental reflective functioning (Standardized Mean Difference [SMD]: 0.19, 95% CI [0.02, 0.36]), and small significant effects on infant attachment security (OR: 1.86; 95% CI [1.20, 2.87]) and maternal depression (SMD: -0.16; 95% CI [-0.31, -0.0]). However, after running a sensitivity analysis the effect on parental reflective functioning disappeared. Through inductive analysis we identified (a) components that provide support or information to parents, and (b) components that promote the strengthening of relationships. (2) Results from the qualitative study indicated that key stakeholders (n=15), including service users; providers and wider professionals, felt that the programme helped mothers to improve their relationships, to gain confidence, and to reflect on their mistakes and the need for change. The four main aspects of the programme that stakeholders identified as having led to these changes were: the relational focus of the intervention, the offer of support adapted to parents' individual needs and circumstances, the support provided to make sense of the past, and the practical support offered. (3) Results from the realist evaluation (n=8) provide some evidence to suggest that the parents with fewer external pressures exhibited positive changes in mistrust, while those with higher levels of childhood adversity coupled with external pressures had less favourable overall outcomes. Significant mechanisms included the

safety and empathy of the group, support received to mentalize others, and learning from others' experiences. The online delivery format received mixed feedback.

Conclusions: The findings of this research suggest that mentalization-based parenting interventions that are delivered during the perinatal period can have a positive effect on parental reflective functioning, infant attachment, and maternal depression. However, these results should be interpreted with caution due to the risk of bias of some of the included studies. Further research is needed to assert their value in supporting vulnerable mothers in this phase.

Data regarding the perceptions of key stakeholders on the impact of the Daisy programme (a newly developed perinatal mentalization-based intervention), suggest that it was perceived to be an important source of support in promoting change for pregnant women with histories of child removal. It therefore seems to be a promising perinatal intervention for pregnant women in these circumstances. However further quantitative evidence is needed to evaluate its effectiveness and impact.

Finally, findings from the realist evaluation stress the importance of considering contextual factors and individual needs in designing interventions to prevent child maltreatment among vulnerable parents with infants at risk of maltreatment. Further research is needed to validate and expand upon these findings, particularly regarding external pressures, adverse childhood experiences and alternative delivery formats.

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Publications and presentations arising from this thesis

The following manuscripts arose directly from this thesis:

Fernandez, A. and Barlow, J. (2023a) 'Promoting reflective functioning during the perinatal period: A systematic review and metanalysis'. Submitted to *Journal of Reproductive and Infant Psychology*.

Fernandez, A. and Barlow, J. (2023b) 'New parenting opportunities for mothers with history of child removal: a qualitative exploration of key stakeholders' perspectives of the impact of a perinatal mentalization-based intervention'. Submitted to *Child Abuse Review*.

Fernandez, A and Barlow, J. (in preparation) A realist evaluation of an innovative theory-based intervention offered to parents with infants at-risk of maltreatment: what mechanisms and parents' contexts influence better outcomes?

The results, analyses, and methodologies used for this thesis were presented and received feedback at the following academic seminars and conferences:

(2) "Mentalization-based interventions during the perinatal stage: Systematic review on their effectiveness in improving Reflective Functioning", 18th World Congress for the World Association for Infant Mental Health, Dublin, Ireland, July 2023.

(3) "Intervenciones basadas en mentalización para la mejora de la función reflexiva en la etapa perinatal", 7th Ibero-American Attachment Network Conference, Lima, Peru, November 2022

(4) "Pregnant women at risk of child removal: Impact evaluation of an intensive attachment and mentalization based perinatal programme", CEBI Research Group, Department of Social Policy and Intervention, Oxford, UK, November 2021.

Declaration of authorship

I, Ana Fernandez Jondec, herby declare that this thesis is my own work, except otherwise stated.

Signed 

Date: 19th April 2024

Place: London, United Kingdom

Table of Contents

THESIS ABSTRACT **2**

ACKNOWLEDGEMENTS **5**

PUBLICATIONS AND PRESENTATIONS ARISING FROM THIS THESIS **7**

DECLARATION OF AUTHORSHIP **8**

I. INTRODUCTION **15**

1. Maltreatment of infants 15
2. Maltreatment during pregnancy 16
3. Policy responses to child maltreatment 16
4. Thesis focus, objectives, and structure 17

II. LITERATURE REVIEW **20**

1. Child maltreatment and neglect during pregnancy and infancy 20

1.1. Periods of high risk: prevalence and consequences *21*
1.2. Vulnerable children, vulnerable parents *25*

2. Parental mentalization in the parent-infant relationship and its potential role as a mechanism of change . 27

2.1. The concept of mentalization *27*
2.2. What is parental mentalization? *28*
2.3. Operationalisations of parental mentalization *30*
2.4. Mentalization and trust when supporting parents at-risk *38*
2.1. Cultural variations in parental mentalization *40*

2. Interventions during the perinatal period and early childhood aiming to improve interaction and reduce inadequate caregiving 42

2.1. Generic antenatal-perinatal interventions *42*
2.2. Interventions that target the parent-infant relationship *45*
2.3. Interventions that target parents' mentalization in populations with psychosocial risk *48*
2.4. Summary *52*

III. METHODOLOGY **52**

1. Analytical strategy 52

1.1. Systematic Review with Meta-Analysis *52*
1.2. Qualitative data analysis: thematic analysis *54*
1.3. Realist evaluation *55*

2. Why use a multimethod approach to understand mentalization based interventions? 58
3. Challenges measuring parental mentalization 59

3.1. Difficulties capturing the multidimensional nature of mentalization *59*
3.2. Validity and stability *60*
3.3. Interpretation and clinical sensitivity *61*
3.4. Complexity and required resources *61*

4. Ethical considerations 62

4.1. Ethical and regulatory compliance ... *62*
4.2. Process of informed consent ... *63*
4.3. Privacy and confidentiality ... *63*
4.4. Interviews on sensitive topics ... *64*
4.5. Researcher's safeguarding knowledge and training ... *64*
4.6. Possibility of psychological distress ... *64*
4.7. Risk to researcher ... *65*
4.8. Incidental findings ... *65*
IV. PAPER 1: PROMOTING REFLECTIVE FUNCTIONING DURING THE PERINATAL PERIOD: A SYSTEMATIC REVIEW AND META-ANALYSIS OF MENTALIZATION-BASED INTERVENTIONS ... **66**
1. INTRODUCTION ... 68
1.1. Maternal reflective functioning ... *68*
1.2. Perinatal and early parenting interventions ... *71*
1.1. Mentalization based interventions in the perinatal period ... *71*
1.2. Rationale for review ... *73*
2. METHODS ... 74
2.1. Eligibility criteria ... *74*
2.2. Search strategy ... *74*
2.3. Selection of studies ... *75*
2.4. Data extraction and management ... *75*
3. RESULTS ... 77
3.1. Results of the search ... *77*
3.2. Risk of bias in included studies ... *85*
3.3. Narrative analysis of the intervention components ... *85*
3.1. Effects of interventions: metanalysis and single study results ... *90*
3.2. Sensitivity analysis ... *92*
3.3. Summary of findings ... *93*
4. DISCUSSION ... 95
4.1. Limitations ... *98*
4.2. Implications for future practice ... *99*
4.3. Directions for future research ... *99*
5. CONCLUSION ... 100
V. PAPER 2: NEW PARENTING OPPORTUNITIES FOR MOTHERS WITH HISTORY OF CHILD REMOVAL, A QUALITATIVE EXPLORATION OF KEY STAKEHOLDERS' PERSPECTIVES OF A PERINATAL MENTALIZATION-BASED INTERVENTION ... **101**
1. INTRODUCTION ... 103
1.1. Child protection during the perinatal period ... *103*
1.2. Emotional neglect in infancy ... *103*
1.3. Risk of maltreatment and child removal during the perinatal period ... *105*
1.4. Protective factors ... *107*
1.5. Mentalization based models of working ... *108*
1.6. The intervention ... *109*
2. METHODS ... 111
2.1. Study design ... *111*
2.2. Aims and objectives ... *111*
2.3. Participants ... *111*

2.4. Data collection *112*
2.5. Data management and analysis *113*
2.6. Ethical considerations *113*
3. Results 115

3.1. Participants characteristics *115*
3.2. Perceptions of the programme's impact *117*
3.3. Perceptions of the programme's mechanisms of change *129*
4. Discussion 151

4.1. Impact *151*
4.2. Mechanisms of change *153*
4.3. Strengths and limitations *158*
4.4. Implications for future research, ... *159*
5. Conclusion 160

VI. PAPER 3 A REALIST EVALUATION OF AN INNOVATIVE INTERVENTION OFFERED TO PARENTS WITH INFANTS AT-RISK OF MALTREATMENT: WHAT MECHANISMS AND PARENTS' CONTEXTS INFLUENCE BETTER OUTCOMES? 161

1. Introduction 163

1.1. The parent-infant relationship and child development *163*
1.2. Parents' risk and protective factors *164*
1.3. Mentalization and trust in parents at risk of maltreatment *166*
1.4. The Lighthouse Parenting Programme: theory of change *169*
1.5. Research objectives and questions *171*
1.6. Ethical approval *171*
2. Methods 172

2.1. Justification for using a realist evaluation approach *172*
2.2. Setting *172*
2.3. Intervention *173*
2.4. Evaluation design *176*
2.5. Recruitment: Participant inclusion criteria *176*
2.6. Data collection *176*
2.7. Data analysis *178*
3. Results 181

3.1. CMO configurations *181*
3.2. Outcome 1: Low risk and improved bond with the child *185*
3.3. Outcome 2: High abuse risk and deteriorated bond with child *191*
3.4. Two cases with similar historical context but different outcomes: the role of the protective external factors 196
4. Discussion and conclusions 199

VII. DISCUSSION 209

1. Overview of DPhil findings 209

1.1. The impact of mentalization based interventions on parents and their infants *210*
1.2. Mechanisms of change of MBT interventions from pregnancy to infancy *216*
1.3. Possible parental characteristics influencing capacity to benefit from MBT interventions *225*
2. Limitations and strengths 229

2.1. Limitations of the study *229*
2.2. Strengths *233*
3. IMPLICATIONS FOR PRACTICE 234
4. DIRECTION FOR FUTURE RESEARCH 236
VIII. CONCLUSION 238
BIBLIOGRAPHY 240
APPENDICES 284
APPENDIX 1.1. ETHICS APPROVAL FROM UNIVERSITY OF OXFORD. DREC OF THE DEPARTMENT OF SOCIAL POLICY AND INTERVENTION, UNIVERSITY OF OXFORD (SPI_DREC_20-21-004) 284
APPENDIX 1.2. ETHICS APPROVAL FROM UNIVERSITY OF OXFORD. I-DREC OF THE SOCIAL SCIENCES AND HUMANITIES DIVISION, UNIVERSITY OF OXFORD (R79282/RE001) 285
APPENDIX 1.3. ETHICS APPROVAL FROM UNIVERSITY OF OXFORD. DREC OF THE DEPARTMENT OF SOCIAL POLICY AND INTERVENTION, UNIVERSITY OF OXFORD (SPI_C1A_23_017) 286

List of figures

Figure 1 PRISMA flow chart 77

Figure 2 Risk of bias of included studies 85

Figure 3 Forest plot of meta-analysis for maternal reflective functioning 90

Figure 4 Parent-infant interaction at post-intervention 91

Figure 5 Maternal depression at post-intervention 92

Figure 6 Infant secure attachment at post-intervention 92

List of tables

Table 1 Description of included studies 80

Table 2 Interventions characteristics 84

Table 3 Intervention components 89

Table 4 Summary of findings table 94

Table 5 Service users characteristics 116

Table 6 External professionals characteristics 117

Table 7 Perceptions of multiple stakeholders on the impact 118

Table 8 Perceptions of multiple stakeholders on the mechanisms of change of the Daisy Programme 130

Table 9 Hypothesised CMO elements 180

Table 10 Context – Mechanisms – Outcomes configurations 184

Table 11 Outcome 1a: Low abuse risk, improved bonding to the child and Low mistrust - Context 1a: Challenging external context and limited internal context difficulties 187

Table 12 Outcome 1b: Low abuse risk and Low mistrust - Context 1b: Challenging internal context BUT less external context difficulties 190

Table 13 Outcome 2a: High abuse risk, worsened bonding to the child and worsened high mistrust – Context 2a: Historical vulnerability and challenging external context. 194
Table 14 Outcome 2b: High abuse risk, worsened bonding to the child, and high but improved mistrust – Context 2b: Challenging internal and external context but no historical vulnerability 198

I. Introduction

Child maltreatment is estimated to affect over half of children worldwide (Hillis *et al.*, 2016). A meta-analysis of the prevalence of maltreatment across the globe estimated rates of 12.7% for sexual abuse, 16.3% for physical neglect, 18.4% for emotional neglect, 22.6% for physical abuse, and 36.3% for emotional abuse (Stoltenborgh *et al.*, 2015).

1. Maltreatment of infants

Maltreatment in infants under one years of age is of particular concern because it is the age group with the highest rate of victimization (U.S. Department of Health and Human Services, 2012, 2015) and the age group with the highest –abuse or neglect related– fatality rates (ONS, 2020; U.S. Department of Health and Human Services, 2015). The current COVID-19 pandemic has further highlighted the vulnerability of infants to maltreatment with reports in the UK of a 20% rise in recorded rates of non-accidental injury, as well as higher rates of non-accidental fatalities in under-one-year olds, during this period (Weale, 2020).

Maltreatment during infancy is associated with clearly visible outcomes such as physical injuries and death. For example, it has been reported that in the UK during the year 2020 sixty-four babies under the age of one suffered non-accidental injuries with eight of them dying as a result of such abuse (Weale, 2020). However, WHO (1999) suggests that emotional abuse and neglect are less visible forms of maltreatment that focus on the 'failure to provide' an adequate environment for the child's emotional and social development. Emotional maltreatment in this period has been found to be particularly detrimental in terms of critical aspects of development, and especially for the shaping of key brain structures (Teicher and Samson, 2016). In addition, the literature suggests that adverse childhood experiences such as maltreatment impacts not only the central nervous system but also the neuroendocrine and immune systems (Danese and McEwen, 2012). Furthermore, suboptimal parental responses have been found to increase the likelihood of an infant developing a disorganised pattern of attachment (Moran *et al.*, 2008, Madigan *et al.*, 2011), which in turn is associated with significant

forms of psychopathology such as conduct/oppositional defiant disorders (Theule *et al.*, 2016) and difficulties with emotional self-regulation (Pallini *et al.*, 2018).

2. Maltreatment during pregnancy

Growing evidence supports the notion that parenting begins before birth (Glover and Capron, 2017) with a range of health behaviours that are adopted on the part of the mother to protect the unborn baby including adopting a healthy diet; and stopping drinking and/or smoking (Glover and Capron, 2017). Similarly, it has been recognised that the bonding and maternal representations that occur during pregnancy are associated with the parent's bonding and adjustment to the baby postnatally, the parent-infant relationship, and the child's attachment classification (Glover and Capron, 2017; Foley and Hughes, 2018; Huth-Bocks, *et al.,* 2011). Although the term maltreatment is seldom used in pregnancy reflecting in part the legal status of the unborn baby, a range of prenatal behaviours have been identified that can harm or put at risk the fetus and long-term wellbeing of the baby. Research has identified multiple sources of potential harm, the most prominent being maternal substance abuse, exposure to IPV and exposure to toxic stress (Guille and Aujla, 2019, Murray *et al.*, 2020, Graignic-Philippe *et al.*, 2014) with significant numbers of infants being exposed to these risks (Mullally *et al*., 2011, Fitzpatrick *et al.*, 2015, Ko *et al.*, 2016, Halim *et al.,* 2018). Along with the potential physical harm to the child, evidence shows that these prenatal behaviours are associated with low prenatal bonding and more negative prenatal representations, as well as parental outcomes at post-birth such as low bonding and risk in the parent-infant relationship (Marjo, *et al*., 2012; Rossen, *et al.,*2016; Sachiko, *et al.,* 2016; Isosavi *et al.*, 2015)

3. Policy responses to child maltreatment

In response to the problem of violence against children of any age, international agencies such as the UN have published documents such as the Convention on the Rights of the Child (UN, 1989) that recognises the right of children to be protected from all forms of violence inviting its members to protect them through legislation and policies. To support countries in the prevention and treatment of child maltreatment, WHO (2018) launched 'INSPIRE: seven strategies for ending violence against

children'. "P" stands for "Parent and caregiver support" which is aimed at reducing harsh parenting practices and creating positive parent-child relationships. This publication highlights the importance of supporting caregivers using interventions that are underpinned by a recognised theory of change, and in the case of parents with infants, the use of attachment theory (WHO, 2018).

4. Thesis focus, objectives, and structure

In line with the above recommendation, this DPhil thesis will focus on preventing abuse by examining the effectiveness and the mechanisms of change of a number of newly developed interventions based on attachment theory and focused on promoting parental mentalization. Mentalization, defined as the capacity and disposition to consider oneself and other people in terms of mental states such as feelings, beliefs, intentions, and desires (Fonagy *et al.*, 2002), focuses on the representational aspects of attachment and posits that maternal caregiving behaviours reflect the mother's attachment status and her related capacity to mentalize the child. Parental mentalization is as such viewed as being the mechanism that mediates the mother's internal representations of her own attachment and her caregiving behaviour (Slade, 2005).

This doctoral research aims to address these important gaps in the existing literature using a number of rigorous research methods that will address some of the limitations of previous studies. First, it is the first literature review and metanalysis of perinatal mentalization-based interventions also offering a narrative analysis of intervention components (**Paper 1)**. Second, it explores the impact and mechanisms of change of a perinatal mentalization-based intervention for mothers at-risk of child removal from the perspective of multiple stakeholders (**Paper2)**. Third, it aims to identify the Context-Mechanism-Outcomes configuration patterns of a mentalization-based intervention for parents with children at risk of maltreatment associated with reduction of infant maltreatment and improvement in parental bonding **(Paper 3)**. To achieve these objectives this study will use three methods (1) a systematic review and meta-analysis; (2) a qualitative study using a thematic analysis,

and (3) a mixed methods realist evaluation, which utilised both quantitative data (i.e., pre-post intervention data) and qualitative data from transcripts of participants interviews.

This DPhil thesis consists of eight chapters including a literature review (Chapter II) and three stand-alone papers (Chapters IV, V and VI) as required by the DPhil-by-publication track at the Department of Social Policy and intervention at the University of Oxford:

Chapter II – Literature review- this provides the context to the thesis describing what we know about maltreatment in the perinatal and infancy periods. This chapter also describes the theory behind the construct of parental mentalization describing some of the main operationalisations and relevant associations with parents' characteristics and infants development. It also offers a synthesis of available interventions to support parents during pregnancy and infancy including mentalization-based interventions.

Chapter III – Methodology – this describes the research design and the analytical strategy to respond the research questions. It explains how the multimethod approach allows to better understand complex interventions for at-risk populations. It also discusses identified challenges with the measurement of parental mentalization and ethical considerations when conducting research with vulnerable populations.

Chapter IV – (DPhil paper 1) presents a review of the evidence on mentalization-based interventions targeting the perinatal period and infancy. It offers a narrative analysis of the components of such interventions and a metanalytic analysis of the effectiveness of the intervention. The results of both the meta-analysis and component analysis are presented, and the limitations and implications of these results are explored in the discussion.

Chapter V – (DPhil paper 2) explores the perspectives of multiple stakeholders regarding the impact and mechanisms of change of a perinatal mentalization-based intervention aiming to support pregnant

women at-risk of child removal to improve their capacity to look after their future infants. The results are presented, and the limitations and implications of these results are explored in the discussion.

Chapter VI – (DPhil paper 3) presents a realist evaluation of a mentalization-based parenting intervention designed for parents at risk of abuse. Utilizing of a subsample of parents of infants from the Supporting Parents Programme RCT study this chapter addresses the programme theory by identifying (1) underlying mechanisms that might contribute to positive outcomes in risk of child maltreatment, parental feelings of bonding, and parental mistrust; as well as (2) the parental contexts that allow parents to benefit the most from such mechanisms. The results are presented in the form of Context-Mechanisms-Outcomes configurations, and the limitations and implications of these results are explored in the discussion.

Chapter VII – Discussion - this provides a summary of the key findings obtained from the three empirical chapters of this thesis. It addresses the strengths and limitations of the study, highlighting its contribution to this field of research, and suggesting new directions for future research and implications for practice.

Chapter VIII – Conclusion – this provides a final synthesis and reflexions of the thesis' key findings and implications.

II. Literature review

1. Child maltreatment and neglect during pregnancy and infancy

The term ‘maltreatment’ is typically used to refer to parenting that occurs after the baby is born. This reflects the legal status of the unborn baby, which has limited recognition in English law having no legal rights until it acquires personhood status at birth. Nevertheless, the law protects the unborn baby in some instances: a pregnancy cannot be terminated after 24 weeks' gestation (Abortion Act 1967), and it is a crime to kill an unborn but viable foetus under the Infant Life (Preservation) Act 1929 (Knight, 1998). Attention has, as such, focused on the behaviours of pregnant women that have been recognised to have a significant and damaging impact on the viable baby in utero. Associations between early environmental influences and later illnesses have been developed by epidemiological research such as the ‘the foetal programming hypothesis’, which proposes that adverse conditions in the womb –i.e. malnourishment or increased concentrations of stress hormones— can trigger complex adaptation processes that can result in permanent changes to the structure and functioning of various organs including the cardiovascular, renal and central nervous systems (Hocher, 2014). This hypothesis has also found support in the growing field of epigenetics, which has found that immunological, molecular, and endocrine mechanisms are triggered by environmental factors leading to changes in gene activity but not in changes to the DNA sequence (Diwadkar, 2016; González-Pardo and Álvarez, 2013). In this sense, women’s experiences and behaviours during pregnancy can increase or reduce gene expression in their babies. For instance, maternal prenatal stress has been found to be an epigenetic trigger that affects foetal brain development and programs risk for emotional dysregulation and mental disorders over the child’s lifetime (Cao-Lei *et al.*, 2016; DeSocio, 2018). Additionally, other health behaviours and social problems during the prenatal stage –such as alcohol or nicotine consumption and intimate partner violence (IVP)— have also been widely documented as a threat to the future development of the child (Flak *et al.*, 2014; Hill *et al.,* 2016).

Maltreatment during infancy is often associated with clearly visible outcomes such as physical injuries and death. For example, it has been reported that in the UK during the year 2020 sixty-four

babies under the age of one suffered non-accidental injuries with eight of them dying as a result of such abuse (Weale, 2020). However, WHO (1999) suggests that emotional abuse and neglect are less visible forms of maltreatment that focus on the 'failure to provide' an adequate environment for the child's emotional and social development. For example, it has been argued that particular types of severely compromised or 'atypical' parent-infant interactions during the first year of life are examples of emotional maltreatment (Barlow, 2012). Research by Lyons-Ruth *et al.* (1999) identified five dimensions of 'atypical' or anomalous parental behaviour: (1) affective errors (i.e. the mother invites the infant to approach verbally but physically takes distance), (2) disorientation (i.e. the mother looks confused or frightened by the infant), (3) physical or verbal negative-intrusive behaviour (i.e. the mother mocks or pulls a part of the infants' body), (4) role confusion (i.e. the mother elicits reassurance from the infant), and (5) physical or verbal withdrawal (i.e. mother holds the infant away from her body with stiff arms). These suboptimal parental responses have been found to increase the likelihood of an infant developing a disorganised pattern of attachment (Moran *et al.*, 2008; Madigan *et al.,* 2011), which in turn is associated with forms of psychopathology such as conduct/oppositional defiant disorders (Theule *et al.*, 2016) and difficulties with emotional self-regulation (Pallini *et al.*, 2018).

1.1. Periods of high risk: prevalence and consequences

1.1.1. Risk in the prenatal period

Parenting begins before the baby is born with a range of changes to maternal behaviours that are designed to protect the unborn infant, and most of which (but not all) involve reducing their exposure to teratogens. The evidence show that chronic alcohol consumption can result in prenatal and postnatal growth disorders, birth defects, developmental and behavioural disorders, cognitive and neuropsychological disorders (Ulrich and Petermann, 2016). The prevalence of Foetal Alcohol Syndrome (FAS) was 120 per 1000 with prenatal alcohol exposure confirmed for all children with FAS, 80% in the first trimester and 50% throughout pregnancy. Children with FAS have almost

invariably present with microcephaly (69%), weight deficiency (85%) and facial dysmorphology and central ner0vous system abnormality/impairment in three to eight domains (Fitzpatrick *et al.,* 2015).

Drug consumption and substance abuse during pregnancy has also been found to have detrimental effects on the foetus such as low birth weight, preterm birth, growth restriction, seizures and foetal death (Wen *et al.*, 2006; Wright *et al.*, 2015; Hayes *et al.,* 2012; Pinto *et al.*, 2010). Another possible outcome of foetal drug exposure is neonatal abstinence syndrome (NAS) (Kocherlakota, 2014) which has shown a significant increase in prevalence. A study in 28 states of the US found that the overall incidence of NAS increased almost 300% between 1999-2013 from 1.5 to 6.0 cases per 1000 hospital births (Ko *et al.,* 2016).

Research has also emphasised the impact of intimate partner violence (IPV) during pregnancy in terms of adverse effects for the foetus and child. These pregnancies are more likely to result in miscarriage and stillbirth (Afiaz *et al.*, 2020; Gebreslasie *et al.*, 2020; Rao *et al.*, 2017) and babies are more likely to be premature, have low birthweight and to be small for gestational age (Shah and Shah, 2010; Hill *et al.*, 2016; Donovan *et al.*, 2016; Do *et al.*, 2019). Moreover, studies have found that IPV during pregnancy predicts subsequent child maltreatment in new-borns and is associated with mother to infant bonding failure at one month after birth (Chan *et al.,* 2012; Kita *et al.*, 2016). Its prevalence varies greatly between high-income countries (HIC) and low-and-middle-income countries (LMIC) with the latter presenting a higher prevalence. For instance, a meta-analysis of studies conducted with Chinese populations – which included thirteen studies with a total of 30,665 individuals— revealed that 7.7% (95% CI: 5.6–10.1%) pregnant women experience IPV in China (Wang *et al.,* 2017). In contrast, a systematic review on IPV during pregnancy in low and lower middle-income countries found that during pregnancy the prevalence for physical IPV ranged between 2% and 35%; sexual IPV ranged between 9% and 40%; and psychological IPV ranged 22—65% (Halim *et al.,* 2018).

When parents engage in behaviours, such as the ones described, which are regarded as representing a significant risk to the unborn/newborn child often result in being referred to Children's Social Care

Services. Parents' capacity to care safely for the future infant is assessed and a plan is laid out to ensure the child's safety which could include further support and assessment or in some instances the removal of the child from the parent's custody.

1.1.2. Maltreatment risk in infancy

Research globally has found that infancy represents the key developmental stage when maltreatment is most likely to occur and when such maltreatment –physical/emotional abuse or neglect—is most likely to result in fatalities (ONS, 2020). Moreover, the data reveals that infants under the age of 1 year old are the most vulnerable of this group. For example, in the UK, 13% of child protection registrations are infants under the age of one (NSPCC, 2019). In the U.S. where one third of maltreated children are between 0 and 3 years of age (U.S. Department of Health and Human Services, 2012, 2015), it is reported that infants under 1 year of age present the highest rate of victimization – 23.1 per 1 000 children—compared to the rates 11.8, 11.4, and 11.0 out of 1000 children for ages 1, 2 and 3 respectively (U.S. Department of Health and Human Services, 2015). Regarding fatalities the US reports that 81% of child fatalities due to abuse or neglect occur in children between 0 and 3 years of age (U.S. Department of Health and Human Services, 2015). The highest rates of fatalities in this group are reported for infants younger than one year of age (18.09 per 100,000 babies) compared to other age groups.

The occurrence of child maltreatment in the first years of life can have a long-lasting impact on the child for a number of reasons. First, the early years are a sensitive period of exposure for brain configuration and development in which key structures are especially vulnerable (Teicher and Samson, 2016). Abuse and neglect are considered "toxic" stressors, defined as chronic and uncontrollable events that result in a strong, frequent or prolonged activation of the body's stress management system and is experienced without the access to a caring adult that can help the child to cope (National Scientific Council on the Developing Child, 2014). Exposure to toxic stress early in life affects the functioning of three integrated systems: the immune system (which protects against

disease), the neuroendocrine system (which releases hormones to control important bodily functions), and the central nervous system (which comprises the brain and spinal cord) (Danese and McEwen, 2012). A recent review of the literature found, for instance, that maltreatment was associated with consistent morphological alterations in anterior cingulate, dorsal lateral prefrontal and orbitofrontal cortex, corpus callosum and adult hippocampus; and with enhanced *(Amy)*gdala response to emotional faces and diminished striatal response to anticipated rewards in later childhood or adulthood (Teicher and Samson, 2016). Second, maltreatment in the early years negatively impacts the development of an organised attachment strategy. A large meta-analysis (Van Ijzendoorn *et al.,* 1999) –which included 80 studies on more than 100 samples and 6,282 parent-child dyads— found that around 80% of maltreated children presented with a disorganised attachment (DA). These rates have been confirmed by later studies (i.e., Cyr *et al.*, 2010). Children with organised patterns of attachment – secure or insecure – have a coherent strategy to cope with stressful situations using their caregivers as a source of regulation (Main and Hesse, 1990). Children with a disorganised attachment, however, present an incoherent pattern of coping behaviour because the source of fear, which activates the fight or flight system, is also the attachment figure who is meant to provide security or regulation. Such paradoxical conflict represents what has been defined as 'fear with no solution' (Main and Solomon, 1990) which is expressed through the infants' behaviour – i.e., approaching the carer whilst turning their head away, freezing or moving in slow motion (Main and Solomon, 1986). In one of the earliest reviews Van Ijzendoorn (1999) reported that disorganised attachment has an impact on the stress reaction of infants finding that the levels of cortisol in the saliva of one-year-old disorganised infants was higher than cortisol found in organized infants. The review also found associations between DA and externalising behaviour difficulties – such as child aggressive behaviour— and dissociative tendencies later in life. Recent meta-analyses have confirmed that disorganised infants are at greater risk for externalizing problems –compared to organised subtypes—but that disorganisation is not significantly associated with internalizing problems (Groh *et al.,* 2017). A meta-analysis –which included six studies and 262 subjects— also found strong associations between DA and conduct/oppositional

defiant disorders (Theule *et al.,* 2016), attention problems in later childhood (Pallini *et al.*, 2019) and lower top-down self-regulation temperament traits compared with children with organised attachment (Pallini *et al.*, 2018).

1.2. Vulnerable children, vulnerable parents

1.2.1. Parental characteristics that heighten the risk of inadequate caregiving

Research has highlighted some of the parental characteristics that can put them at greater risk of harm to the unborn baby, and suboptimal caregiving to the infant after birth.

During the antenatal period, the most frequent characteristics of parents that engage in (short and long-term) harmful behaviours such as substance abuse or IPV are: (1) experience of having been maltreated as a child, (2) young maternal age, (3) low socioeconomic status, (4) mental health difficulties, (5) stress, and (6) lack of social support (Mpelo *et al.*, 2018; Kennare *et al.*, 2005; Leonardson and Loudenburg, 2003; Shamu *et al.*, 2011; Nguyen *et al.,* 2018; Charles and Perreira, 2007). Additionally, to these psychosocial factors, the evidence suggests that parents' cognition and emotion during pregnancy also plays a role in their capacity to provide their infant with optimal care at post-birth. For instance, literature reviews suggest that mothers' bonding with the fetus is associated with the quality of the parent-infant interaction (Foley, 2018) and with developmental outcomes such as infant temperament, adaptative behaviour and milestone attainment (Branjerdporn, *et al.,* 2017). Other studies have focused on maternal capacities such as mentalization, which refers to a person's capacity and disposition to consider oneself and other people in terms of mental states such as feelings, beliefs, intentions, and desires (Fonagy *et al.,* 2002). For instance, a recent study explored the trajectories of maternal mentalization from pregnancy to infancy and found associations between maternal prenatal reflective functioning (RF) – an operationalization of mentalization– and child social-emotional competence at age 2 (Lindblom, *et al.,* 2022). Moreover, longitudinal studies have highlighted the role of reflective functioning as an important mediator between maternal history of

child abuse and neglect and infant disorganization and child developmental problems (Berthelot *et al.,* 2016; Garon-Bissonnette *et al.*, 2022).

During childhood, similar parental risk factors have been highlighted by the evidence. The most recent evidence from an umbrella review of eleven metanalyses (with total sample sizes ranging from approximately <500 to over 8 500) identified parents with (1) history of child abuse, (2) experience of IPV and, (3) significant socioeconomic deprivation and (4) insecure attachment patterns, are at highest risk of maltreating their children (van Ijzendoorn *et al.,* 2020). In addition to these findings, it has been suggested that parental substance abuse and mental health difficulties are important contributors to the risk of child maltreatment. For instance, a comprehensive systematic review and meta-analysis conducted by Hatzis, and colleagues (2017) concluded that substance misuse had an impact on the quality of mothers' caregiving, and specifically maternal sensitivity and child responsiveness. Furthermore, evidence shows that parental history of drug abuse increases the risk of child maltreatment (Walsh *et al.,* 2003) with significant pathways being identified from maternal history of abuse –physical or sexual— to substance use problems to offspring victimization (Appleyard *et al.*, 2011). Similarly, parents with mental health difficulties –such as depression, mania and schizophrenia— have also been found to be more likely to engage in any type of abuse (Walsh *et al.,* 2002) as well as to exhibit more disruptive parenting behaviours which negatively impact the parent-infant relationship and the development of an organised attachment strategy in the infant (Lovejoy *et al.*, 2000; Wan and Green, 2009; Erickson *et al.*, 2019). For instance, a metanalysis on maternal depression and parenting behaviour found an association between maternal depression and negative/coercive maternal behaviour as well as maternal disengagement and low levels of activity with the infant (Lovejoy *et al.*, 2000).

The identified risk factors are coherent with evidence from the child protection field. For example, research shows that women returning to child care proceedings are characterized by: (1) history of exposure to multiple adverse experiences during childhood (with 56% having an ACE of 4 or more)

such as neglect, emotional abuse, physical abuse, and/or sexual abuse which often involved their caregivers; (2) experience of being in care as children (40%) with multiple placement moves; and (3) pregnancy before 20 years of age (64%) (Broadhurst *et al.*, 2017).

1.2.2. Parental factors that protect parents from abusing or neglecting their children

At a community-level, research has identified that factors such as the availability of health and social services for parents and families as well as neighbourhood processes such as social cohesion and control, can provide a supportive environment that promotes positive parenting (Austin *et al.*, 2020).

At an interpersonal level, research suggests that caregivers' social support through their relationship with a romantic partner, family, and friends, has been found to reduce the likelihood of engaging in maltreatment (Austin, Lesak and Shanahan, 2020). Furthermore, evidence suggests that having positive support from family also reduces the likelihood of families re-entering the child welfare system (Davidson *et al.*, 2019). These findings are echoed by the evidence reported by Ward (2019) which suggests that a key factor in distinguishing parents at risk of child removal who make and sustain positive changes from those who do not is the presence, development, and restoration of positive relationships with partners, family, friends, and professionals in the system and wider community. These relationships, if sustained, provide these parents with both social/emotional and material support. Similar findings were reported by a study on mothers with recurrent child proceedings in which the women that demonstrated capacity for positive change had in common that: (1) they had the ability to reflect and learn from experience, (2) they achieved positive changes in intimate partner relationships and social networks, (3) they were offered better professional help and making better use of that help; and (4) they expressed their desire to 'do better' for their children (Broadhurst *et al.,* 2017).

2. Parental mentalization in the parent-infant relationship and its potential role as a mechanism of change

2.1. The concept of mentalization

The concept of mentalization was developed by Bateman and Fonagy (2004) in the context of developing a theory and intervention for borderline personality disorder, integrating theoretical perspectives from psychoanalysis, developmental psychology, and cognitive neuroscience. Mentalization is defined as the mental process by which an individual implicitly and explicitly interprets the actions of himself or herself and others as meaningful based on intentional mental states such as personal desires, needs, feelings, beliefs, and reasons (Bateman and Fonagy, 2004). In other words, mentalization can be implicit or explicit, related to both the self and the other, and involves both cognitive and affective aspects (Choi-Kan and Gunderson).

The mentalization model relies on developmental psychology and attachment theories. In this sense, it is proposed that mentalization develops in the context of secure early attachment relationships aided by the primary caretaker's marked and contingent mirroring of the infant's internal states (Fonagy and Allison, 2013).

Nowadays the concept of mentalization is used more widely in different clinical domains, such as high-risk parent-infant dyads, eating disorders, and school-based communities, etc. and it has been argued that it is an important component of psychotherapeutic interventions (Allen, Fonagy and Bateman, 2008; Ludemann, Rabung and Andreas, 2021).

2.2. What is parental mentalization?

Parental mentalization refers specifically to parents' capacity to understand their children's internal experiences, their capacity to build a representation of their children considering their mental states and to take into account the impact of their own mental states on their children's (Shai and Meins, 2018). In this sense a mentalizing parent will be able to recognize the mental agency of their child, to imagine the child's mental states, and to connect their child's mental states with observable behaviours accurately and meaningfully (Senehi, Brophy-Herb and Vallotton, 2018).

Mentalization theory suggests caregivers who can accurately and flexibly think about their children are better able to interpret their emotional states (Arsen and Fonagy, 2012). Parents attempts to find meaning to the child's behaviour is believed to promote self-regulation in the child and supports the development of secure relationships (Fonagy and Luyten, 2009). Parents' capacity to mentalize in relation to their children is expressed as early as from the perinatal period. Research has found evidence that prenatal mentalization predicts mentalization post birth, albeit not perfectly (Arnott and Meins, 2007; Arnott and Meins, 2008; Steele and Steele, 2008) often tending to naturally increment when the baby is born (Sadler et al., 2013). A theoretical explanation for this is that further mentalization is developed in parents through their interaction with the baby, their growing confidence and the dynamic development of the mother's representation of the relationship and of herself as a mother ((Fonagy *et al.*, 1991).

Research has established links between parental mentalization and infant attachment organization and parental behaviour (including parental sensitivity and affective communication) (Grienenberger *et al.*, 2005; Slade *et al.,* 2005; Kelly *et al.*, 2005; Stacks *et al.*, 2014; Ensink *et al.*, 2016). For instance, a metanalysis from Zeegers and colleagues (2017) which included multiple measures of parental mentalization (reflective functioning, mind-mindedness and insightfulness) found that parents' capacity to mentalize their children was significantly associated with their children's attachment security (r=30). Furthermore, some studies suggest that parental mentalization plays a role in counteracting the effects of risk factors such as maternal experience of child abuse on parent behaviour and infant attachment (Schultheis *et al.,* 2019; Senehi *et al.*, 2018; Heron-Delaney *et al.,* 2016; Wong, 2012; Jessee, 2012; Stacks *et al.,* 2014). In contrast, low maternal mentalization has been associated with more negativity, overcontrolling and intrusive parenting behaviour (Stacks *et al.,* 2014; Borelli *et al.,* 2017), with extremely insensitive parenting which includes aggressive behaviour (Ensink *et al.*, 2017). Similarly, compromised parental mentalization has been associated with behavioural problems and externalising behaviours in children (Ensink et al., 2016; Ha, Sharp and Goodyer, 2011; Smaling et al., 2017; Benbassat and Priel, 2012; Ha et al., 2011; Meins et al.,

2013) as well as with attention difficulties, social withdrawal, anxiety, and dysfunctional mother-child interactions (Esbjørn et al., 2013; Fonagy et al., 2002; Smaling et al., 2016).

2.3. Operationalisations of parental mentalization

The need to test the theoretical construct of mentalization within the research context led to the emergence of a range of operationalizations of the concept and related measures such as parental reflective function (Slade *et al*., 2005), mind-mindedness (Bernier and Dozier, 2003; Meins *et al.*, 2001) and embodied mentalizing. This section will describe these operationalisations trying to clarify their similarities and differences.

2.3.1. Parental reflective functioning (PRF)

2.3.1.1. Definition

Parental reflective functioning (PRF) refers to the capacity to reflect upon the parent's own mental experiences as well as those of the child and the nature of their relationship (Fonagy *et al.*, 1991). This operationalization is meant to be an overt manifestation of an individual's mentalizing capacity.

2.3.1.2. Measurement

In order to measure PRF a scale was developed in parallel to the mentalization conceptualization by Fonagy and Bateman (2004). The reflective functioning scale (RFS) (initially named the Self-Function scale) was designed as a coding system initially to be applied to the Adult Attachment Interview AAI (unpublished coding manual by George, Kaplan and Mein, 1985). Later on, new versions of the scale were developed, being the most recent and most frequently used version the PDI-RF which is applied to the Parent Developmental Interview (PDI; Aber *et al.*, 1985; PDI-R; Slade *et al.*, 2004), a 45-question clinical interview in its original form. The PDI's questions explore mother's representations of her child, herself as a parent, and her relationship with her child. The scale, which goes from -1 (negative RF) to 9 (high RF), assesses four dimensions: (1) Awareness of the nature of

mental states, (2) Explicit effort to tease out mental states underlying behaviour, (3) Recognition of developmental aspects of mental states and (4) Mental states in relation to the interviewer (Sharp and Fonagy, 2008). The scale is also used with the Pregnancy Interview (PI), a version of the PDI which aims to evaluate the mental representations of the mother about herself being pregnant and about the fetus, and her expectations of her future as a parent. The RFS has also been applied to the Working Model of the Child Interview (WMCI; Zeanah *et al.*, 1986, Unpublished), which focuses specifically on the maternal representations of the infant. The PDI is often considered the gold standard narrative-based measure to assess parental reflective functioning due to its well-stablished general validity and reliability (Schiborr *et al.* 2013). However, limitations have been highlighted by researchers particularly regarding its clinical sensitivity and complexity in usage. In this sense the PDI-RF has been criticized as being too simplistic in reflecting the complexities of parental mentalization (Katznelson, 2014), such as being unable to adequately capture the dyadic quality in parent–child relationships (Grey and Farnfield, 2017) because it only generates one single score.

In recent years, two self-report questionnaires have also been developed in an attempt to measure the concept in a more time and cost-effective way: The Parent Reflective Functioning Questionnaire (PRF) and the Prenatal Parent Reflective Functioning Questionnaire (P-PRFQ). A preliminary validation study of the PRFQ's was carried out by Luyten and colleagues in 2017 in a sample of mothers with infants aged 0-3. This study used factor analysis which confirmed three factors that explained 31.24% of the variance, resulting in three subscales: (1) Pre-Mentalizing (PM) which captured a non-mentalizing stance, malevolent attributions, and an inability to think about the subjective world of the child; (2) Certainty about Mental States (CMS) which referred to the recognition of the opacity of mental states; and (3) Interest and Curiosity (IC) in mental states which ranges from absence of interest in the infant's mental states to intrusive hyper-mentalizing. Anis and colleagues (2020) later on provided preliminary evidence for convergent validity of the PRFQ to the PDI-RF as well as acceptable internal consistency reliability of its scales.

2.3.1.3. Association with other constructs and parents' socioemotional characteristics

Studies exploring the relationship between parental reflective functioning and general reflective functioning (not specific to the child) have found that these two constructs are associated. However, this association is not perfect, as correlations have only been modest (i.e., Steele *et al.,* 2008). This supports the idea that RF is a dynamic, bidirectional and context -and relational- specific capacity that might be influenced by the parent's relational experience with a particular child.

Other studies have explored the social and emotional determinants of parents reflective functioning. Sleed and colleagues (2018) found that PRF was associated with maternal non-verbal IQ and long-term unemployment (moderate correlations) as well as with child age, being first time mother, low income and being single (small correlations). Additionally, a recent longitudinal study from Bennett and colleagues (2023) using a large multinational sample (n = 2208) found that parents characteristics such as parent emotion dysregulation, male cisgender status, speaking a language other than English, younger parent age, and older child age were associated with lower parental reflective functioning 12 months later showing higher levels of prementalizing.

2.3.1.4. Association with child outcomes

Recent studies have highlighted the role of parental reflective functioning as a mediator and moderator of relevant associations. For instance, a study examining the relationship between parent attachment and problems in child socio-emotional development found that this association was mediated by impairments in PRF (Nijssens, Vliegen and Luyten, 2020). Another study, examining the relationship between children sexual abuse and internalising and externalising difficulties found that PRF moderated is association, with higher PRF resulting in less difficulties (Ensink, Normandin and Fonagy, 2017). Similar PRF moderator effects have been found between maternal depression and externalising behaviours in school age children (Khoshroo and Seyed Mousavi, 2022). Furthermore,

evidence suggest that PRF can moderate the association between infant negative affect and toddler behaviour problems, with high PRF turning the association non-significant (Wong, *et al.,* 2017).

2.3.2. Mind mindedness (MM)

2.3.2.1. Definition

The term mind-mindedness was coined almost 20 years ago by Meins (1997) to describe the caregiver's proclivity to treat the young child as an individual with a mind of her own (Meins *et al.,* 2001). As an operationalization mind-mindedness refers to the appropriateness of caregivers' comments about their infants' internal states (thoughts, feelings, preferences) during interaction and mental state words used by the caregiver spontaneously when invited to describe her child (Meins *et al.*, 2012; Meins *et al.,* 2001).

2.3.2.2. Background

Rooted in cognitive developmental theory, the concept of mind-mindedness was as an attempt to re-evaluate the original notion of maternal sensitivity (Meins *et al.,* 2001). The aim was to emphasize not just a mother's general responsiveness but her "appropriate" responsiveness as the foundation of secure attachment (Meins *et al.*, 2001) arguing that this perspective had been neglected in previous operationalizations of sensitivity. Based on observations of mother-infant interactions, authors Meins and colleagues (2001) identified five different ways in which mothers showed their capacity to view their infants as a thinking, intentional agents: (1) Maternal response to changes in the infant's gaze, (2) Maternal response to the infant's object-directed actions, (3) Imitation, (4) Encouragement of autonomy, and (5) Appropriate comments related to the child's mental state. Associations between these categories and maternal sensitivity were explored. Results showed that each of these categories positively correlated with maternal sensitivity but only accounted for a small part of its variance (2 and 5 had the stronger correlations and only accounted for 16% of the variance each), suggesting that maternal sensitive and mind-minded behaviours, even though related, can be considered different as

they capture distinct aspects of maternal behaviour (Meins *et al.*, 2001). This study also found that out of the five categories, only "Appropriate comments related to the child's mental state" predicted infant attachment security, being a better predictor than maternal sensitivity (Meins *et al.*, 2001). Authors conclude that mothers' appropriate mind-related comments are an indicator of the mother's ability to accurately represent the mental and emotional states of her infant which is likely to have an impact on how appropriate her responses are and how secure the infant becomes. In this sense authors state the important of mind-mindedness as a construct which could serve as a bridge to the "attachment transmission gap" (Meins *et al.*, 2001).

2.3.2.3. Measures

Two measures of mind-mindedness have been developed: (1) an online measure, which assesses parents' comments while they interact with their children and is scored from a transcription of a 20-minute video of parent-infant interaction, and (2) an offline measure, which assesses parents' appropriate comments regarding their children in a 5-minute interview which is then transcribed and scored. Both measures are manualized and don't require specialised training for administration or coding. The online measure has reported convergent, divergent, and predictive validity (Meins *et al.*, 2003), while the offline measure convergent reliability only (Meins *et al.*, 2003). Both measures have been found reliable (Arnott *et al.*, 2007; Demers *et al.*, 2010; Laranjo *et al.*, 2010; Meins *et al.*, 1998).

2.3.2.4. Association with children's outcomes

Meins and colleagues demonstrated that maternal mind-mindedness at 6 months strongly predicted attachment security at 12 months, and at 45 or 48 months (Meins *et al.,* 2001; Meins *et al.,* 2002), as well as their children's social-cognitive performance at fifty-five months (Meins *et al.,* 2003) and effortful control at eighteen and twenty-six months follow-up (Bernier, Carlson and Whipple 2010; see also Arnott and Meins 2007; Meins *et al.,* 2012).

A review by McMahon and colleagues (2016) found similar results suggesting that MM assessed during infancy predicts the child's secure attachment, his capacity for theory of mind, and, to an extent, language, behavioural and attention regulation. This review also pointed out that there is limited evidence regarding MM in risk and clinical samples and the results across different risk groups was inconsistent as some present lower MM, but not others. However, some studies have reached to seemingly contradictory results. Such is the case of Bernier and Dozier (2003) who found that MM was associated with carers' (foster parents) nonautonomous attachment classifications (assessed with the AAI) and with insecure attachment in children (measured with the Strange Situation procedure) in a sample of carers of children in foster care. These results might suggest that the complexity of the construct and its relation to the carers' representations of attachment and child attachment needs further exploration, particularly in complex carer-infant relationships such as in the context of foster care

2.3.3. Embodied mentalizing

2.3.3.1. Definition

Embodied mentalizing is defined as the parental capacity to (a) implicitly conceive, comprehend, and extrapolate the infant's mental states (such as wishes, desires, or preferences) from the infant's whole-body kinaesthetic expressions and (b) adjust one's own kinaesthetic patterns (Shai and Belsky, 2011a, p.175). The authors hoped to conceptualise a source of parental influence that moved beyond parents' verbal capacities toward the infant's realm experience – understood as the quality of their movement, rhythms, space, time, sensations, and touch. Authors consider that other tools available to measure parent mentalization rely solely on verbal behaviour. PEM then offers a nonverbal means of measuring mentalizing during parent-infant interactions which considers the infant's perspective and the impact of mentalizing on behaviour.

The authors propose that in order to develop a coherent sense of self and of self-awareness infants need to move from purely bodily processes and sensations toward symbolisation and mental representations that can be reflected on and can then be connected to personal and interpersonal experiences. For this to happen parents need to be able to implicitly interpret changes in their infant's movements and rhythms as signs of mental activity and to respond to these in an "embodied" manner (physically). This allows infants to feel capable of influencing others and active relational agents.

In summary this theory poses that that parents' implicit embodied mentalizing underpins the process through which parents transform infants' movements into meaningful and intentional mental states (Shai and Belsky, 2011b).

2.3.3.2. Measurement

The PEM coding system involves identifying and analysing non-verbal, movement-based interactions termed Embodied Circles of Communication (ECC). An ECC is described as a back-and forth exchange which includes at least three consecutive bodily actions and reactions that reflect the mental states both the parent and the infant. These interactions are "body-based conversations" where one party expresses their mental state through movement and the other party responds with corresponding movements (Shai, 2011; Shai and Belsky, 2017; Shai and Meins, 2018). For instance, if the infant withdraws and tenses their muscles, it indicates a mental state of feeling overwhelmed, while a parent who reduces the intensity of their movements shows an understanding of the infant's mind (Shai, 2011; Shai and Belsky, 2017; Shai and Meins, 2018).

Components of each ECC such us movement qualities like tempo, space, pathways, pacing, directionality, and tension flow, are described but not scored. Instead, these help the coder to observe and evaluate the interactions. In this sense, the quality of the ECC is based on the extent to which the mother modifies her movement response in light of the infant's kinaesthetically manifest mental state.

Each ECC's quality is rated using a score which ranges from "very low" (1) to "very high" (9). Then a Global PEM score is obtained (score ranging from 1 to 9) by considering all the individually rated ECC events of the dyadic interaction. This score considers both the mean of the ECC events and further considerations such as (1) the interactive syntax, (2) the frequency of extremely low PEM manifestations, and (3) the dominance of premature termination of ECCs which if present lower the mean score (Shai, 2011; Shai and Belsky, 2017; Shai and Meins, 2018).

2.3.3.3. Association with other constructs and parent's characteristics

Recent studies have examined the association between PEM and other parental constructs. For instance, studies have shown moderate associations between PEM and maternal sensitivity (Shai and Meins, 2018; Shai and Belsky, 2017; Shai *et al.,* 2022). Results have also shown that PEM is associated with aspects of mind mindedness having found a small association between PEM and appropriate mind-related comments but no association to non-attuned mind-related comments (Shai and Meins, 2018). Regarding parents' sociodemographic characteristics PEM ratings have been found to be associated with higher SES, being married, older age, higher verbal IQ and education, and Caucasian ethnicity (Shai and Belsky, 2017; Shai *et al.*, 2022).

Regarding maternal mental health and parenting a study by Ierardi and colleagues found that mothers with psychopathological problems had lower PEM than mothers with no psychopathology. Similarly, maternal depression and anxiety were negatively correlated with PEM and so it was maternal controlling style (Ierardi *et al.*, 2022).

2.3.3.4. Association with children's outcomes

Multiple studies have explored the relationship between PEM and infant attachment security. Results showed small positive associations between the two indicating that mothers with higher PEM ratings were more likely to have infants classified as securely attached (Shai and Belsky, 2017; Shai and Meins, 2018; Gagne *et al.*, 2021).

Regarding PEM association with child development outcomes, Shai and Belsky (2017) found small but significant associations between PEM and child language functioning, academic functioning, social skills and overall competence at 54 months. PEM was also inversely associated with children externalising and internalising behaviours. Similar results were found later by Shai *et al.*, (2022) reporting small associations between PEM and child cognitive development measured 12 months later and child language development.

2.4. Mentalization and trust when supporting parents at-risk

2.4.1. Mentalization, epistemic trust and mistrust

Humans, like all mammals, possess a natural *epistemic vigilance,* that is, a mistrust towards information from others in order to protect the self. This mistrustful vigilance is reduced by experiences of being mentalized and can be replaced by *epistemic trust,* trust in information from a trusted source, such as a parent or professional. However, mistrustful vigilance can also be compounded by experiences of abuse and neglect and become defining of an individual's approach to relationships. Indeed, it has been found to be characteristic of individuals who have experienced neglect and/or other forms of abuse in childhood and can severely undermine agencies and professionals' attempts to offer interventions (Munoz *et al.*, 2019). This is understood to be present in both poor parental engagement and parental non-engagement in professional services (Mason *et al.*, 2020).

2.4.2. The role of epistemic trust in MBT interventions when supporting at-risk parents

Epistemic trust is seen as fundamental to effective psychological intervention (Fonagy and Allison, 2014; Fonagy and Campbell, 2017). Therefore, it is recommended that intervention services should target epistemic trust and mentalization to achieve lasting change. Three distinct levels of communication are proposed for the promotion of epistemic trust and mentalization in psychological treatments and in interventions for parents and families (Fonagy and Allison, 2014; Fonagy and Campbell, 2017). Communication System 1 entails the lowering of epistemic mistrust (vigilance) and

the establishment of epistemic trust. Communication System 2 enables the patient's social learning within a relationship characterized by epistemic trust. Communication System 3 targets patient's reengagement with the social world transferring epistemic trust and bringing a capacity to learn from experience. Furthermore, Bateman (2022) and Byrne (2020) have described these communication systems as the main targets of Mentalization Based Treatment (MBT) interventions in individual and group programmes. Fonagy and Campbell (2017) stress the importance of the re-engagement with the social world as part of the therapeutic recovery and positive outcomes in patients' mental health. Particularly when supporting high-risk parents their on-going engagement in a variety of supportive relationships from agencies and in the community is crucial to continued access to support and to the reduction in risk of harm to their children.

Parental engagement with social care is predictive of better outcomes in care proceedings and non-engagement is a risk factor for recurrence of abuse (White *et al.*, 2015). Parental engagement through positive relationships with family, friends, professionals and the wider community was a key marker distinguishing parents at risk of losing their child to care who showed capacity to make and sustain positive change (Ward *et al.*, 2019). Parental non-engagement is often cited in court reports that argue for removal of children with phrases such as 'disguised compliance' appear both in court reports and the literature.

Platt (2013), taking an ecological approach to understanding engagement of parents whose children were at risk of maltreatment, suggests that parental engagement with child welfare services has behavioural, attitudinal and relationship components. She emphasises both internal (service user) and external (provider/agency) factors as equally important. Internal factors include the personal, psychological and behaviour factors in the parent and include hostility or negativity towards services (Ward *et al.,* 2004), and attitudes from past experiences of similar services (McCurdy and Daro, 2001) and their beliefs about whether services can genuinely help (McCurdy *et al.*, 2006). Childhood experiences of abuse (defined as developmental trauma) are common in parents who present in

recurrent child protection proceedings, and it has been argued that parental non-engagement needs to be considered using this lens (Broadhurst *et al.,* 2020). Suspiciousness, and hostility or negativity towards services characterise an attitude of epistemic vigilance, and low epistemic trust.

Mason *et al.* (2020) have recently supported this view and call for consideration of the concepts of trauma and epistemic trust to better understand parental non-engagement in care proceedings. They highlight the multiple adversities experienced by the majority of mothers in child care proceedings resulting in relationship difficulties and low epistemic trust and suggest that non-engagement is more helpfully viewed as part of a previously adaptive, survival strategy forged in adverse childhood experiences. They urge professionals to establish a collaborative engagement with shared responsibility between parent and professional. In this context, it has been suggested that establishing epistemic trust should be the treatment target when working with hostile and epistemically mistrusting parents (Byrne *et al.* 2019; and Byrne, 2020).

2.5. Cultural variations in parental mentalization

Despite growing evidence indicating the relevance of mentalization in understanding psychopathology and as a mechanism of change, there is still limited understanding of mentalization from a cross-cultural perspective. Recent attempts have been made to explore the relevance of mentalization across cultures and how cultural differences influence its expression and focus. For instance, a systematic review by Aival-Naveh and colleagues (2019) examined 112 cross-cultural studies (across more than 45 cultures) on five mentalization-related concepts: Theory of Mind (ToM), empathy, perspective-taking, alexithymia, and mindfulness. They obtained valuable findings which suggest that mentalizing profiles vary between cultures.

First, their results suggest that people from individualistic cultures tend to focus more on their own mental states, while people from collectivistic cultures focus more on the mental states of others. For example, individuals from collectivistic cultures, such as East Asians, tend to be more other-oriented

and perform better on perspective-taking and empathic accuracy tasks than those from individualistic cultures, such as Euro-Americans (Aival-Naveh, 2019).

Second, it is likely that the way that mental states are perceived varies across cultures. Some studies indicate higher emotional reactivity in collectivistic cultures (e.g., higher empathic concern), though findings are inconsistent, with some studies suggesting the opposite (Aival-Naveh *et al.*, 2019).

Third, cultural differences, especially regarding Theory of Mind, appear more pronounced in verbal (explicit) measures than in nonverbal (implicit) ones. In this sense, it is likely that the effortful, slow, and verbal aspects of mind-reading are more influenced by culture than people's automatic, fast, and nonverbal ability to perceive mental states (Aival-Naveh *et al.*, 2019).

Fourth, the review (Aival-Naveh *et al.*, 2019) identified possible mediators of cultural differences in mentalization. Linguistic differences, such as lexical explicitness and grammaticalized epistemic concepts, may explain cultural differences in particularly in Theory of Mind tasks. Additionally, value preferences seem to be another relevant mediator, with studies finding that cultural differences in alexithymia are mediated by people's value preferences both Eastern and Western. Similarly, the review found evidence indicating that parenting practices and characteristics mediate cultural differences in mentalization.

Specifically, regarding parental mentalization, different cultures likely have specific cultural representations of parenting, children, and the parent-infant relationship. We could argue that these representations are likely to shape parents' mentalizing patterns and focus. A recent study by Lee and colleagues (2023) offered some insights on this topic. They investigated differences in the parental mind-mindedness and reflective functioning profiles of mothers from South Korea and the United Kingdom. The study (Lee *et al.,* 2023) considered the maternal ideal of 'oneness' with the infant (viewing the mother-infant dyad as a single entity) characteristic of Korean culture and the more individualistic parenting values of British culture and their impact on parents' mentalization. The

results showed no difference in mind-mindedness between Korean and British mothers, but differences in the types of internal states commented on. British mothers commented more on desires and preferences, while Korean mothers focused more on their infants' cognitions and emotions. These findings likely reflect British mothers' parenting focus on facilitating individuality and agency in their infants, in line with their individualistic cultural context, which didn't seem to be such a prominent goal for Korean mothers.

Regarding parental reflective functioning (PRF), Korean mothers scored higher on certainty about mental states compared to British mothers, while both groups showed similar levels of interest and curiosity in mental states. Given the emphasis on oneness in Korean parenting, it makes sense that Korean mothers are more likely than British mothers to consider themselves to know precisely what their infants are thinking and feeling (Lee *et al.,* 2023).

These results suggest that while mentalizing is relevant across different cultures, different aspects of mentalizing may be more important depending on cultural values. Therefore, different cultures may present distinct mentalizing profiles.

3. Interventions during the perinatal period and early childhood aiming to improve interaction and reduce inadequate caregiving

An increasing recognition of the characteristics that put parents at greater risk of maltreatment have created the context for the design and delivery of a number of interventions aimed at supporting parents who are viewed as being at risk. Some of these interventions focus explicitly on reducing the risk of abuse –i.e., home visiting programmes— or in helping future parents to prepare and adapt to their parental role –i.e. preparation for parenthood programmes– whilst others focus on improving the parent-infant relationship having a more representational component.

3.1. Generic antenatal-perinatal interventions

3.1.1. Home Visiting (HV)

Home visiting programmes are possibly one of the most widely known interventions having been in existence for over 20 years (Gomby, 2005). Based on ecological theory (Bronfenbrenner, 1992), these programmes attempt to improve indirect influences on the child by connecting the family with economic and social supports, and direct factors through parenting education. They are primarily delivered by nurses or paraprofessionals with the aim of reducing the risk of maltreatment in high-risk populations of parents with young children, offering services that they might not access otherwise. It has been argued that the advantages of HV programmes might be that they offer disadvantaged families a greater sense of control and comfort being supported in their own homes and that it allows practitioners to offer a service more tailored to families' needs (Gomby, 2005; Zercher and Spiker, 2004).

However, the effectiveness of HV programmes remain unclear and meta-analytic analyses have struggled to demonstrate a consistent impact, possibly due to the difficulty in achieving consistency in service delivery within specific programmes as well as due to the wide variety of services that fall under the HV category of intervention. For example, Peacock and colleagues (2013) systematically reviewed the effectiveness of home visiting programmes showing that that: (1) home visiting interventions can contribute to the prevention of child abuse in some cases, particularly when the intervention is initiated prenatally, (2) programmes with a cognitive change component were successful in reducing the frequency and occurrence of harsh parenting in at risk-parents, and (3) programmes delivered by paraprofessionals were less successful probably due to the limitations of their training. However, a later meta-analysis (Viswanathan *et al.*, 2018) examining the effects of home visiting interventions on child maltreatment reported to child protection services only found a small, non-significant reduction (d=.03) in reports within two years of the final sessions. Despite of the lack of consensus among the broad range of home visiting interventions, a literature review by MacMillan and colleagues (2009) highlights that two specific programmes have consistently shown to provide significant benefits. The Nurse–Family Partnership, a programme delivered by nurses to low-income first-time mothers beginning prenatally and during infancy, has been evaluated by three

RCT's which found it effective in reducing child physical abuse and neglect, as measured by official child protection reports, and associated outcomes such as injuries (Olds *et al.*, 1986: Olds *et al.,* 1997; Olds *et al.*, 1998; Kitzman *et al.*, 1997; Olds *et al.*, 2007; Olds *et al.*, 2002; Olds *et al.,* 2004; Eckenrode *et al.*, 2000). The Early Start programme, which targeted families facing stress and wider difficulties, was found in one RCT (Fergusson *et al.,* 2005a; Fergusson *et al.*, 2005b) to be effective in reducing associated outcomes such as injuries and hospital admissions for child abuse and neglect, although rates of child protection reports did not differ between the intervention and control groups.

3.1.2. Preparation for Parenthood

Preparation for Parenthood programmes are group-based antenatal educational programmes, which are offered to pregnant women –and sometimes their partners— aiming to support their 'transition to parenthood'. The evidence about their benefits in terms of parenting and the parent-infant relationship is limited, as many of these studies have put a strong emphasis on outcomes related to the couple relationship. There are to date, two systematic reviews summarising the results of such programmes in terms of parenting adjustment. The Fergusson and colleagues (2005b) review of RCT's included twenty-five studies with a large overall sample and focused on the effectiveness of universal psycho-education programmes aimed at improving the transition to parenthood. Most of the programmes reviewed targeted parenting or the couple relationship. With regard to parenting, they concluded that both mother-focused and couple-focused interventions were equally effective in enhancing parenting adjustment (Petch and Halford, 2008). McMillan and colleagues (2009) reviewed the effectiveness of antenatal education programmes based on four RCT's and two quasi experimental studies. They included a section that synthesised results for programmes specifically focused on the transition to parenthood. The authors concluded that there is some evidence of their effectiveness on maternal psychological well-being, parental confidence and satisfaction with the parent-infant relationship in the post-natal period. Other programmes targeting the transition to parenthood have been evaluated since these two reviews. For instance, the Family Foundations programme a group based 16-hour

perinatal intervention –delivered in eight, two-hour sessions – was evaluated in a RCT that included 169 heterosexual pregnant couples, finding significant effectiveness in improving co-parental support, maternal depression and anxiety, distress in the parent-infant relationship and infant-regulation (Feinberg and Kan, 2008). Moreover, it was found that the intervention remained effective in all domains at one-year post intervention (Feinberg *et al.*, 2009), and it continued to be effective in improving co-parenting and, in reducing parental stress, depression and harsh parenting at three-years post intervention (Feinberg *et al.*, 2010).

Even though the above two types of programmes target the perinatal period that is the focus of the current project, neither of them explicitly focuses on addressing the parent-infant interaction. Attachment-based interventions - video feedback programmes, and parent-infant psychotherapy - more specifically target such interaction addressing also, albeit indirectly, parental mentalization through their representational components.

3.2. Interventions that target the parent-infant relationship

3.2.1. Attachment-based programmes

Attachment-based interventions aim to promote the development of secure attachment. These interventions focus on factors that are thought to prevent or correct the development of insecure attachments (van IJzendoorn *et al.*, 1995). Two complementary approaches have been developed: interventions that focus on parental sensitivity by addressing the behavioural aspect of the relationship (e.g. infant massage and video feedback), and interventions that focus on changing parental mental representations of attachment which address the representational level in order to pave the way for further behavioural changes (e.g. parent-infant psychotherapy) (van IJzendoorn *et al.*, 1995).

An early meta-analysis (van IJzendoorn *et al.,* 1995) on the effects of attachment-based interventions (which included 12 studies) showed that these interventions were more effective in changing parental sensitivity (d=.58) than in changing attachment insecurity (d=.17) and short-term preventive

interventions were more effective than longer and more intensive ones. A more recent meta-analysis (Mountain *et al.,* 2017), which included four RCT's, found that attachment-based early interventions improved attachment security and reduced rates of disorganised attachment. Additionally, it reported improvement in maternal sensitivity in one of the three included studies (Cooper *et al.*, 2009).

3.2.2. Video Feedback (VF) interventions

Video feedback programmes aim to improve the parent-infant relationship by focusing on the behaviours of the parent with their infant, in which parents are filmed interacting with their children and then invited to watch positive moments of interaction and reflect on the recording with the guidance of a therapist. O'Hara and colleagues (2019) carried out a systematic review and meta-analysis on the effects of video feedback on parental sensitivity and attachment security in children aged under five years at risk for poor attachment outcomes. Their comprehensive meta-analysis of twenty RCT's (1757 parent-child dyads) showed that VF improved parental sensitivity compared with control or no intervention groups from post intervention to six months' follow up. Regarding attachment security a meta-analysis of two studies that used the Strange Situation Procedure (SSP) to measure attachment found that VF increased the odds of being securely attached at post intervention. However, a second meta-analysis of two studies that didn't use the (SSP) didn't found the same effect. Even though, some authors have stablished a link between VF and reflective functioning suggesting that it enhances the mentalization capacities of carers (Kennedy *et al.*, 2017), so far, no studies have measured this outcome.

3.2.3. Parent-Infant Psychotherapy (PIP)

Parent-infant psychotherapy is a dyadic intervention, which aims to improve the parent-infant relationship, by improving parental representations of the baby. These interventions are carried out by a parent-infant psychotherapist, the setting is usually a clinic or hospital –but it can also be offered at home— and it is usually delivered to individual dyads although it sometimes can be offered to small

groups of dyads. This intervention has a psychodynamic approach –involving identifying unconscious patterns of relating—and was initially developed by Jessee, Adelson and Shapiro (1975) with a focus on the maternal representations of attachment. In this sense, it aims to help mothers to recognise how their representations, based on their own history, influences their current functioning in relation to their babies. Later, this initial approach was further developed and combined with behavioural components resulting in programmes such as Watch Wait and Wonder (WWW) (Cohen *et al.*, 1999) which also promotes behaviours of physical closeness and accessibility.

A review and meta-analysis (Barlow *et al.,* 2015) that evaluated the effectiveness of PIP in improving parental and infant mental health and the parent-infant relationship showed a that at post PIP intervention there was a higher proportion of securely-attached infants (RR 8.93, 95% CI 1.25 to 63.70); a reduction in the number of avoidantly-attached infants (RR 0.48, 95% CI 0.24 to 0.95); fewer infants with disorganised attachment (RR 0.32, 95% CI 0.17 to 0.58); and an increase in the proportion of infants moving from insecure to secure attachment (RR 11.45, 95% CI 3.11 to 42.08). These results were product of meta-analysis of 2 studies with 168 participants and the quality of the evidence was rated low to very low. However, there were no significant differences when comparing PIP with controls (treatment as usual or no treatment) for other parent-based or relationship-based outcomes (i.e. infant behaviour and cognitive development), and there was no evidence that PIP was more effective than other interventions for parents and infants (i.e. psychoeducation, video-interaction guidance, CBT). It can be argued that this intervention relates to the principles of mentalization as the therapist helps the mother to recognise internal representations and states of mind in themselves and in their babies, but this has not to date been evaluated as an outcome.

Even though the three above interventions have a mostly indirect representational component they all focus only on the post-natal stage. In the following section I will discuss interventions that have been designed to be delivered in the antenatal, postnatal and perinatal periods, and that are explicitly based

on mentalization theory (i.e., and as such directly targeted parental mentalization as part of the theory of change).

3.3. Interventions that target parents' mentalization in populations with psychosocial risk

Recently, a number of mentalization based treatment approaches have been developed as a result of an increased recognition of the potential value of such treatments with high-risk groups of parents more widely (Fewell, 2013), and the role of reduced parental mentalizing capacities in child maltreatment. Mentalization Based Treatment (MBT) was developed as a treatment for borderline personality disorder (BPD) in adults, which has been identified to be a 'disorder in mentalizing'. Evidence supporting the effectiveness of MBT in improving the mentalizing capacities of patients with BPD (Bateman and Fonagy, 2004; Bateman and Fonagy, 2008), has led to the development of mentalization-based interventions for a wider range of clinical populations including pregnant women and parent-infant dyads. These interventions have as a primary objective to develop a reflective stance in parents which involves wondering about their child's internal experience rather than just their behaviour (Slade, 2007).

Many of the existing mentalization-based programmes specifically target parents with characteristics that are widely recognised to be risk factors for child maltreatment (Fewell, 2013), and in the following sections, I will present examples of some of these interventions.

3.3.1. Antenatal interventions

Although still limited, there are now a small number of antenatal interventions that have been developed with the aim of enhancing the mentalizing capacities of at-risk pregnant women. For instance, the 'Parental mentalization focused ultrasound intervention' (Pajulo *et al.*, 2016; Jussila *et al.*, 2019; Jussila *et al.,* 2020) combines ultrasound and parent mentalization components to enhance the curiosity of substance abusing mothers' about the personality and development of the foetus/baby. Four 4D ultrasound consultations are offered at 24, 30 and 34 gestational weeks delivered by an

obstetrician and an infant mental health professional working in collaboration. During the sessions the pregnant woman is invited to explore her thoughts, experiences and feelings related to watching the foetus on the screen to promote an active interest in the child, to improve parental mentalzsation and maternal-foetal attachment (Pajulo *et al.*, 2016). The second component of this intervention is a mentalization-focused Pregnancy Diary which aims to help the mother to keep the child's present in her mind. Women were offered as three prenatal meetings –two weeks after each ultrasound session— with the infant mental health professional to discuss the experiences and questions that arose when using the diary (Pajulo *et al.*, 2016). Despite of the use of innovative ultrasound consultation and mentalization components, its effectiveness is still unknown. A preliminary RCT (n=90) (Jussila *et al.*, 2020) evaluating the effectiveness of this intervention concluded that although there was no evidence to support its use to improve maternal prenatal mental health, child attachment, or parental mentalization, these results could have been product of the small sample size and other limitations of the research.

3.3.2. Perinatal interventions

'Minding the baby' (MTB) (Slade *et al.*, 2005b) is a good example of a perinatal mentalization-based programme. It targets young first-time mothers living in underserved, poor, urban communities. The intervention is provided by master's level clinicians trained in RF–a paediatric nurse practitioner and a clinical social worker— who are involved in the recruitment, initial evaluation process and then continue regular contact with the mothers. Weekly visits start in the last trimester of the pregnancy continuing until the baby's first birthday. From then on mothers are visited fortnightly until the baby's second birthday. The duration and location of the visits are variable; for instance, visits can last hours in times of crisis and can take place in the neighbourhood, library or a local restaurant. The aim of this intervention is to support mothers to recognise the baby as an individual with a body and mind of his own, also learning to tolerate and regulate the child's internal states (Slade *et al.*, 2005b). To achieve this the practitioner starts by building a therapeutic relationship with the mother holding her in mind

so she can eventually hold the child in hers (Slade *et al.*, 2005b). A recent cluster RCT (n=156) (Slade *et al.*, 2020) found that the dyads that received the MTB intervention had significantly different scores from the control groups post intervention, being more likely to be in a higher mentalizing category (2.15 times) and to have securely attached infants (2.59 times).

Another perinatal programme with an emphasis in parental mentalization is 'Nurture and Play' (NaP), which is a parenting group intervention for prenatally depressed women. This group-based intervention is characterised by being short-term, manualised and easily taught. It requires minimal training and can be delivered by multi-professional primary health care professionals from in primary health care settings. The programme starts during pregnancy and continues until the infant is seven months old and is delivered in 11 sessions of 1.5 hours each (4 during pregnancy offered bi-weekly and 7 postnatal offered weekly). The Pregnancy Group covers the topics: mothers' attachment history, connecting with the baby, becoming a mother and preparing for birth; whilst the Baby Group addresses themes such as: getting to know the baby, encouraging mutuality and preparing for the future. The sessions include elements of Theraplay, physical touch and reflective functioning practice. In each session mothers discuss a topic selected to activate their RF including feelings and thoughts related to their pregnancy, maternal representations of their childhood history, their ideas about the child, etc. The theoretical objectives of this intervention have been supported by a recent RCT (n=45) (Salo *et al.*, 2019a) which found that the women that received the NaP showed a significantly higher maternal sensitivity and RF compared to the control group as well as in lower maternal depressive symptoms at 12 months.

3.3.3. Post-natal and early childhood interventions

Mothering from the Inside Out (MIO) (Suchman and Bers, 2015) and New Beginnings for mothers and babies (Baradon *et al.*, 2008) are two mentalization-based interventions delivered during infancy which target mothers suffering from mental illness or substance addiction, and mothers in prison respectively. MIO is a manualized 12-session individual therapy developed to enhance a parent's

capacity for RF in the parenting role to support mothers to better manage emotional distress in the absence of neural reward that frequently occurs during chronic substance use episodes and early recovery from addiction (Suchman *et al.*, 2017). In the sessions the mother is free to propose the topic of the discussion. The therapist function is to bring the child into mind putting special attention to stressful situations that challenge the mother's RF. The mother is invited to consider thoughts, feelings and intentions in herself, her child and others emphasizing the mentalizing process rather than a specific content. Additionally, the therapist can provide developmental guidance and suggest parenting strategies to promote secure attachment when needed (Suchman *et al.*, 2017). An RCT (n=87) that examined the efficacy of MIO in mothers with substance abuse difficulties showed that MIO had small to moderate effects on RF (d = 0.20) and maternal representational coherence (d = 0.41), as well as infant's involvement (d = 0.37) (Suchman *et al.*, 2017).

The New Beginnings intervention is a short term, experience-based programme designed to support mothers and infants in prison's mother-baby units (MBU). It addresses the early attachment relationship between mothers and babies and prepares them for separation should that occur (Baradon *et al.*, 2008). The programme consists in eight two-hour sessions run over four weeks for groups of up to six mothers and babies per MBU. The sessions were structured around eight topics covering: history of pregnancy, family tree of the baby, mother's representations of her own childhood experiences, perceptions of the baby, experiences of motherhood, aspirations of herself, aspirations of the baby and separation (Baradon *et al.*, 2008). Mothers are encouraged to pay close attention to the baby's communications and to try to make sense of them with the support of other group members and the facilitators. The intervention focuses on the baby's attachment needs and capacities, mirroring their emotional states, verbalising their experience and creating opportunities of connexion through play (Baradon *et al.*, 2008).The effectiveness of this programme was examined in a cluster RCT (n=163) revealing that the intervention had a positive effect on the mother's reflective functioning showing a modest but significant improvement at post intervention whilst the RF of mothers in the control group declined significantly. It was also found that the parent-infant interaction of

participating dyads remained stable whilst the interaction in dyads in the control group deteriorated over time (Sleed *et al.*, 2013).

3.4. Summary

This chapter examined the prevalence, risks, and consequences of maltreatment during pregnancy and infancy, focusing on the factors that put parents at risk of maltreating their children, as well as protective factors that mitigate this risk. It also examined the concept of parental mentalization, describing its key operationalizations and how it relates to parental characteristics, behaviours, and contexts, as well as children's developmental outcomes. Additionally, it explored the link between mentalization and epistemic trust, particularly concerning support for vulnerable parents with a history of relational trauma. Finally, it summarized evidence on interventions that aid parents during the prenatal and infancy stages, including those based on mentalization.

The upcoming chapter outlines the methodology of the thesis, detailing the analytical strategy for each study and providing a rationale for employing a multimethod approach to better understand the impact and mechanisms of change of mentalization-based interventions. Furthermore, it will address the challenges associated with measuring parental mentalization and ethical considerations pertinent to conducting research involving vulnerable families.

III. Methodology

1. Analytical strategy

The proposed research project aims to address the three main research questions using three approaches: (1) A systematic review with meta-analysis, (2) a qualitative analysis of primary data from intervention stakeholders using thematic coding, and (3) a realist evaluation of an intervention using qualitative and quantitative analyses.

1.1. Systematic Review with Meta-Analysis

A systematic review is a method that "attempts to identify, appraise, and synthesise all the empirical evidence that meets pre-specified eligibility criteria to answer a specific research question" (Higgins and Green, 2008). Systematic reviews differ from literature reviews in that they rely on an objective and transparent method based on the science of research synthesis aiming to minimize bias and therefore providing reliable findings and conclusions (Oxman and Guyatt, 1993). In this sense, they integrate existing information helping health care providers, researchers and policy makers to make rational decisions supported by the existing evidence (Mulrow, 1994). Meta-analysis within a systematic review is a statistical method of combining the data from the included studies and in so doing can increase the power and precision of estimates of treatment effectiveness and risk exposure (Mulrow, 1994).

To answer the research question "how effective are parental mentalization-based interventions offered at any point during the perinatal period in improving parental reflective functioning?" the candidate conducted a systematic review and meta-analysis of published parent interventions based on mentalization theory during the perinatal period (pregnancy and infancy). This systematic review examined the treatment effect on maternal mentalization including measures of reflective functioning. Furthermore, as the number of studies was too small to conduct meta-regression analysis, I conducted a narrative component analysis to identify the importance of different intervention components using inductive thematic analysis, as well as subgroup analysis to assess the moderating role of a number of delivery factors.

Despite systematic reviews having a number of significant benefits in terms of reducing bias, they may nevertheless have a number of limitations (Haase, 2011; Tufanaru *et al.*, 2015; Järvholm and Bohlin, 2014). For example, the findings of systematic reviews and meta-analysis can lead to over-generalisation masking the fact that some interventions did not produce positive effects as well as masking variability at an individual level. Moreover, the quality of meta-analyses can be affected by problems related to the design and execution of primary studies (Flather *et al.*, 1997). Metanalysis can

also be limited by presence of substantial unexplained heterogeneity in estimates of the relative treatment effect that can reduce its value (Haase, 2011; Tufanaru *et al.*, 2015). I attempted to overcome these limitations by following a clear and methodical data extraction and data processing plans. Additionally, conducted risk of bias analyses and report the quality of the studies included in the review, following the recommendations that are made by the Grades of Recommendation, Assessment, Development and Evaluation Working Group (GRADE) to rate the overall quality of the evidence.

1.2. Qualitative data analysis: thematic analysis

Qualitative research offers valuable and rich information regarding the experience and perspectives of service users and providers and has an important place within the social and health sciences (Braun and Clarke, 2014). There are two types of approach to qualitative analytic methods: the ones associated with a particular theoretical or epistemological position and the ones independent of theory and epistemology. Thematic analysis belongs to the latter and is defined as a method for identifying, analysing, and reporting patterns within data (Braun and Clarke, 2006). In this sense, it organises and describes the data in detail and has the potential to interpret aspects of the research subject (Braun and Clarke, 2006). This type of analysis is considered a particularly useful qualitative approach when conducting applied research or when doing research relevant to public policy or clinical practice as it offers robust and sophisticated analysis of qualitative data but that can be presented in an accessible way to people outside the academia (Braun and Clarke, 2014).

Braun and Clarke (2006) suggest six phases of the thematic analysis process: (1) familiarizing with the data which involves transcribing, reading and writing down initial ideas, (2) generating initial codes which involves identifying interesting features of the data in a systematic way, (3) searching for themes which comprises sorting the codes into potential themes and grouping the coded extracts under the identified themes, (4) reviewing themes which requires checking whether the themes created fit the coded data and mapping the themes analysed, (5) defining and naming themes which

involves refining the themes and generating definitions and names for each theme, and (6) producing the report which comprises the selection of compelling extract examples, linking them back to the research question and literature, and producing a report of the analysis. As the described process shows, in thematic analysis the themes are an outcome of the coding process, instead of codes being sought as evidence for pre-existing themes (Braun and Clarke, 2021).

However, the authors caution that these phases should be used only as a guidance with enough flexibility to fit the research questions and data (Braun and Clarke, 2006). The flexibility of the method means that it can be used under a wide variety of guiding theories (e.g., experiential, or critical) and using different orientations to data, coding practices (e.g., inductive or deductive) and theme development (e.g., semantic or latent) (Braun and Clarke, 2021).

To address the research question "What is the impact and mechanisms of change of a mentalization based parenting programme delivered during the perinatal period from the perspective of its service users, practitioners, and other professionals from the wider professional network?", the candidate conducted an inductive thematic analysis of in-depth semi-structured interviews with key stakeholders (service users, practitioners, and other professionals from the wider professional network involved in the service users care) focused on their perspectives about the impact and the mechanisms of change of the Daisy programme, a mentalization-based intervention for pregnant women at-risk of infant removal. I chose an inductive approach allowing codes to emerge from the data using an open coding method. The inductive approach is a method of data analysis in which key themes are identified from raw data without the restraints of structured methodologies, allowing research findings to emerge from the most frequent, dominant, or significant themes (Thomas, 2006).

1.3. Realist evaluation

Realist evaluations are particularly valuable in terms of assessing complex interventions because it helps to better understand what works, for whom and under what circumstances (Wong *et al.*, 2017;

Wong *et al.*, 2016; Pawson and Tilley, 1997). This methodology is based on the philosophical perspective of Realism, which takes into account how factors such as culture, class and economic systems can have a real effect on whether programmes work. Realist philosophy considers that an intervention works because actors make decisions in response to the intervention. The 'reasoning' for their decision is what ultimately causes the outcome and is built upon underlying social and psychological drivers ('generative mechanism') that are influenced by the context (Pawson and Tilley, 1997). A realist evaluation will, as such, help with the examination of how different programme mechanisms - underlying changes in the reasoning and behaviour of participants - are triggered under specific circumstances (Wong *et al.*, 2016). The assumption in this type of evaluation is that programmes are underpinned by an implicit or explicit theory (or theories) about what might elicit change. When conducting a realist valuation these theories are made explicit, by developing hypotheses about how, for whom, to what extent and under what contexts the programme might work. The evaluation will test and refine those hypotheses (Wong, 2016). For this purpose, the data collected needs to provide information on the impact and processes of implementation, the contexts that might have an impact on the outcomes, and how these contexts might shape the mechanisms of change. The understanding of how aspects of the context shape the mechanisms that result in a particular outcome can be expressed as a context-mechanism-outcome (CMO) configuration which is the analytical unit of a realist evaluation (Wong *et al.*, 2016).

While this methodology does not require the use of particular methods, it typically involves the use of quantitative and qualitative data that are collected with the former usually being used to examine the context and outcomes and the latter to explore the generative mechanisms.

Guidance on realist evaluation suggests researchers should focus on providing the following: (1) clear explanatory focus; (2) use a multimethod approach; (3) investigate context, mechanisms and outcomes in configurations (Pawson and Manzano-Santaella, 2012). The first element refers to the theory driven nature of realist evaluation which implies searching for and refining explanations of

programme effectiveness. For this purpose, is important to either: a) articulate and formalise some, albeit not perfect, a priory hypothesis; b) provide a theoretical focus; c) deepen the working hypothesis by consulting the participants of the programme using respondent validation; or d) compare notes with existing research on the same family of programmes (Pawson and Manzano-Santaella, 2012). These strategies are meant to provide some explanation of the complex footprint of outcomes obtained providing in this sense a focus for the investigation (Pawson and Manzano-Santaella, 2012). The second element refers to the importance of using both qualitative and quantitative data analysis for this type of evaluation (Pawson and Manzano-Santaella, 2012). As mentioned above, mechanisms are often obtained through qualitative evidence, outcomes through quantitative data, and canvasing context requires comparative and historical data. "Realist" evaluations that fail to include a variety of methods risks obtaining artificial results (Pawson and Manzano-Santaella, 2012). The third element refers to the idea that evaluation tests programmes' theories and to do so the theory must be cast as an if-then proposition which in this case would be '*if* the right processes operate in the right conditions, *then* the programme will be successful' (Pawson and Manzano-Santaella, 2012). Therefore, programme theory should be rendered into its constituent and interconnected elements, in other words CMO configurations, rather than being presented as atomised and disconnected CMO catalogues (Pawson and Manzano-Santaella, 2012).

To address the research question for paper 3 "what are the mechanisms of change and parents' contexts that influence the outcomes of a mentalization-based intervention offered to parents of infants at risk of child maltreatment?", the candidate conducted a realist evaluation of the Lighthouse Parenting Programme exploring CMO configurations associated with results on child abuse risk and parent-infant bonding. Quantitative and qualitative methods were used including a pre- and post-intervention methodology as well as qualitative analysis of participants' interviews. This mix-methods evaluation aims to deepen the understanding on the mechanisms and participants' contexts that may play a part on positive or negative parental outcomes and to expand on the existing preliminary results which suggest that the programme might improve parental mentalization, adjustment and self-efficacy

and reduce coercive parenting practices and parenting stress (Byrne, *et al.,* 2019; Gervinskaite-Pulaitiene, *et al.,* 2023).

2. Why use a multimethod approach to understand mentalization based interventions?

Mentalization-based interventions are categorized as 'complex interventions' because they encompass multiple interrelated components or strategies. These components frequently interact dynamically among themselves and with the broader socio-cultural, economic, and organizational context. Consequently, this interaction can result in variability in outcomes and unintended consequences. Moreover, complex interventions are typically adapted to diverse contexts and conditions, rendering standardization for evaluation challenging. Consequently, outcomes of such interventions are highly sensitive to context; factors such as local culture, infrastructure, and existing services significantly influence their effectiveness.

This thesis has attempted to address this complexity by using a multimethod approach. The systematic review and metanalysis offered synthesis of the quantitative data available on the effectiveness of mentalization based interventions as well as identified their components based on the information available in the manuals of the included interventions or as these were described in the reviewed papers. We can say that this first approach responds to the questions: (1) are these interventions effective? and (2) what intervention components can be identified? The limitations of this approach are that the components identified was based on what was reported by the authors that designed the intervention and that there was no sense of the contribution of different components to the improvement parents' mentalization. Another aspect not answered by this method was specifically how these interventions might impact parents' risk of maltreatment. To address these gaps, we analysed two interventions specifically targeting parents at risk of losing custody of their children due to the risk of maltreatment or neglect. The qualitative analysis of the mechanisms and impact of the Daisy programme (perinatal) attempted to respond to the questions: (1) what is the perceived impact of the intervention? and (2) what components are perceived as important to bring about change? This study then offered another

dimension of understanding which included the perceptions of the people directly involved with the intervention, both service users, service providers, and stakeholders from the wider professional network. The stakeholder's reports on impactful components complemented the information what was found in the systematic review as it identified the ones that (at least) are considered the most relevant. It also offers some information regarding the perceived outcomes of the intervention beyond parental mentalization.

Finally, the realist evaluation responds to the more complex question for whom this intervention reduces the risk of maltreatment, and which mechanisms are involved with the change. This study focuses specifically on the risk of maltreatment as one of the main outcomes and tests whether the components identified by the intervention's theory of change are related to better outcomes. In this sense, the realist evaluation complements the evidence on the effectiveness of MBT interventions, and on the components that are perceived important for change, by offering insight into which participants might benefit the most from them.

In summary, the chosen methods address different aspects of our understanding of the impact of mentalization based interventions for at risk-parents in reducing the risk of suboptimal caregiving, the mechanisms that might play a part in this change and the parents' contexts that might allow better results.

3. Challenges measuring parental mentalization

As described above, over the years multiple measures have been developed to capture the mentalization concept. However, clear limitations have been noted by authors such as issues with validity, interpretation, complexity, suitability for clinical application, limitations to capture the multidimensional aspects of the concept, and their cultural sensitivity.

3.1. Difficulties capturing the multidimensional nature of mentalization

Various measures of mentalization capture distinct aspects of the concept. For example, verbal-based measures, like the Parent Developmental Interview, delve into "offline" mentalization, involving

reflections on past situations. On the other hand, behaviour-based measures, such as the Mind-Mindedness Scale, concentrate on "online" aspects of mentalization, observing interactions as they unfold in real-time (Luyten *et al.*, 2019).

Moreover, "online" measures exhibit diversity, with some emphasizing real-time verbal input (such as mental state comments during the interaction), while others focus exclusively on non-verbal bodily interactions, as seen in the Parental Embodied Mentalizing (PEM) scale. The lack of integration across these multiple dimensions of parental mentalization limits the measures' capacity to comprehensively capture the construct (Fonagy, Bateman and Bateman, 2011).

3.2. Validity and stability

Questions have been raised regarding the validity of some aspects of the measures (Law *et al.*, 2021). For instance, verbal-based measures, which are often off-line (i.e. measures that code mentalization from parents' recollection of events or description of their relationship with their children), require from parents' verbal skills which questions whether the measure is capturing parents' intelligence and educational attainment instead of their capacity to mentalize (Håkansson *et al.*, 2018). However, it is important to note that other mentalization measures like PEM which is not verbal based has also found to be associated with parent's education and IQ (Shai and Belsky, 2017; Shai *et al.*, 2022). This might indicate that parents' cognitive skills are associated with mentalization but not necessarily because of their verbal capacities but due to other processes which need to be further investigated.

Other concerns have been voiced regarding test-retest reliability issues. For instance, regarding the Choi-Kain and Gunderson (2008) note that (when using the reflective function scale, which is the antecedent to the PDI-RF scale) scores for reflective function can vary depending on who is the person mentalizing about and the context and timing of the relationship. This puts into question the stability of the measure and whether it offers a good representation of the individual's capacity for mentalization.

3.3. Interpretation and clinical sensitivity

Another aspect of the reflection function scale that has been criticised is its unidimensional score that can't be submitted to factor analysis (Choi-Kain and Gunderson, 2008). Interviews like the PDI explore multiple dimensions of their mentalization capacities such as the awareness of the nature of mental states, the explicit effort to tease out mental states underlying behaviour, the recognition of developmental aspects of mental states and parent's mental states in relation to the interviewer (Sharp and Fonagy, 2008), however the score obtained with the scale is unidimensional. In this sense, two interviews that obtained the same score could represent very different mentalization profiles (Choi-Kain and Gunderson, 2008; Shiborr *et al.*, 2013). Similar issues have been raised for the PDI-RF scale (Law *et al.*, 2021) which also only generates a single score and therefore fails to reflect the complexity of the construct (Katznelson, 2014) as it is unable to capture the dyadic quality in parent-infant relationships (Grey and Farnfield, 2017).

3.4. Complexity and required resources

Interview-based measures such as the PDI can be characterised as excessively complex and time consuming, diminishing their use in both large-scale research and routine clinical settings (Schiborr *et al.*, 2013; Choi-Kain and Gunderson, 2008). This complexity primary stems from their elaborate coding system which requires substantial prior training (Schiborr *et al.*, 2013). Consequently, the incorporation of these measures demands a significant allocation of diverse resources, leading to elevated costs which makes them less attractive for research (Rosenblum *et al*., 2008).

However, despite the challenges associated with the PDI, it remains the established benchmark for assessing parental reflective functioning. This prominence persists primarily due to the fact that contemporary, more cost-effective and time-efficient self-report measures, exemplified by the Parental Reflective Functioning Questionnaire (PRFQ), necessitate additional scrutiny to ascertain their validity, reliability, and practical applicability. Therefore, while alternative measures show promise,

further investigation is imperative before considering their widespread adoption in research and clinical contexts (Katznelson, 2014).

4. Ethical considerations

The topic of this thesis involved families at psychosocial risk. Only the qualitative study (New parenting opportunities for mothers with history of child removal, a qualitative exploration of key stakeholders' perspectives of a perinatal mentalization-based intervention) involved primary data collection and therefore direct contact with vulnerable participants. The other two (systematic review and realist evaluation) worked with secondary data. Relevant ethical approval was sought for the three papers that are part of this thesis.

4.1. Ethical and regulatory compliance

For the systematic review, ethical approval was sought through the Departmental Research Ethics Committee (DREC).

For the qualitative study a CUREC2 application was completed, and ethical approval was obtained from the University of Oxford Ethics committee. Additionally, a data sharing agreement between the researchers and the Walsall Council was signed to obtain participants' demographic and historical social care information for this study. CUREC2 Approved Procedure for "Studies involving administration of interviews and/or questionnaires on sensitive and/or medical topics, for testing and/or recruitment of participants" were followed as well as the guidance for best practice relevant to psychological distress, conducting research interviews, internet mediated research, and management and protection of data.

For the realist evaluation a CUREC1 application was submitted and approved by the University of Oxford Ethics committee. The primary study proposal was reviewed and approved by the University College London research ethics committee (Project ID Number: 9593/002). To comply with their

regulations to access data, I joined the Anna Freud Centre/UCL team as student researcher with an honorary contract.

4.2. Process of informed consent

Participants in the qualitative study provided written informed consent both a) for sharing their identifiable data and b) to be interviewed. Consent forms included a patient information sheet that detailed how their data was going to be managed by the research team.

Interviewees took part in the interviews voluntarily and received the information needed to make an informed decision about taking part, including the fact that refusal to take part did not in any way affect their receipt of the Daisy or other services. The research team treated the participants with dignity and respect and informed them that they could stop or pause the interview at any point if they need a break.

The consent form and patient information sheet stated that even though the information participants share was confidential, in cases where there were safeguarding concerns (children or other vulnerable people at risk of harm) such information was going to be disclosed to the researcher PI/Supervisor and to the service providers in accordance with the Requirements of The Children Act (1989).

4.3. Privacy and confidentiality

Microsoft Teams was used to interview participants of the qualitative study as this the only platform approved by the University of Oxford for conducting meetings where confidential or sensitive subjects are discussed. The research team made sure that the participants had access to the software and appropriate space to carry out the interviews.

Identifiable information, demographic information and social care data was shared by the Daisy team via Nexus 365 One Drive for Business, then anonymised using a numeric code. The linkage list to identify participants was stored in a different file. Interviews were recorded using an encrypted

Dictaphone and using the participant numeric code. All data was stored securely using the software Nexus 365 One Drive for Business.

4.4. Interviews on sensitive topics

The women interviewed in the qualitative study had a history of having lost the parental rights of previous children and at the time of the interviews were being assessed to determine if they could care for their recently born babies. Discussion of sensitive topics with this vulnerable group of women (such as their experiences related to previous child removals) was inevitable, as one of the aims of the study was to explore their perspectives of the care received in the targeted programme in comparison with any care received in the past when their child was removed from their care.

4.5. Researcher's safeguarding knowledge and training

The researcher conducting this study (and fieldwork) was a qualified mental health professional (qualified psychology practitioner registered with the Heath and Care Professional Council HCPC and psychotherapist registered with the British Association for Counselling and Psychotherapy BACP) and had experience in managing risk and knowledge about UK safeguarding policies. She also followed the guidance of the University of Oxford Safeguarding Code of Practice and completed the training course 'Introduction to Safeguarding' offered by the university. Additionally, she attended the Anna Freud Centre safeguarding training which was a requirement to access data for the realist evaluation.

4.6. Possibility of psychological distress

A protocol of actions to take in cases of participant distress was outlined for the qualitative study. This included offering participants to end the interview if they showed acute distress, exploring the support available for the participant in distress, and signposting to an adequate care provider. No interviewed

participants requested to interrupt or end any interview, and no acute distress was noticed by the researcher.

We did not anticipate any long-term negative consequences resulting from participation in the interviews, even though a number of sensitive topics were discussed and managed as described above.

4.7. Risk to researcher

It was anticipated that interviewing mothers involved with social services and at risk of having their infants removed from their care, was potentially an emotionally demanding experience for the researcher. However, her clinical training allowed her to manage these situations protecting the well-being of the participants as well as her own. Additionally, A plan was laid out to discuss difficult situations with her supervisor when needed.

4.8. Incidental findings

A protocol of actions to take in case of disclosure of illegal activity or abuse was created. This included to discuss concerning situations with the supervisor and report incidents back to the Daisy service who was to follow Walsall council's relevant safeguarding procedures. No incidental findings were encountered during the interviews.

IV. Paper 1: Promoting Reflective Functioning during the Perinatal Period: A Systematic Review and Meta-analysis of Mentalization-Based Interventions

Abstract

Introduction. Parents' mentalization capacities in relation to their children significantly predict infant attachment security. Over the last two decades, diverse interventions targeting parental mentalization throughout the perinatal period have emerged, recognizing the this is a critical period for early intervention. However, to date, no systematic review or meta-analysis has included the evaluation of both prenatal and postnatal interventions.

Aims: This study aimed to assess the effectiveness of mentalization-based interventions offered throughout the perinatal period in enhancing parental reflective functioning (PRF) and secondary outcomes such as parent-infant interaction, attachment security and maternal depression.

Method. This systematic review and meta-analysis included Randomized Controlled Trials (RCTs) conducted until October 2021. Inclusion criteria focused on interventions explicitly mentioning mentalization as a mechanism of change targeting pregnant women or mothers of infants/toddlers up to 36 months.

Results. A total of twelve eligible studies (829 participants) were identified. Meta-analyses revealed a statistically significant small improvement in PRF (SMD= 0.19, 95% CI [0.02, 0.36], p =.03), a significant enhancement in infant attachment security (OR: 1.86; 95% CI [1.20, 2.87]), and a significant reduction in maternal depression (SMD: -0.16; 95% CI [-0.31, -0.0]). These findings suggest a positive impact of parenting mentalization-based interventions, particularly for vulnerable mothers, during the perinatal period.

Conclusion. This study underscores the potential of mentalization-based interventions in fostering small yet significant improvements in the mentalization capacities of vulnerable mothers during the perinatal period. Future research should explore how the impact of these highly focused interventions might be modified to increase their impact.

Key words: mentalization, reflective functioning, parenting, intervention, attachment, parent-infant interaction.

1. Introduction

1.1. Maternal reflective functioning

The parent-infant relationship has been the subject of considerable scientific interest because of its association with children's attachment patterns and developmental outcomes (Deans, 2020; Landi *et al.*,2020; Malmberg *et al.*, 2016). Diverse aspects of this relationship, some of which begin in the antenatal period, have been studied to increase our understanding about the association between parenting and attachment. These include an emotional component, known in the literature as bonding or maternal-foetal attachment (Cranley, 1981), which is linked to the parent's affects in relation to the child or the unborn baby; a behavioural component, known as maternal sensitivity (Ainsworth *et al.*, 1978), which refers to appropriate parental responses to the child's needs; and a cognitive component, known as parental mentalization or, its operationalization, reflective functioning (RF) (Slade, 2005a; Slade, 2005b; Schiborr *et al.*, 2013), linked to the mental representations that the parent has in relation to the baby (born or unborn).

Building on the evidence that found only small to medium associations between maternal sensitivity and infant attachment security (Aggarwal and Patton, 2018; Allen, 2000; De Wolff and van Ijzendoorn, 1997; Van Ijzendoorn, Schuengel, and Bakermans–Kranenburg, 1999), more recent research has begun to focus on the representational aspects of parenting, and in particular the concept of mentalization (Slade 2005a; Slade 2005b) because of its association with child attachment security and the development of emotion regulation in infants and young children (Fonagy, 1991; Stacks *et al.*, 2014; Heron-Delaney *et al.*, 2016; Smaling *et al.*, 2017; Suardi *et al.*, 2020). Mentalization is a multidimensional form of social cognition, and it is defined as the capacity to envision mental states, such as thoughts, feelings, desires, beliefs, and intentions, both in the self and in others (Fonagy *et al.*, 2002). Furthermore, mentalizing individuals are capable not only of recognizing or acknowledging mental states but are also able to think about behaviours connected to such mental states (Slade, 2007). As such, parental mentalization can be understood in terms of the parent's capacity to

recognize the mental agency of their child, to imagine the child's mental states, and to connect their child's mental states with observable behaviours accurately and meaningfully (Senehi, Brophy-Herb and Vallotton, 2018). For example, a parent who can mentalize about possible internal states causing a child's distress/behaviour (i.e., hunger; fear; loneliness) is better able to provide an appropriately sensitive response.

Mentalization theory suggests that parental mentalization promotes the infant's ability to develop mental representations associated with their everyday experiences, scaffolds the child's attentional orientation toward their internal states, and models an understanding of the mind (Fonagy *et al.*, 2002). Perhaps most importantly, it is the repeated interactions with a mentalizing or mind-minded caregiver, and in particular one who is able to make appropriate mind related comments, which contributes to attachment security above and beyond parental sensitivity (Meins *et al.*, 2001). The carer's capacity to make sense of their own and their child's mental states plays a crucial role in helping the child to develop flexible and adaptive means of regulating himself and to establish productive and sustaining relationships (Slade, 2007). Moreover, it has been suggested (Slade, 2007) that the carer's own capacity to tolerate and regulate their own affective experiences is what allows them to tolerate and regulate their child's.

The need to operationalize mentalization in terms of the parent-child relationship has led to the emergence of a range of social-cognitive parenting constructs and related measures such as parental reflective function (Slade *et al*., 2005) and mind-mindedness (Bernier and Dozier, 2003; Meins *et al.*, 2001). Parental reflective functioning refers to the capacity to reflect upon the parent's own mental experiences as well as those of the child (Fonagy *et al.*, 1991) whilst mind-mindedness refers to the appropriateness of caregivers' comments about their infants' internal states (Meins *et al.*, 2012; Meins *et al.*, 2001).

To date, much of the existing research has been epidemiological in nature, focusing on the relationship between RF and children's attachment security (Meins *et al.*, 2001; Slade *et al.*, 2005)

and representational capacities, and more specifically, emotion knowledge (Doan and Wang, 2010), emotion understanding (Kårstad *et al.*, 2015), emotion talk (Salmon *et al.*, 2013) and theory of mind (Laranjo, Bernier, Meins, & Carlson, 2010) as well as parental sensitivity (Longhi *et al.*, 2019). Studies on maternal mind-mindedness, have also been found to predict other positive outcomes in children such as executive abilities (Bernier, Carlson and Whipple, 2010; Bernier, McMahon and Perrier, 2017), early language abilities (Bernier *et al.,* 2017; Meins *et al.,* 2013) as well as fewer behavioural difficulties and higher school attainment in children from low socioeconomic status backgrounds (Meins, Fernyhough, and Centifanti, 2019).

The mentalizing capacities of parents-to-be during pregnancy have also been found to be associated with the later parent-infant relationship. A recent systematic review (Foley and Hughes, 2018) found that representations of the unborn infant had modest but significant associations with observed postnatal ratings of parent-child interaction quality. Furthermore, the evidence also shows that maternal representations have an impact on the attachment pattern of the child after birth (Atkinson *et al.*, 2009; Benoit *et al.*, 1997; Huth-Bocks, Theran, Levendosky and Bogat, 2011; Madigan *et al.,* 2015), finding associations between the 'Balanced' classification-on the Working Model of the Child Interview (Gustman, 2015)-and the 'Secure' attachment classification postnatally. Additionally, data from a number of studies shows that mother's representations remain stable from the prenatal period to the postnatal period (Benoit, Parker and Zeanah, 1997; Theran *et al.*, 2005).

The relevance of parental mental representations, and more specifically, their mentalizing capacities both during pregnancy and postnatally has encouraged the development of a range of mentalization-based parenting interventions (Camoirano, 2017). While all of these target some aspect of parental reflective functioning or mind-mindedness, they focus on different moments of development from pregnancy (Jussila, Ekholm and Pajulo, 2020) to toddlerhood (Zeegers *et al.*, 2019), and diverse populations from parents with mental health difficulties (Schacht *et al.*, 2017) to parents with children with special needs (Enav *et al.,* 2019).

1.2. Perinatal and early parenting interventions

Parenting programmes for young children have been shown to improve both child and parent outcomes (Barlow and Parsons, 2005; Barlow *et al.*, 2011). While most of these have been focused on the postnatal period, there has also been a burgeoning interest in early parenting interventions that begin antenatally including home visiting programmes (Barnes *et al.,* 2017; Catherine *et al.*, 2016; Olds, 2006) and preparation for parenthood programmes (Gagnon and Sandall, 2007; McMillan, Barlow and Redshaw, 2009). This expansion to the antenatal period reflects an increasing recognition of its importance as a window of opportunity for early intervention to promote child cognitive, behavioural and socioemotional development, as well as for the promotion of positive parental caregiving outcomes and the prevention of child abuse and neglect (Eckenrode *et al.*, 2010; Kitzman *et al.*, 1997; Kitzman *et al.*, 2010; Mejdoubi *et al.*, 2015; Olds, 2006; Olds *et al.*, 1986; Olds, Henderson and Kitzman, 1994; Olds *et al.*, 1998; Olds *et al.*, 2004; Olds *et al*., 2007).

1.3. Mentalization based interventions in the perinatal period

Over the past decade, we have also begun to see the development of programmes that are explicitly focused on bringing about change in maternal mentalization during the pre and postnatal periods. Mentalization Based Treatment (MBT) in general was developed as an approach to address borderline personality disorder (BPD) in adults, which has been identified to be a 'disorder in mentalizing'. Evidence supporting the effectiveness of MBT in improving the mentalizing capacities of patients with BPD (Bateman and Fonagy, 2004; 2008), has led to the development of mentalization-based interventions for a wider range of populations with psychosocial risk including parents-infants/toddlers dyads experiencing difficulties such as social risk (Sadler *et al.*, 2013), substance dependence (Suchman *et al*.,2011) and depression (Salo et al., 2019). These interventions have as a primary objective the development of a reflective stance in parents. This involves helping them to wonder about their child's internal experience rather than just their behaviour (Slade, 2007) (see next section for further detail). The latest review and metanalysis on the effectiveness of mentalization-

based interventions for parents with infants (Barlow *et al.*, 2021) analysed six trials of five dyadic interventions that targeted mentalization and found a significant reduction in disorganized attachment albeit a nonsignificant moderate improvement in parental reflective functioning. Five interventions were included in that review: Minding the Baby (Sadler *et al.*, 2013), New Beginnings for mothers and babies in prison (Sleed, Baradon and Fonagy, 2013), the Mothers and Toddlers programme (Suchman *et al.*, 2010), Mothering from the inside out (Suchman *et al.*, 2017) and Parent Infant Psychotherapy-PIP (Fonagy, Sleed and Baradon, 2016). These specifically targeted reflective functioning and had in common that they were dyadic, relational, manualized and focused on promoting secure attachment. They were delivered either by professional practitioners such as nurses and social workers (Sadler *et al.*, 2013) or trained therapists (Fonagy, Sleed and Baradon, 2016; Sleed *et al.*, 2013; Suchman *et al.,* 2010; Suchman et al., 2017). The programmes were delivered both on an individual (i.e., Mothering from the inside put) and group-basis (i.e., New Beginnings for mothers and babies in prison) and ranged from 8 to 16 sessions, they were delivered either post-natal or across the perinatal period. They were delivered to a diverse group of parents that ranged from low-risk mothers (Sadler *et al.*, 2013) through to women with demographic risk factors (Slade *et al.,* 2020) or mental health problems who were also experiencing high levels of social adversity (Fonagy *et a*l., 2016), to high-risk groups of women in prison (Sleed *et al.*, 2013) or who were substance dependent (Suchman, 2010).

All the included interventions aimed to bring about a positive change in the parent-infant relationship by developing or strengthening the parent's capacity to recognize how their thoughts, emotions and intentions impacted their actions and specifically, there relationship with the baby.

Slade (2007) identifies three essential mechanisms that mentalization-based parenting programmes use to promote the development of reflective functioning in parents. First, they model reflectiveness in which the clinician delivering the intervention represents the child to the parent in terms of mental states. This is achieved by focusing on the child's mental states and intentions 'giving a voice' to the

child's internal experience. In this way the clinician reframes the parent's behavioural explanations of their infant's behaviour in terms of the infant's mental states. Second, they facilitate 'wondering' about the infant's internal states, by promoting curiosity in parents about their infants' experience. Third, they elicit affect as a means to mentalization by focusing on experiences that occur 'in the moment' including the thoughts and feelings of both the parent and the child. By addressing concrete situations that happen in the presence of the practitioner, strong affects can be mobilized and regulated.

Parent's mentalizing capacities are thought to have an impact in the child's own capacity to mentalize, and through the 'marked mirroring' of the infant's affect, are thought to provide the foundation for attachment security, affect regulation, and self-control (Ensink and Mayes, 2010; Slade, 2005a). Evidence from RCT studies and a systematic review on the effectiveness of interventions with a focus on parental mentalization, show that these can have positive effects on parental reflective functioning (Slade *et al.*, 2020) as well as on parent outcomes such as maternal sensitivity (Salo *et al.*, 2019) and child development outcomes, reducing the presence of disorganized attachment (Barlow *et al.*, 2021) and child behavioural difficulties (Longhi *et al.*, 2019). However, it is important to note that these results are not consistent among studies.

1.4. Rationale for review

While a significant number of parenting interventions have been developed specifically targeting Reflective Functioning or Mind-mindedness, or measuring these as outcomes, to date, only two systematic reviews have collated information regarding their effectiveness (Camoirano, 2017; Barlow, 2021). Only one of these combined the data in a meta-analysis (Barlow, 2021), and neither included antenatal interventions or studies that had assessed mind-mindedness as an outcome. The current review will update the existing reviews widening the focus to the perinatal period. The review will include meta-analysis of interventions effectiveness on parental reflective functioning and the parent-infant relationship.

2. Methods

The protocol for this systematic review and metanalysis was registered in PROSPERO (https://www.crd.york.ac.uk/PROSPERO/) in March 2021 (Registration number: CRD42021242524).

2.1. Eligibility criteria

The inclusion and exclusion criteria for this study were formulated using the PICOS framework. We included Randomized Control Trials (RCTs) (individual or cluster) evaluating the effectiveness of interventions that had mentalization explicitly mentioned as part of its mechanisms of change. Studies were included if the primary target of the intervention was pregnant women or mothers of infants or toddlers with a mean age up to 36 months. Both individual and group modalities of interventions were included. Comparison groups could be active (other interventions that did not target parent mentalization) or inactive control (waitlist, treatment as usual) groups. Studies had to have measured mentalization (reflective functioning or mind-mindedness) using a standardized instrument. We also extracted data for secondary outcomes: parent-infant interaction, maternal mental health, and infant attachment. Even though like mentalization, theory of mind (ToM) refers to metacognitive processes, we didn't include it as an outcome in this study as we were interested specifically in the relational and emotional aspects of these processes which ToM doesn't fully address.

2.2. Search strategy

Eligible papers were identified using electronic databases PsycINFO, MEDLINE, Cochrane Central Register of Controlled Trials, CINAHL and Web of Science as well as sources of grey literature such as Clinical Trials.gov, PROQUEST Dissertations & Theses Global and UNICEF Office of Research – Innocenti. The searches were run both in English and in Spanish until October 2021. The detailed search strategy was as follows: [("Reflective functioning" OR "Mind-Mindedness") OR ("mentalization based" OR "mentalization based")] AND [(baby OR infant OR infancy OR toddler)

OR (pregnancy or pregnant or prenatal or antenatal or perinatal or maternal or parental)]. Additionally, reference lists of the included papers and other relevant reviews were examined.

2.3. Selection of studies

Studies identified through searches were imported to EndNote, and duplicates were removed. The reviewer screened titles and abstracts to determine whether they met the inclusion criteria. The reviewer then obtained and reviewed all full texts of titles and abstracts that appeared to meet the criteria. For articles without abstracts or with very brief abstracts, full texts were reviewed if titles appeared relevant. Inter-rater reliability wasn't assessed but the second reviewer corroborated the first reviewer's decisions at the full-text stage.

2.4. Data extraction and management

The data from the included studies was extracted, coded, and entered in a spreadsheet created by the review author. Authors of the included trials were contacted to obtain missing data if the reasons for missing data had not been specified. Information collected on the data extraction form included:

- Demographic details: mean age, age range, gestational weeks, or infant's age.
- Intervention details: Type of intervention, length, intensity, group or individual.
- Methods: study design, study setting
- Outcome measures including primary and secondary outcomes and time point data collected including post-treatment measures.

2.4.1. Assessment of risk of bias in included studies

The risk of bias for all studies was appraised by the review author using the criteria recommended by the Handbook for systematic reviews of interventions (Higgins, 2019b) using the RoB 2 tool. The following domains were assessed:

- Randomization process
- Deviations from the intended interventions
- Missing outcome data
- Measurement of the outcome
- Selection of the reported result

2.4.2. Data synthesis

The decision about whether to conduct a meta-analysis was based on the homogeneity of the included studies in terms of interventions, participants, and outcome measures, to ensure meaningful statistical conclusions.

A random effects model was used to pool the data for each outcome as some level of heterogeneity was expected. The meta-analysis was performed using Review Manager 5.4 (Review manager 2020). We calculated the overall effects using inverse variance methods. For dichotomous outcomes we calculated a standard estimation using risk ratio (RR) or odds ratio and its 95% confidence intervals (CIs). We analysed continuous outcome data by calculating standardised mean differences (SMDs). This was presented with 95% CIs. SMDs was calculated using Hedges g. When an outcome was reported in some studies as dichotomous data and in other studies as continuous data, we converted the odds ratios to a SMDs, assuming that the underlying continuous measurements followed a logistic distribution, and that the variability of the outcomes was the same in both experimental and comparator participants.

Subgroup analyses were conducted for the primary outcome to assess the impact of the delivery components (delivery mode, number of sessions, level of risk, and focus of the intervention - perinatal, antenatal or infancy) on the results.

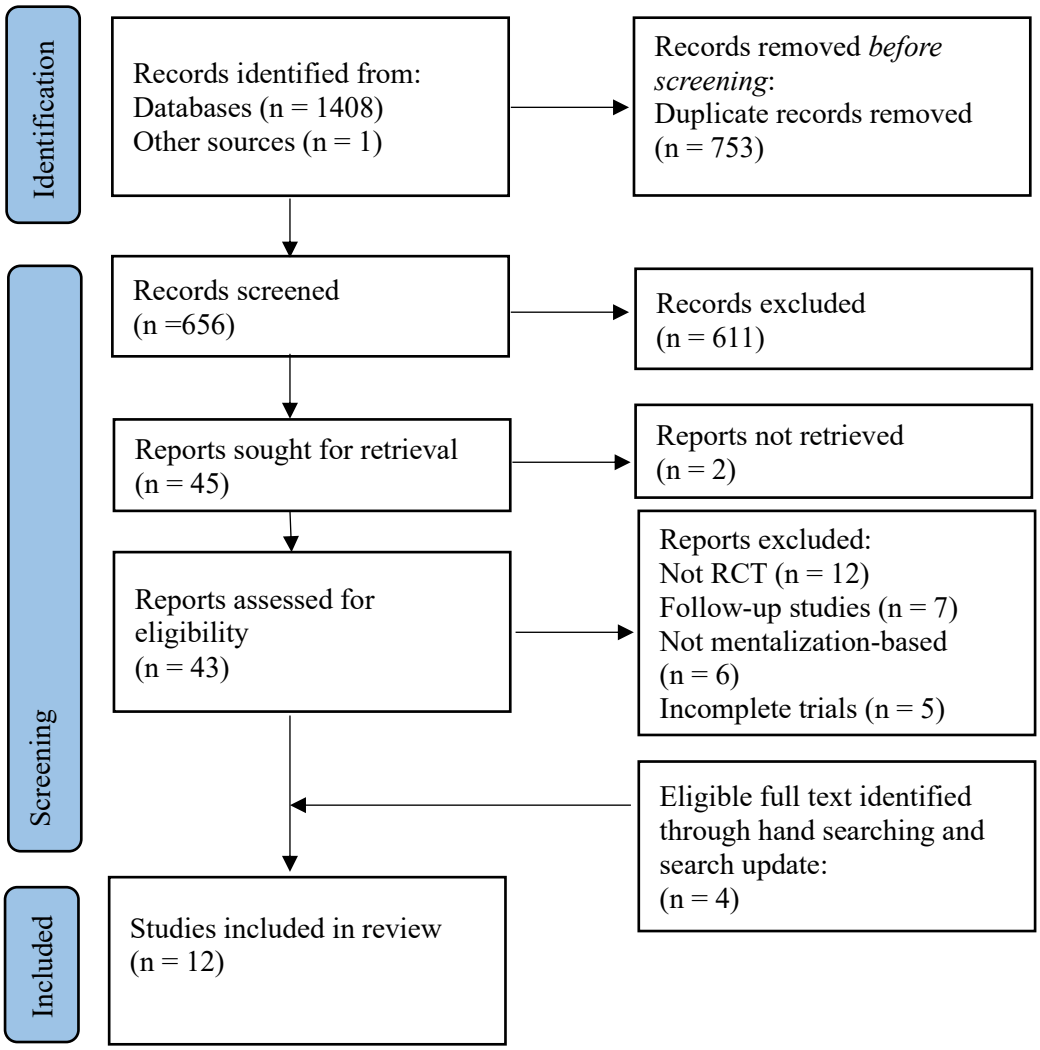
Sensitivity analyses were carried out by repeating analyses with the exclusion of studies that were cluster RCT's or were at high risk of bias.

3. Results

3.1. Results of the search

The PRISMA flow chart (Figure 1) shows that a total of 1409 records were identified. Following the removal of duplicates, 656 records remained for screening. After screening titles and abstracts, the review author identified and obtained 43 full texts to further assess eligibility. Thirty-five reports were further excluded (see Figure 1). One more report was identified through an update of the initial search and three more through hand searching of reference lists, resulting in 12 studies (studying 9 different parenting programmes) being included in this review (see Table 1).

Figure 1 PRISMA flow chart



Two of the studies were small pilot RCTs (Cox *et al.*, 2020; Letourneau *et al.*, 2020) and two were cluster RCT's (Sleed *et al.*, 2013; Slade *et al.*, 2020). All the studies included in this review reported results for Parental Reflective Functioning. No RCT's were found reporting results on Mind-mindedness.

All of the included studies apart from on (Cox *et al.*, 2020) included parents with moderate to high psychosocial risk (see Table 1), including, first time young mothers facing significant social deprivation (Longhi *et al.*, 2019; Sadler *et al*., 2013; Slade *et al.*, 2020), mothers using substances (Jussila *et al.*, 2020; Suchman, 2013; Suchman *et al.*, 2017), mothers experiencing mental health difficulties (Fonagy *et al.* 2016; Salo *et al.*, 2019), mothers in prison (Sleed *et al.*, 2013), mothers exposed to toxic stress (Letourneau *et al.*, 2020), and mothers with infants experiencing early regulatory disorders (Georg *et al.*, 2021) (see Table 1). The reminding study (Cox *et al.*, 2020) was conducted with a low-risk sample of women (i.e., middle class, white population without reported difficulties) attending a maternity unit.

Eight different interventions were included among the twelve studies. These included 'Minding the baby' reported in three studies (Longhi 2019; Sadler *et al.,* 2013; Slade 2020), 'New Beginnings for Mothers and Babies in Prison' (Sleed *et al.*, 2013), 'Attachment and child health ATTACH' (Letourneau *et al.*, 2020), 'Nurture and Play' (Salo *et al.*, 2019), the 'Mothers and Toddlers program' (Suchman *et al.,* 2010), 'Mothering from the inside out' (Suchman *et al.*, 2017), a 'Parental mentalization focused ultrasound consultation' (Jussila *et al.*, 2020), 'Baby Chat' (Cox *et al.*, 2020), and 'Parent Infant Psychotherapy PIP' which was reported in two studies (Fonagy 2016, Georg *et al.*, 2021). Most of the interventions delivered focused on infancy (Fonagy *et al.* 2016; Georg *et al.*, 2021; Letourneau *et al.*, 2020; Sleed *et al*., 2013; Suchman *et al*., 2010; Suchman *et al.,* 2017), four focused on the perinatal period (Longhi *et al*., 2019; Sadler *et al*., 2013; Salo *et al.*, 2019; Slade *et al*., 2020), and two focused on the antenatal period (Cox, 2020; Jussila 2020) (see table 2).

For more information regarding the interventions' characteristics see Table 2.

Table 1 Description of included studies

Author	Population	Interventions and conditions	Outcome measures and time of assessment	Results at post-intervention	
				Intervention	Control
Cox et al., 2020	Pregnant women from two maternity units (non-clinical)	Baby chat – single group antenatal intervention, incorporation 4D scan video (n=15) Wait list control (n=13)	Maternal reflective functioning—Prenatal parenting reflective functioning questionnaire (P-PRFQ) Parental attachment—Maternal and parental antenatal attachment scales (MAAS/PAAS) Pregnancy behaviours –Prenatal health behaviours scale (PHBS) Assessed immediately post intervention	4.9(1.12)	4.14(0.82)
Fonagy et al., 2016	Parents experiencing mental health problems as well as socioeconomic deprivation.	Psychoanalytic Parent Infant Psychotherapy PIP (n=38) Treatment as usual - Secondary and specialist primary care treatment (n=38)	Maternal reflective functioning– The Parent Development Interview (PDI) Parent–infant interaction – Emotional Availability Scale (EAS); Coding Interactive Behaviour System (CIB) Attachment – The Strange Situation Procedure (SSP) - Secure - Disorganised Depression – Centre for Epidemiological Studies Depression Scale (CES-D) Global distress – Brief Symptom Inventory (BSI) Master – Mastery Scale (MS) Mother–Object Relations Scale (MORS): Warmth and Invasion Parenting Stress Index (PSI) -total score Ages and Stages Questionnaire (ASQ: SE) 12-month follow-up reported (not 6 month)	4.8(1.6)	4.3(1.4)
Georg et al., 2021	Families with infants experiencing significant crying, sleeping or feeding difficulties.	Focused Parent Infant Psychotherapy fPIP – brief psychodynamic based intervention (n=81) Treatment as usual - developmentally oriented education and counselling (n=73)	Parental reflective functioning –Parental Reflective Functioning Questionnaire (PRFQ) - Pre-Mentalizing (PM) - Curiosity in Mental States (IC) - Certainty of Mental States (CMS) Parent-infant relationship –Parent relationship Global Assessment Scale (PIR-GAS) Infant regulatory symptoms—The questionnaire for Crying, Feeding and Sleeping (QCFS); the 96-Hour Behavior Diary. Parenting stress—Parenting stress index (PSI) Psychological distress and depression—The symptom-checklist (Symptom Checklist-90R-S, SCL) Maternal self-efficacy—The Maternal Self-Efficacy Scale (MSES) Emotional Availability –The Emotional availability Scales (EAS) Patient satisfaction—Patient Satisfaction Questionnaire (ZUF-8) Measured after intervention (12 weeks from time 1)	PRFQ: Pre Ment 1.44(0.52) Curiosity MS 4.92(0.93) Certainty 4.47(0.95)	PRFQ: Pre Ment 1.58(0.6) Curiosity MS 4.93(1.03) Certainty 3.96(1.06)

Table 1 Description of included studies

Author	Population	Interventions and conditions	Outcome measures and time of assessment	Results at post-intervention	
				Intervention	Control
Jussila, 2020	Pregnant women in outpatient clinic due to self-reported alcohol abuse, illicit drug use/misuse of a prescription medication, or concerns regarding alcohol consumption.	Parental mentalization-focused ultrasound consultation (n=47) Treatment as usual at the obstetric outpatient clinic (n=48)	Maternal reflective functioning –Prenatal Parental Reflective Functioning Questionnaire (P-PRFQ) Depression—Edinburg (Pre) Postnatal Depression Scale (EDPS) Anxiety State-Trait Anxiety Inventory (STAI) Maternal-Fetal attachment—Maternal-Fetal Attachment Scale (MFAS) Measured at the end of the intervention.	5.2(0.5)	5.2(0.6)
Letourneau, 2020	Women with high psychosocial risk, typically affected by toxic stress.	Attachment and child health intervention ATTACH (n=15) TAU – Nurturing patenting intervention/Theraplay for all participants neither focused on reflective functioning (n=15).	Maternal reflective functioning—Parent development interview (PDI) Attachment—Strange situation procedure (SSP) -Secure -Insecure Assessed post intervention (10-12 weeks after baseline)	3.7(1.8)	2.7(1.5)
Longhi, 2019	Young first-time pregnant women experiencing social deprivation.	Minding the baby - intensive home-visiting programme (n=75) Treatment as usual - comprised the standard care provided to the mothers by their local services, including GPs, health visitors and community midwives (n=73).	Parental reflective functioning –Parent Development Interview (PDI) at year 1* Maternal sensitivity – NICHD Study of Early Childcare protocol Child attachment –Attachment Q-Set (AQS) at year 2* Child cognitive development –Bayley Scales of Infant and Toddler Development, third edition (Bayley-III) at year 2* Behavioural problems –Child Behaviour Checklist (CBCL) at year 2* Maternal mental health –Edinburg Postnatal Depression Scale (EPDS) Parent stress –The Parenting Stress Inventory (PSI) Mastery –Pearlin and Schooler 7 item scale Maternal anxiety –The State-Trait Anxiety Inventory (STAI) All measured at year 1 and 2 except for *.	3.31(0.22)	3.61(1.39)

Table 1 Description of included studies

Author	Population	Interventions and conditions	Outcome measures and time of assessment	Results at post-intervention	
				Intervention	Control
Sadler, 2013	First time pregnant women attending nurse-midwifery group prenatal care sessions	Minding the baby - intensive home-visiting programme (n=72) Treatment as usual – usual care at an urban community health centre (n=67)	Maternal reflective functioning – The Parent Development Interview (PDI) Maternal Depression Centre for Epidemiological Studies Depression Scale (CES-D) Global distress – Brief Symptom Inventory (BSI) Maternal–child relationship – Atypical Maternal Behaviour Instrument for Assessment and Classification (AMBIANCE) Attachment – The Strange Situation Procedure (SSP) - Secure -Disorganised AMBIANCE assessed at 4 months; all other measures at 12 months.	3.6(0.08)	3.7(1.5)
Salo, 2019	Prenatally depressed mothers	Nurture and play – mentalisation-based parenting group intervention (n=24) Treatment as usual - bi-monthly medical check-ups during pregnancy and six meetings after the birth until the children are 12 months (n=21)	Parental reflective functioning – Parent Development Interview (PDI) Caregiving behaviour – Nursing Child Assessment Satellite Training (NCAST) Total Contingency for Caregiving Behaviour Depression – Beck Depression Inventory (BDI) Global Distress – Brief Symptom Inventory (BSI) Substance Use Assessed immediately post-intervention	4.05(1.33)	2.92(1.45)
Slade, 2020	Young first-time pregnant women living in underserved, poor, urban communities	Minding the baby – intensive home-visiting programme (n=82) Treatment as usual – routine prenatal and postnatal well-woman health visits, and well-baby health care visits as dictated by clinical guidelines and infant/child immunization schedules in place at the health centres (n=82).	Maternal reflective functioning postnatal – Parent Development Interview – Revised (PDI) Maternal child relationship – Atypical Maternal Behaviour Instrument for Assessment and Classification (AMBIANCE) Scale (4 months)- Disrupted Attachment – The Strange Situation Procedure (SSP) - Secure -Disorganised Maternal Depression Centre for Epidemiological Studies Depression Scale (CES-D) Post-traumatic stress disorder (PTSD) – Mississippi Scale for the Assessment of PTSD – Civilian Form Assessed at 12 months (infant).	OR: 2.15 95% confidence CI [1.02, 4.53]	

Table 1 Description of included studies

Author	Population	Interventions and conditions	Outcome measures and time of assessment	Results at post-intervention	
				Intervention	Control
Sleed, 2013	Mothers and babies in prison	New beginnings for mothers and babies in prison - manualized attachment-based intervention developed specifically for mothers and babies in prison (n= 3 prisons; 96 mothers) Treatment as usual - mothers and babies in both groups had access to standard health and social care provision as provided by the prison service (n=4 prisons; 99 mothers).	Parental Reflective Functioning – Parent Development Interview (PDI) Mother-Infant Interaction – Coding Interactive Behaviour Scales (CIB) – Dyadic Attunement Mother Object Relations Scale (MORS) – warmth/invasion Depression) – Centre for Epidemiological Studies Depression Scale (CES-D) All assessed immediately post-intervention	3.54(1.57)	3.15(1.33)
Suchman, 2010	Mothers enrolled in outpatient substance use treatment	The mothers and toddlers program - 12-week individual psychotherapy intervention designed as an adjunct to outpatient substance abuse treatment (n=23) Parent education – helping mothers to get connected to services, solve problems of daily living, and male parenting-related decisions (n=24)	Parental reflective functioning – Parent Development Interview (PDI) Representations of the child – Working Model of the Child Interview (WMCI) Coherence Caregiving behaviour – Nursing Child Assessment Satellite Training (NCAST) Total Contingency for Caregiving Behaviour Child behaviour—NCAST scales for child cues and responsiveness. Depression – Beck Depression Inventory (BDI) Global Distress – Brief Symptom Inventory (BSI) Substance Use Assessed immediately post-intervention	3.33(0.46)	3.11(0.46)
Suchman, 2017	Mothers in addiction treatment	Mothering from the inside out - 12-week individual psychotherapy intervention designed as an adjunct to outpatient substance abuse treatment (n=40). PE - structured intervention that provides developmental guidance and parenting strategies for challenges that are typically encountered by parents with young children and challenges that are typical for parents in substance abuse treatment (n=47).	Parental reflective functioning – Parent Development Interview (PDI) Representations of the child – Working Model of the Child Interview (WMCI) Coherence Mother-Infant Interaction – Coding Interactive Behaviour Scales (CIB)– Maternal sensitivity Global distress - Brief Symptom Index (BSI) Attachment – The Strange Situation Procedure (SSP) - Secure -Insecure/Disorganised Assessed at 12 months infant age	3.25(0.06)	3.14(0.06)

Table 2 Interventions characteristics

	Delivery Mode		**Number of sessions**			**Targeted developmental stage**			**Level of risk**			**Setting**	
Study ID	Individual	Group	1-10	11-20	50+	Ante natal	Infancy	Peri natal	High	Moderate	Low	Professional	Home
Cox et al., 2020		X	X			X					X	X	
Fonagy et al., 2016	X			X			X		X			X	
Georg et al., 2021	X		X				X			X		X	
Jussila et al., 2020	X		X			X			X			X	
Letourneau et al., 2020	X			X			X			X		X	
Longhi et al., 2019	X				X			X		X			X
Sadler et al., 2013	X				X			X		X			X
Salo et al., 2019		X		X				X	X			X	
Slade et al., 2020	X				X			X		X			X
Sleed et al., 2013		X	X				X		X			X	
Suchman et al., 2010	X			X			X		X			X	
Suchman et al., 2017	X			X			X		X			X	

3.2. Risk of bias in included studies

As figure 2 shows we found three studies (Fonagy *et al.*, 2016; Slade *et al.*, 2020; and Sleed *et al.*, 2013) as presenting low risk of bias, five studies were rated as presenting some concerns (Georg *et al.*, 2021; Jussila *et al.*, 2020; Longhi *et al.,* 2019; Suchman *et al.*, 2010; Suchman *et al.*, 2017) and four studies were found to be at high risk of bias (Cox *et al.*, 2020; Letourneau *et al.*, 2020; Salo *et al.*, 2019; Sadler *et al.*, 2013).

Figure 2 Risk of bias of included studies



3.3. Narrative analysis of the intervention components

Through inductive analysis we identified: (1) components that provide support or information to parents and (2) components that promote the strengthening of relationships (see Table 3).

3.3.1. Components aimed at providing support or information

3.3.1.1. Parent education

Interventions that provided parents with health information (Jussila, 2020; Longhi, 2019; Sadler *et al.*, 2013; Slade, 2020) involved the use of prenatal education, and parent/infant health information. Education components also included the provision of information about child development (Cox, 2020; Georg, 2021; Jussila, 2020; Longhi, 2019; Sadler, 2013; Salo, 2019; Slade, 2020; Suchman, 2010; Suchman, 2017) explaining to parents what to expect at different stages of the development of the unborn baby and/or the infant. Finally, interventions also offered parenting strategies (Cox, 2020; Georg, 2021; Longhi, 2019; Sadler, 2013; Slade, 2020; Suchman, 2017), which involved behavioural interventions, modelling parenting skills, and direct advice on how promote secure attachment.

3.3.1.2. Parental mental-health support.

Interventions supported mothers with their mental health difficulties in both or one of two areas: emotion regulation which included cognitive and affect regulation techniques to manage depressive mood and better tolerate their children's emotional distress (Georg, 2021; Salo, 2019; Suchman, 2010; Suchman, 2017) and stress management which included sharing strategies to cope with stress (Salo, 2019 and Suchman, 2010). Minding the baby interventions (Longhi, 2019; Sadler, 2013; and Slade, 2020) also provided this type of support but only in cases where there was a specific need, therefore we didn't treat parental mental health as being a specific component of this interventions.

Practical assistance

Practical support involved advice (Longhi, 2019; Sadler, 2013; Salo, 2019; Slade, 2020; Suchman 2010) regarding a range of practical issues, such as for example, legal issues and infant sleeping problems; and supporting mothers to fulfil basic needs (Longhi, 2019; Sadler, 2013; Salo, 2019; Slade, 2020; Suchman 2010) including physical safety, food assistance, employment, childcare, schooling, housing support, social benefits for the children, and health issues.

3.3.2. Components aimed at strengthening relationships

3.3.2.1. Fostering interaction

Activities that were aimed at promoting interaction between mother and infant (or unborn baby) included dyadic play (Cox *et al.*, 2020; Longhi *et al.*, 2019; Sadler *et al.*, 2013; Salo *et al.*, 2019; Slade *et al.*, 2020; Sleed *et al*., 2013) and/or physical touch (Salo, 2019). Prenatally, play activities included singing, playing music or talking to the fetus and physical activities included mothers touching their bellies and/or making rhythmic movements to stimulate the fetus. Postnatally, play involved peekaboo, singing or playing instruments to the baby, whilst physical touch involved massage and exploring the baby's senses with touch.

3.3.2.2. Fostering reflectiveness

A number of activities were aimed at fostering maternal reflectiveness regarding their own internal states (including understanding how these were connected to their early experiences) and their infant's. Three types of activities were identified: Visual activities (see below for further detail) (Cox, 2020; Jussila, 2020; Letourneau, 2020; Longhi, 2019; Sadler, 2013; Salo2019; Slade, 2020; Suchman, 2010), homework (Jussila, 2020; Longhi, 2019; Sadler, 2013; Salo, 2019; Slade, 2020; Sleed, 2013), discussion of challenging situations (Fonagy, 2016; Letourneau, 2020; Suchman 2010; Suchman, 2017) and reframing (Fonagy, 2016; Georg, 2021; Longhi, 2019; Sadler, 2013; Slade, 2020; Suchman, 2010; Suchman, 2013) .

The visual activities in the prenatal stage involved ultrasound images –interactive 4D ultrasound or video with generic 4D ultrasound images– visualisation (imagining) the characteristics of their unborn baby in the womb or drawing pictures of the future baby. In the postnatal stage the activities included watching videos of the mother-baby interacting during play or daily routines. For instance, the practitioner filmed the parent and infant in a free play situation to then watch a short clip of the video together (practitioner and parent); in this 'feedback session the practitioner focused on parents'

perceptions (including wishes, intentions, and emotions) of themselves and their children offering opportunities for parental mentalization.

Homework involved activities aimed at stimulating mentalization in-between sessions, using journaling, scrapbooking (these two used prenatally and postnatally) and tasks such as observing their child for a few minutes when at home and thinking about their internal states.

The discussion of challenging situations included thinking about hypothetical parent-infant situations as well as reviewing real-life stressful situations that happened in the past or directly addressing difficulties in the relationship with the infant happening during the session. particular attention was given to nonverbal communications and communication errors and what the parent and others might have been thinking and feeling.

Finally, reframing was a technique that often was part of the activities presented before, as it involved helping parents to review situations considering what their and others' feelings, thoughts, intention and wishes were and therefore have a more integrated (mentalizing) perspective of the situation. For instance, the therapist helped parents to think about their own attachment experiences and how these might impact their internal representations of their infants.

3.3.2.3. Relationship with a mentalizing therapist

The stance of the therapist was another component found in multiple interventions (Fonagy, 2016; Georg, 2021; Jussila, 2020; Letourneau, 2020; Longhi; Sadler, 2013; Slade, 2020; Suchman, 2010; Suchman, 2017), specifically the therapeutic alliance and the mentalizing stance of the practitioner. Therapeutic alliance involved building a relationship based on continuity, trust, empathy, and non-judgement with the participants, and the development of a mentalizing stance referred to the practitioner's curious, not-knowing attitude regarding the child's and parent's feelings.

Table 3 Intervention components

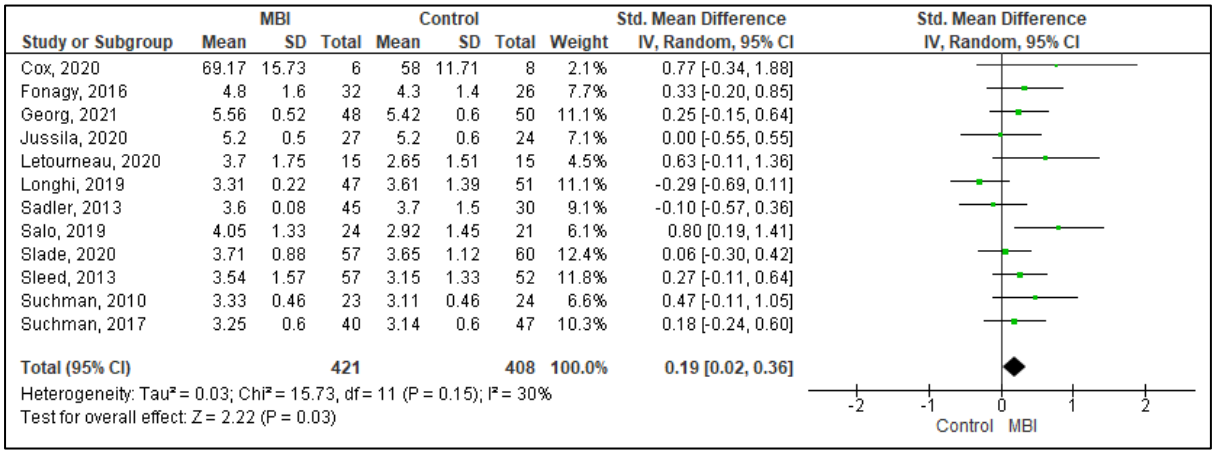
	Activities providing support/ information									**Activities promoting strengthening of relationships**				
	Offers parental education			Promotes maternal mental health		Provides practical assistance		Interaction focused activities		Reflectiveness focused activities				Rel. with Mentalizing
Study ID	Health education	Child development	Parenting strategies	Focus on emotion regulation	Focus on stress management	Support with basic needs	Practical advice	Dyadic play	Physical touch	Visual activity	Homework	Discussion of challenging situations	Reframing	Therapist
Cox et al., 2020		X	X					X		X				
Fonagy et al., 2016												X	X	X
Georg et al., 2021		X	X	X									X	X
Jussila et al., 2020	X	X								X	X			X
Letourneau et al., 2020										X		X		X
Longhi et al., 2019	X	X	X			X	X	X		X	X		X	
Sadler et al., 2013	X	X	X			X	X	X		X	X		X	X
Salo et al., 2019		X		X	X	X	X	X	X	X	X			
Slade et al., 2020	X	X	X			X	X	X		X	X		X	X
Sleed et al., 2013								X			X			X
Suchman et al., 2010		X		X	X	X	X			X			X	X
Suchman et al., 2017		X	X	X								X	X	X

3.4. Effects of interventions: metanalysis and single study results

3.4.1. Reflective functioning

All studies included a measure of Parental Reflective Functioning that could be combined in a meta-analysis providing an overall sample of 829 participants, of which 421 were assigned to a mentalization-based intervention group and 408 were assigned to a control or other intervention group. The results were significant favouring the intervention group (SMD= 0.19 95% CI [0.02, 0.36], p =.03) and with moderate heterogeneity (χ^2 =15.73, df=11, p < .15; I^2 = 30%) (see Figure 3).

Figure 3 Forest plot of meta-analysis for maternal reflective functioning

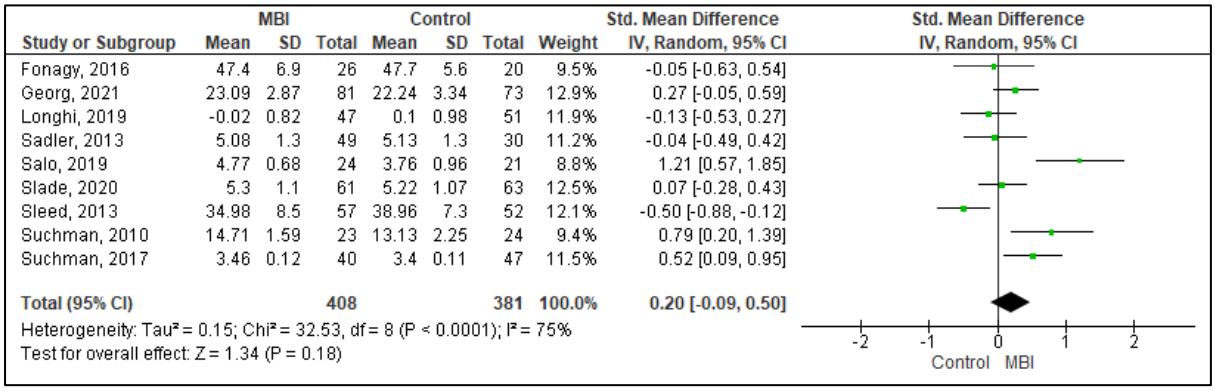


Secondary outcomes

3.4.2. Parent infant interaction

Nine studies (Fonagy *et al.* 2016; Georg *et al.,* 2021; Longhi *et al.*, 2019; Sadler *et al.*, 2013; Salo *et al.*, 2019; Slade *et al.*, 2020; Sleed *et al.*, 2013; Suchman *et al.*, 2010; Suchman *et al.*, 2017) included a measure of parent-infant interaction, which were combined in a meta-analysis providing an overall sample of 789 participants, of which 408 were assigned to a mentalization-based intervention group and 381 were assigned to a control group. The results showed no significant differences between intervention and control groups (SMD) 0.20 (95% CI [-0.09, 0.50], p =.18) and significant heterogeneity (χ^2 =32.53, df= 8, p < .00001; I^2 = 75%) (see Figure 4).

Figure 4 Parent-infant interaction at post-intervention



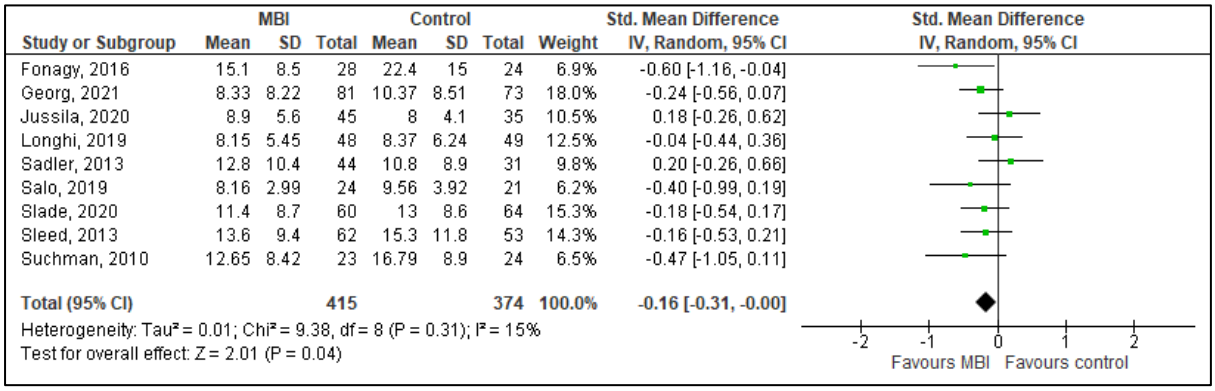
3.4.3. Maternal global psychiatric disorders

Four studies (Fonagy et al. 2016; Sadler et al., 2013; Suchman et al., 2010; Suchman et al., 2017) included measures of maternal global distress which were combined in a meta-analysis providing an overall sample of 261 participants, of which 135 were assigned to a mentalization-based intervention group and 126 were assigned to a control group. The results showed no significant difference between intervention and control groups (SMD: -0.85; 95% CI [-4.62, 2.92]; p =.66). Heterogeneity was considerable and significant (χ^2 =10.71, df= 3, p < .01; I^2 = 75%).

3.4.4. Maternal depression

Nine studies (Fonagy *et al.* 2016; Georg *et al.*, 2021; Jussila *et al.*, 2020; Longhi *et al.*, 2019; Sadler *et al.*, 2013; Salo *et al.*, 2019; Slade *et al*., 2020; Sleed *et al.*, 2013; Suchman *et al*., 2010) included measures of maternal depression, which were combined in a meta-analysis. These provided an overall sample of 789 participants, of which 415 were assigned to a mentalization-based intervention group and 374 were assigned to a control group. The results indicate that mothers in the intervention groups scored significantly lower in maternal depression than mothers in control groups (SMD: -0.16; 95% CI [-0.31, -0.0]; p =.04). Heterogeneity was small and not significant (χ^2 =9.38, df= 8, p < .31; I^2 = 15%) (see Figure 5).

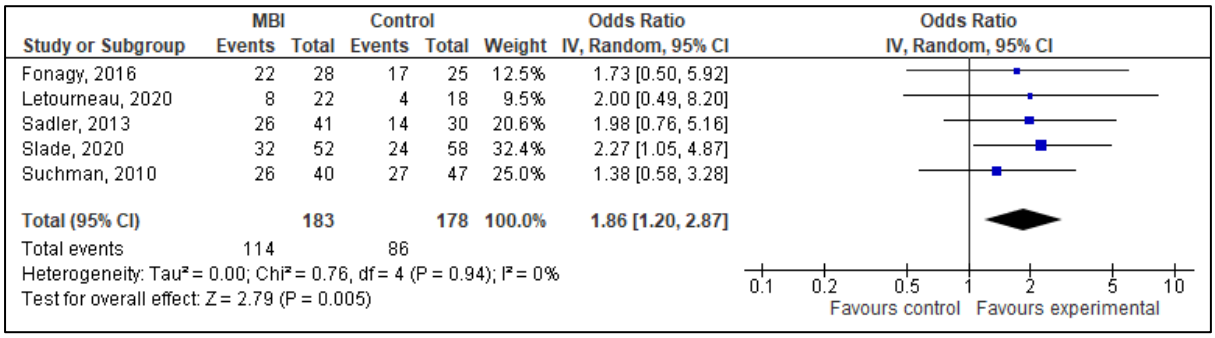
Figure 5 Maternal depression at post-intervention



3.4.5. Infant attachment

As figure 6 shows, five studies measured infant attachment using the Strange Situation Procedure (SSP) (Ainsworth, Blehar, Waters and Wall, 1978) (Fonagy *et al.*, 2016; Letourneau *et al.*, 2020; Sadler *et al.*, 2013; Slade *et al.*, 2020; Suchman *et al.*, 2017). A total of 361 participants were included in the meta-analysis of secure attachment, The results indicate that rates of secure attachment in the intervention group were higher than for the control group (OR: 1.86; 95% CI [1.20, 2.87], p = .005) with low levels of heterogeneity ($\chi^2 = 0.76$, df = 4, p = .94, $I^2 = 82\%$).

Figure 6 Infant secure attachment at post-intervention



3.5. Sensitivity analysis

Sensitivity analyses were conducted for maternal reflective functioning. The impact of study quality was assessed by (1) removing studies with overall high risk of bias and by (2) adjusting the 'n' of studies that used cluster randomization.

3.5.1. Exclusion of studies with high risk of bias

Four studies were removed due to a high risk of bias (Cox *et al.*, 2020; Letourneau *et al.*, 2020; Sadler *et al.*, 2013; Salo *et al*., 2019). The pooled effect was not significant and smaller than when the studies with high risk of bias were included (SD: 0.13, 95% CI [-0.03,0.29], p =.10) and the level of heterogeneity was not non-significant and small (χ^2 =7.44, df = 7, p = .38, I^2 = 6%).

3.5.2. Adjustment for clustering in included RCTs

Two of the included studies used cluster randomization (Slade *et al*., 2020; Sleed, 2013). Both studies analysed their data as if the randomization was performed on the individual rather than clusters. Due to the insufficient data available for the study of Slade and colleagues (2020) we couldn't perform appropriate sensitivity analysis. Sleed and colleagues' (2013) didn't report the Intracluster Correlation Coefficient (ICC). So, we used an estimate based on known patterns in ICCs (normally under 0.05, commonly around 0.01 to 0.05) to adjust the sample sizes. Sensitivity analysis did not change the overall effect size of the metanalysis' results using either of the ICC (0.01 and 0.05) variations with both producing the same effect size (SMD: 0.38, 95% CI [0.06, 0.71], p .02).

3.6. Summary of findings

Table 3 presents a summary of findings based on the GRADE (2020) approach (Grading of Recommendations Assessment, Development and Evaluation) which is a method of assessing the certainty/quality of the evidence. It shows the magnitude of treatment effects for the main outcome RF (moderate certainty) and four relevant secondary outcomes: parent-infant interaction (moderate), attachment security, insecurity and disorganization (high certainty), the quality of evidence, and the sum of available data.

Table 4 Summary of findings table

Mentalization Based Interventions compared to Treatment as Usual for Mothers in the perinatal period

Bibliography: . mentalisation-based interventions for improvement of parental reflective functioning in the perinatal stage. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Certainty assessment							Summary of findings				
							Study event rates (%)			Anticipated absolute effects	
Participants (studies) Follow-up	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty of evidence	With Treatment as Usual	With Mentalization Based Interventions	Relative effect (95% CI)	Risk with Treatment as Usual	Risk difference with Mentalization Based Interventions
Maternal reflective functioning (assessed with: PDI/PRFQ)											
829 (12 RCTs)	serious[a]	not serious	not serious	not serious	none	⨁⨁⨁◯ Moderate	408	421	-	-	SMD **0.19 SD higher** (0.02 higher to 0.36 higher)
Parent-infant interaction											
789 (9 RCTs)	not serious	serious[a]	not serious	not serious	none	⨁⨁⨁◯ Moderate	381	408	-	-	SMD **0.2 SD higher** (0.09 lower to 0.5 higher)
Infant secure attachment											
361 (5 RCTs)	not serious[b]	not serious	not serious	not serious	none	⨁⨁⨁⨁ High	86/178 (48.3%)	114/183 (62.3%)	**OR 1.86** (1.20 to 2.87)	483 per 1,000	**152 more per 1,000** (from 46 more to 245 more)

CI: confidence interval; **OR:** odds ratio; **SMD:** standardised mean difference

Explanations

a. 5 studies presented high risk of bias

b. 2 studies presented high risk of bias

4. Discussion

The review found 12 studies that measured parental reflective functioning following interventions that were delivered at any point during the perinatal period, none of which included mind-mindedness. Meta-analysis of the findings from these twelve studies, which included 829 pregnant women or mother-infant dyads most of them presenting moderate to high psychosocial risk, found that there was a significant but small improvement in parental reflective functioning in the intervention group as assessed by the Reflective Functioning Scale in the Parent Development Interview, the Parental Reflective Functioning Questionnaire (PRFQ) or the Prenatal version of the PRFQ (P-PRFQ).

The certainty of the evidence for this outcome was 'moderate' using GRADE criteria, mainly due to serious limitations in relation to the risk of bias of included studies. It is likely that the inclusion of pilot studies with small sample sizes and less methodological rigor had an impact on this score. Despite this downgrade, these significant results are of special relevance as they expand on the findings of the previous review (Barlow, 2021), which found only a non-significant trend, favouring the intervention group. It was suggested that the lack of significant results was related to the limited sensitivity to treatment change of the PDI-RF scale (Slade, 2020) and the limited data available that could be included in the meta-analysis (Barlow, 2021). The larger pooled sample and the inclusion of studies measuring RF with the PRFQ scales (which has been reported to be more sensitive to change) in the current review might have helped to better capture the impact of the treatment on parental reflective functioning. Nevertheless, the results should be treated with caution because sensitivity analysis excluding the studies with high risk of bias resulted in a loss of significance for the primary outcome.

This study also found that the infants of mothers in the mentalization based intervention group were more likely to be classified as securely attached than infants of mothers in the control group at post intervention. These significant intervention effects are consistent with the previously reported association between parental reflective functioning and infant attachment (Zeegers *et al,* 2017). The

lack of significant intervention effect on parent-infant interaction, however, is interesting and might suggest that the intervention was successful in improving infant attachment through the improved mentalization. Consistent with the Zeegers *et al*. (2017) review, these findings suggest that the mechanism of change of mentalization-based interventions is related to supporting mothers to recognize and reflect upon their children's mental states rather than by encouraging them to offer more sensitive responses. This might mean that if mothers are able to reflect on how their behaviour impacts their children's psychological experiences and overall wellbeing, even when their responses are not always sensitive, then they are better able to name their shortcomings and seek reparation, which in turn allows for the development of a secure attachment.

In contrast with the most recent systematic review and meta-analysis (Barlow, 2021), the current review found a significant improvement in maternal depression for the mothers who received the mentalization intervention compared to the ones in the control group. The difference in these results is possibly due to the larger number of studies included in the present review. The improvement in maternal depression shows that such interventions not only have positive implications for infants and toddlers but also a positive impact on the wellbeing of participating mothers. Evidence regarding the relationship between depression and mentalization suggests that depressed individuals show a lower capacity for mentalization, and it is believed that this might be related to the impact that depression has in cognitive processing (Fischer-Kern *et al*., 2013; Fischer-Kern *et al.*, 2008; Uekermann *et al.*, 2008). Many of the interventions included in this review were aimed at supporting mothers to think about their own experiences of being parented and their attachment relationships, thereby helping them to make sense of them and connect them with their behaviour and ways to relate (with their children) in the present. These reflective exercises might have strengthened the social cognitive processing of these mothers. Furthermore, it is possible that by helping mothers to be more curious about their own mental states and those of others, these interventions supported women not only to reframe their understanding about their children's internal states and experiences but also their own and therefore having a healthier perception about themselves and the world.

The thematic coding identified two types of intervention components: those aimed at providing support or information, and components aimed at strengthening relationships. Practical support and/or information included the subcomponents (1) parental education, (2) maternal mental health support, and (3) practical assistance/ advice with basic needs. Studies that had this component mainly offered parental education, which included information about child development and parenting strategies. Strengthening relationships included the subcomponents (1) fostering interaction, (2) fostering reflectiveness, and (3) relationship with a mentalizing therapist. The fostering reflectiveness subcomponent was present in all the interventions, and the fostering reflectiveness activities aimed at supporting parents to reflect upon their own internal states which often involved understanding how these were connected to their early experiences, as well as their infant's internal world. Furthermore, they aimed at helping parents to make connections between their perceptions of their children and their own attachment experiences, as well as between internal states of mind and behaviours. The mentalizing therapeutic relationship was also explicitly mentioned as an important part of the intervention by most of the studies (Fonagy, 2016; Georg, 2021; Jussila, 2020; Letourneau, 2020; Longhi; Sadler, 2013; Slade, 2020; Suchman, 2010; Suchman, 2017). This referred to the relationship of trust and safety in which the therapist/practitioner maintained a curious stance about the parents' (and others') thoughts and feelings.

These findings align to the mechanisms of change of mentalization-based interventions described by Slade (2007). For instance, the therapist 'model reflectiveness' giving a voice to the child's internal experiences to help the parent to 'reframe' their explanations about their infant's behaviour. This could be linked to the reframing techniques, which were part of the fostering reflectiveness theme, identified in this study in which the practitioner helped parents to review situations considering what their and others' feelings, thoughts, intentions and wishes were and therefore have a more integrated (mentalizing) perspective of the situations. Slade (2007) also refers to promoting curiosity in the parents about their infant's experience. Eliciting parents' curiosity could be connected to the practitioner's curious –mentalizing— stance (included in the relationship with a mentalizing therapist

theme) identified in our analysis of components as practitioners could have modelled for parents this way of thinking or reflecting in relationships. Finally, Slade states the interventions should elicit affect by focusing on experiences that occur in the present and in the presence of the practitioner. In our analysis we identified a number of visual exercises that practitioners used to promote reflectiveness, and it is likely that by bringing concrete images of situations (including ultrasound images) involving their infants/ babies practitioners managed to make the past situation a present experience. In this sense, the practitioner focused on the parents' present internal experience observing themselves interacting with their children. However, these visual techniques were also used to explore and reframe the past – i.e., parent's representation of their internal experiences at the time of the interaction. In this sense, our findings regarding the promotion of parental reflectiveness are consistent with what has been previously reported, albeit that they add a more detailed view in terms of what type of activities or elements are used to activate the mentioned mechanisms.

4.1. Limitations

This literature review has a number of limitations. Even though we identified twice the number of studies included in the most recent previous review on interventions targeting reflective functioning, this is still relatively limited. In this sense, it is likely that some of the meta-analyses conducted were underpowered and therefore not able to show significant results for some outcomes.

Another notable limitation is the presence of potential bias in the included studies. For instance, it is worth noting that two of the incorporated randomized controlled trials (RCTs) were characterized as pilot studies, featuring relatively small sample sizes and a lack of evidence for intention-to-treat analysis. Additionally, certain methodological issues were evident in other studies, such as the mid-trial switch of instruments, resulting in the loss of significant data. Performing a sensitivity analysis by excluding studies with a high risk of bias revealed a statistically non-significant treatment effect on the reflective functioning of participants. Consequently, it is prudent to exercise caution when interpreting the results.

Finally, as the search and selection of studies was made by one reviewer only for title and abstract screening due to resource constraints, inter-rater reliability was not reported. However, the second reviewer approved the selected studies at the 'full-text screening' stage of the process and agreed with the final selection of studies; furthermore, the data extracted was consistent with that extracted for the earlier review.

4.2. Implications for future practice

This review indicates that parenting mentalization-based interventions that are delivered during the perinatal period can have a positive effect on parental reflective functioning, infant attachment, and maternal depression particularly in at-risk samples. As such, these interventions should be considered when supporting vulnerable mothers in this phase, providing an opportunity to reduce suboptimal parenting and prevent infant disorganization.

4.3. Directions for future research

Future research should examine whether the effect of mentalization based interventions on infant attachment is mediated by maternal depression. An examination of the mediating role of maternal depression would provide greater insight into the factors driving the intervention's effectiveness and thereby inform the development and delivery of future interventions. Furthermore, future studies should further investigate whether the developmental period during which the intervention is delivered has an effect on the impact on parental RF, and in particular whether interventions that focus only in the antenatal or postnatal periods are more or less effective than interventions provided throughout the perinatal period. This should be done with larger sample sizes to ensure results sufficiently powered.

Interesting new approaches such as embodied mentalizing (Shai and Belsky, 2017; Shai, Dollberg and Szepsenwol, 2017; Shai *et al.*, 2022) have been developed in recent years focusing on the non-verbal aspect of mentalization. Future reviews should include the measurement of other aspects of

mentalizing such as this, which might provide furth evidence about the mechanisms underpinning programme effectiveness.

5. Conclusion

This review suggests that parenting mentalization-based interventions that are delivered during the perinatal period can have an effect on parental reflective functioning, infant attachment, and maternal depression in populations with moderate to severe psychosocial risk factors. These interventions should be considered in terms of supporting vulnerable mothers in this phase who present with risk factors that are associated with reduced mentalizing capacities, as these could offer an opportunity to reduce suboptimal parenting and prevent infant disorganization.

V. Paper 2: New parenting opportunities for mothers with history of child removal, a qualitative exploration of key stakeholders' perspectives of a perinatal mentalization-based intervention

Abstract

Introduction. In advanced industrialized societies, the protection of children's well-being by the state starts early, often beginning with assessments during pregnancy, particularly in cases where previous child removals have occurred. In recent years there has been an increase in newborns subjected to care proceedings, highlighting the pressing need for effective interventions. In response to this need, an intensive perinatal attachment and mentalization-based intervention, the Daisy programme, was developed by a local authority to support pregnant women with a history of child removal, aiming to prevent further parent-infant separation and involvement in care proceedings**.**

Aims. This study aimed to explore multiple stakeholders' perceptions of the impact and mechanisms of change of Daisy Programme.

Methods. A qualitative design was used. Data from mothers who benefited from the programme, service providers and other practitioners from the wider professional network was collected through semi-structured interviews and coded using thematic analysis.

Results. Participants included in the study were 4 service users, 5 Daisy practitioners and 6 external professionals (n=15). Findings indicated that stakeholders felt that the programme helped mothers to have more positive relationships, to gain confidence and to recognise her mistakes and the need for change. The four main aspects of the programme that stakeholders identified as having led to these changes were: (1) the relational focus of the intervention, (2) offering support adapted to parents' individual needs and circumstances, (3) the support provided to make sense of the past, and (4) the practical support offered. Implications for clinical practice and future research are discussed in the context of the wider literature.

Conclusion. This study highlights the impact of the Daisy programme, as perceived by key stakeholders. It also indicates the aspects of the intervention that might have promoted change. Initial findings suggest that the programme was beneficial to pregnant women with histories of child

removal, promoting both immediate social care outcomes and likely long-term maternal and infant well-being.

Keywords: Mentalization, perinatal, parent intervention, child removal, parents at-risk

1. Introduction

1.1. Child protection during the perinatal period

In most advanced industrialised societies, children's well-being and safety are protected by law, and assessment regarding the risks posed to a child can start in pregnancy, especially in cases where there is a history of previous child removals. Evidence shows a rising trend of new-born babies subject to care proceedings in England and Wales (Alrouh, Broadhurst and Cusworth, 2020; Broadhurst *et al.*, 2018). Care proceedings are the legal process by which a local authority (such as a local council) applies to the court for a care order or supervision order for a child who is deemed to be at risk of significant harm or in need of protection. The court assesses the situation and, if necessary, makes an order to protect the child. Among the many measures that child protection services can put in place to safeguard children's wellbeing, there is the temporary or permanent removal of the child from the parent's care.

The removal of infants from their biological parents at birth is a controversial and emotionally charged issue. However, the decision is not taken lightly, and courts must be convinced that the infant is suffering or likely to suffer significant harm or neglect before taking such action. Some infants sustain life-changing injuries or die if they are not removed (Batra, Palusci and Berg, 2022). According to the NSPCC National Case Review Repository, infants are the subjects of approximately 30% of serious case reviews (now child safeguarding practice reviews SPRs) in England, Wales and Scotland. Reports indicate that around 60% of serious case reviews are due to neglect and almost half of child protection plans are made in response to this type of maltreatment (Brandon *et al*., 2012).

1.2. Emotional neglect in infancy

Neglect is considered a form of maltreatment, which in the broader sense of its definition encompasses the failure to provide for the child's basic needs, including his emotional needs (WHO, 1999). In this sense, neglect can be understood as a form of environmental deprivation that has a

severe impact on a child's development. Without a stable, sensitive, and responsive caregiver, infants are deprived of the necessary experience-expectant processes that enable them to acquire various skills and competencies (McLaughlin, Sheridan and Nelson, 2017). Experience-expectant brain development refers to processes in which the human brain requires certain inputs to acquire a skill or competency, typically during sensitive periods in development (McLaughlin, Sheridan and Nelson, 2017). The early months of a child's life are recognised to be a sensitive period in terms of brain configuration and development, in which key structures are especially vulnerable to adverse input (Teicher and Samson, 2016). Experiences of neglect early in life have been found to be especially detrimental and have been associated with short- and long-term negative effects on cognitive, social and emotional regulation, language, and behavioural development as well as with difficulties in forming a secure attachment and a higher likelihood of developing mental health difficulties such as depression, anxiety and post-traumatic stress disorder (Hildyard and Wolfe, 2002; McLaughlin, Sheridan and Nelson, 2017).

From an attachment perspective five dimensions of 'atypical' or anomalous parental behaviour have been identified as potentially harmful for the infant's adequate emotional development: (1) affective errors (i.e. the mother invites the infant to approach verbally but physically takes distance), (2) disorientation (i.e. the mother looks confused or frightened by the infant), (3) physical or verbal negative-intrusive behaviour (i.e. the mother mocks or pulls a part of the infants' body), (4) role confusion (i.e. the mother elicits reassurance from the infant), and (5) physical or verbal withdrawal (i.e. mother holds the infant away from her body with stiff arms) (Lyons-Ruth, 1999). Such suboptimal parental interactions have been found to increase the likelihood of an infant developing a disorganised attachment (Madigan, Voci and Benoit, 2011; Moran *et al.*, 2008), which in turn is associated with forms of psychopathology such as conduct/oppositional defiant disorders (Theule *et al.*, 2016) and difficulties with emotional self-regulation (Pallini *et al.*, 2018) including personality disorder (Carlson, Egeland and Sroufe, 2009; Lyons-Ruth *et al.*, 2007).

1.3. Risk of maltreatment and child removal during the perinatal period

Research has highlighted some of the parental characteristics that can put them at greater risk of causing harm to the unborn baby, and the infant after birth. This section describes two pathways in terms of the risk of child maltreatment - physical and psychological. Additionally, we also consider the impact that previous child removals have on pregnant women's risk of child maltreatment and further care proceedings.

1.3.1. The physiological pathway

Substance abuse and intimate partner violence, known to put the foetus at risk, have been associated with parental mental health difficulties, history of abuse, stress, and low socioeconomic status. For instance, evidence shows that women consuming substances such as alcohol or drugs during pregnancy are more likely to have lower education, to smoke, to have a psychiatric condition, to be single, to be a young mother, to have experienced abuse in the past or present and to have a low socioeconomic status (Mpelo *et al.*, 2018; Kennare *et al.*, 2005; Leonardson and Loudenburg, 2003). Intimate partner violence during pregnancy is also associated with a previous history of abuse, young age and low SES; as well as with parent perceived stress, lack of perceived support and having a partner with substance misuse problems (Shamu *et al.*, 2011; Nguyen *et al.*, 2018; Charles and Perreira, 2007). These behaviours are detrimental not only because they can directly harm the foetus but also because these continue to have a negative impact on the infant after birth. For instance, a study found that alcohol consumption during pregnancy was associated with the child's undesirable types of social engagement, child interaction difficulties, and problems with sensory regulation at 9 months (Williams *et al*., 2010). Furthermore, a study on IPV during pregnancy found that violence during pregnancy strongly predicted violence post-partum (Charles and Perreira, 2007), and put mothers at higher risk of child maltreatment (Casanueva and Martin, 2007).

1.3.2. The psychological pathway

The psychological pathway addresses women's prenatal psychological capacities or cognitive tendencies that could negatively impact the child's socioemotional development. In this sense, the literature has emphasised the importance of the prenatal period in the development of the infant's attachment organisation/disorganization. Evidence shows, for instance, that the prenatal tendency toward bias in interpreting emotions and high levels of prenatal depression predicts disorganisation in the infant (Bernstein *et al.*, 2014; Hayes *et al*., 2013). Moreover, the mother's mentalization capacities during pregnancy also seem to play an important role in future infant organisation. For instance, a longitudinal study found that mothers with traumatic childhood experiences of abuse and neglect who presented with low prenatal reflective functioning (RF) were more likely to have disorganised infants than mothers who presented high prenatal RF (Berthelot *et al.*, 2015).

1.3.3. Prior child removals

Evidence shows that women who have had a baby removed from their care have a 1 in 4 chance of reappearing in proceedings within a 7-year window, with the greatest risk of return being within the first two years and most frequently with a new-born baby.

Studies have indicated that when parental rights are terminated, women often experience a psychosocial crisis involving role loss, exclusion, and isolation (Broadhurst and Mason, 2019). This crisis can leave them in a particularly vulnerable condition. They report experiencing mental health difficulties indicating significant levels of psychological distress (Broadhurst *et al.,*2017). Similarly, they report experiencing an escalation of their prior difficulties, which often include homelessness, interpersonal violence, instances of criminal behaviour, and repeated pregnancy (Broadhurst and Mason, 2017). Thus, when these women become pregnant again, they are often living under circumstances of significant psychosocial risk which makes them more likely to reappear in proceedings with their new babies. This state of vulnerability is often preceded by an already complex history of relational trauma and risk. For example, research shows that women returning to child care proceedings are characterised by: (1) history of exposure to multiple adverse experiences during

childhood (with 56% having an ACE of 4 or more) such as neglect, emotional abuse, physical abuse, and/or sexual abuse which often involved their caregivers; (2) experience of being in care as children (40%) with multiple placement moves; and (3) pregnancy before 20 years of age (64%) (Broadhurst *et al.*, 2017).

1.4. Protective factors

Research has also identified parental interpersonal and community factors that can act as protective against child maltreatment. Caregiver's social support through their relationship with a romantic partner, family, and friends, has been found to reduce the likelihood of engaging in maltreatment (Austin, Lesak and Shanahan, 2020). Furthermore, evidence suggests that having positive support from family also reduces the likelihood of families re-entering the child welfare system (Davidson et al., 2019).

These findings are echoed by the evidence reported by Ward (2019) which suggests that a key factor in distinguishing parents at risk of child removal who make and sustain positive changes from those who do not is the presence, development, and restoration of positive relationships with partners, family, friends, and professionals in the system and wider community. These relationships, if sustained, provide these parents with both social/emotional and material support. Similar findings were reported by a study on mothers with recurrent child proceedings in which the women that demonstrated capacity for positive change had in common that: (1) had the ability to reflect and learn from experience, (2) they achieved positive changes in intimate partner relationships and social networks, (3) were offered better professional help and making better use of that help; and (4) expressed their desire to 'do better' for children either lost from their care or new-born (Broadhurst *et al.*, 2017).

At a community-level, research identified that factors such as the availability of health, social and services for parents and families as well as neighbourhood processes such as social cohesion and control, can provide a supportive environment that promotes positive parenting (Austin *et al.*, 2020).

1.5. Mentalization based models of working

Attachment theory provides the framework for interventions that focus on improving the parent-infant relationship, targeting in this way the relational deficiencies that appear in maltreatment. Mentalization-based interventions are a particular group of attachment-based interventions that address an individual's capacity to reflect upon his/her own internal mental experiences as well as those of others (including their children) (Luyten et al., 2017; Sharp and Fonagy, 2008; Slade, 2005). Targeting parents' mentalization in the context of maltreatment is pertinent as it is thought to be a compromised capacity in parents who maltreat their children (Byrne *et al.,* 2019). Parents at risk of child removal have often been victims of abuse or inadequate caregiving when they were children (Assink *et al.*, 2018; Roberts *et al.*, 2017), many of whom live with the effects of unresolved relational trauma (Iyengar *et al*., 2014; Madigan *et al.*, 2006; Walker, 2007). These experiences are likely to have had a negative impact on their attachment organization and their acquisition of mentalizing capacities (Fonagy and Allison, 2013). Deficits in mentalizing by which a parent cannot see or imagine the child's needs, could thereby contribute to a pattern of consistent emotional or physical neglect (Byrne *et al.*, 2019). Studies on parental mentalization indicate its association with emotional regulation capacities in parents and children, and positive impact in the parent-infant relationship, sometimes counteracting the effects of risk factors such as maternal experience of child abuse (Schultheis *et al.*, 2019; Senehi *et al.*, 2018; Heron-Delaney *et al.*, 2016; Wong, 2012; Jessee, 2012; Stacks *et al.*, 2014). In contrast, low maternal Reflective Functioning (RF) –an operationalisation of mentalization— has been suggested to play a role in the occurrence of child maltreatment, being associated with more negativity, overcontrolling and intrusive parenting

behaviour (Stacks *et al.*, 2014, Borelli *et al.*, 2017), as well as with extremely insensitive parenting which includes aggressive behaviour (Ensink *et al.*, 2017).

A mentalization perspective is also relevant when aiming to engage parents frequently described as 'hard-to-reach', which is often the case of parents at risk of maltreatment and/or child removal (Byrne *et al.*, 2019). This reluctance to engage often stems from the parents' unresolved relational trauma – described previously— which is known to have a detrimental impact on individuals' capacity to establish epistemic trust described as "the individual's trust that new knowledge from another person is authentic, trustworthy, generalizable and relevant to the self" (Fonagy and Allison, 2014, p.373). The chronic epistemic mistrust seen in such parents makes them especially suspicious of other people's intentions and thus less likely to make use of the support available. A mentalization model of intervention is then suitable when working with such families as it explicitly seeks to establish epistemic trust in the therapeutic relationship and aims to generalise it to other relationships and social connections/opportunities (Fonagy, Campbell and Bateman, 2017; Fonagy and Campbell, 2017).

Mentalization-based interventions also put special emphasis on the importance of fostering mentalizing relationships in the professional network as these mentalizing systems promote epistemic trust and a better communication and understanding across the support network (Bevington *et al.,* 2017; Distefano *et al.*, 2017).

The Daisy programme is an intensive perinatal intervention focused on increasing the mentalization capacity of high-risk pregnant women with a history of child removal. The current study explores the impact and the mechanisms of change of this intervention from the perspective of their service users, practitioners, and other professionals from the wider professional network.

1.6. The intervention

The Daisy programme builds on previous work undertaken as part of a Court Based Assessment Service in Coventry and is underpinned by the NSPCC pre-birth assessment framework (Lushey *et*

al., 2018), and the Early Family Drug and Alcohol Court (FDAC) pilot, which evaluated the assessment and treatment service for pregnant women with one or more children previously removed from their care through court proceedings (Shaw, 2021). The Daisy is a two-year pilot programme which launched in February 2021 developed in the West Midlands and trialled by one local authority in the region as part of the Children's Social Care Services' provision. It aims to prevent the need for parent infant separation and care proceedings by providing intensive attachment and mentalization-based support to mothers and fathers who have already had a child removed from their care, as they transition to parenthood with a new pregnancy. This intervention (between 2-4 visits per week for 11 months) is offered to pregnant women with 12-16 gestational weeks who have had at least one child removed from their care previously, who are open to support from Children's Social Care and who are willing to work with services. It is being delivered by a team of 5 practitioners with backgrounds in mental health and child development.

The programme is structured in four stages:

Stage 1: 'Engagement and Formulation' (delivered between 12 and 16 gestational weeks), focuses on developing the relationship with the keyworker and the building of a joint formulation. At this stage techniques such as the AMBIT aims assessment, the DMM's Narrative Integration, genograms and mapping are used.

Stage 2: 'Stabilise and Prepare' (16-34 gestational weeks), addresses the practical difficulties identified and builds social and professional networks around the family. In addition, it prepares the service user mentally, promoting attachment with the baby and parental mentalization through techniques such as pregnancy diaries and scan images; physically, through antenatal education; and practically preparing materials and the home for the baby.

Stage 3: 'Birth Planning' (35-40 gestational weeks) offers a clear plan for ongoing post-birth support from the DAISY team, other services and the family network, in the event that the baby remains with

the parents; or support to understand the parent's legal process and rights, as well consideration of early contact with foster family when separation is likely to happen.

Stage 4: 'Develop and Transition' (birth-24 gestational weeks), offers two pathways: (A) Mentalize and attach pathway, which is offered when the baby remains with the parents or in an alternative care provision with a plan to rehabilitate and it focuses on promoting parental reflective functioning and infant secure attachment through the Circle of Security intervention; and (B) Heal and Develop, which is offered when the baby is placed in alternative care with a plan for adoption or a permanent placement with kin, and aims to support the parent through care proceedings and through the challenging process of loss. Furthermore, from 16 weeks post-birth, the service places special attention on preparing parents for leaving the programme, focusing on establishing the parents' coping strategies and developing ongoing professional and social networks of support.

2. Methods

2.1. Study design

This study involves the use of a qualitative design in which data were collected through semi-structured interviews.

2.2. Aims and objectives

The current study aims to explore the impact and mechanisms of change of the Daisy programme from the perspective of a group of service users who benefited from it, its practitioners and other professionals from the wider professional network. The objectives were then (1) to identify the impact and mechanisms of change of the programme from the perspective of service users, Daisy practitioners, and other professionals working alongside the programme, and (2) to triangulate the data across different groups of respondents.

2.3. Participants

The study sample consisted of 16 people: 4 service users, 6 Daisy team members, and 6 members of the wider professional network.

2.3.1. Service users

All women who took part in the Daisy programme between February 2021 and October 2022 (approximately 21 in total) received a letter briefly explaining the aims of the study and asking for their permission to share their contact details with the researcher. To take part of the Daisy programme women had to be in the first trimester of pregnancy, to have had at least one child previously removed from their care, to be open to support from Children's Social Care and to be willing to work with services.

The 10 women who agreed to be contacted received an information sheet and consent to participate form requesting their written consent to be interviewed, and to share identifiable social services data with the research team. Four women signed the consent form and were interviewed.

2.3.2. Wider stakeholders

All members of the Daisy service delivery team were invited to take part in an interview (1 manager, 2 coordinators and 3 keyworkers), and they all accepted. They were given an information sheet and consent form requesting their written consent to be interviewed. In addition, eight professionals from the wider professional network who had been involved in the treatment or decision-making with regard to the families involved with the Daisy service, were invited to take part. Seven agreed to participate and were given an information sheet and consent form requesting their written consent to be interviewed. Six returned the signed consent form and took part in the interview.

2.4. Data collection

In-depth, semi-structured interviews were conducted by one of the researchers to gather service users and other stakeholders' (Daisy practitioners and other professionals in the wider network) views on

the mechanisms of change, outcomes, and limitations of the Daisy programme. Online interviews lasted between 30 and 45 minutes and were facilitated by a researcher with a mental health professional background. All interviews were audio recorded.

The focus of the interviews was: to explore (a) participants' perspectives about attending the Daisy programme, (b) the Daisy practitioners' views about delivering the programme, and (c) other stakeholders views on the impact of the programme in the wider network. The interview for mothers was based on 15 questions, which included topics such as the mother's engagement with the service, the impact of the intervention on their relationships and self-perception, what makes this programme similar or different to other services, and what they found most and least helpful about the programme. The practitioners and other stakeholders interview questions explored topics such as their professional background, their training/understanding of mentalization and attachment, how they became involved/gain knowledge about the Daisy programme, what makes the programme more/less impactful, what would they change about the programme and what they think are the main outcomes of the programme.

2.5. Data management and analysis

Interviews were audio recorded with the participants' permission using an encrypted digital dictaphone, transcribed verbatim by the one of the authors, and analysed using NVivo 12 software (QSR International Pty Ltd., 2020). The lead author followed an inductive process of thematic analysis outlined by Braun and Clarke (2006). This process included (1) transcribing the data and writing initial ideas, (2) generating initial codes using an open coding method, (3) arranging codes into groups with similar themes and naming them, (4) arranging code groups in sub-groups, and (5) further grouping the themes into overarching themes.

2.6. Ethical considerations

Informed consent was provided by all participants, and ethical approval was granted by the University of Oxford Ethics committee.

This study involved participants considered vulnerable as the service users interviewed were pregnant woman with a history of child removal by the court and involved with Children's Social Care Services because they were considered at risk of not providing adequate care to the infant with whom they were pregnant. CUREC2 Approved Procedures and Guidance was followed with regard to this vulnerability as follows:

2.6.1. Interviews on sensitive topics

Sensitive topics related to previous child removals were discussed during the interviews. This information was key as one of the aims of the study was to explore women's perspectives of the care received in the current Daisy programme in comparison with any care received in the past when their child was removed from their care.

Researchers assumed responsibility for complying with safeguarding regulations and research practices related to this setting. To manage the risk the researcher conducting the interviews was a qualified psychologist and psychotherapist.

2.6.2. Internet mediated research

Microsoft Teams was used for interviews as it is the University of Oxford's approved platform for virtual meetings and currently the only platform approved for conducting meetings where confidential or sensitive subjects are discussed.

2.6.3. Psychological distress

A protocol of actions to take in cases of participant distress was formulated, which included offering to close the interview if participants showed acute distress, explore the support in place with the

distressed participant, and signposting to an adequate care provider. In the event, no interviewed participants requested to interrupt or end any interview, and no acute distress was noticed by the researcher.

2.6.4. Data collection, protection, and management

Participants provided written informed consent both for a) sharing their identifiable data and b) being interviewed. Consent forms included a patient information sheet that detailed how their data was going to be managed by the research team.

2.6.5. Conduct of research interviews

Interviewees took part in the interviews voluntarily and received the information needed to make an informed decision about taking part, including the fact that refusal to take part did not in any way affect their receipt of the Daisy or other services. The research team treated the participants with dignity and respect and informed them that they could stop or pause the interview at any point if they need a break.

The research team made sure that the participants had access to the software and appropriate space to carry out the interviews.

We did not anticipate any long-term negative consequences resulting from participation in the interviews, even though a number of sensitive topics were discussed and managed as described above. The risk associated with the discussion of sensitive topics was managed by the researcher who was clinically trained in psychology.

3. Results

3.1. Participants characteristics

3.1.1. Service users

Four out for the nineteen service users who had taken part in the programme between February 2021 and October 2022 agreed to take part in the study. This is a highly self-selected sample possibly representing mothers who had found the programme particularly beneficial or who had had a good experience with the programme.

All were women with ages ranging between 18 and 32 years; ethnically half of them were White British and half were Black Caribbean; 75% were unemployed; and 15% were homeless. Regarding the participants history, three of the women had had children previously removed from their care; all of them had history of domestic abuse; half had been in care as children; half reported to have suffered sexual abuse; three reported substance abuse; and three reported to have suffered mental health problems. Their gestational age of their unborn baby when they started the programme was on average 20 weeks, with the earliest being 14 weeks and the latest 28 weeks. Three of the babies were subject to pre-proceedings in the family court.[1] Three of the participants had kept their babies under their care whilst the fourth was initially in a mother-baby placement (when interviewed) after which the baby was put in foster care with a plan for adoption. Approximately 57% of the total women who had completed the programme (until October 2022) had their babies paced in their care vs the 43% who lost parental rights.

Table 5 Service users characteristics

Participant ID	Ethnic Background	Work status	Parent in care as a child	Children removed prior
Ruth	Black British/Black Caribbean	Unemployed	No	1
Patrice	Black British/Black Caribbean	Unemployed	Yes	0
Susan	White British	Unemployed	Yes	2
Amy	White British	Employed	No	3

[1] Pre-proceedings process is a phase of work aimed at avoiding care proceedings. It is sometimes described as a 'last change' for parents to make changes they need to, otherwise children's services may need to go to court to start care proceedings.

3.1.2. Wider stakeholders

The Daisy practitioners included two senior care coordinators, three care coordinators (keyworkers), and a manager. Their professional backgrounds were social care, family support, and youth work. Two were male and four were female.

The external professionals who took part in the study were two social workers, two prenatal health professionals, an employment and housing officer, and a mental health professional. They had all been professionally involved with one or more service users who were taking or had taken part in the Daisy programme. One was male and five were female.

Table 6 External professionals characteristics

Participant ID	Professional area
Network professional 1	perinatal health
Network professional 2	perinatal health
Network professional 3	social care
Network professional 4	social care
Network professional 5	employment and housing
Network professional 6	mental health

3.2. Perceptions of the programme's impact

This section describes the stakeholders' perspectives regarding the impact of the Daisy Programme. The information has been organised by presenting the mothers' perspectives and then contrasting them with the views of the Daisy practitioners and other professionals involved in their care.

Table 7 Perceptions of multiple stakeholders on the impact

PARTICIPANTS (N=4)				**DAISY PRACTITIONERS (N=6)**				**EXTERNAL PROFESSIONALS (N=6)**			
THEME	N(n)*	SUBTHEME	N(n)*	**THEME**	N(n)*	SUBTHEME	N(n)*	**THEME**	N(n)*	SUBTHEME	N(n)*
More positive relationships	4(34)	Children Partners Family Professionals (Mixed feelings) Friends	4(15) 4(9) 2(6) 2(2) 1(2)	**Improved relationships**	6(20)	Professionals Family Couple Friends Children	4(9) 3(4) 2(3) 2(2) 1(2)	**Improved relationships**	4(11)	Children Family Couple Professionals (Mixed feelings)	3(4) 1(1) 1(1) 3(5)
Gained confidence	3(5)			**Confidence and agency**	3(9)			**Confidence**	1(5)		
Recognised past mistakes and need for change	2(6)			**Recognised past mistakes and need for change**	3(12)			**Understanding their behaviour and need for change**	2(4)		

N(n)*= Number of participants that referred to this theme/subtheme (total number of times that this theme/subtheme was referred to)

3.2.1. Strengthening relationships

Mothers reported that their experience with the Daisy programme had had a positive impact on multiple relationships.

3.2.1.1. Enjoyment of the parent-infant relationship and parenting role

Mothers like Patrice, cited below, described how the programme's focus encouraged them to work on their emotional connection with their children. In this case, she describes how her positive feelings towards her daughter served as a motivation for change.

"I would say the Daisy team has also pushed me to want to have a better connection with my children as well, as a mom […] when she was born, I fell in love instantly […] she actually motivates me. She motivates me to be better." (Patrice)

The mother below also described how she enjoyed looking after her two daughters after they had been returned to her care.

"I felt like with the support they offered me, I've been able to do it. Now I feel like I'm living a dream. I took my daughter to school this morning. I come home; I give my other daughter breakfast […] I'm making a dinner or try and cut the sandwiches into little hearts because my mind is self-focused and I'm not drinking and I'm not using drugs and I'm just a mum. I'm enjoying doing the mum things and I feel like I've got such a good relationship with both my daughters. I mean in my eldest daughter she's amazing […] that has really helped our relationship as well, because now I mean, if I walk in a room, I can just see her face […] lights up and she just likes to be right by me all the time." (Ruth)

Even when mothers hadn't yet regained the care of their children, they worked hard to stay involved in their lives. In the case of the mother quoted below, she continued to have regular contact with her children via FaceTime. She describes her relationship with her baby and how she was able to recognise in his reaction to her voice the confirmation that she was still seen as an important figure to him.

"Now I see him twice a week for three hours at a time. But it is lovely. I've always been there because I've got my other children as well. I speak to them every day over FaceTime. I see him over FaceTime. And he knows my voice. He starts laughing and smiling and. We have it (a relationship) considering all […] he very much knows who I am, which is really good." (Amy)

Daisy practitioners noticed that the service users' relationship with their children was supported by the parents' growing capacity to reflect upon their internal world but also their ability to understand their children's behaviour. The practitioner below, explains how she noticed this change in terms of how parents' structured their family time, including activities that promoted emotional connection.

"I have previously worked with a mom whose relationship with her older children, who are living with family members, it wasn't so great. I say it wasn't so great (because) it was very 'quick fix'. So, every time they go to see their children there wouldn't be a genuine conversation. But through the Daisy programme, because they've kind of learned to really focus on their ability to mentalize and understand other people's feelings, they were able to be really reflective. And (now) they could see why some of their children's behaviours were in a certain way. So, I've done some family time observation following this, and I've kind of seen that the way that they structure their family time has changed (and) they really do have some deep and meaningful conversations with their children because they're able to understand their children." (Daisy practitioner 5)

Non-Daisy professionals focused on the parents' capacity to look after their children's needs. For instance, the professional quoted below provides an example of a client who was able to retain care of her baby and who was succeeding in providing the optimal care for her development.

"The outcome for the second child was very good and she was able to take baby home and up until the last meeting, which I would say was probably a couple of months ago. She was doing really well. Her little one was absolutely thriving in her care and yeah, it was a very good combination of services that helped her, and I think she would tell you herself." (Network professional 1)

3.2.1.2. Strengthening and re-evaluating couple relationships

The mothers in the study and the professionals working with them agreed that the programme had had an impact on parents' relationships with their partners, sometimes serving to strengthen their couple relationship and in terms of others as having helped them to make the decision to end a relationship that was unhealthy or unsafe for their children.

Patrice quoted below, for instance, describes how the intervention helped her and her partner to be better connected.

"I would say my experience was good. I've been helped through the whole journey and stuff like that. You know I have been, well, me and my partner have connected more." (Patrice)

Daisy practitioners also noticed that their clients developed healthier relationships with their partners. The practitioner quoted below attributed this improvement to the parents' developing mentalizing capacities, which she felt had allowed them to better understand each other's behaviour and coping strategies.

"In that sense it's been really good, some of the work that we've been doing to get him to understand actually where does that come from? Oh, as a kid, as a kid, because of you having learning needs, you were always picked on. So, you've learned to be quite defensive and quite proactive in challenging people. Whereas she's had a lot of setbacks in her life, and she finds actually that (taking a step back) is the best way for her. That has been really good in getting to understand each other's relationships." (Daisy practitioner 4)

Non-Daisy professionals agreed with this view highlighting the parents' capacity to acknowledge how each had contributed to the difficulties in their relationship. As the example below shows, this was perceived as having allowed them to have more open and healthier patterns of communication.

"So having that intensive programme, going through it, it makes them realize, 'OK, yeah, I have been a victim. And yes, I have been a perpetrator'. And then obviously the other parent as well has gone through exactly the same without realising it. So, when they come back together, they have spoken about this and have discussed it as a unit and got through it and said, 'yeah, OK, I've, I apologise. I didn't realise that I've done it in the past." (Network professional 2)

In other cases, the programme had enabled mothers to realise that the relationship with their partner was not good for them or their children. For instance, Ruth below explains how she became aware that her partner's behaviour was detrimental to their children's emotional development and modelled negative relationship patterns that could affect them in the future.

"I don't have no contact with her father anymore. He's gone on to leave a completely different life, but I think throughout that assessment it also made me realize when I talk about it, and I listened to the things he was doing and the way he was behaving and the way he was acting towards me. I think no, I would never want that around my children. And I would never want my children to grow up and to be treated that way. The more I was talking about it, the more I realized I could never be in a relationship like that because I don't want my daughters to grow up and think that that kind of behaviour is acceptable." (Ruth)

For Amy quoted below, the programme also seemed to have impacted on her attitude towards future relationships by increasing her understanding about the importance of assessing how safe a potential partner is for herself and her children.

"Yeah, like I say, like the work that we were doing, a range like relationships […] just the way that I would go about getting into a new relationship, the things that I would do now that perhaps I didn't do before, like background checks […] they've made me aware of all of those things." (Amy).

3.2.1.3. Stronger family connections

Service users, like Amy and Ruth below, described how the changes that they started to achieve through the programme had also had an impact on their relationship with important members of their families of origin.

"Definitely me and my mom are a lot closer now […]it [didn't] just had an impact on me and my children, it's had an impact on my mum as well because my mom is actually being able to see the they've been there to support me and they have helped me to make these life changes to be able to care for both of my children […]I've got a good relationship with my mom, and I feel like I've made them proud." (Ruth)

"I mean I had lost contact with like my auntie. Unfortunately, back in October, my mom passed away. So, we sort of got me and my auntie regained our relationship, obviously through my mum passing. But it was because she saw such a change in me which did come from the Daisy". (Amy)

Stakeholders also witnessed how the relationships between service users and their families of origin became stronger. For instance, in the extract below, a Daisy practitioner shares one of his client's evolving relationships with her family and her rebuilding of pathways of trust and communication.

"And I just feel like, you know ... from then, her (relationship) with her parents, her sister and her brother … she's been able to be really open about what's been going on. Things have, things have got better. They're not ideally where they want to be, but things have got better, and she has now got the support of her family. […] They know what's going on now and they can support her. So, it's been really, really powerful." (Daisy practitioner 1)

Professionals from the wider professional network echoed this view.

It has definitely had a great impact even with parents, grandparents, siblings because they've reflected on how their own personality has been and how they need to change that." (Network professional 2)

3.2.1.4. Relationship with other professionals

Some mothers described how the experience with the Daisy service had had an impact on their relationship with other services and professionals. Previous challenging experiences with services influenced how these mothers felt about their current involvement particularly with social services. Ruth for instance felt grateful for a better relationship with a new social worker whilst Susan wasn't sure about how much she could trust.

"I've got a really good relationship now with my current social worker, because […] she is busy because it is not just me she deals with. But if I have an emergency, she will always call in time. And that's a big thing for me, is timing because, you know, this is my life, you know, my children's life. And for somebody to just allocate a bit of time out of the day if we need them, you know, that means a lot to me." (Ruth)

"It has helped. I still don't put my full trust into services, but it it's got a better." (Susan)

Professionals views regarding the relationship between their clients and the wider professional network were also consistent with this.

Daisy practitioners, for example, were optimistic noting that the parents' positive experience with the programme offered parents opportunities to reevaluate their relationships with other professionals.

"It goes back to having that voice. […] And this is irrespective of the outcome for the unborn baby […] t's been successful in terms of helping the parents that we are working with to build relationships with their wider network and with professionals, with their families […]. I think the Daisy programme in a way, have been successful in trying to change the perception that parents have of other services. […] When you've work with a parent who's had say multiple children removed from their care, their perception of say social care isn't going to be great. It's not going to be very positive. But I think we've been able to break that perception." (Daisy practitioner 5)

Non-Daisy professionals also witnessed clients having a positive relationship with practitioners from the wider professional network.

"This client was particularly, she worked very well with professionals and, it might be that in the past, there had been some hostility because of what had happened, but that wasn't the case when I worked with her." (Network professional 6)

However, like Susan above, they also recognised that trusting could still be hard.

"With the social workers, families still find it difficult to [trust] social workers because they automatically, link with the [previous] history with the social workers and they are afraid it's going to happen again." (Network professional 2)

3.2.1.5. Ending unhealthy friendships

Friendship relationships also seemed to have been impacted by the programme. This involved reassessing how supportive or detrimental friends were. The example below, for instance, describes Amy's decision to reduce her friendship group having realised that some of her friends put at risk her goal of being a good mother to her children.

"I mean I'm, I'm not with anybody or you know, I'm pretty much doing what I need to do for (my son) and put aside friends as well. I went from having quite a quite a big group of friends, but there were the wrong people. It was Daisy that, not directly, but I knew what I had to do to be able to be successful in that programme, and that was get rid of those people. So again, that's something I've done myself, but they helped me to realize that I need, like, a handful of people, not a crowd." (Amy)

Practitioners from the programme noticed similar changes in their clients' relationships with friends. As noted by the keyworker below, it was considered important that the evolution of these relationships was the product of these mother's own reassessment of their history and relationships in general as opposed to it having been imposed on them by the Daisy team.

"We have seen women that have been in a position where they're able to start to leave out the people that they don't want around them anymore. But they've done that for themselves, not because they've been told to do it […]. It's only going to be (sustainable) when they've made the choice themselves." (Daisy practitioner 6)

3.2.2. Growing confidence

Most of the mothers interviewed reported to have gained a sense of confidence in themselves as individuals as well as in their role as a mother and in their ability to build a better future.

Susan, quoted below, explained that her experience with the programme helped her to regain confidence in her capacities and had strengthened her self-esteem.

"I believe in in myself. It has just made me believe in myself more than anything and made me realize what my worth is." (Susan)

In some cases their growing confidence allowed the mothers to increase their aspirations. For instance, Patrice aspired to become a professional and to offer a better future for her children and had started to take steps towards achieving her goals.

"I want to make sure that I have something you know where I can go and work and provide a better future for them. So that's how I started to reach out to go to online classes and get certifications. So, I'll be able to work in the future when she's a little bit older and I can provide a future for her and my toddler as well." (Patrice).

Patrice's growing confidence and independence was noticed by her housing officer below. He describes how her and her partner began to see themselves as able to achieve bigger goals, trusting in their capacities to build a better future.

"I I've definitely noticed [parents gaining] independence and kind of like confidence. […] [For instance] He [father] wants to go into work, and she [mother] wants to do like an online sort like course. She's like, already looking for something like beyond. They're taking these steps and I think it is because they do feel more confident. And now they've got their own place. You know, they definitely feel independent and think it's just given them that that optimism." (Network professional 5)

The experience of having had a child removed from their care in the past often imprinted in mothers a sense of failure with deep feelings of guilt and shame. For many mothers like Ruth, cited here, this had intensified the urge to engage in escapist behaviours, which in turn confirmed her sense of failure. For Ruth the support received through the Daisy programme helped her to regain a sense of confidence that change was possible, and, thereby, to have a more positive perception of herself as a good mother, transforming her feelings of shame into pride.

"When I first started the Daisy programme, I had really low self-esteem about myself because, you know what? My eldest daughter had been removed from my care. So, I felt like a failure as a mum. I couldn't stop using cannabis so that made me feel like I wasn't doing enough for my daughter to come home, and I just felt like I was a disappointment to my mum. Now I look at myself in the mirror and I see a good mum. I see a mum that wakes up every day and cares for both my children to a good standard. I keep both my kids safe, I've got a good relationship with my mom, and I feel like I've made them proud. Now I feel like I've made people proud and most of all, I feel like I've made my children proud." (Ruth).

This sentiment was echoed by other mothers. Patrice below shares her deep feelings for her children and her confidence that she can be a good mother to them.

"I see myself being a great mum, to be honest, you know, I don't see myself failing as a mum, you know. Because I would give them anything, I would do anything for them." (Patrice)

Their increased confidence allowed mothers to trust that they could parent their children after ending the programme. As explained by Ruth, even though she was saddened about losing the Daisy's input, she felt able to look after her children and remained hopeful about the future.

"As much as it's quite upsetting to know that my contact with Daisy is coming to an end, it feels like another step in the right direction because this is what we've been working towards. To me, being able to care for both of my children, without the involvement of social services and stepping back from my contact with the Daisy team now, is one step closer to that." (Ruth)

Daisy practitioners also noticed the growing confidence and sense of agency of participating mothers. For instance, the keyworker quoted below explains the process by which one of her clients moved from a passive position, being easily influenced by others, to a place where she felt confident enough to voice her needs and to take ownership of her parental role. The practitioner highlights how genuine and substantial this change was, to the point that it was noted across multiple relationships: within the relationship with the practitioner herself, within her group of friends, and within the wider professional network.

"When we would do reviews [my client would say]: 'A (name of friend), isn't? A, isn't this is what happened?'. She was very much behind, and she would always […] refer to others, and say: 'because they've said, If I do this…, I need to…'. […] Through conversation and support […] I tried to bring it back to herself and say, 'what about you?'. […] And then she was talking, she was saying what was working well, what's going wrong. […] This was, evident for me within the (therapeutic) relationship. But then it was [also] evident with her friends. […] She started to speak up for herself (for example saying): 'Well, actually, no, this is what I want for my child. I want the house to look this way. I need to make these decisions. It's not because of anybody else, I'm here now, so let me see what I can do and then receive the support (to deal with) my past but let me help myself change my future because that's more important. You know it was just magic and she is the one (whose assessment outcome was) 'no concern' because her confidence kept rising and it wasn't a fake confidence. It was honest. You saw the journey". (Daisy practitioner 4)

3.2.3. Recognising past mistakes and need for change

Two mothers in the study found that the programme allowed them to reflect on their past acknowledging their shortcomings and recognising the issues that they needed to address to offer optimal care for their children.

In the extract below Ruth explains that reflecting on her past actions was a key factor in enabling her to acknowledge that at that time she wasn't able to provide a safe environment for her children.

"I felt like throughout my pregnancy, the more I started to reflect on my past, the more I realized that changes needed to be made because the person I was then, is not the kind of person that can care safely for two children. Now I can spend the rest of my life, you know, making up for that time." (Ruth)

She also explains how this realisation allowed her to understand what changes she needed to make to get her daughter back into her care.

"But my eldest daughter, she's back at home with her mum [me] and she's just so comfortable and happy. I feel like, you know what, I'm doing it for my children. (In the past) I made the wrong choices, but I stopped using drugs and I feel like I needed it to be where I am today." (Ruth)

Patrice, below, also acknowledges past mistakes and emphasises her wish to do better with her new baby.

[The programme] has pushed me to, you know, like, be a better mom and not make the same mistakes as I have done with my toddler. (Patrice)

Practitioners working with these mothers agreed on the importance of mothers' making sense and taking ownership of their past decisions in order make better decisions for their new babies.

"It's about looking back at the past behaviours and actually taking some responsibility for their own actions and recognizing: 'actually, I did cause harm to my children in that situation. What can I change to make that better?' [...] they're able to then see 'this is the harm that I caused my older children, maybe I can do better for my baby'. This is why this is important prebirth because it's that mentalization of that child's feelings before they're born." (Daisy practitioner 2)

The Daisy practitioner below gives an example how courageous one of his clients was when she took ownership of her actions and faced her family.

"They [client's family] didn't approve this relationship, and she'd kept her parents in the dark as to why her children were removed. And when it came to it, when she needed to let them know because they were going to be part of a liability assessment, I asked her, I offered her the opportunity, just said, "Do you want me to tell them and then you come in after?" And she goes, "No, actually," she goes, "I want you to tell them, but I want to be in the same room." And it was a massive moment for her to actually show a bit of strength and a bit of independence and actually take a bit of ownership of what's been going on." (Daisy practitioner 1)

In other instances, practitioners described how their clients not only were able to acknowledge their past mistakes but also recognise their current limitations in terms of being able to look after their children. In some cases, this meant parents recognising that keeping the baby in their care was not in the best interests of the child. As shown in the quote below, cases like this were deemed to be of special significance as parents showed the capacity to put their child's well-being over their own hopes and needs. Additionally, they valued that, even though the social care outcome was separation, the fact that the decision made sense in the parent's minds, perhaps left them feeling less disempowered.

"Some parents aren't there yet [but they] understand why they're not there yet if that makes sense […] I think the way we go about things, when the parent is saying, "I'm not ready", that is a successful outcome. […] Even to get a parent to go through the exercises, go through the work and say, "Actually, I'm not ready," that is the best thing for the child […] Actually be at peace with that decision." (Daisy practitioner 1)

Practitioners also noted that parents' capacity to take accountability for their actions with professionals from other services.

"He [client] had to feel safe, and he had to feel like he had a voice and having those two things allowed him to show his vulnerability and to tune into it. And also let him show that to other professionals. It wasn't just me. We all started to see it. He became vulnerable. He was honest, he started to say what he's doing. He was admitting certain things at the beginning. He was saying. Yeah, he would do something and say, Yeah, but it's because of ... Now we will say, but you shouldn't have done it. He's like. Yeah, I shouldn't have, I don't know why. There's acceptance because there is accountability." (Daisy practitioner 4)

Mothers like Amy quoted below felt that the programme had also helped professionals from the wider professional network to see their capacity to do better.

"That [I could look after my children] was something that was never even in in the pipeline before and again it's through them, it's through them [the Daisy team] making people realise that actually like this girl has changed." (Amy)

External practitioners also referred to the impact of the Daisy programme on the wider system. For instance, the extract below, describes how one practitioner felt it offered to the system a more optimistic view about the possibilities of change for parents with a history of child removal. The practitioner quoted highlights the focus and quality of the programme's assessment as being key elements that helped to provide this different perspective.

"I think it's given another dimension, and another opportunity for people […] It's more optimistic, I guess kind of thing, just because a parent has had a child removed before, it doesn't mean that it's not going to be safe or there's going to be the same concerns again. So, I think just having that detailed assessment and pause, if you like, on stuff can be really helpful rather than assuming that they're going to have the same difficulties again. And I think that is what it [the Daisy service] is doing. It has kind of highlighted that." (Network professional 6)

3.3. Perceptions of the programme's mechanisms of change

3.3.1. Relational experience

The relational aspect of the intervention was named as an important mechanism by all the mothers that participated in the programme and was the one that was most frequently referenced. The subthemes identified by thematic analysis were: (1) working in partnership, (2) developing trust, (3) including the family, (4) a team that didn't give up on them, (5) feeling listened to without judgement.

3.3.1.1. Feeling they were working in partnership with the team

One of the most important relational mechanisms highlighted by the mothers in the study was feeling that they were working in partnership with the Daisy team to achieve their goals. This involved a sense of trusting the team as an ally and recognising themselves as active participants in their therapeutic journey. Ruth below describes that even when discussing 'shameful' subjects her sense that they were working together was never lost.

Table 8 Perceptions of multiple stakeholders on the mechanisms of change of the Daisy Programme

PARTICIPANTS (N=4)				**DAISY PRACTITIONERS (N=6)**				**EXTERNAL PROFESSIONALS (N=6)**			
THEME	N(n)*	SUBTHEME	N(n)*	**THEME**	N(n)*	SUBTHEME	N(n)*	**THEME**	N(n)*	SUBTHEME	N(n)*
Relational experience	4(31)	Working in partnership	4(8)	**Relational focus**	6(94)	Promoting agency	4(17)	**Relational focus**	4(17)	Promoting agency	1(4)
		Developing trust	3(8)			Offering a safe space to elicit trust	6(25)			Relationship of trust	4(4)
		Including the family	3(7)			Involving the social network	4(18)			Including the family	3(4)
		A team that didn't give up on them	3(7)			Recognition of strengths and progress	3(4)			Giving a second chance	2(5)
		Feeling listened to without judgment	2(2)			Practitioners reflectiveness and understanding	6(29)				
Support adapted to my needs	4(20)	Continuous support	4(8)	**Support tailored to clients' needs**	5(28)	Flexibility around time due to the long-term nature	4(18)	**Support tailored to clients' needs**	5(13)	Time availability (mixed reports)	3(8)
		Adapted to readiness and circumstances	3(8)			Adapted to needs and circumstances	5(18)			Adjusted to need and circumstances	1(1)
		Easy to access	1(4)			Always available to clients	2(2)			Intensity (Mixed reports)	3(4)
Support to make sense of the past	3(9)			**Invite to reflect and make sense of the past**	6(40)			**Support to make sense of the past**	3(6)		
Practical support	2(8)			**Practical support**	4(15)	Skill building	4(6)	**Practical support**	4(41)	Skill building and information	2(2)
						Supporting engagement	3(5)			Supporting engagement	1(1)
						Material support	1(4)			Material support	2(4)
										Signposting and multiagency work	4(19)

N(n)*= Number of participants that referred to this theme/subtheme (total number of times that this theme/subtheme was referred to)

At the worst times, we had difficult discussions, and you know, I felt overwhelmed. But I always felt, even when we didn't agree on things and the more difficult conversations, I still felt like we were working together, not against each other. And that was also a big thing for me. Even when there is asking questions, the kind of I knew I had to accept, and made me feel, you know, a bit ashamed of the things I've done in the past. I always felt like we were working together rather than against each other. (Ruth)

Participants perceived the Daisy team as an ally particularly during review meetings where other professionals and their family members where present. Amy below takes ownership of these meetings experiencing them as supportive rather than persecutory.

"We have reviews (review meetings) each month and which is really good. And like everybody attends and it's really for me, because obviously like we have LAC reviews which is for my son, but (these are) reviews for me to see like where I am (and) the work that I'm doing with people and things like that, that all gets said in that that review meeting […] I mean, I work with my keyworker, she's like the number one that I'd go to, but they [the Daisy Team] all tend to be on these review meetings". (Amy)

Similarly, Susan describes how during review meetings with other professionals, she felt that the Daisy team was there to support her and to support the professional network to keep in mind her capacities and progress.

"Every meeting that I had like, even if it wasn't the Daisy program where they would just join in to give me support, they were always same positive things. I never really focus on the negatives of things, which was really nice because you don't really get that from many people". (Susan)

The sense of partnership was echoed by the Daisy team. The strong relationship that developed between keyworker and client was perceived to have allowed them to address difficulties because the practitioner was not seen as a threat but rather as an ally. The following extract shows this practitioner's experience with a mother, in which the participant let her know, through the voice of her baby, how much her presence, encouragement and support had meant to her in her parenting journey.

"I'll give you a real-life example of a mum who had a baby. Mum brought the baby in, and I was holding her son, and I was talking to him. And then she said to her son. I think he was like a month or so […] 'well, you should remember that voice because she used to tell mummy off a lot, but she really helped mummy as well, didn't she?' so it was just so nice to hear [that] because when she's saying 'that's The Voice that used to tell mummy off [and] used to tell mummy come on? What is going on? you can do it […] I just feel like they feel like we're on their side". (Daisy practitioner 4)

The Daisy team recognised that the parents' history of child removal and early experiences of trauma, had often left them feeling incompetent, powerless, and passive. Therefore, they saw the importance to empower parents to take ownership of their stories and to see themselves as active agents of change.

The two extracts below show how these practitioners highlighted the mothers' right to have a voice whether by telling their story in their own words or by expressing their needs in moments of crisis. Practitioners hoped that this approach would communicate to parents that what they had to say was important and that they were worthy of being listened to.

"I'm saying to them: I'm going to write your story, but I want it to be your words, I want it to be your actions. I have to write it, but how do you want it to be written? How you want it to be written is up to you and you should want it to be up to you because it's your story, it's not mine". (Daisy practitioner 4)

"Women's families in complex crises, (...) they see us as the experts, but they are the experts, they know from their own perspective what it is today that is really troubling them". (Daisy practitioner 6)

Practitioners also highlighted how the mothers' sense of partnership with the team was supported in part by its voluntary nature. In this sense, and in opposition to many social care interventions, this was a programme in which they had chosen to take part.

"If the social worker comes and tells the parent that they I have to complete this parent and assessment, they are obligated to do that because of their involvement with the local authority. But we don't have this kind of pressure on families, and they can easily turn and say OK I had enough". (Daisy practitioner 3)

3.3.1.2. Trust in the therapeutic relationship

The second most important relational mechanism was building trust in the therapeutic relationship. Mothers shared that building a relationship of trust with their keyworkers was not a straightforward process particularly due to their previous experiences with social care and history of child removal. However, as described by Amy and Susan in the following extracts, the frequent contact and gentle

approach of the keyworker allowed relationships to develop providing an optimal framework for change.

"No, not at the beginning, because I think […] I was quite closed off because I didn't have the support before my children had gone. And I was sort of like just left there, so, I was quite closed after. Then you get somebody that's a stranger and that comes into your world and wants to know everything about you. I think at the start I was a little bit like: 'I don't know about this'. But like I said, the more and more you see them, and even just talking about like general things […] general chit chatters, as well as being professional. I've done the work that I need to do through them, but it's because I can say certain things to her because we've built that relationship". (Amy)

"Yeah, I think pretty much straight away they knew how I was previously with the local authority […] they knew that I was quite standoffish and wouldn't speak to them. So, they were really good at trying to break down my barrier without putting too much pressure on me. Then from there, that's when I obviously gained my trust, and I was able to open up to her". (Susan).

Mothers also expressed the view that another important element that promoted trust was having one keyworker who acted as a main point of contact, liaised with other professionals, and provided therapeutic support. Establishing relationships with multiple professionals seemed to be an overwhelming endeavour for vulnerable families as it demanded emotional resources and skills that perhaps were not available. An example of this perspective is shared below:

"I think just having that one key worker was what helped me, just having one person to trust, and let everything out […] rather than having to change and have to open up to different people". (Susan)

Daisy practitioners agreed with mothers that investing time and resources in building a therapeutic relationship with their clients' was vital for their engagement with the therapeutic process.

"And it's about helping the cause to actually see therapy as a journey for the individual. You can't say when a person is going to start their reflective functioning, you have to build up a restorative relationship with them first in order for them to trust you enough to talk about their history". (Daisy practitioner 2)

Daisy practitioners also described how in order to build trust they needed to provide consistency, resilience, transparency and a space to think things through particularly when challenges arise.

"I think the biggest thing is that epistemic trust that we build with families, we don't let them down. We make sure we're there when we say we're going to be there, you know, if someone shuts the door in

our face today, we go back tomorrow, you know, with the let's put the kettle on and have a talk about this." (Daisy practitioner 6)

The investment in creating a relationship of trust seemed to have helped parents to be more open around difficult subjects. The external professional below noted how the Daisy practitioners' positive 'bond' with their clients allowed them to address difficulties in a way which other professionals wouldn't have been able to.

"So, they're getting that friendlier bond with the family. So, it allows them to tell them what they're doing wrong, tell them what they need to improve on. And whereas if a social worker was saying that to them, obviously they've already got the guard up". (Network professional 2)

3.3.1.3. Experience with professionals that didn't give up on them

For the interviewed service users, the experience of a team able to remain hopeful and committed despite ongoing concerns or setbacks was a new or at least a very rare occurrence in terms of their relationship with professionals.

"I had a bad addiction to cannabis and even when I had a drug testing [and] it came to light that I was still using cannabis, rather than just completely say Oh well, we don't think we can work with you moving forward. I got me more support and more help [...] They never gave up on me, even when things took a little bit of a turn, they never gave up on me […] I felt like they saw my potential to be a good mum, and that's all I've ever wanted". (Ruth)

"Just how very open they were from the beginning […] as soon as I went on to that meeting, I felt like they were going to be very supportive of me and help me, even with the ongoing concerns, which is quite positive because I never really get that from professionals". (Susan).

Mothers like Amy below reported that one of the key aspects of the Daisy programme was that the Daisy team genuinely believed that change was possible.

"Understanding that, yes, people can change. That's what I like more than anything else about the Daisy, that they're believe massively in change". (Amy)

This was also noted by external professionals. As described in the quote below, the team's focus was parents' strengths and capacity for change. In that sense, the programme revisited the past searching for understanding rather than to assign blame.

"Although all parents who access the service have already had a child removed in the past. I don't think that's acknowledged, but it's not like it's seen as a negative or a blaming factor. It's seen as kind of strength based and what's the potential, what changes have been made. So, I feel there's a real push to try and keep children at home with their parents, and that's the real benefit. I think there's a lot of support there." (Network professional 6)

In this sense, the Daisy team were perceived to offer their clients a 'second chance' as the non-Daisy professional remarks below:

"That idea that they are kind of starting over with a new team is helpful. It's allowing them a second chance that they haven't had before because, as sad as it sounds, their decision has been made by the social workers. They think it's going to happen again." (Network professional 2)

3.3.1.4. Involving the family network

Another aspect of the relational focus of the programme was its active inclusion of family members in order to build and/or strengthen parents' support networks.

"They they've done a great deal for me that they really have, not just for me, for my family, because they don't just work with me either, they've worked with my family, with mum., Mum and the Daisy team have worked closely with my mum so on some occasions my mums contacted my care coordinator." (Ruth)

Family members were invited to join review meetings, which allowed them to take part in the team's reflections regarding the parents' presenting problems as well as providing parents with support, whether emotional or practical, as part of their care plan. Amy below described how important review meetings were to get everyone, including her family, on the same page.

"Yes. My mom and dad are there [review meetings] and cause obviously they've got my son at the moment. So my mum and dad will be there all just like social services. Every other service that I'm working with will be there too, on this review […] It's I think it's really good, it just gets everybody sort of on the same page and as well like if certain people aren't or you know they don't understand a certain thing that I've done because it's through somebody else like it can all be put on the table there." (Amy)

Daisy practitioners highlighted the importance of review meetings in bringing families together in order to build or strengthen parents' support networks.

"What's different about Daisy is we build a network around them. So, we bring in their family members, we look at family members who [could] offer them support and we bring them into the network a little bit like family group conferencing used to do back in the day. But we bring the family network together. We talk about the issues open and honestly and we see who can offer what support at what time". (Daisy practitioner 2)

From the Daisy practitioners' perspective, including family members in the programme also allowed them to make sense of the wider family story and how it might have played a role in prior social care outcomes. These reflections helped families to feel closer, to have a more compassionate view of the parent, as well as to share the responsibility for achieving a different outcome this time around.

"They [the parents' families] have really disconnected from them [parents]. So, we've tried to rebuild family networks. What we have been able to do is to help the parents of the parent [Daisy client] to think about their own selves and their own input into why that child was removed, so the family [as a whole] owned it. Now it's not just 'it is your fault you haven't got your child'. It's about bringing that family to the table and saying this is a collective thing. This is a collective reason why this baby's not in the family. It's not down to you. So, we really bring the family legacies to life and then the whole family system starts to shift". (Daisy practitioner 6)

The practitioner below describes how they helped parents to recognise the sources of available support within their family network. She describes how through open communication with family members, parents were able to access support and understanding.

And trying to get to the point where you say, "Out of all, out of all the people you have to worry about […] your parents are actually there to support you. Your parents love you regardless." And as it turns out, it was quite emotional, and that was exactly what the [service users'] parents said: 'Why didn't you let us know? Why didn't you let us know? We'd have supported you throughout". (Daisy practitioner 1)

As the following extract illustrates, Daisy practitioners understood that their clients' relationships with their families was vital post treatment as they were going to be parents' main source of support at the end of the programme.

"Because when professionals work [ends] and they step away, it's their family and their wider network that is there for them. It [the Daisy] has helped to scaffold their relationships with their families, with their extended family members, [and] with their parents. (Daisy practitioner 5)

Professionals from other teams agreed on the importance of integrating parents' families in their support system but highlighted that it was equally important to help parents to recognise the sources of risk within that same network.

"Family support plays a key in terms of the intervention. I think is necessarily helpful for that particular type of client as sometimes families are the problem. So, I think it's about establishing those supportive families and incorporating them, but also letting the client be aware of those families that actually are a hinderance to their progress." (Network professional 1)

Involving the clients' social network, however, also involved challenges. Interviewed mothers reported that including their partners sometimes brought some difficulties, particularly if they were supported and assessed by the same keyworker. In the quote below, this mother explained how she was put in a difficult situation when her partner disagreed with his assessment report.

"The only thing that I would say is, when we are doing assessments, me and my partner were separated. […] Me and my partner disagreed with that (partner assessment results). That is the only part where there has been an incident where words were switch of. […] So, my partner did disagree with the assessment and then I disagreed on what was said as well. But then he (my keyworker) said that my partner gave the answers, and he just wrote them down. My partner said he didn't want to sign it..." (Patrice)

As the extract illustrates both members of the couple were supported by the same keyworker so the disagreement between her partner and the keyworker put the mother in an uncomfortable position. Even though she had a good relationship with the keyworker and had not been part of her partner's assessment, she became involved in supporting her partners' views, perhaps trying to protect her relationship. In this sense, the dual role of the keyworker could have adversely impacted this mother's otherwise positive experience of the service.

3.3.1.5. Feeling listened to without judgement

As we can see in the extracts below, this approach seemed to have helped mothers to feel safe to disclose profound and very painful aspects of their life, opening opportunities for reflection, support, and ultimately for change.

"Throughout the whole assessment there was a lot of conversations that were very upsetting and deep, but it allowed me to process things that had happened in the past and it allowed me to reflect on it as well, which has helped me to get where I am today, because I felt like I was listened to, rather than being judged, which is what I felt like in the past, I felt like I was being listened to". (Ruth)

"The lady who I work with, she knows pretty much everything about me know. And that is really good, she is actually supportive, not somebody that's necessarily judging now". (Amy)

Mothers' feelings of being valued in their relationship with the keyworker seems to have been elicited by the keyworkers' capacity to listen to them and to offer support in a non-judgemental manner, as the Daisy practitioner below describes:

"I just feel like the Daisy gives room for them [parents] to say do you know what? I'm a human being. I have messed up. And possibly I am going to lie to you at the beginning because I'm scared. They really share and open up […] it's just a place for them to speak. That's what is therapeutic. And that's where a lot of the time you see a massive shift in their behaviours because their vulnerability is met with safety. It's not met with judgment. It's hard for a family to go up against professionals, when they don't know the words." (Daisy practitioner 4)

Practitioners described how a mentalizing stance helped them to seek understanding rather than be judgemental:

"If I was to work with a parent, I'm expecting her to show some evidence of mentalization and reflective functioning. [But also] I need to be able to mentalize her position. You know, why she or why he is feeling this way? Let's go back a little bit, it's about trying to understand, and I think when you do that, this naturally progresses into having that positive working relationship [whether this is] with colleagues or with families that have come to use the service". (Daisy practitioner 5)

As the same practitioner describes in the following extract, this non-judgemental approach allowed his client to share their struggles and ask for help despite her fears.

"She said to me 'It is just that nobody really calls me, nobody is really bothered about how I am. Yes, the children are really important. But I've had to go back to the doctor and I'm taking medication for my mental health again. I wasn't doing that sometime […]' and I said she said, 'I don't say anything because I worry that they are going to think 'Oh my God!', that my mental health is declining. And it is not that my mental health is declining, it's just that my emotional well-being is not 100%. But people seem to forget that. I said, well, you know, I'm always available. If you ever need me to come down to touch base with you on more than happy to do that with you. I think I guess the reason why I'm showing this example is that throughout the work that we do." (Daisy practitioner 5)

3.3.2. Support adapted to mother's needs

3.3.2.1. Continuous and long-term support

Service users described the continuous and frequent contact offered by the Daisy practitioners. As depicted by the following extracts, mothers valued not only the sessions but also the more informal check-ins in between sessions. Particularly for Susan this seems to have been a style of support which contrasted with prior experiences with other services.

"Yeah, I think, because I'm like I did a previous assessment with the local authority. I will do an assessment [and] go home. They don't have that extra communication as a Daisy program. There were always checking in on me […] [They were] always making sure I was OK, that the baby was OK. Every appointment I had within, if it was in the morning, by the afternoon, they would message to check up and everything and make sure that I was OK. It's just that extra support after the session you don't really get from many professionals." (Susan)

"You know she'll phone me and check on me like a couple of times a week. And I do see that. And once a week through the contact I have with my son." (Amy)

Mothers like Ruth below also referred to the importance of the long-term nature of the programme, which continued after the court assessment process.

"Their support didn't just end at the assessment, you know, we kept going and going and there was really good. It was brilliant. I would recommend the Daisy programme to anybody." (Ruth)

The Daisy practitioners emphasised the importance of the support offered post birth, which was considered as still being a time of particular vulnerability both for the mother and the baby. In this sense, even when the court decision had been that the baby was to remain in parents' care, Daisy

practitioners made themselves available for sporadic consultations, offering containment and signposting them to relevant services when further support was needed.

"I still get phone calls from parents that I have worked with who are no longer known to the programme. He will just ask me questions, or they'll just call me because they're feeling something is difficult […] they'll still call me and say 'Oh, this happened, what do you think? [I will advise]: so erhaps it'll be a good idea if you go and speak to that person about it, or maybe speak to your GP". (Daisy practitioner 5)

Practitioners agreed that the length of the intervention was a key element that allowed them to adjust to their clients' complex, multiple and constantly changing needs.

"Having that, having this long period we have, from 12 weeks pregnant to 26 weeks post birth, it does give us the time to do a lot of work with our families". (Daisy practitioner 1)

"We go in with our own agenda because we are professionals, but when somebody's in complex crisis, things can change from hour to hour so we can't [say]: We need to achieve this today, actually it doesn't work like that. Which is why we're trying to stay involved as long as we can". (Daisy practitioner 6)

Professionals from the wider professional network noted that the time available contributed to the development of a positive therapeutic relationship.

"The Daisy team have a lot more time for the mums and get that bond a bit nicer, they get more friendly with them. […] They need you know as much time working with the participant as possible." (Network professional 5)

However, even though the Daisy is a long-term intervention, professionals from the wider network recognised that this was limited, particularly when mothers were referred late in their pregnancy.

"Some families need a lot more input than others, but obviously ultimately we've only got nine months." (Network professional 2)

"She was late booked on to the Daisy programme, so if you if you start at 20 weeks instead of 12 weeks, that's a substantial amount of time that you lost. […] And when we first started working with her, then she became homeless. We were told in the first meeting that she was homeless, so you can't start the interventions and the work you're [meant to be] doing with then when they are in that kind of situation. So, we had to resolve that first, and then we had to start working. So, then we were so late in the pregnancy when we started the work." (Network professional 3)

However, not all the external professionals interviewed shared the view that more was better. For instance, the social worker quoted below voiced her concerns about the possible burden that such intense contact could be for vulnerable families who are possibly already feeling overwhelmed.

"I think this [intervention] was a big burden on them [parents] and was not fair at that stage in pregnancy. I think we were lucky that these are two very lovely people who were so accommodating, and they just wanted to do what's right for their children. They want to be the best parents they can be. And so, they allowed us to do that. But I think other families would have really gotten angry with us." (Network professional 3)

Contrasting this view, the service users interviewed seemed to have appreciated the consistency and frequency of contact, often interpreting it as a sign of being looked after. For instance Patrice, the mother who the social worker was referring to in the quote above, described how she had experienced the contact with her key worker during her pregnancy as supportive and reliable.

"I was down. I was feeling down for most of the pregnancy but uh, he [keyworker] was there to help. Like, he was there mentally as well. Emotionally, used to say, you know, like, get up, take a walk with your partner and your child, you know, get some fresh air. And then he would come in and check if I was still down or if I was feeling better or stuff like that." (Patrice)

3.3.2.2. Adapted to readiness and circumstances

Mothers noted that the practitioners were ready to adjust the intervention in order to meet their readiness and their needs. The following extract shows one of the participants' struggles to approach emotionally challenging subjects. She reported that the programme's flexible approach helped her to engage with those difficult conversations by offering her shorter initial sessions that increased in intensity over time, as well as check-in calls between sessions.

'I knew that it was going to be quite hard because of obviously the subjects that we were going to discuss […], but once they did it, they kind of approached it … they did these smaller sessions... So, they knew how to help me get around it. And then they approached the hard ones. But there were still very supportive. But even afterwards after the sessions, they would ring me to check in on me and make sure I was OK". (Susan)

Mothers like Ruth and Susan below noticed the practitioners' sensitiveness to their state of mind and their emotional availability and appreciated them adjusting the length of the sessions to their needs or even rescheduling appointments when needed.

"It didn't matter if we added, let's say, a meeting that was set for an hour. If that meeting run over until 2 hours. I never felt like there was rushing me to get out or I was listening to for the whole time". (Ruth)

"If I wasn't feeling up to the session, I didn't have to do it, or [they] would take into consideration my feelings." (Susan)

Ruth also shares in the following extract how her Daisy keyworker adapted the intervention to her needs whilst being in a Mother and Baby Unit. This mother had reported to her keyworker her feelings of isolation, low mood, and fragility and that her family was unable to visit her.

"I mean the social worker for the team […] in the early stages of my placement she came to collect me from placement, and she took me to a cafe, and we had a coffee and a chat and she just she offered emotional support. Because my family wasn't able to, she got me out of the placement for a couple of hours for a change of scenery and just reassured me, you know, that it wasn't going to be like this forever". (Ruth)

The practitioners also provided descriptions of how they adapted the pace, intensity, and topics of the sessions to their clients' capacity, taking into account their emotional availability, their need/tolerance for contact, the stage of the therapeutic relationship, and their learning needs.

So, if they're, if they're quite timid and shy, and they don't want to talk and that, I will try and work out ways to actually get them relaxed and at ease. If they've got learning needs, I have to adapt my sessions and break them down. And it might be that the introductory session might be two sessions […] because we don't want to overload that person. Let's build them up in the meantime. So that, that's, that's one thing this job has taught me is actually we have to, sometimes we have to just take our time. (Daisy practitioner 1)

The post birth support offered also was adapted for parents who didn't get custody of their babies. For instance, the following practitioner, describes how she continued supporting her client by arranging contact between her client and the baby until adoption.

"I have arranged that contact as well. They were regularly coming and seeing their child until adoption. I made that journey very smooth and therapeutic." (Daisy practitioner 3)

Wider service professionals also noted the programme's ability to build a care plan adjusted to each of their clients' needs.

"The programme has supported them to navigate the things that they need to do in order to make the changes that are necessary, and I think that's probably one of the benefits of the Daisy, that they can sit down and look at where you were at. These are the needs that have been identified. This is how we're going to support you to make those changes." (Network professional 1)

3.3.2.3. Easy to access

One of the mothers also valued that the support and the team itself was easy to access. In the quote below a participant describes her experience with the service and her sense that practitioners were available when she needed them and open to adjust to her needs if she communicated them.

"If I wanted to talk to them at a different date, I didn't feel like I had to constantly jump through hoops to get in touch. I could just pick up the phone and there was always somebody there to talk to, whether it was positive news or bad news, there was always (someone) there". (Ruth)

Daisy practitioners confirmed that they offered abundant contact opportunities to their clients, allowing them to reach out to them when they needed additional support.

"I'd. I'd always make sure that I'm available for parents. I think it's really important that they have access to the whole team." (Daisy practitioner 6)

"[I told mother] You've got my work number. You can always pick up the phone and call if you just want to vent or you just want to have a conversation because you're feeling low." (Daisy practitioner 5)

3.3.3. Support to make sense of the past

Three of the mothers reported that thinking about their life stories and making sense of them was a key element of the programme. For many of the participants this had been the first time that they had been offered support that included reflecting on their past.

"The work that I've done with them really helped me because I had never looked inside; this support I have never had before. So was it like delving into my past which I've never actually done before". (Amy).

The exercise that the mothers indicated was most relevant in this exploration of the past was the 'Narrative Integration' offered in week three. The following extract describes this exercise in the words of one of the participants.

"She [the keyworker] sat on the floor, and we wrote the most important events that have happened in my life and then we had different items: a rock, a feather, […] a petal and a flower, which all represented different events and whether it was a happy experience, sad experience […] In seeing it [I could notice] where things changed. It hit me. You know. Things were OK before, and then it changed." (Susan)

A growing understanding of their past experiences seemed to have allowed mothers' like Ruth to take ownership of her actions with compassion and to have more clarity about the changes that they needed to make in order to better care for their children.

"I think one that really stood out to me was we doing a timeline of my life […] I noticed after my eldest daughter was born, it seems to be a lot of negatives in my life […] we had in-depth conversations with the Daisy, and I realised that life hadn't been the same since she was born. And I felt that rather than embrace my daughter when she was born, I became more focused on her father and then my life kind of spiralled out of control. I actually dwelled on it for a couple of weeks after because I feel that if at that time, I would have put my daughter first rather than my own feelings— instead of the things that were happening with her dad and the relationship— I wouldn't have ended up where I have been, but I just couldn't see it at the time". (Ruth)

"I felt like throughout my pregnancy, the more I started to reflect on my past, the more I realized that changes needed to be made because the person I was then is not the kind of person that can care safely for two children". (Ruth)

Daisy practitioners agreed with mothers that understanding their past was an important aspect of the intervention. They hoped that improving a parent's understanding about their past would help them to

build a more integrated view of themselves, recognising not only their past mistakes and limitations but also their strengths and capacities.

"I think the exercises get them to really, really reflect, really, really personally reflect on their life. So, on different levels. Things that have happened to you, things that you've done, things you've done to your children, things you've done well, things you haven't done, you haven't done so well. They have to reflect on the past, their past issues, which they've been blamed for, and rightly so in many cases because the children have been put at risk, [but] we're also looking for the things that they've done well". (Daisy practitioner 1)

The Daisy practitioners shared examples, like the one below, of how they supported parents to reframe their views about themselves and the people around them in light of their past experiences.

"She realised actually, you know what […] Everyone's told her she's a … this is her words not mine, crackhead, prostitute, this, that and the other. But actually, what she's, what she'd learned from that is actually she was only 13 years old and there's been ... I think we identified there was about 108 people in her family that could have supported her at that time and not one of them supported her. And she realises actually that it's not, it's not to say like, you know, "It's their fault or whatever, it's their fault, it's your fault, it's our fault," but actually, "I'm not to blame." You know, she is to blame but […] she was only a child in all this". (Daisy practitioner 1)

Other professionals shared a similar perspective highlighting the preventive potential of understanding the root of parents' maladaptive behaviours.

"It's a holistic service that looks at the root cause of why a woman or a mother is in the position she's in. By looking at the root cause, it's being able to clearly identify [….] What caused this person to get to the point where they're at? let's not pick on that. Let's work with that and put the support in place to ensure that this doesn't happen again, you know." (Network professional 4)

The practitioners knowledge of their clients' stories allowed them to better understand their triggers and behaviours. With this understanding they were in a better position to then support their clients' own self-reflection. The practitioner below describes how he was able to address her clients' behaviour towards another professional in light of her childhood history and her relational patterns.

"For example, there there's a mom that I was working with, and she's got Autism and she's been in a domestic violence relationship. Her self-esteem is quite low, she was groomed when she was younger, she is a 'people, pleaser' as she puts everybody before herself. Now, she's on the path of change, she's starting to find herself. Her esteem is next level. It's beautiful to see because you literally like a Phoenix you can see that she's rising. [However] We were having a session together and another professional walked in and spoke to her about something, and I just saw how flippant she could be

and how defensive she was and how her body language changed her tone changed so I obviously I didn't get involved. I just watched so when that professional left, I just said to her what was that? Because […] she never displayed those behaviours to me. I know of all of those behaviours but in our relationship, she would never display those to me […] She knew exactly what I meant, so she started to explain that she felt as if she was being challenged. She was being told that she's wrong. So, I was saying OK because of this? Was it because of the tone? [I was] trying to understand what triggered her and where she was. What happened there? What was in your brain what? What was in your stomach? What did you feel? What happened? And then we were able to then have a conversation and really good session". (Daisy practitioner 4)

External professionals noted that the Daisy's approach of revisiting the past was ultimately focused on eliciting change.

"Having that approach [a more friendly long-term approach] allows the parents, I feel, to really think about, OK, what did we do wrong and the reflective process of it all is explaining to the parents: 'this is what you did wrong, maybe this is why it happened, but ultimately this is what went wrong, this is what we need to do to change it'. Every single family has a different approach based on what's happened in the past." (Network professional 2)

The opportunity of having space to make sense of their own childhood experiences, opened for parents the possibility to also reflect on their children's experiences. As described by a Daisy practitioner below, parents were encouraged to reflect on past events from their children's perspective. They were invited to think about their children's feelings and thoughts and supported to understand how these experiences were connected to their current behaviour.

"OK, it's good that you're being open and honest [...] What do you think the impact was on your children? What do you think your children felt on this situation. Let's say, see from your children's perspective, let's get into your child's world. So, it's really important that they use that reflective functioning to think about their child […] Let's look at the impact that it has on them. Let's look at their behaviours now and how it's impacted on them. And it's really important to get the parent into a place where they're thinking about their child's worlds and how their child was. See things from their point of view […] Let's talk about this incident from [your child's] perspective, who was five years old at the time, what do you think she was thinking and feeling. [Then] they're able to see, this is the harm that I caused my older children. Maybe I can do better for my baby". (Daisy practitioner 2)

3.3.4. Practical support

Another aspect that stakeholders highlighted was the programmes' capacity to offer concrete support when needed. This included solving practical problems, supporting their engagement with other services, providing advice and teaching practical skills.

Two of the mothers interviewed particularly addressed the relevance of this type of support. For instance, Ruth below recalls how the team connected her with agencies which provided support with housing, substance misuse and mental health difficulties.

"They've put support in place to help me get a new property. It's a great deal of things they've done. […] support with my alcohol and drug use and my mental health, they've helped me with housing and […] they've put me in touch with support groups". (Ruth)

Daisy practitioners reported that addressing practical issues such as housing and education had a positive impact on the parents' mental state and emotional availability, thereby enabling them to engage in elements of the programme that were perhaps more emotionally challenging.

"This is a programme being built to support families to reach their ultimate goal [which includes] solving their solvable problems with housing, with finance and with education". (Daisy practitioner 3)

"We were able to put this family into their two-bedroom house […] That helped and solved a lot of problems. [Having housing difficulties] your mind is stressed, but solving this problem, we gave them a space […] and that also shifted a big stress from their shoulders". (Daisy practitioner 3)

Another important practical aspect highlighted by mothers like Patrice below, was the team's support and encouragement to engage with services and attend their appointments.

"Before I wasn't really […] going to appointments in regard to my toddler and in regard to my pregnancy, but (my keyworker) did push me to go and he did push my partner to support me in going as well. And now I have been going to my appointments and stuff". (Patrice)

Practitioners like the one quoted below explained their efforts to promote engagement with other services.

"One of the concerns [for this family] was attending their appointments. So, I gave this family a calendar and regular calls and regular check-ups. And during our meetings, we also brought all professionals, teenage pregnancy professionals and the mental health team." (Daisy practitioner 3)

Furthermore, practitioners frequently served as a bridge to improving communication between other services and their clients. As the next extract shows, sometimes this entailed sharing with other

services their understanding of their clients, in order to improve the chances of engagement and the development of a positive relationship.

"I then sent an e-mail to the residential [services] where she was staying in because I was of the understanding that these things were happening there as well. I sent an e-mail to […] let them know that this is how she feels, when you guys are feeling that that she's attacking or just combating against you guys. I just gave them context: 'this could be the reason […] possibly this is what it is because I've witnessed it […] She said that she needs time, she needs to be spoken to in a different tone'. So, I just tried to pass what she shared to me to others who are dealing with her in different settings. So hopefully, everybody begins to work together". (Daisy practitioner 4)

As described in the extract below, wider service professionals also noticed how Daisy keyworkers put significant effort into helping their clients to engage with relevant services.

"[At] pre-birth they really go out of their way to make sure that the participant has got everything [for instance] seeing the nurse regularly. And I know that they personally help the person to get to their appointments. I've known that they've actually gone to pick them up and take them there." (Network professional 5)

Along with supporting their engagement with services, mothers also reported that they were supported with more day-to-day challenges, which had an impact on their everyday lives and their feelings of wellbeing. It is likely that by attending to those more mundane needs, practitioners helped mothers like Patrice below to feel validated and thought about in a way that was central to their recovery.

"He [keyworker] was asking his manager […] if he could help us washing our clothes or stuff like that. Because there was nothing in the hotel for washing our clothes. And [to buy] like food and stuff. He went out of his way to get another professional involved to get us a home, which got us the flat that we're living in now". (Patrice)

Patrice also described how in addition to supporting her basic needs, the programme offered regular check ins and simple advice and strategies to support her emotional wellbeing. The quote below provides an example of such support.

"He has helped me mentally as well. Emotionally […] like, get up, take a walk with your partner and your child, get some fresh air. And then he would come in and check if I was still down or if I was feeling better". (Patrice)

As described below, Patrice also appreciated the parenting support she received to improve her relationship with her toddler.

"Well, because there was a situation going on with me and my toddler, with connection […] he showed me videos on how I should be with my toddler (so) we could built back our connection. And for my toddler to want to be around me. So, he showed me videos, he gave me tips, he gave me advice and I've been following those tips. I have been watching the videos and the connection with me and my toddler has grown." (Patrice)

Patrice's keyworker also commented on the parenting advice he offered to the couple, helping them to focus on her daughters' experience and understanding, instead of following a rigid reward/punishment model.

"I said to him […] you think that gently tapping [your child's] hand will prevent your child [from misbehave], can you please tell me what lesson your child has gotten? […] and he couldn't think of anything because there was no lesson, that was a consequence. There was no lesson for this child to understand [whether] what they [was] did right or wrong. The best way is the communication not the consequences". (Daisy practitioner 3)

Patrice also appreciated the support she received to improve her couple's relationship. As illustrated in the example below, she describes how her keyworker supported her partner to better understand her perspective and needs.

"There were a time when there was a disagreement with me and my partner as to where he wanted, my partner wanted to go abroad. (My keyworker) spoke to my partner and told him that it would be hard for me managing my one-year-old whilst expecting a child. He got my partner to understand." (Patrice)

In addition to what was highlighted by the two mothers, Daisy practitioners reported to have supported their clients to find work, manage their money and improve their finances.

"[In the past] they've learned how to get through systems and get what they want. But now they are doing it in the legal way. So, let's try to push him to change negative behaviours, which were used in an illegal way, into a positive way. So, you want to make sure that you've got things in place? Then you're going to work. [Now] your son is OK your wife is OK, you're saving, you've got the right things in place. You've got nappies. Let's replace the illegal stuff into legal stuff." (Daisy practitioner 4)

"We need to speak about what you're prioritizing. You spoke to me about a vase that you want, you have to say to it: is that a necessity or is that [something] I want? […] and that made her understand.

Instead of me just saying 'why are you buying that vase? why have you got so many expensive things and candles?" (Daisy practitioner 4)

From the perspective of wider professionals, the multidisciplinary nature of the Daisy team was key to providing an integrated service. In the example below, a professional explains that the families he was involved with viewed it as positive to have professionals from different disciplines on board as part of the Daisy provision pre and post birth. He also highlights his experiences working alongside such a team, feeling that communication within the team made the work more efficient.

"And then you've got the Daisy team, which you know is it's all obviously they're all like together. And yeah, it's kind of nice working in a bigger team because you feel like you've got more responsibilities in a way, but you've got the other professionals there that you can talk to about certain points. […] it seems like they have everything in house ready, so they've got their own nurse, they've got their own set of social workers and I think that that is like really important to these families who really need them. They are generally really happy that they've got so many professionals on board, you know, and they all do different sort of like work. So, and everyone keeps everyone in the loop. […] The Daisy team go above and beyond to make sure that they've got everything ready before they give birth and then after their birth obviously, if the child is taken away, they sought out the contact for them as well." (Network professional 5)

4. Discussion

This study explored key stakeholder's perceptions of the impact and mechanisms of change of the Daisy programme using a thematic analysis. Our findings show that despite their different organisational positions, the key stakeholders included in this study on the whole, had complementary views regarding these themes.

4.1. Impact

According to mothers who participated in this study and the professionals interviewed (Daisy team and external) the programme positively impacted four areas: it improved the service users' *relationships*, helped them to *gain confidence,* and supported them to *recognise their mistakes and the need for change.*

The impact on mothers' relationships was the main area of change for the three group of stakeholders. Reports showed that mothers were enjoying their parental role and found the parent-infant relationship gratifying, they had strengthened or when needed re-evaluated their couple relationships, they had developed stronger relationships with their families of origin, they had re-considered their relationship with other professionals, and they were able to end or restructure their friendships if these posed a threat to their parenting. In sum, through the programme mothers seemed to have been able to build a more satisfactory and supportive social network around them.

The growing confidence of participating mothers was another aspect of change that was attributed to the programme. Mothers particularly highlighted a change in their perception of themselves in their maternal role describing themselves as capable and proud of their achievements. Stakeholders gave examples of the mothers' growing confidence and sense of agency, seeing themselves and their contributions as valuable, as well as gaining trust in their ability to build a better future.

The mothers' capacity to recognise their past mistakes was also perceived to have improved through the Daisy Programme. Mothers and professionals gave examples of how they were able to understand and acknowledge their contribution to their current difficulties, the impact of their actions on their children's lives, and more importantly to recognise that change was needed. It is significant to note that mothers' understanding of the impact that their trauma had on their decision-making and their difficulties wasn't used to justify their behaviour, rather to have been part of the process of taking ownership of their story and their actions.

Finally, both the mothers and external professionals who participated in the study suggested that the programme had helped professionals to have a more integrated and hopeful view of parents with a history of child removal.

The characteristics of the participants of the Daisy Programme, and specifically of the women who participated in this study, echo the wider literature in terms of the characteristics of parents at risk of child maltreatment and recurrent care proceedings. As described in the results, the participants presented with multiple risk factors such as homelessness, history of child removal, domestic violence, substance abuse, being in the welfare system as children and/or experience of sexual abuse. Despite these significant sources of risk, by the end of the Daisy Programme most of the participating mothers were able to keep their babies in their care and in one case to also be reunited with an older child, and it seems likely that the mothers' improvement in terms of the four areas described above might have played an important part in the reduction of risk.

Interestingly, our results on the areas of change concur with Broadhurst's (2017) report on the characteristics of women' who demonstrate capacity for positive change following the removal of a child : (1) had the ability to reflect and learn from experience, (2) achieved positive changes in intimate partner relationships and social networks, (3) were offered better professional help and made better use of that help, (4) and expressed their desire to 'do better' for children either lost from their care or new-born (Broadhurst, *et al.,* 2017).

The first , ability to reflect and learn from experience is related the parents' recognition of their past mistakes which implies the capacity to reflect on their behaviour with the intention to change.

The second and third factors, positive changes in relationships and making better use of help, are related to what was identified in the current study as the improvement in mothers' relationships both with their social network and the professionals in the system. The importance of supportive family networks as a protective factor in child maltreatment has been identified (Davidson *et al.*, 2019), and the capacity to strengthen, restructure or build positive relationships with family, friends, and professionals has been reported to be characteristic of mothers able to sustain change despite being at high risk of harming their children (Ward *et al.*, 2019). Finally, the fourth factor, desire to do better, is related to these mothers' recognition that change was needed, which involves reflecting on what went wrong, and their increasing confidence that they were capable of doing things differently this time around.

Overall these results suggest the potential of the Daisy Programme to reduce the risk of child maltreatment.

4.2. Mechanisms of change

With regard to the mechanisms of change, stakeholder's reports were consistent with one another and four aspects were noted: (1) its relational approach, which was the main mechanism for at least two groups of stakeholders, (2) its adaptability to meet the parents' needs, (3) the support given to make sense of the past understanding how this connected to the present, and (4) the programme's ability to address the participants' practical needs.

In terms of the first mechanism, the relational approach of the programme, mothers found particularly highlighted the way in which the Daisy service was a partner in their process of change. They shared examples of how even during difficult conversations they felt that the Daisy was 'on their team'. Professionals' reports (from Daisy workers and external professionals) complemented this

perspective, describing how important it was for the intervention to put parents' voices and perspectives at the centre of their work. They provided examples of their work where they encouraged parents to take ownership of their stories and views, and feeling more empowered to share them with the wider network. It is possible that being seen as agents in their own change made it possible for parents to see the team as partners of change instead of 'helpers'.

Another important element of the relational focus was the development of a relationship of trust between the mothers and the service. Mothers remembered that feeling safe in the relationship didn't come easy but the gentle and respectful approach of the keyworkers allowed the relationship to flourish. Practitioners described how the mothers' internal work could not begin without feeling safe in the therapeutic relationship and they understood the importance of offering consistency, transparency and resilience to its foundations. External practitioners complemented these reports noting how thanks to the positive relationship with the Daisy service mothers were able to address difficult subjects that they hadn't been able to discuss before. This element reflects the emphasis and resources that the programme places on building a positive therapeutic relationship with their clients. As suggested by one of the quoted Daisy practitioners, this relationship elicited the progressive development of epistemic trust (ET) in the parents participating in the programme. ET is defined as "the individual's trust that new knowledge from another person is authentic, trustworthy, generalizable and relevant to the self" (Fonagy and Allison, 2014, p.373) and it has been suggested it could be the core predictor of the outcome of psychosocial interventions (Knapen *et al.*, 2022). ET has often been associated with attachment and the individuals' early experiences. Aversive experiences in childhood have the potential to elicit mistrust about other people's intentions (Fonagy and Allison, 2014; Fonagy *et al.*, 2017; Fonagy, Luyten and Allison, 2015). As we have described, frequently, parents who appear in recurrent proceedings have themselves experienced suboptimal care and abuse (Broadhurst *et al.*, 2017) and are then more likely to present high levels of mistrust which often makes them less likely to trust professionals and to engage in treatment. Mentalization interventions explicitly seek to establish epistemic trust in the therapeutic relationship and aim to generalise it to

other relationships and social connections/opportunities (Fonagy *et al.*, 2019; Fonagy and Campbell, 2017). The service users of the Daisy programme fitted this profile presenting with multiple adverse childhood experiences and the additional context of having had a difficult history with professionals related to previous child removal(s). However, the interviewed mothers not only engaged with the programme but also reported to have benefited from it. We hypothesise that the growing EP supported mothers' engagement and learning from the programme. We also hypothesise that the parents' developing capacity to trust and be vulnerable within the context of a relationship (through the therapeutic relationship) also had an impact on the improvement of parents' relationships with their families of origin and other important people which, as we have described above, was a reported outcome of this programme.

Additionally, mothers and professionals emphasised the relevance of including the family in the intervention. They appreciated this helped parents to rebuild family relationships as well as to recognise sources of support and risk. Parents shared how much their appreciated to have had the support to repair significant relationships, for instance with their own mothers. By inviting families to review meetings, the Daisy team elicited reflectiveness in family members often helping them to recognise their contribution to the parents' past difficulties and giving them the opportunity to play an important role in the current solution. The Daisy service may have also modelled alternative ways of communicating in terms relationships between the parents' wider family network. As described by practitioners, they discussed openly and with honesty the difficulties being experienced by participating families without looking for blame and instead trying to make sense of the parents' stories. This gave service users and their families an experience of a different way of discussing difficult topics and to enable parents to find ways to ask for support and to make use of it when available. The impact of this aspect of the intervention can be seen in the unanimous reports of stakeholders with regard to the improvement of the mothers' relationships with their families of origin and their capacity to use them as part of their support system.

Parents also reported how important it was to work with a team that didn't give up on them despite of ongoing social care concerns. Mothers shared that the team's response to setbacks or concerns was to make sense of the difficulties and put more support in place which seemed to have been emotionally impactful for at least 3 of them. This view was echoed by the external professionals reporting that they felt that the service was truly giving these mothers a real 'second chance'. Perhaps this denotes the more hopeless general view often attached to parents with recurrent child procedures which seems to have been challenged by the Daisy's approach. The Diasy team added that the programme made efforts to always highlight parents' capacities, strengths and progress which was easily forgotten or overlook by the system. It is possible to say that in this sense the Diasy worked hard to keep an integrated view of these parents in the system, urging it not to lose sight of their 'goodness' despite their shortcomings.

Another aspect of the intervention's relational approach, perhaps also related to trust, was parents' sense that they were being listened to without judgement. From the practitioners' perspective this was possible due to their capacity for reflective functioning and understanding, framing their behaviour in the context of their mental states, their story and circumstances. Mentalization theory refers to this as a *mentalizing stance*. In this sense, the practitioner's tendency to be curious about parents' experiences and mental states rather than to jump to conclusions based on their behaviours might have offered parents a relational experience free of judgement, with compassion and understanding. Indeed, the therapist's mentalization is a recognised mechanism of change within mentalization based treatments, as described by Fonagy and Bateman (2006, p. 415):"*The therapist's mentalizing in a way that fosters the patient's mentalizing is seen as a critical facet of the therapeutic relationship and the essence of the mechanism of change. The crux of the value of psychotherapy is the experience of another human being's having the patient's mind in mind."* This approach potentially offered parents a model of relationship in which their mind could be thought about. As this quote suggests, this experience could thereby have elicited the parent's development of reflective capacities, a more compassionate view of themselves and others, and a different relational model.

The second mechanism, *support adapted to clients' needs*, highlighted the flexibility of the programme in terms of the intensity, timing, topics covered, length, frequency, and the practitioner's availability, which were adapted to the participants' state of mind, context, and skills, etc. Interestingly, while some external practitioners agreed with this view, professionals sometimes questioned the benefit of the frequency of contact, worrying that this might be a further burden for service users. Nevertheless, service users seemed to have interpreted the frequency of contact as a sign of consistency and validation. In this sense, it is possible that the overall flexibility of the programme as well as the consistency and frequency of contact had all contributed to the building of the therapeutic relationship, and its being seen as a reliable source of support. Practitioners noted that the flexibility of the programme was facilitated by the long-term nature of the intervention, which was perceived as being key to achieving change. A recent meta-analysis exploring the effectiveness of parenting interventions in the first three years of life suggested that interventions that were less than 12 months long showed a bigger impact on parenting practices (Jeong *et al.,* 2021). The Daisy Programme supported mothers through the last two trimesters of their pregnancy and up to six months post birth, which puts it within the 12-month range. However, this was a complex intervention supporting a very vulnerable population of women, and the parenting support that they provided was only one part of a more comprehensive and holistic approach to meeting these parents' complex needs. For instance, in order to support parents' difficulties with housing, keyworkers had to invest significant time in working alongside housing officers to find a suitable home for both mother and baby. Success, as reported by stakeholders, required them to have enough time to address these multiple needs.

The third mechanism identified was the programme *inviting parents to reflect and make sense of the past* and how this was connected to the present. Mothers shared how valuable it was to delve into their childhood stories in terms of both the joyful and painful times. Exercises such as the narrative integration helped them to understand how their experiences of trauma and childhood adversity had impacted them and how these were connected to their current circumstances. This allowed them to

have a more integrated and compassionate view of themselves as well as to recognise the need for change. Practitioners gave examples of how they guided parents through these exercises and the questions they used to elicit self-reflection. Similarly, practitioners guided parents into thinking about their children's past experiences from the child's perspective and to acknowledge the role they played in these. External practitioners confirmed these reports emphasising the importance of understanding the parents' past in order to understand the current issues and prevent repetition.

The fourth mechanism, the offer of *practical support,* referred to helping parents to solve practical issues. For instance, mothers highlighted the importance of the team's liaising with services to support their housing, mental health, and substance dependence problems. They also appreciated the service helping them to attend appointments, access clean clothes, and provide practical parenting advice. Daisy practitioners additionally reported to have supported parents to learn skills like managing their finances. External professionals noted that the key role that the team played bringing the team around the family together and the multiagency nature of their work. It is possible that the services' attention to the parents' more concrete problems was also a factor that contributed to the relationship between the service and the parents. In this sense, the service's effective response to their practical issues might have helped parents to feel that their needs were listened to and validated, and perhaps that the service could see their needs from a more holistic perspective. Additionally, this aspect of the intervention aligns with the wider literature regarding protective factors for child maltreatment highlighting the importance of the availability of health, social and educational services for parents and families to promote adequate parenting (Austin *et al*., 2020). The programme's support connecting parents with relevant services in the community may as such have worked as a further protective factor in terms of reducing parental risk.

4.3. Strengths and limitations

The strength of this study is that the findings are based on the perspectives of key stakeholders involved in either receiving or delivering the Daisy Programme. The reports on the impact and

mechanisms of change - service users, Daisy practitioners and professionals from the wider professional network – were triangulated, thereby strengthening our confidence in terms of the credibility and overall trustworthiness of the study's results (Lincoln and Guba, 1986).

The main limitation of this study is the limited sample of mothers recruited to be interviewed. Only four of the twenty-one mothers who had participated in the programme (by the time of recruitment) agreed to participate. Three were women who had been successful in keeping their babies in their care whilst the remaining participant had her baby in foster care. In this sense it is clear that the views reflected in this study are those of a particular group of mothers who had had a more positive experience with the service and who were as such more likely to feel that the programme had been beneficial. The women who did not agree to take part in this study, may well have had a less positive experience of the programme. While engaging a larger number of women including those who experienced separation from their babies was a challenge, we tried to include the experience of the wider group of women through the accounts of their keyworkers and other professionals involved in their care.

4.4. Implications for future research,

The findings of this first study of the Daisy Programme highlight the need for further research. Perhaps most importantly the impact of this intervention should now be explored using a rigorous study design and standardised measures to assess its objective impact on parent mentalization, mental health and infant attachment, as well as on exploring the elements of the intervention that play a role in the reduction of risk.

Similarly, future studies should explore the long-term effects that the Daisy Programme has on outcomes for women who participate in the programme. In the case of mothers who retained their children it would be beneficial to explore whether they were able to sustain change, for instance measuring further social care involvement and their ongoing capacity for mentalization. Where

women had their children removed it would be pertinent to explore whether the long-term negative psychosocial outcomes that often follow such separation (Broadhurst and Mason, 2019; Broadhurst *et al.*, 2017; Broadhurst, Mason, and family, 2017) were also experienced by women who participated in the Daisy Programme..

Another area for further investigation relates to programme moderators. For instance, contrary to previous findings (Fernandez, 2023 unpublished), the length of the intervention, seems to have been experienced, as an aspect of the programme that contributed to its success. Another area in need of further exploration is the timing of the referral, as the professionals interviewed suggested that women who were referred late in the pregnancy had less access to the therapeutic aspects of the service and perhaps not enough time to show change.

5. Conclusion

In summary, the current study highlights the perceptions of key stakeholders in terms of the impact of the Daisy Programme and identifies a number of possible mechanisms of change. These preliminary reports regarding the impact of the DAISY Programme suggest that it has been an important source of support in promoting change for pregnant women with histories of child removal, not only in terms of the social care outcome but on the general and long-term wellbeing of the mother and the baby. This programme appears to be a promising perinatal intervention for pregnant women in these circumstances, and future research should evaluate it effectiveness using a rigorous method of evaluation.

VI. Paper 3 A realist evaluation of an innovative intervention offered to parents with infants at-risk of maltreatment: what mechanisms and parents' contexts influence better outcomes?

Abstract

Introduction. Parenting interventions are crucial in preventing child maltreatment, especially among at-risk parents with infants. This study aimed to refine the programme theory of the Lighthouse Parenting Programme, which an intervention for parents at-risk of maltreatment.

Aims. The study aimed to respond to the questions: What characterises parents who obtained better and worse outcomes? and What are the mechanisms that promote change?

Methods. A realist evaluation was conducted using secondary data from the Supporting Parents Programme RCT study to analyse Context-Mechanism-Outcome configurations associated with changes in parental reflective functioning, risk of child maltreatment, parental bonding and mistrust.

Results. Eight participants fit the inclusion criteria. Half of them achieved favourable outcomes, with varying levels of parental mistrust. Parents facing multiple difficulties tended to have worse outcomes. Those with fewer external pressures exhibited positive changes in mistrust, while those with higher levels of childhood adversity coupled with external pressures had less favourable overall outcomes. Significant mechanisms included the safety and empathy of the group, support received to mentalize others, and learning from others' experiences. The online delivery format received mixed feedback.

Conclusions. This study contributes to a refining of the programme theory of the Lighthouse Parenting Programme, through improving our understanding about the complex interactions between parents' contexts and underlying programme mechanisms, in terms of the generation of change. The findings stress the importance of considering contextual factors and individual needs in designing interventions to prevent child maltreatment among at-risk parents with infants. Further research is needed to validate and expand upon these findings, particularly regarding external pressures, adverse childhood experiences and alternative delivery formats.

Keywords: mentalization-based intervention, infants, maltreatment, risk of abuse, parents.

1. Introduction

1.1. The parent-infant relationship and child development

Infancy is by its nature a stage of high dependency, in which the child's survival depends on the carer's caregiving capacities. Therefore, the parent-child relationship is considered to be a fundamental factor in the well-being and development of infants. Specifically, the attachment relationship between children and their caregivers refers to the way in which children seek proximity to an attachment figure when feeling unsafe or stressed (Bowlby, 1977) and the quality of this relationship, which is shaped by the caregiver's sensitivity and responsiveness to the child's communications, has been found to be crucial to later psychosocial development (Sroufe, 2005).

Parental maltreatment is associated with insecure and in particular disorganised attachment strategies in the child, both of which are associated with poor developmental outcomes and psychopathology (Baer and Martinez, 2006). A particular category of parental suboptimal responses within the parent-infant relationship (described as 'Frightened and Frightening' – Lyons-Ruth 2005) has now been recognised to be a form of maltreatment (e.g. emotional neglect/abuse), as it not only constitutes a failure to provide the child with an adequate environment to successfully develop (WHO, 1999), but leads to significantly compromised outcomes for the child in the longer-term. From an attachment perspective, research has demonstrated that a parents disrupted affective communication with the infant can have a particularly detrimental effect on the infant's attachment configuration (Bronfman, Parsons and Lyons-Ruth, 1999; Lyons-Ruth, Bronfman and Parsons, 1999). Five types of parental behaviours were identified as part of these atypical parental responses: (a) parental withdrawing responses, (b) negative-intrusive responses, (c) role-confused responses, (d) disoriented responses, and (e) a set of responses classified as affective communication errors, which included sending mixed emotional signals to the child and not responding to the child's evident emotions. Evidence has demonstrated that the frequency of these five aspects of interaction is associated with the extent of the infant's disorganised attachment behaviours, finding also that parental affective communication errors

(the fifth aspect) was most strongly associated with infant disorganisation (Lyons-Ruth, Bronfman and Parsons, 1999; Goldberg *et al.*, 2003; Grienenberger and Kelly, 2001; Madigan, 2002; Kelly, Slade and Grienenberger, 2005; Lyons-Ruth *et al.*, 2005).

Further studies have also distinguished two distinctive parental profiles within the group of parents with disorganised infants, one displaying hostile and self-referential behaviours, a type more easily recognised clinically as being detrimental, and the other exhibiting helpless-fearful behaviours, which is often more difficult to identify. However, both were found to put the infant at risk of a variety of negative outcomes with long term implications (Lyons-Ruth *et al.,* 2005). For instance, evidence shows that children with disorganised attachment present with higher stress reactiveness, lower top-down temperament traits, externalising behaviour difficulties, conduct/oppositional defiant disorders, and attention problems than children with other attachment configurations (Van Ijzendoorn, 1999; Groh *et al.*, 2017; Theule *et al.*, 2016; Pallini *et al.*, 2018; Pallini *et al.*, 2019).

1.2. Parents' risk and protective factors

Multiple factors can affect a parent's capacity to establish a nurturing relationship with their infant. The most recent evidence from an umbrella review on the antecedents of child maltreatment which included eleven meta-analyses, identified five key factors: (1) parental experience of child maltreatment, (2) parental personality characteristics related to an insecure attachment pattern, (3) parental experience of intimate partner violence (IPV), (4) low socioeconomic status (SES), and (5) parental baseline physiology and physiological reactivity (van Ijzendoorn *et al.*, 2020).

In addition to these findings, it has been suggested that (6) parental substance abuse and (7) mental health difficulties are important contributors to the risk of child maltreatment. For instance, a comprehensive systematic review and meta-analysis conducted by Hatzis and colleagues (2017) concluded that substance misuse had an impact on the quality of mothers' caregiving, and specifically maternal sensitivity and child responsiveness. Furthermore, evidence shows that parental history of

drug abuse increases the risk of child maltreatment (Walsh *et al.*, 2003) with significant pathways being identified from maternal history of abuse –physical or sexual— to substance use problems to offspring victimization (Appleyard *et al.*, 2011). Similarly, parents with mental health difficulties – such as depression, mania and schizophrenia— have also been found to be more likely to engage in any type of abuse (Walsh *et al.*, 2002). There has been special interest in the relationship between Borderline Personality Disorder (BPD) and the potential for child abuse, and evidence suggests that between 50% and 60% of maltreating mothers present with elevated BPD features (Perepletchikova *et al.*, 2012; Laulik *et al.*, 2016). Moreover, a study by Hiraoka and colleagues (2016) found that a third of parents classified at high risk of Child Physical Abuse (CPA) presented BPD features, and all of the parents of the sample presenting BPD features met the criteria for high risk of CPA.

Research has also identified interpersonal and community factors that can act as protective against child maltreatment. Caregiver's social support through their relationship with a romantic partner, family, and friends, has been found to reduce the likelihood of engaging in maltreatment (Austin, Lesak and Shanahan2020). Furthermore, evidence suggests that having positive support from family also reduces the likelihood of families re-entering the child welfare system (Davidson *et al.*, 2019).

These findings are consistent with the evidence reported by Ward (2019) which suggests that a key factor distinguishing parents at risk of child removal who make and sustain positive changes from those who do not is the presence, development, and restoration of positive relationships with partners, family, friends, and professionals in the system and wider community. These relationships, if sustained, provide these parents with both social/emotional and material support. Conversely, parents who were unable to make or sustain sufficient changes were found to have fewer stable and positive relationships with a partner, family, or friends. Researchers hypothesize that positive support and relationships in various social networks can provide a buffer to reduce caregiver stress and promote caregiver wellbeing, reducing overall maltreatment risk.

At a community-level, research has shown that factors such as the availability of health, social and educational services for parents and families as well as neighbourhood processes such as social cohesion and control, can provide a supportive environment that promotes positive parenting (Austin *et al.*, 2020).

1.3. Mentalization and trust in parents at risk of maltreatment

More recent research has begun to suggest that parents' harmful responses towards their children can be understood as deficits, serious lapses or misuses of mentalizing or some combination of these factors (Byrne *et al.,* 2019). Mentalizing is the capacity to envision mental states, such as thoughts, feelings, desires, beliefs, and intentions, both in the self and in others (Fonagy *et al.,* 2002). Evidence shows that parental mentalization is associated with emotional regulation capacities in parents and children, and that it can positively influence the parent-infant relationship, sometimes counteracting the effects of risk factors such as maternal experience of child abuse (Schultheis *et al.*, 2019; Senehi *et al.*, 2018; Heron-Delaney *et al*., 2016; Wong, 2012; Jessee, 2012; Stacks *et al*., 2014). In contrast, low maternal Reflective Functioning (RF) –an operationalisation of mentalization— has been suggested to play a role in the occurrence of child maltreatment, being associated with more negativity, overcontrolling and intrusive parenting behaviour (Stacks *et al.*, 2014; Borelli *et al*., 2017), as well as with extremely insensitive parenting including aggressive behaviour (Ensink *et al.*, 2017).

As suggested above, parents who engage in maltreatment or neglectful practices are more likely to have experienced child maltreatment themselves or other types of relational trauma. These experiences are likely to have had a negative impact on their attachment organization and their acquisition of mentalizing capacities (Fonagy and Allison, 2013). Deficits in mentalizing whereby a parent cannot see or imagine the child's needs, could thereby contribute to a pattern of consistent emotional or physical neglect (Byrne *et al.*, 2019).

People with a potential risk of abusing their children often show a reluctance to participate in therapy or parenting programmes, turn them down completely, or sign up but then end their participation prematurely (Byrne *et al.*, 2019). Statutory health and social care services, therefore, struggle to engage/retain and adequately support this type of parent, despite them being perhaps the most in need of intervention.

Poor parental engagement can be explained by an inability to trust helping professionals, something that is often a product of their own histories of adverse childhood experiences, which makes them more suspicious of other people's intentions (Knapen *et al.*, 2022). Specifically, a deficit of epistemic trust, has been defined as the individual's inability to "trust that new knowledge from another person is authentic, trustworthy, generalizable and relevant to the self" (Fonagy and Allison, 2014, p.373). Furthermore, chronic epistemic mistrust is seen in in many parents who are at risk of child maltreatment (Knapen et al 2022).

The main aim of mentalization-based interventions is to support the parental capacity for reflective functioning (RF); that is to see their children as individuals with internal mental states such as thoughts, feelings and intentions (Slade *et al.*, 2005). Additionally, they also explicitly seek to establish epistemic trust in the therapeutic relationship and have as a goal, its generalisation to other relationships and social connections/opportunities (Fonagy, Campbell and Bateman, 2017; Fonagy and Campbell, 2017). The emphasis on epistemic trust rests on the argument that such trust is associated with the individual's capacity to accept social information from others and thereby to learn from interventions (Knapen, *et al.*, 2022). Therefore, a mentalization-based approach to parenting might be key to effectively supporting parents with these complex presentations who are frequently characterised as 'hard to reach' by mainstream provision.

A recent review and meta-analysis conducted as part of this thesis (Fernandez, 2023a) showed that interventions aiming to promote RF capacities in parents during the antenatal, perinatal and postnatal periods have achieved positive results in improving parental reflective functioning, infant attachment,

and maternal depression. Results also suggest that parents' mentalization skills can be fostered through the use of visual activities, reflective homework, journaling, and reframing techniques that invite them to contemplate internal mental states (their own and their children's). Furthermore, the therapeutic relationship of trust and safety between the practitioner and the client, and the therapist's stance of curiosity and ability to model mentalizing ways of relating, seem to be essential components of a successful therapeutic process, as they play a major role in the development of parents' reflective functioning capacities. Practical support is also considered to be important especially regarding parenting strategies and child development information.

Even though the above review provided important new information regarding MBT interventions for parents, it didn't specifically focus on interventions for parents at-risk of child maltreatment. A recent qualitative study of stakeholders' perceptions of an MBT intervention for mothers at risk of child removal also conducted as part of this thesis (Fernandez, 2023b) provides insights into the impact and mechanisms of MBT interventions targeting high-risk populations. As with the meta-analysis mentioned above, the researcher reports that the programme was perceived as successful in improving service users' capacity for reflective functioning. Additionally, stakeholders reported improvement in the participants' self-perception, relationships with their support systems, and their capacity to take accountability for their past actions.

Regarding the mechanisms of change, stakeholders identified four main aspects of the programme that promoted change. First, it was tailored to the individual needs of the participants, with practitioners being flexible and able to offer constant and consistent support. Second, it involved promoting, repairing, and building relationships. Consistent with the findings of the systematic review, an important component was the non-judgemental and trusting relationship between service users and practitioners, which offered clients the experience of being mentalized by their keyworkers. Third, it supported participants to make sense of the past, think about their stories and understand how these were connected to their present circumstances thereby developing a more integrated view of

themselves, and an ability to recognise their mistakes, revise their parenting practices and prevent further difficulties. Clients were also invited to reflect on their interactions with people in the present such as their children and other professionals. Also consistent with the findings of the review, it offered practical support that included solving material issues like housing, education, work, etc, as well as practical advice around parenting, finances, couple relationships, etc.

While the identification of perceived mechanisms of change offers relevant information to our understanding of how MBT interventions for at-risk populations might work, there is currently a paucity of studies that have evaluated possible CMO configurations to identify what works, for whom, and under what circumstances for these types of programmes. The current study evaluates a mentalization-based programme specifically developed for parents at high risk of child maltreatment called the Lighthouse Parenting Programme (LPP), using a realist evaluation approach that is aimed at exploring how the programme works and who it works best for in terms of achieving specific outcomes. This was achieved by developing some context (C), mechanism (M), outcomes (O) CMO configurations to identify contextual factors and programme mechanisms associated with positive and negative outcomes. These analyses were conducted using secondary data obtained from the Supporting Parents Project, a RCT and implementation process study of the Lighthouse Parenting Programme.

1.4. The Lighthouse Parenting Programme: theory of change

The Lighthouse Parenting Programme (LPP) aims to improve parental sensitivity and confidence, reduce stress and the risk of child maltreatment by attending to both parental lapses and deficits in mentalizing, and has been developed specifically for parents at high-risk of child maltreatment. The programme aims to help parents approach their child with a curious, wanting-to-know mentalizing stance ("Illuminating Beam"). This helps them to recognise where their own mentalizing as a parent can fail and when they have too much certainty about their child's inner world, which can be lead to distortion replacing curiosity ("Projecting Beam"). The programme aims to give parents skills to

recognise such moments, and when they happen, to attempt to restore their own mentalizing, in order to gain clearer sight of the child.

Based on the LPP theory we identified 5 mechanisms providing the active ingredients that could facilitate change:

(1) Parents experience empathy and safety in the group setting where facilitators empathetically validate and challenge participants.
(2) Parents experience being mentalized during the group sessions as well as having opportunities to mentalize others, including their children, including being supported to recognise when mentalization and failures in mentalizing have occurred.
(3) Parents being supported to make sense of their early attachment and how this impacts their relationship with their children and possible misunderstandings.
(4) Parents receiving psychoeducation and behavioural support relevant to attachment, child behaviour and emotion regulation.
(5) Parents are supported to repair relationships after ruptures if they occurred and will be encouraged to practice self-forgiveness.

The programme has been successfully developed, implemented, and tested in specialist Child and Adolescent Mental Health Services by psychological therapists, where families usually commenced treatment on child protection plans, as part of pre-proceedings or care proceedings. The majority moved to Child in Need plans or discharge on completion of the programme, and in a significant number of cases, families were successfully reunified (Byrne and Webb, 2015). Furthermore, a small non-randomised pilot evaluation of the programme demonstrated improvements in parental sensitivity, parenting confidence and parental stress from pre- to post-intervention with moderate to large effect sizes (Byrne et al., 2019). Interviews with participating parents indicated that most felt the programme had led them to make “life-changing” improvements in their capacity to care for their children.

The current study aims to build on the existing evidence to help shape the programme theory of this promising intervention.

1.5. Research objectives and questions

Using data from the "Supporting Parents Project: RCT and implementation process study of the Lighthouse Parenting Programme", this research aimed to refine the programme theory of the LPP by identifying the circumstances of parents of infants for whom the programme was beneficial or not beneficial, and the mechanisms involved in such outcomes. The questions that it aimed to address were:

- What characterised the parents (C1) who **reduced** their risk of child maltreatment, improved the bonding to their child and reduced their mistrust (O1) after attending the LPP and what were the mechanisms (M) that facilitated this change?
- What characterised the parents (C2) who **increased** their child maltreatment risk, felt less bonded to their child and became more mistrustful (O2) after attending the LPP? Are there mechanisms that can explain this deterioration?
- Were there differences between the theoretical mechanisms proposed and the mechanisms reported by the parents who participated in the LPP?

1.6. Ethical approval

Ethics approval for this research was obtained from the University of Oxford Ethics Committee. The primary study proposal was reviewed and approved by the University College London research ethics committee (Project ID Number: 9593/002). Ethical issues were clearly set out in the participant information sheet, consent form and privacy forms for the primary study. Each stated that participating was voluntary, and participants could withdraw at any time without giving a reason and without it affecting any benefits that they were entitled to or their legal rights. Participants could withdraw from the research and continue to receive their allocated intervention. Potential participants

were told about the potential benefits and difficulties associated with participation in the trial before giving their consent. They were also informed that all data was going be treated confidentially and only used for the purposes explained to them. The limits to confidentiality were also carefully explained. Detailed information regarding data security was set out in data privacy forms approved by the Data Protection officer at Anna Freud Centre. The data for this study was held in accordance with the University of Oxford's CUREC Best Practice Guidance.

2. Methods

2.1. Justification for using a realist evaluation approach

This study employed a realist evaluation methodology, which was deemed suitable for examining the complexities inherent in the Lighthouse Parenting Programme (LPP). Realist evaluations are highly recommended for investigating multifaceted interventions such as the LPP, as they aim to discern not only what works, but also for whom and under what conditions (Pawson and Tilley, 1997; Wong *et al.*, 2017; Wong *et al.,* 2016). This approach is grounded in the understanding that interventions are effective because individuals make decisions in response to them. These decisions are influenced by underlying social and psychological drivers, referred to as 'generative mechanisms', which are in turn shaped by the context (Pawson and Tilley, 1997).

Realist evaluation is particularly adept at uncovering how different program mechanisms operate, as they underlie changes in participants' reasoning and behaviour. By exploring the interplay between mechanisms and context, realist evaluation enables researchers to elucidate the intricate pathways through which interventions produce outcomes (Wong *et al*., 2016). In the case of the Lighthouse Programme, understanding these mechanisms and contextual factors is crucial for identifying which aspects of the intervention are effective and for whom, thereby providing valuable insights for program refinement and optimization.

2.2. Setting

Five Local Authority Children's Social Care sites in England participated in the trial: Bath and North-East Somerset, Bristol, Oxfordshire, Stockton-on-Tees and Wiltshire.

2.3. Intervention

The Lighthouse Parenting programme is an innovative mentalization-based treatment (MBT) intervention for families where children are at risk of maltreatment. The programme is an adaptation of MBT for borderline and antisocial personality disorders, with a particular focus on attachment and child development.

2.3.1. Aim

The Lighthouse Parenting Programme aims to prevent child maltreatment by promoting sensitive caregiving in parents. The programme is designed to enhance parents' capacity for curiosity about their child's inner world, to help parents 'see' (understand) their children clearly; to help parents make sense of misunderstandings in their relationship with their child (including misunderstandings that arise from unresolved difficulties in the parent's own attachment history); and to equip parents to inhibit harmful responses in those moments of misunderstanding, and to repair the relationship when harmed.

2.3.2. Mentalizing approach

The underpinning mechanisms of change for LPP suggests that its mentalizing approach is an appropriate domain for therapeutic intervention in harmful parenting for two reasons. First, because it has been hypothesised that child abuse and neglect can be understood as arising from deficits in mentalizing, serious lapses in mentalizing, misuses of mentalizing, or some combination of these factors (Byrne *et al.*, 2019). Second, because the LPP as a Mentalization Based Treatment (MBT) can help engage hard-to-reach parents, who typically do not benefit from parenting programmes. MBT works directly with issues of trust (Byrne, 2020; Fonagy and Allison, 2014) and there is robust

evidence for its effectiveness in engaging adults with complex psychological and social difficulties who - like many of the parents whose children are referred to social care - have histories of attachment trauma or neglect, poor emotion regulation, and difficulties building stable trusting relationships (Malda-Castillo, Browne and Perez-Algorta, 2019; Volkert, Hauschild and Taubner, 2019).

2.3.3. Format

The Lighthouse Parenting Programme comprises a 20-week intervention. Parents attend a weekly Lighthouse Parents' Group (2hrs), facilitated by two practitioners, and fortnightly one-to-one Parenting sessions with one of the practitioners (1hr). The practitioners are trained in MBT skills as well as the Lighthouse model. In keeping with other MBT programmes, the Lighthouse Parenting Programme explores parents' own attachment styles, and the attachment styles of their children. Each session is at its core an MBT session. This means that practitioners will be aiming for parents to feel seen and understood and that they will experience practitioners as genuinely open and curious about their minds and are more likely to trust in what they learn from the programme. This curious, 'wanting to know' stance is called the mentalizing stance. Practitioners attend first and foremost to the issues that parents bring to each session, and aim each time to help parents understand misunderstandings, map their own and others (especially children's) behaviour in relation to their internal world, including attachment needs in the moment. The programme also makes use of a 'library' of videos, images, vignettes, role play and creative activities, in order to stimulate active curiosity and mentalizing. These are intended to be drawn on and used as needed, rather than 'delivered' at predetermined points in the programme. The programme uses metaphor as a way of helping parents hold complex mentalizing and attachment concepts in mind, so that these are salient later even under pressure (e.g., when dealing with a child whose behaviour a parent might find frightening, infuriating, or confusing). The central metaphor in the programme is of the parent as a

lighthouse, providing a gentle attentive light for their child's journey and a homing beacon, guiding their child back to safe harbour/shore for support, help or comfort when needed.

3.3.4. Mode of delivery

Due to uncertainty during the Covid-19 pandemic, both groups and individual sessions were hosted online, via video conferencing as follows: Group sessions were delivered by two to three practitioners worked with groups of 8-12 parents, weekly for 20 sessions. Individual MBT-P sessions were provided by a practitioner (one of the group facilitators), fortnightly alongside the group programme.

2.3.5. Staff training and supervision

The clinical team who developed the programme provided an MBT-Basic 3-day training and a 5-day Lighthouse training to teams of social workers and family support practitioners from each participating Local Authority. These teams then delivered the Lighthouse Parenting Programme at each site.

The trained practitioners received weekly (90min) group supervision with an experienced Lighthouse Parenting Programme practitioner from the clinical development team. Supervision involved the practitioner submitting videos of group and individual sessions for the supervisor to review, and a specific focus on (a) the improvement of MBT micro-skills with attention to the submitted video footage (for example: the practitioner's not-knowing MBT stance, emphatic MBT mental stance, capacity to support parent's mentalization in relation to themselves, others and their children, their capacity to use the Lighthouse metaphors, and to make reference to the parents' past and their relationship patterns); (b) ongoing refinement and development of mentalization-based risk formulation for each family which implies mapping parents' default pre-mentalizing mode, the conditions under which they lapse this mode and the risk this may pose to themselves, and to their children; (c) reflection on the impact of the work on the therapists and supporting therapists in terms

of noticing their own mentalizing and non-mentalizing moments in relation to the families they are supporting.

2.4. Evaluation design

The study involved the secondary analysis of data collected as part of the Supportive Parents Project (SPP). The SPP was a two-arm multi-site randomised controlled trial of the Lighthouse Parenting Programme versus Treatment as Usual in Children Social Care (CSC). Five local authority CSC teams with 120-144 parents participated in this project. Parents were randomly allocated to one of two groups: TAU or the LPP + TAU. Four sites run one LPP group of 10-12 parents and provided the usual care interventions for 10-12 parents in the TAU only group. The fifth site recruited double the number of participants and run two concurrent LPP groups (giving a total of 6 recruitment clusters).

The current study used a mixed-methods approach. A quantitative one-group, pre- and post-measures methodology was used to gather CMO outcomes data, and a qualitative methodology was applied to gather CMO mechanisms data.

2.5. Recruitment: Participant inclusion criteria

Due to the focus of this study on parents with infants, we selected parents that participated in the Lighthouse Parenting Programme who had at least one child that was 3 years old or younger, who had attended at least 8 out of the 20 sessions and who had consented to be interviewed at the end of the programme. The mean group attendance for the primary study was 12 sessions (SD = 4.76) whilst the mean attendance for the group with 8 or more sessions was 14.04 (SD = 3.02). The decision of including only participants that attended 8 or more sessions was made taking into account that only those participants had been invited to take part in the interview at the end of the programme.

2.6. Data collection

Secondary data was accessed by the lead author through an honorary contract with the Anna Freud Centre leading the Supporting Parents Project. Relevant data was shared via Microsoft 365 One Drive for Business.

We extracted three types of contexts for the CMO analysis: external, internal and historical. Demographic information was collected by the primary research team at Time 1 (immediately after consent and prior to randomisation) using a demographic form. We extracted data for the participants' partner cohabitation, number of children and annual income bracket. These three sets of data constituted the external context (E) of participants. The decision to extract these were based on the risk and protective factors of child maltreatment literature, which indicates that low income and having more than two children put parents at greater risk of abuse whilst partner cohabitation is considered a protective factor (Younas and Gutman, 2023).

We extracted 5 sets of data that constituted the participants internal context. We also based this decision on their associations with child maltreatment reported in the literature or theoretically indicated. These were: depression (Gardner, Thomas and Erskine, 2019), stress (Younas and Gutman, 2023), parent's feelings for her child (we chose this measure as a proxy measure for parent-infant relationship due to availability), stress in the partner relationship (Younas and Gutman, 2023), and parent's mistrust (theoretical association posed by the LPP programme and mentalization literature). Depression, life stress, parent attachment to the child, and relationship with the parenting partner were extracted from four scales of the Parenting Stress Index (PSI) data taken at baseline. Mistrust data was gathered using the Mistrust scale of the Epistemic Trust Mistrust and Credulity Questionnaire (ETMCQ).

For the parents' historical context, we extracted data on parents' Adverse Childhood Experiences (ACE-Q) reported at baseline. We based this decision on reports that indicate relationships between parents ACEs and protective factors among parents' risk of child maltreatment (Panisch *et al.*, 2020).

The outcomes that we considered for this study were: risk of child abuse, parents' bonding to the child and parents' mistrust. For a measure of child abuse we extracted Time 1 and Time 2 data of the CAPI-abuse scale considering the cut off points suggested in the manual: 166 for low risk 215 for high risk. Change was measured as a step up (if moving from low to high risk), step down (if moving from high to low risk) or no change (if staying in the same category). Parents bonding with their child was measured by the Attachment scale of the PSI. The outcome recorded was whether this had improved or worsened from time 1 to time 2. Finally, data about mistrust was extracted from the Epistemic Trust Mistrust and Credulity Questionnaire (ETMCQ) capturing whether mistrust had improved or worsened from time 1 to time 2.

To capture the perceived intervention mechanisms, we analysed the transcripts of semi-structured interviews conducted at the end of the intervention period, which asked about parents' experiences of the support they received through the LPP intervention. In order to reduce the risk of bias during the analysis of the interviews we analysed these before the extraction and processing of the demographic information, and the participant outcome data.

All the data used for this study was shared by the primary study team anonymised.

2.7. Data analysis

Quantitative and qualitative data was analysed to identify patterns of CMO configurations.

2.7.1 Context

Initially, we began by selecting only three factors for our analysis: income, number of children and cohabitation with a partner. However, this approach left several gaps in our understanding of the circumstances surrounding these parents, and so we revisited the literature and identified additional parental characteristics that are considered to represent a risk in terms of child maltreatment or to be a protective factor, some of which we hoped might be available in this existing dataset. This resulted in

the addition of the PSI subscales for depression, life stress, problems in the parenting couple relationship and parental attachment (emotional closeness to the child), as well as baseline measures for mistrust and ACEs.

Subsequently, we organized these factors into historical, internal, and external categories to simplify the CMO analysis process. The decision about whether a measure was indicative of risk was based on criteria suggested by the guidelines for the measures or cut-off points based on the literature. For instance, for the PSI scales we used the measure 90 point cutting point for clinical difficulties. For the demographic characteristics such as number of children our cutting point was two as the literature indicates that having more than two children is associated with higher risk of maltreatment (Younas and Gutman, 2023). For other outcomes like mistrust and income, we used the group average.

2.7.2. Mechanisms

Based on the logic model developed by the primary study team we identified the programme's activities/learnings which we then grouped into 5 mechanisms: M1: Empathy and Safety, M2: Mentalized and Mentalizing, M3: Making sense of attachment and trauma, M:4 Psychoeducation and Behavioural support, and M:5 Repair and Forgiveness (see Figure 7).

We conducted a line-by-line analysis of the end of treatment interview transcripts assigning a mechanism code when appropriate. The codes assigned were revised and approved by the senior investigator.

We also explored the existence of other mechanisms not currently part of the programme model by making a comment every time that the parent mentioned something that they had valued or found beneficial (or not beneficial), which didn't fit with any of the 5 mechanisms proposed by the theory. When all transcripts had been coded, we revised the comments and assigned a letter (y, x, z) to differentiate them from the theoretical mechanisms.

2.7.3. Outcomes

We analysed pre and post quantitative data on risk of child abuse, parental bonding to the child and mistrust by grouping the outcomes as either favourable (O1) or unfavourable (O2). We then created subgroups within those categories to show the variation of trust within each of these groups.

Following guidelines for realist evaluations (Pawson and Manzano-Santella, 2012) we added the CMO elements to a "CMOc table" (Pawson and Tilley, 1997) which is a way of incorporating multiple hypotheses using an "if-then" format. Patterns between combinations of areas of contextual risk and groups of outcome were then identified. Similarly, we drew connections between these (outcomes and contexts) and the reported mechanisms.

Table 9 Hypothesised CMO elements

Selected Context	Expected (theoretical) mechanisms	Selected outcomes
	M1: Empathy and safety	
Historic:	Parents feel empathetically validated	
ACEs	Parents feel empathetically challenged	Risk of child abuse
	Facilitator offers a safe relational environment	
Internal:		
Depression	M2: Mentalized and mentalizing	Parent attachment to the child
Stress	Parents feel mentalized	
Parenting relationship	Parents are thought to recognise when mentalizing has occurred	Mistrust
Attachment (bonding) to the child	Parents helped to understand/recognise failures in mentalizing (in others/ in themselves)	
Mistrust	Parent has opportunity and support to mentalize themselves and others	
External:		
Parents' income		
Living with a partner	M3: Making sense of early attachment and trauma	
Number of children	Facilitator supports the understanding of intergenerational patterns of attachment-trauma and their relationship with misunderstandings	
	M4: Psychoeducation and behavioural support	
	Psychoeducation on attachment and child development is offered	
	Parenting advice is offered	
	Parents are thought to recognise their own triggers/stressors	
	Parents are thought to inhibit harmful responses	
	M5: Repair and forgiveness	
	Support to repair after rupture if occurred	
	Promotion of self-forgiveness	

3. Results

Out of the 110 parents that participated in the primary study 57 were allocated to the intervention. 30 withdrew at different stages of the programme. Out of these, 21 had attended to 8 or more sessions and had consented to be interviewed at the end of the programme. 11 of them had at least one child that was 3 years old or younger . 3 further participants were excluded because they didn't engage in the post-treatment interview. This resulted in a sample of 8 participants. Parents were mainly of white British background (only one was non-white mixed background); their average age was 29 with the youngest being 21 and the oldest being 47; 6 parents reported that their main income was state benefits, one had a paid job and one had mixed income from paid work and benefits. Seven parents were female and 1 was male; five reported to have a partner. Parents had between 1 and 4 children (average 2), these were between 0 and 14 years of age and the parents' youngest child was in average 1.9 years of age (0.9 months the youngest and 3 years the oldest); three parents had children under a Child in Need Plan, four under a Child Protection Plan and one under Court Proceedings. At the end of the intervention 6 out of 8 parents had retained custody of their children, 5 had stepped down to a lower form of social care involvement and 1 had remained under the same social care plan. The remaining 2 parents had their children in foster care.

3.1. CMO configurations

The realist approach to analysis led us to identify four Context-Mechanism-Outcome (CMO) configurations (see table 10):

(1) Parents who at follow-up had maintained or reduced their abuse risk to "low", who felt more bonded to their children and had maintained low levels of mistrust (O1a), were participants who at baseline reported challenging external circumstances, one area of internal difficulties and none or limited (3) adverse childhood experiences (C1a). They reported that what helped them was the sense of safety and empathy that they experienced

in the group (M1), to be supported to become more curious about their children's mental states (M2), to listen to other's people's experiences (Mx) and the online format of the sessions (My).

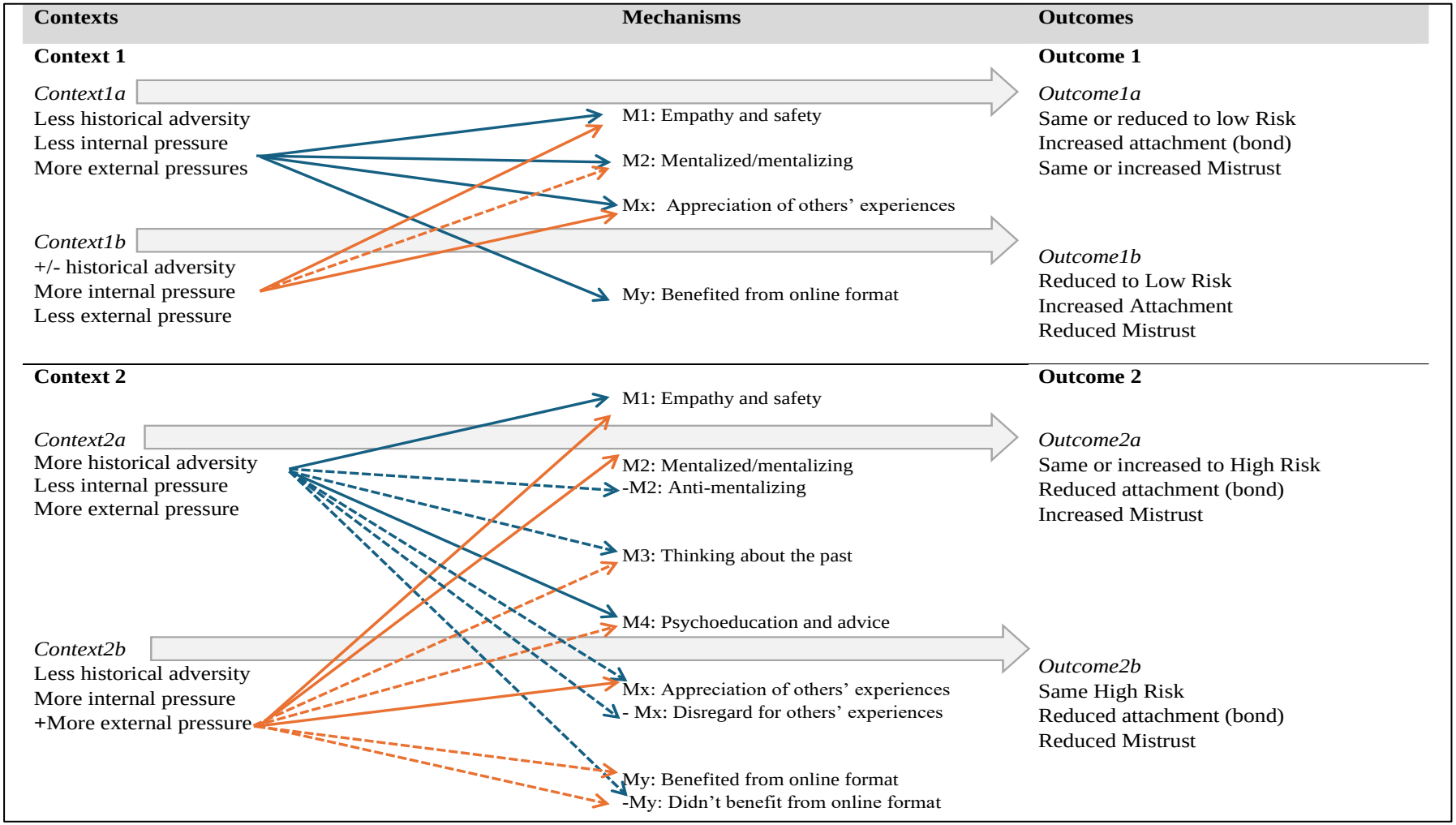
(2) Parents who at follow-up had reduced their abuse risk to "low", felt more bonded to their children and who had reduced their mistrust at the end of the programme (O1b) were participants who at baseline had a challenging internal context (up to 4 areas of internal difficulties) but a more favourable external context (C1b) at baseline. They reported that what had helped them was the sense of safety and empathy they experienced in the group (M1), to listen to other people's experiences (Mx), and one found helpful to see things from a different perspective and to be more aware of their thoughts before acting (M2).

(3) Parents who at follow up had a "high" risk of abuse (either maintained or stepped up), who felt less bonded to their children and who had increased their mistrust at the end of the intervention (O2a), had reported at baseline multiple adverse childhood experiences and a challenging external context (C2a). They reported they had benefited from the sense of safety and empathy that the group provided (M1) as well as from the programme's psychoeducation and advice (M4). One of the parents in this group expressed anti-mentalizing statements about her children's behaviour (-M2) and reported she didn't benefit from listening to other's experiences (-Mx). There was no agreement about the benefit of talking about the past (M3) or the online format of the group (My).

(4) Parents who at follow up had a risk of abuse that remained "high", who felt less bonded to their children and whose mistrust had reduced (O2b), were dealing with both internal and external difficulties but presented no (or little) historical vulnerability (C2b). They reported they had benefited from the sense of safety and empathy that the group provided (M1) and from being supported to be more curious about mental states (M2) and they reported it was beneficial to listen to others' experiences (Mx). There were references to thinking about the

past (M3), psychoeducation (M4) and the online format of the intervention (My) but there was no agreement between parents, or the comments were too vague.

Table 10 Context – Mechanisms – Outcomes configurations



→ Two participants reported the mechanism / ---› One participant reported the mechanism

3.2. Outcome 1: Low risk and improved bond with the child

At the end of the treatment four parents had low risk of child abuse and improved bonding feelings towards the child. The majority of parents who achieved favourable outcomes (O1) reported experiencing no more than three Adverse Childhood Experiences (ACEs). Notably, only one parent within this cohort disclosed six ACEs. Within this group, most parents attributed their positive outcomes to the supportive environment characterized by safety, empathy, and non-judgment within the group setting (M1). Furthermore, they reported deriving significant support in cultivating heightened awareness and curiosity regarding mental states (M2), as well as drawing insights from the collective experiences shared by other group members (Mx).

3.2.1. Outcome 1a: Stable/worsened mistrust

The mistrust of two of those parents had either remained stable or had slightly increased (+1). The risk of abuse had remained low for one of these parents and it had stepped down from high to low for the other parent (see table 11).

3.2.2. Context 1a: Challenging external context, less internal context difficulties and less historical vulnerability

As table 9 shows the parents with low risk, improved bonding, had stable low mistrust and low financial resources and didn't have a partner living with them (external context) but their reports regarding depression, stress or attachment to their children were within the normal range (internal context). Each participant only reported one area of internal difficulty: one had difficulties in the parenting relationship and the other reported life stress (both were in the clinical range).

3.2.3. Mechanisms for context and outcome 1a:

Parents reported several mechanisms through which mentalization-based interventions supported them. First, they felt a sense of **empathy and safety (M1)**; they described feeling welcomed, respected, and listened to by the practitioners, allowing them to share their experiences without feeling judged. They appreciated the warmth, kindness, and friendliness of the practitioners, as well as their informal yet boundaried approach, which included a duty to report concerns if necessary. Consistency in the weekly sessions and meeting the same people every time was also valued.

Additionally, the interventions helped parents develop an **interest in their children's mental states (M2)**, promoting an understanding of their children's behaviour and perspective. This awareness impacted parents' own mental states and their behavioural responses to their children. One parent noted that the intervention increased their awareness of their own difficult emotions, while another found mentalizing beneficial in other relationships as well.

Parents also **appreciated the experiences shared by other group members (Mx)**, finding them memorable and relevant despite individual differences, a mechanism distinct from the theoretical ones initially proposed. Moreover, **the online format (My)** of the intervention emerged as another beneficial factor. Parents found it easier to join the group online, which helped manage feelings of embarrassment or anxiety. One parent even joined the group while doing other activities to cope with these difficult feelings.

Table 11 Outcome 1a: Low abuse risk, improved bonding to the child and Low mistrust - Context 1a: Challenging external context and limited internal context difficulties

PARTIC	CONTEXT										MECHANISMS		OUTCOMES		
	HISTO		INTERNAL					EXTERNAL							
CODE	ACEs		Depress	Life str	Attachm	Rel pa	Mistru	N Child	Partner	Income			CAPI-Abuse	PSI -Attach	ETMCQ -Mistrust
4008A	0		81	77	78	92	20	3	No	£10000 - £20,000	M1	It was good, yeah. I knew I could rely on them (practitioners) and I knew I could say anything that was relevant. But I also knew that they were, because they tell you straight and there's no lie in there, straight from the outside. If there's, I don't know how to call it now, a worry with the way I'm at that moment, they will report it as a concern.	LOW (Step down)	Improved	No change
											M1	We've been taking to the end of the line and make sure we're alright and all the time someone was keeping an eye on us, which to me matters, that someone's keeping an eye on me.			
											M1	You didn't have to, yeah, there's no proving anyone to anything. No one's there to really particularly judge ya, and there's no judging. Yeah. Truthful and open.			
											M1	I feel they (practitioners) suffer the same problems as us and they express that they will go through the same thing. And it's good to see that they're real people that are actually trying to help us, because they go through the same thing or are about to go through the same thing every day. So, they have an underlying understanding rather than just what I'm gonna call an academic understanding, if you see what I mean. They are experienced people			
											M1	We was welcomed and we was loved and we was. Yeah, we were showing respect and people listened. I felt that people listened. [...] I felt that I was able to be open.			
											M2	Uhm, I thought it might reconnect me with my emotions, which it has done.			
											M2	I was in a stressful situation. I was kind of dealing with everything thereafter still within the PTSD way where you treat everything as the same. If it's a disaster, it's a disaster. Whereas now it might be disaster, but on an emotional scale it's not a disaster or whatever, just it's- it's hard to explain. It's hard to explain, but you can see the wood for the trees after you look at the woods.			
											M2	It's made it easier trying to fight the devil. It's made it easier to make a pact with him to be good. It's yeahm yeah, it's- it's- it's easier to work with the devil than it is to fight him. And it's taught me, 100% taught me that it's not, you're not always fighting the devil, the Devil's not the worst person to know anyway. There's a lot worse out there than the devil, if you see what I mean.			
											M2	Sometimes if you look at what you would have considered as being naughty, it's just kids pushing the boundaries and having fun.			
											M2	it's saved me worrying about things, I needn't worry about. Looking at it different, not worrying about, why are they crying. Not just worrying about why they're crying, but understanding- already being able to understand why they're crying rather than just why they're crying.			
											M2	It's taught me, rather just be the [age] year old ex [type of worker] who has worked with [similar people] all their life, it's taught me to be able to look at my kids, they're only four years old and see it from their point of view, rather than an [age] year old [type of worker] point of view, which is completely and utterly different.			
											M2	So, it's yeah, it's opened my mind and it's allowing me to express to my kids, things I probably wouldn't have been able to express to them anyway, it makes me think about them and their emotions rather than just be, don't worry about it, because yeah.			
											Mx	There is one which is stuck, sticks in my mind where all of a sudden people started talking about stuff that was, I found out of my league, if you see what I mean, but yeah, there's one that really stuck out of my brain that there's a lot of people out there, there's other people out there with different problems which are different to mine.			
											My	I preferred it that way, I'm quite (?) at home with video calls rather than in person […]It's a lot easier to be open on Teams than there's to be face to face because you haven't got the in the room embarrassment if you see what I mean. So yeah, definitely open, definitely open.			
2013A	3		52	95	75	78	19	2	No	£10000 - £20,000	M1	Did you feel able to contribute or to be open in the group setting? Yeah [because] Just everybody was really welcoming	LOW (no change)	Improved	Wrosened +1
											M1	[practitioners were] Absolutely fantastic. You know, they were all really lovely, really warm and welcoming and there were really friendly, like, didn't feel like you were sat talking to you know professionals, you know they were really kind.			
											M1	So, at the beginning obviously we just met them. There was a bit a bit of a wall there, but towards the end that was completely down and the relationship was better throughout throughout then right at the beginnin			
											M1	[Practitioners] they gave me their own advice and they didn't give me like, obviously they were really professional, but I feel like I knew that advice, it had come from the heart rather than like from a from a textbook.			
											M1	I remember when we first started getting the assessments done for my youngest, Daisy. And I was like. I was a mess, you know? I was really upset. And they were just all really you know, helpful. Just explained and take it day by day. They even try to give me examples like the therapists was giving me examples of other things I could do with them.			
											M1	Thursday morning for me, it was adult time as well. So it was a break from everything else that was going on. It was nice to see everyone that we've been with every week.			
											M1	Just to feel support. It's really, you know, it it it it lightens the mood. It makes you feel better as a person knowing that you've got people there for you			
											M2	[Child] was having, like like this morning with the disney princess dress, I actually remember thinking like, oh, you know, about, about the the program and thinking, you know, why she like this is, you know, trying to think why she was upset rather than just being angry at her or frustrated with her.			
											M2	It's not even just the kids that I use it for. So like sometimes my mam can be a bit like like snappy and rather than thinking, oh, she's in the right mood. I don't think like that now, I think, you know, I wonder what is going on with her. Umm, and well, just my my whole life lifestyles. Just a lot more laid back now.			
											M2	understanding why the child's thinking like that. How we can, how we can resolve the issues, understanding why they've gone to feeling like that			
											Mx	It was nerve wracking. But that first time when you met everyone, I remembered everybody straight away. Everyone was so different to each other and you know, they all had their own little, little, little stories.			
											Mx	Every week we always give give examples and of how we all work, work with them.			
											My	Just because I found every week on the group, I was on the video every week. But I could do my own thing, you know? I was popping around the house, I was doing washing, but that's my way because I was very anxious. That was my own way. So it was. So it was better for me to do it like that.			

3.2.4. Outcome 1b: Improved mistrust

The other two parents that had low risk and that felt more bonded to their children after the intervention had also reduced their mistrust levels. Their risk had in one case remained low from pre to post treatment and had stepped down from high to low in the other (see table 12).

3.2.5. Context 1b: Challenging internal context, less external context difficulties

As table 10 shows these two parents had two of the highest incomes (external context) of the sample and had a partner that lived with them. However, they reported having difficulties in their relationship with their parenting partner and in their attachment to their children (internal context). They also presented high levels of distrust at baseline (internal context). Additionally, one reported to have clinical levels of depression (internal context) and the other reported six adverse childhood experiences (historical context). Qualitative analysis of the mechanisms of this pair was challenging because one of the parents didn't provide a full end-of -therapy interview; she only sent a text message with her feedback.

3.2.6. Mechanisms for context and outcome 1b:

Both parents experienced a sense of **empathy and safety (M1)**, highlighting a general positive experience with other group members and a feeling of familiarity and closeness. They noted having things in common despite their differences.

One parent referred to the **mentalized and mentalizing mechanism (M2)**, mentioning that the intervention helped her see things from different perspectives, become more reflective, and think before acting.

Additionally, both parents appreciated **hearing about and learning from other people's stories (Mx)**, experiences, and progress, finding value in the shared experiences of the group members.

3.2.7. Outcome 1a vs outcome 1b: internal vs external pressures

The two parents who achieved outcome 1b exhibited the most pronounced changes across three domains: risk of abuse, bonding to their child, and parental mistrust. This outcome might be attributed to the initial challenges faced by these parents, which offered greater potential for improvement compared to the other parents who achieved outcome 1a. However, it is plausible that contextual factors played a significant role in distinguishing these two sets of parents. Specifically, parents that achieved grater change encountered predominantly internal challenges (C1b), while those who obtained positive results but didn't change much faced primarily external challenges (C1a). Thus, it appears that parents grappling with fewer external pressures derived greater benefits from the intervention mechanisms despite having greater internal difficulties.

Table 12 Outcome 1b: Low abuse risk and Low mistrust - Context 1b: Challenging internal context BUT less external context difficulties

PARTIC	CONTEXT										MECHANISMS		OUTCOMES	
	HISTO	INTERNAL						EXTERNAL						
CODE	ACEs	Depress	Life str	Attachm	Rel pa	Mistru	N Child	Partner	Income			CAPI-Abuse	PSI -Attach	ETMCQ -Mistr
3004A	1	97	65	91	96	29	2	Yes	£20,000-£30,000	M1/x	The other girls were amazing and I learnt so much from everyone and I hope they learnt from me too.	LOW (Step down)	Improved	Improved -8
3026A	6	60	16	93	100	24	2	Yes	£30,000-£50,000	M1	That was kind of particularly good about the way they were. Umm. Yeah, like I felt like I'd known them a long time	LOW (Step down)	Improved	Improved -6
										M1	There were these other mums, other parents, although some of them were completely different, we all had things in common			
										M1	It was strange because they were always like, how are you? And like, because we were quite open with them and I was telling them about my week and things like that. Yeah, I think it's quite nice to have that […] a weekly thing, it's yeah this has happened this week ,and ohh yeah, like it's more personal.			
										M2	it just opens your eyes a bit more and it makes you look at things a bit differently, and take more time to think about things rather than just act			
										M2	I'm more aware I'm more I think more.			
										M4	it was more visual. Um. So with like our social worker, he comes around, he talks and he gives me information and a lot of that's helpful, but actually completing activities, I think...I learned from that quite well			
										Mx	I'm a lot more open minded now. Just like so at the beginning of the meeting, even just checking in, seeing how everyone is, how everyone's weeks been like. It was nice having that support there.			

3.3. Outcome 2: High abuse risk and deteriorated bond with child

Four parents in the sample had a high risk of abuse and their bonding with their children had deteriorated at the end of treatment (see table 13). The majority of parents who experienced unfavourable outcomes (O2) were characterised by the presence of at least one external challenge, such as low income, exceeding the sample's average number of children, and/or lacking a live-in partner (E+). Despite their outcomes, all participants acknowledged the significance of the group's atmosphere of safety and empathetic understanding (M1) as an important component of the intervention. Additionally, a notable subset of participants (three) acknowledged that the group facilitated a deeper understanding of their children's behaviours and encouraged them to 'think' before reacting impulsively (M2), while also attesting to the benefits derived from sharing and learning from the experiences of fellow parents (Mx). However, one parent expressed scepticism regarding the necessity of shared experiences within the group (-M2) and maintained a fixed perspective centred on behavioural understanding of their children (-M2). Furthermore, three parents indicated appreciation for the intervention's educational components (M4).

3.3.1. Outcome 2a: Worsened mistrust

Along with the high risk of abuse and the deterioration of the parents' bonding their children, the mistrust of two parents had also deteriorated from baseline to the end of the treatment. One of these parents presented low risk at baseline but had deteriorated to become high at the end of the treatment, whilst for the other parent the risk was high at baseline and had not changed at follow up (see table 11).

3.3.2. Context 2a Historical vulnerability and challenging external context

As table 11 shows both parents that had high risk, felt less bonded with their children and had worse mistrust at the end of the treatment, reported multiple adverse childhood experiences (9 and 6)

(historical context) and they had low financial resources (external context). Additionally, one of them didn't have a partner (external context) and reported clinical stress levels (internal context).

3.3.3. Mechanisms for context and outcome 2a:

The first mechanism, **safety and empathy (M1)**, was highlighted by both parents, who described the practitioners as kind, patient, and understanding. Initially, they found it difficult to trust the group, but this improved over time. The consistency of weekly sessions and meeting the same people every week was important. One parent appreciated the non-judgmental approach and the small group size, which helped build trust and allowed her to share difficult experiences and feelings. She felt a strong connection with group members, noting that people cared, noticed her, and valued her presence. Trust was reciprocal between her and the practitioners, partly due to the practitioners' self-disclosures in the group.

The second mechanism, **(anti) mentalizing (M2)**, had mixed references. The first parent found the shared parenting experiences useful in confirming her belief that children are difficult but showed no interest in understanding her children's behavior. Interestingly, this was the only parent whose abuse risk increased by the end of the intervention. The second parent, however, appreciated the program's focus on understanding children's mental states and learned to think before reacting to her children.

The third mechanism, **thinking about the past (M3)**, was mentioned by only one parent, who shared stories about her childhood when discussing the importance of a secure base.

The fourth mechanism, **psychoeducation and advice (M4)**, was valued by both participants. They found learning concepts through metaphors like the "safe harbor" and engaging in practical activities useful. One parent noted that this approach seemed more informal, reflective, and collaborative.

The fifth mechanism, **(un)appreciation of others' experiences (Mx)**, showed differing perspectives. The first parent did not find the shared experiential aspect useful or interesting, despite appreciating

being listened to. She was not curious about the experiences and stories of other group members. In contrast, the second parent benefited from speaking to different parents with diverse experiences and valued their presence in the group.

Finally, the **online format (My)**, the sixth mechanism, received mixed feedback. One participant reported that technology difficulties were a disadvantage to the program.

Table 13 Outcome 2a: High abuse risk, worsened bonding to the child and worsened high mistrust – Context 2a: Historical vulnerability and challenging external context.

PARTIC	CONTEXT									MECHANISMS		OUTCOMES		
	HISTC		INTERNAL					EXTERNAL						
CODE	ACEs	Depress	Life str	Attachm	Rel pa	Mistru	N Child	Partner	Income			CAPI-Abuse	PSI -Attach	ETMCQ -Mistrust
4004A	9	52	62	67	48	20	2	Yes	£10000 - £20,000	M1	*Are there moments that are particularly memorable for you?* Um, the people that was in the group was truly memorable. *The people? OK, why is that?* You see it. Same people every single day kind of bombed	HIGH (step up)	Worsened	Worsened +3
										M1	Could you describe the practitioners, what kind of person they were? Ohh, they were inviting. Um. *pause* Kind. They listened to quite a bit			
										M1	*Did you trust them?* Well, at first. Not at first, but then afterwards [..] I start to tell right end. OK. *Why is that, do you think?* Ohh see them every week I guess…			
										M1	*Did you feel you were able to contribute or be open in the group?* So after a couple of weeks, yeah, I was opening and contributed. Um. Yeah. *Why did you think that is?* I wanted to get to know who was gonna be in Group before I even know life.			
										M1	*Could you describe the practitioners, what kind of person they were?* Ohh, they were inviting. Um. *pause* Kind. They listened to quite a bit			
										(-) M2	(I wished) Maybe we have bit more patience with my son. S*o that that was one of the, the, the changes that you hope that you. Yeah. Hmm. And what would you say are the actual changes, does that patience actually, um, grow or-or was it something that stays the same?* Ohh. Let's think it stayed the same. To be fair, he's just got a bit more harder to deal with			
										(-) M2	In terms of being in the group, was it like being in a group with other parents for you? Ohh enlightening. It showed me that I'm not the only one going through things and having difficult children			
										M4	Safe harbour. Um, The mentalizing, the actual tasks that they did. *infant crying* that was fairly interesting.			
										(-) Mx	And the boring was talking about random stuff. It's yeah, not needed *You remember any of those random stuff that was not needed?* It is more people talking about their lives.			
										(-) Mx	They just did courses then it was chatting the right random stuff			
4020A	6	71	93	66	68	21	2	No	£10000 - £20,000	M1	"We had like a really good session and like we were talking about some really difficult things but everyone kinda like not made a joke of it, but everyone sort of lightened the situation up and it was nice do you know what I mean. I think from then on we knew that we could try trust each other in the group"	HIGH (no change)	Worsened	Worsened +2
										M1	They're they were really sort of understanding and quite patient with all of us. D'you know what I mean it was quite hard like especially with it being online.			
										M1	You do feel like you're like, they do really care about you and your feelings sort mean and how you're feeling and even down to the kids. Like when [practitioner] come out. She she was reading with my daughter. [...] so they do treat you as as what feels like a proper person.			
										M1	Yeah, I would hope to think that they trusted me (practitioners) because they both spoke about things that had happened, so I mean in their life.			
										M1/M2	Yeah, I did trust them. I mean, I said I said quite a lot of things to [practitioner], in trust. I said quite a few things about, like my childhood and being a parent. Yeah, I'd say I trusted them as well.			
										M1	So sometimes it would have been nice to have a bigger group, but Umm. it was easier to be able to trust everyone and be open because they weren't so many of us.			
										M1	I think it was nice when we used to do the group they used to do like a check in and check out. Umm. And we used to have a member in the group that was quite like positively vocal, like used to say quite a lot of nice stuff about everyone. I would say it's nice and I think there was a few times where [practitioner] kind of with message me after and say like, are you alright? Umm. I've noticed you was a bit quiet in the group			
										M1	You really didn't feel judged in anything that you were saying or speaking about because it was so because it won't all about social services or all about, especially negative stuff. So I mean like don't get me wrong, like you do, you do end up speaking about but bad experiences or bad memories or things like that. But it didn't feel like we were all put on the group just to be like, criticised. It felt like we were there to, to actually try and learn something			
										M1	A lot of the other parents said some really nice things about me. Do you know what I mean and like when I opened up about a few things, there were like Oh my God, like, I would never would have thought that about you.			
										M2	Parent: Uh, more about parenting and understanding why the child's thinking like that. How we can, how we can resolve the issues, understanding why they've gone to feeling like that.			
										M2	Sometimes I do stop and think so. I mean, before I react or before I say something or before I let something that the kids say or do affect me, I do you stop and think like and before I I just wouldn't, I would just react			
										M3	There was a bit about the Safe Harbor, about obviously being it for your kids and obviously Umm speaking about it from when we were younger and I think that's something that did stick in my mind when we started learning about it. And I still does stick in my mind now...			
										M3	They would only talk like, just talk. So it was nice that we had a quite a good session. We can't remember. I think it was, I think we ended up talking about us all as as our childhood. So it was like when we was all younger.			
										M4	(Metaphors) I think there are explained well if you know what I mean. So it's a lot of, the way that it was explained didn't feel textbook. It felt like it was actually thought about not just like ohh read it in black and white and Umm then we'll learn from it. It was a lot of the time. It was asking us questions, short meaning, making us think not just being told what you should do,			
										Mx	It was nice to speak to, it's nice to speak to to obviously a dad, to a bloke, I mean, compared to it, just all being women. Umm. Yeah. On the flip side of it, it was nice to talk to to older people. Who've it seems like got more experience and more, they know what they are doing.			
										Mx	It was nice to speak to different people and like you did kind of get a get a connection with them. And you did wonder how they were getting on or or what was going on. Do you know what I mean if someone did miss last week and you didn't see them you used to say like, well, where's so and so and are they alright.			
										(-)My	At first I thought it was gonna be a lot easier. Umm. And kind of a lot less hassle. But I think especially after doing all of the sessions, I think it would have been nicer, and more, I think we would have connected with your parents a lot better if it was like a mean face to face group. So yeah and we did have quite a few, like technical issues or people not being able to get on to the group or do'you know what I mean, just little things that that made it not all about the lighthouse program.			

3.3.4. Outcome 2b: Improved mistrust

The remaining two parents that obtained outcome 2 (high risk of abuse and a deteriorated bonding to their child), had reduced their mistrust at the end of the treatment (see table 14).

3.3.5. Context 2b: Challenging internal and external context but no historical vulnerability

These two mothers struggled with depression (clinical) and had high levels of mistrust (internal context). One of the participants also experienced difficulties in her relationship with the father of her child (internal context). Both also had external life pressures (external context). Neither lived with a partner and additionally one reported to have a very low income and the other had four children to look after (see table 12).

3.3.6. Mechanisms for context and outcome 2b:

The first mechanism, **safety and empathy (M1)**, was emphasized by parents who felt the group was a safe place where people were relaxed and comfortable enough to share their experiences. Initially, both participants found it difficult to share, but this improved over time. One parent still felt unsure if she had shared as much as she could have. Parents bonded with other group members, forming deep relationships and appreciating meeting people with similar difficulties. This sense of community became a source of support where they could share both challenges and progress. One parent highlighted the importance of feeling valued by other parents, while the other reported that practitioners' disclosures made her feel trusted.

The second mechanism, **mentalized and mentalizing (M2)**, was described as supporting parents to be curious about their children's mental states to better understand their behavior. One parent mentioned that the weekly meetings helped them practice thinking before reacting, and another parent noted becoming more aware of her mentalization capacities.

The third mechanism, **thinking about the past (M3)**, was impactful for one parent who felt that reflecting on childhood and sharing difficult memories while feeling supported by the group was significant.

The fourth mechanism, **psychoeducation, information, and advice (M4)**, was appreciated by one parent who found learning concepts through metaphors helpful for understanding the importance of the parent-child relationship. This parent also valued the exchange of advice for managing difficult situations.

The fifth mechanism**, appreciation of others' experiences (Mx)**, was evident as both parents showed interest in the experiences, perspectives, and feelings of other group members. One parent highlighted being touched by other parents' stories.

The sixth mechanism, **the online format (My)**, received mixed feedback. One participant was happy with the online intervention despite initial hesitation, while the other preferred meeting in person.

3.3.7. Outcome 2a vs outcome 2b: the role of historical vulnerability

The distinguishing factor between parents who achieved outcome 2a and those who achieved outcome 2b lay in their historical vulnerability. Specifically, parents who experienced a decline across all assessed domains exhibited a higher incidence of Adverse Childhood Experiences (ACEs) compared to the sample average. Conversely, parents who demonstrated risk of abuse, diminished bonding to the child, yet an improvement in parental mistrust reported e two or fewer ACEs. Notably, this discrepancy persisted even though the latter group encountered a context marked by more pronounced internal challenges compared to the former.

3.4. Two cases with similar historical context but different outcomes: the role of the protective external factors

We compared two individual cases that, despite exhibiting some contextual similarities, obtained markedly different outcomes. Parent 3026A (O1b) and parent 4020A (O2a) possessed a similar number of Adverse Childhood Experiences (ACEs) but displayed contrasting results: while one demonstrated improvement across all measured outcomes (risk of abuse, bonding to the child, and parental mistrust), the other remained at a high-risk of abuse, experienced a deterioration in bonding, and her mistrust had worsened (see tables 10 and 11). Despite sharing an equivalent number of ACEs, disparities in other contextual factors were evident. The parent with the more favourable outcome (3026A) benefited from additional external protective factors, such as cohabitation with a partner and a higher income compared to the sample average, notwithstanding facing greater internal difficulties (three areas). In contrast, the parent who experienced less favourable outcomes was in the lowest income bracket and lacked a live-in partner although only had one area of internal difficulty.

Table 14 Outcome 2b: High abuse risk, worsened bonding to the child, and high but improved mistrust – Context 2b: Challenging internal and external context but no historical vulnerability

PARTIC	CONTEXT										MECHANISMS		OUTCOMES		
	HISTC		INTERNAL					EXTERNAL							
CODE	ACEs	Depressi	Life str	Attachm	Rel pat	Mistru	N Child	Partner	Income				CAPI-Abuse	PSI -Attach	ETMCQ -Mistrust
2027A	0	100	62	45	100	27	1	No	£10000 -	M1	Did you feel that the practitioners trusted you? Umm (confused face) I think so. I mean, they was, they shared, quite a bit of their stories as well as us, so they must've trusted us.		HIGH	Worsened	Improved -3
									£20,000	M1	I just felt like it was, it was like – a safe space. Mhmm. Everyone was (pause) was just, opening up and speaking, about everything.		(No change)		
										M1	There was a man on the group – Mm – I didn't like that. Um, I really struggled with that. Mmm. So I wouldn't like, put my camera on or anything, but then after a while, and like getting to like, obviously know him and stuff, I was, I was fine with it in the end, Okay – but that is, I really did struggle with it at first.				
										M1	I'd say – at first I was very closed to them, because obviously it's a group, so, I wasn't very open to speaking about everything like some people was. But towards the end – I think they – they understood a bit more, like, the one to one lady did.				
										M1	*Do you feel like you were able to contribute and participate and be open in the group* ? Not as much as I would have liked to be. But I think that's just because (pause) I don't know, obviously its, it's a bit scary speaking about everything – Yeah – and I'm not as, I just wasn't as open as, as some people. Towards the end I did get a bit more open, but I probably could've been more open.				
										M1	I feel like, the group, and speaking to [therapist] like, really got me through the week				
										M1	At first, I was – that's never gonna work. Never ever. And then – I remember the first time – I done it, the whole, the whole situation just went - completely different to how it normally would. I was really happy about that and then I went and told them all about it.				
										M2	I liked all that stuffI would never sit there and think, who's got – who's, who is [child's] safe person, or like, why did she react – or, why did she react in that way?				
										M2	It was interesting to like – to dig, like, dig deeper into – into them [other members of the group stories] and understand 'em more				
										M2	Stopping, and thinking, before doing something. Probably the biggest thing that I learned, and like, think about how you're gonna react before you react. And – and – it's hard to do obviously, cause in the moment – you don't think of it. But at weekly sessions you do				
										Mx	I thought – it was interesting to see other people's stories, and how, they go about things, differently to me. Mhmm. Um, and yeah, how they deal with things, compared to how I deal with things. Mhmm. Uh, 'cause I think it was probably hard for everyone, so – it was nice				
										Mx	I just looked forward to doing it every week. It was really nice to sit and – um, I think it was like two hours, wasn't it? Sit and have two hour chat with people that you don't know (laughing together) Yeah. But in the end, you did get, you did look forward to hearing, like, how everyone was				
										My	I didn't really like that at first ... cause I thought there's just no motivation to do it – because it's literally just online. And also, if it was somewhere, I probably wouldn't have went because of my anxiety (small laugh). But once I got used to it, it was really good.				
2014A	2	94	88	60	22	29	4	No	-	M1	That also showed me like, I'm not alone, like, there's other people out there in the same situation, but different area		HIGH	Worsened	Improved -3
										M1	It was nice, cus it felt like we'd known each other for years.		(No change)		
										M1	I cried when it was the last session ...Become so close to them. At the end it felt like we'd known each other for years.				
										M1	[Relationship with the practitioners] it was brilliant from the, honestly couldn't have asked for a better group of people, better mentors, honestly, just everything was so comfortable, relaxed from start to finish.				
										M1	Well through the group at one point erm, I was explaining to them, I was like my confidentiality just got broken, not off them. Off somebody else in the group. They were so, so helpful in what to do and like how I should go about it and things.				
										M1	Even though it was only once a week, there was a lot lifted off my shoulders, a lot of burden lifted off of my shoulders, I felt like I could talk about and things. Like getting stuff of my mind and stuff.				
										M1	We were all so, like I would say we were all so close … All so comfortable with each other, it was uncanny how comfortable we all felt.				
										M1	It's excellent, I met some lovely friends, it was like a family at the end, like you know. There's no bickering, we were all so close-				
										M1	I got a shock that like how much of an impact I did have on the group. If I miss one week- And they'll all say 'Oh. Where's [participant name] this week. I was shocked like, I did have that impact on the group.				
										M1/M2	It's getting your stresses out, it's getting your problems out, like you know how you can deal with your child, your children differently as well look at it from their point of view and things				
										M2	I didn't realise I were doing it, like, oh what did they call it, like mentalising ...And do you know something? You don't realise that you're doing, but you are, you're mentalising and you don't realise it.				
										M2	We were mentalising with each other, you know.				
										M2	We didn't realise we were mentalising and giving each other answers and things and like, advice.				
										M3	We drew a cove and like how we felt like when we were kids and what we'd expect. So that had an impact on me as well. Because it brought back so many buried memories. Memories, of my childhood and things like, that did, it did give me a hell of a lot, so they were all like, you know, bit worried about me cus it obviously got to me. Cus it opened some suppressed memories. […] that one was a difficult session, but it helped.				
										M4	The Lighthouse just showed us different things, about rocky waters, our safe waters, we were the lighthouse for our children ... we could be like facetiming or whatever, or doing something, but our beams still on with our children				
										M4	It was nice to give advice and hear advice back.				
										M4	It was how we dealt with situations and things differently				
										Mx	Like obviously hearing a story for one… it got me emotional.				
										(-)My	*What would you change?* It would have been nice to see them all in person, have a group in person.				

4. Discussion and conclusions

The Lighthouse Parenting Programme represents a novel mentalization based intervention, for which limited outcome data are currently available. This study examines a subset of data involving parents (n=8) with infants who attended a minimum of 40% of the sessions offered. Given the restricted sample size, the findings should be regarded as preliminary and subject to revision as additional data becomes available.

The results indicate that half of the parents in the sample demonstrated improvement in their feelings of bonding with their children and were able to either maintain or reduce their risk of abuse to a low level. Conversely, the remaining half exhibited a decrease in bonding with their child and either maintained or increased their risk of abuse to a high level. Thus, while the intervention proved beneficial for some parents, it did not induce change or potentially led to adverse effects for others.

Theoretical mechanisms

The theoretical mechanisms underpinning the intervention's efficacy were explored through participants' responses. A consistent finding across all parental outcomes was the positive perception of the safety and empathy fostered within the group environment (M1). This aspect was universally valued by participants, regardless of their ultimate outcome. Additionally, the majority of parents (6 out of 8) acknowledged the significance of the support provided to enhance their awareness of others' mental states and to gain a deeper understanding of their children's behaviour (M2). The findings with regard to these two mechanisms are concordant with recent studies that identified relevant intervention components or mechanisms of change of interventions offered during pregnancy and infancy (Fernandez, 2023a, Fernandez, 2023b). The first, a systematic review, identified that two of the relational components of these interventions were: a safe and mentalizing therapeutic relationship with the practitioner, as well programme activities and techniques (such as a reflective diary, and reframing methods) aimed at triggering parental mentalizing (Fernandez, 2023a). The second study, a qualitative thematic analysis, which explored the perspectives of multiple stakeholders on the

mechanisms of change of a perinatal intervention for parents at risk of child removal, found that the therapeutic relationship characterised by safety and validation and the practitioner invitation to reflect were two of the most important mechanisms facilitating change (Fernandez, 2023b).

Theoretical mechanisms, such as making sense of attachment history and trauma (M3), did not emerge prominently in participants' accounts. Two parents, who didn't show positive change in abuse risk or bonding to their child, vaguely referenced discussions related to their early childhood experiences, but it remained unclear whether reflective consideration of the past played a role in understanding their current relationships, including those with their children. Interestingly, in the recent systematic review and the qualitative study referred to above, parents reflection on their past attachment relationships and their connection to their present patterns of relationship was an important part of the promotion of mentalization (Fernandez, 2023a, Fernandez, 2023b). It is interesting that this was not reported as important in the present study despite its importance in terms of the programme theory. It is possible that delivery factors, such as the online or group formats influenced how much this could be explored during the sessions, given that many of the parents had experienced multiple instances of childhood adversity.

Furthermore, it was noteworthy that only parents who obtained unfavourable outcomes (O2) reported benefiting from the psychoeducational aspect of the intervention (M4). This could suggest that these parents may have focused on recalling informative elements of the intervention, while those who demonstrated more favourable outcomes may have been more engaged with the relational and experiential components.

Interestingly, none of the participants mentioned repair and forgiveness (M5) as a mechanism during their interviews. While it is plausible that this mechanism operated implicitly through the non-judgmental stance reported by practitioners and group members, its theoretical significance in terms of parental reports did not align with our expectations. This suggests that further exploration is warranted to elucidate the role of repair and forgiveness within the intervention framework.

Other mechanisms

The coding process undertaken in this study enabled the identification of two mechanisms that were not initially encompassed within the theoretical framework proposed by the programme: Mx and My. Mx is characterized by the reported benefit of learning from and feeling appreciation for others' experiences. It was observed that all participants who achieved more positive outcomes (O1) reported benefiting from this mechanism, suggesting its potential importance in facilitating favourable outcomes. However, it is noteworthy that the majority of parents (3 out of 4) who experienced deterioration in one or two outcomes (O2) also reported benefiting from Mx. This finding suggests that while Mx may contribute to positive outcomes, its influence may extend beyond simply promoting improvement, possibly playing a role in mitigating the risk of decline in certain outcomes.

Of particular interest is the case of the sole parent who reported Mx as unhelpful and unnecessary (-Mx). This parent exhibited the poorest outcomes, demonstrating a deterioration across all three domains. This observation underscores the significance of individual differences in response to intervention mechanisms in terms of the outcomes achieved.

My was the second non-theoretical mechanism that we identified: the online format of the intervention. Despite encountering challenges in discerning group differences due to limited feedback, noteworthy patterns emerged regarding participants' perceptions of the online format. Parents who achieved more positive outcomes (O1) generally reported more positive comments regarding the online delivery method. This suggests that for some individuals, the online format may have facilitated engagement and the effectiveness of the intervention. In contrast, participants with less favourable outcomes expressed frustration with technological failures and indicated a preference for face-to-face interactions. This observation highlights potential barriers associated with the online format, such as technical difficulties, which may hinder participant engagement and satisfaction. The participant who expressed a desire for in-person sessions despite their initial hesitation underscores the importance of considering individual preferences and needs when designing intervention formats.

The role of multiple sources of pressure

The analysis revealed an interesting pattern regarding the contextual factors influencing parental outcomes. Specifically, parents who faced challenges in only one context appeared to achieve better outcomes. Most notably, the majority of parents who achieved outcomes characterized by low risk, improved bonding with their child, and stable or improved mistrust (O1) reported experiencing difficulties in only one area with regard to context. However, it is important to note an exception to this trend: one parent with high ACEs and internal difficulties, which warrants further discussion.

In contrast, parents who experienced worse outcomes (O2) tended to encounter difficulties in at least two areas: external pressures (such as not cohabiting with a partner, having numerous children, or low income) and either multiple sources of childhood adversity or internal difficulties. This suggests that the accumulation of contextual pressures may contribute to poorer intervention outcomes.

This finding underscores the importance of considering the complexity of contextual factors when designing and implementing interventions. Addressing multiple sources of stress and adversity may be crucial for effectively supporting parents and improving outcomes.

The role of parental childhood adversity

The analysis of CMO configurations underscored the impact of parents' experiences of childhood adversity on their capacity to benefit from the intervention. First, our analysis revealed that the majority of parents who obtained favourable outcomes (O1) reported experiencing no more than three Adverse Childhood Experiences (ACEs), with only one parent in this group reporting six ACEs. This highlights a potential association between lower levels of childhood adversity and favourable intervention outcomes.

Second, within the group of parents who obtained unfavourable outcomes (O2), a distinct pattern emerged. Specifically, parents who exhibited an improvement in mistrust despite their high abuse risk

and reduced bonding with their child had a lower number of ACEs. Conversely, parents who experienced deterioration in mistrust alongside other negative outcomes tended to have a higher-than-average number of ACEs. This observation suggests that the historical vulnerability associated with higher ACE scores may influence parents' capacity to benefit from intervention mechanisms, particularly in addressing mistrust.

Further analysis within the subgroup of parents who experienced deterioration in mistrust (O2a) revealed an important finding. The parent with the highest number of ACEs was the only one to also demonstrate deterioration in abuse risk (stepping up from low risk at baseline to high risk at post-treatment). This parent reported a lack of benefit from learning from other parents' experiences (-Mx) and expressed boredom and disinterest in these discussions. Listening to other parents' difficulties made her more certain about her children's challenging behaviour instead of helping her to become more curious about what these behaviours tried to communicate (-M2). The challenges faced by this mother underscore the potential limitations of the intervention for parents with similar backgrounds. Similar results were obtained by another exploratory study on a welfare population which found that the number of parents' ACEs had an impact on the effect of a parenting intervention (Blair et al.,2019). However, more evidence is needed to establish its impact of programme's effectiveness.

It is plausible that her experiences of trauma and adversity rendered the discussions about attachment and shared experiences overwhelming and emotionally taxing. Her reported boredom may have served as a defence mechanism to shield herself from confronting the painful emotions associated with her past experiences. The group format and emotional content of the intervention may have exacerbated her discomfort, leading her to cling to existing negative beliefs about her children as a means of self-protection.

This raises important questions about the suitability of the intervention for parents with similar profiles of childhood adversity. While the intervention may offer valuable support and resources for some parents, it may inadvertently exacerbate distress for those with high levels of trauma or

emotional vulnerability. Thus, future iterations of the intervention should carefully consider the needs and capacities of participants, particularly those with complex trauma histories.

The external context as a protective factor

The CMO (Context-Mechanism-Outcome) analysis also highlighted the significance of participants' external context in facilitating or impeding change and mitigating other sources of risk. Notably, a predominant observation was that most parents who experienced unfavourable outcomes (O2) typically had at least one area of external difficulties, such as low income, exceeding the sample's average number of children, or lack of a live-in partner (E+), in addition to other contextual challenges. These findings are aligned with the existing literature which points out that single parents, parents with low income and with more than two children have higher risk of abuse than parents with a partner and less children (Younas and Gutman, 2023). Similarly, the evidence suggests that being married or cohabiting (for mothers and fathers) can be protective against physical abuse (Price-Wolf, 2014).

A comparative analysis of two individual cases, namely parent 3026A (O1b) and parent 4020A (O2a), with similar ACE scores (6) yet vastly different outcomes, further elucidated the role of external factors. Parent 3026A exhibited improvement across all outcomes (risk, bonding, and mistrust), benefiting from external protective factors such as a higher income and a cohabiting partner. Conversely, parent 4020A who obtained less favourable outcomes, was in the lowest income bracket and lacked a live-in partner, despite facing fewer internal difficulties than parent 3026A. This suggests that external protective factors, such as financial stability and social support, may mitigate the negative effects of ACEs on parents' capacity to benefit from interventions like the Lighthouse Parenting Programme (LPP).

Moreover, interventions like the LPP predominantly target internal difficulties, aiming to promote epistemic trust and enhance parents' understanding of themselves and others, including their children.

In this sense, they address the needs of parents with psychological and relational difficulties but may overlook external stressors that hinder their progress.

This finding is in line with the existing literature. According to Maslow's theory of the hierarchy of needs, individuals must first satisfy their basic physiological and safety needs before being able to fulfil higher-order needs, such as belongingness and self-actualization (Maslow, 1943). This might explain why parents with more external resources benefited more from the intervention than parents who didn't have their basic needs met. By considering how external pressures impact parents' ability to meet their basic needs, interventions can be tailored to address both internal and external challenges, thereby maximizing effectiveness and promoting positive outcomes.

Strengths and limitations

This realist evaluation adds to the existing literature by investigating the context-mechanisms-outcome patterns of the Lighthouse Parenting Programme when targeting parents of infants at risk of abuse. By thoroughly analysing participants' feedback, this study offers valuable insights into the underlying intervention mechanisms that promote change for parents of infants, illuminating both theoretical and non-theoretical influences. Additionally, it highlights the contextual factors that might contribute or hinder parents' capacity to benefit from the intervention.

One of the limitations of this study is its sample size (n=8), and the fact that this sample represented only one-third of the total sample. While the study provides valuable insights into intervention mechanisms and outcomes, the limited size of the sample and the interpretive nature of the qualitative analysis necessitates that the results be treated as hypotheses that need further confirmatory evidence.

Another limitation of the study pertains to the choice of outcomes, specifically the subjective measurement of the risk of abuse. The study utilized the CAPI (Child Abuse Potential Inventory) abuse subscale, a subjective measure of parental risk of physical abuse. This measure was selected over objective measures, such as social care outcomes, due to its availability within this dataset and

relevance to the intervention's focus. We also felt that social care decisions may be based on multiple factors which not only pertain to the parent, such as the level of support that the parent has, or the level of need of the child. However, the use of the CAPI may not capture all aspects of parental risk, as it primarily focuses on the risk of physical abuse. Consequently, the study may not fully capture the multifaceted nature of parental risk and its impact on intervention outcomes.

Despite efforts to consider various relevant parental contextual factors, our selection didn't include other characteristics such as sex, age, ethnicity, education, source of income, employment, and housing. The decision was based on the evidence about the importance of different risk and protective factors, as well as the variability of these characteristics within our sample (for instance, all parents lived in rented accommodation). Notwithstanding this consideration, it is possible that relevant contextual factors may have been overlooked or underrepresented. This limitation underscores the complexity of contextual influences in terms of the effectiveness of parenting interventions and highlights the need for a more comprehensive and nuanced approach to contextual assessment.

Implications for future research and practice

Future research should aim to explore the identified CMO's using statistical analysis with a larger and more diverse sample to further explore the validity of the hypotheses developed here. The observed variability in participant responses to intervention mechanisms highlights the importance of considering individual differences in future research. Future studies should explore potential moderators and mediators of intervention outcomes, including demographic characteristics, psychological factors, and past experiences of trauma and adversity. By identifying factors that influence treatment response, researchers can tailor interventions to meet the diverse needs of participants and maximize effectiveness.

Future research endeavours could also extend the scope of inquiry to investigate whether similar context-mechanism-outcome patterns persist when involving parents of older children or if they exhibit different patterns from parents raising infants. By examining a broader range of parental demographics, including those with older children, researchers can deepen their understanding of how the intervention operates across different developmental stages of childhood. This could provide more nuanced insights into the effectiveness and applicability of the Lighthouse Parenting Programme across diverse parental contexts, ultimately informing the refinement and customization of intervention strategies tailored to specific demographic groups.

The study also raises important considerations for the implementation of online interventions, particularly in understanding the impact of the delivery format on participant experiences and outcomes. While the online format may offer flexibility and accessibility, challenges such as technical issues may detract from its effectiveness. Thus, efforts to address these challenges and provide adequate support for participants navigating the online environment are warranted.

Conclusions

This study provides valuable insights into the mechanisms underlying the Lighthouse Parenting Programme when offered to parents of infants. Through a qualitative analysis of participant responses, several key findings emerged, shedding light on the complex interplay between intervention mechanisms, contextual factors, and parental outcomes.

While certain theoretical mechanisms, such as the safety provided by the group and empathy of the therapist and provision of support to mentalize others, were valued by most participants, others, such as making sense of attachment history and trauma, receiving psychoeducation, and forgiveness and repair were less prominent in participants' accounts. The study also identified additional mechanisms, such as learning from and appreciating others' experiences (Mx) and the online format of the intervention (My), which were not initially encompassed within the theoretical framework of the

programme. These mechanisms appear to have played an important role in facilitating positive outcomes for some participants.

Moreover, individual differences in contextual factors, such us parental childhood adversity and external pressures, seemed to have an impact on intervention outcomes. Similarly, facing difficulties in multiple areas (external, internal and/or historical) was associated with worse outcomes.

External factors, such as financial stability and social support, appeared to play a role in mitigating the negative effects of childhood adversity on intervention outcomes. These findings highlight the need for personalized and tailored interventions that take into account the unique needs and experiences of participants.

VII. Discussion

1. Overview of DPhil findings

The main objective of this thesis was to investigate whether mentalization based (MB) interventions promote change for vulnerable parents during pregnancy and infancy, and to explore which intervention mechanisms might facilitate change for parents of infants at risk of child maltreatment, as well as the conditions under which this change is more likely to occur. The candidate addressed the following three aims which resulted in three stand-alone papers:

(1) Examine the effectiveness of mentalization-based interventions during the perinatal period in improving parental reflective functioning (PRF)/mind mindedness and secondary outcomes such as parent-infant interaction and infant attachment.
(2) Explore stakeholders' perceptions of the impact and mechanisms of change in an intensive perinatal-based intervention for pregnant women at risk of child removal.
(3) Explore the characteristics of parents with infants who benefited the most from a MBT intervention for parents at risk of child maltreatment comparing with parent's who did not appear to benefit from it; as well as to identify the mechanisms that likely promoted change.

The findings from these three studies explored the impact of MB interventions on vulnerable parents with infants at risk of child maltreatment, shedding light on various mechanisms and contextual factors that influence outcomes.

The systematic review provided a comprehensive overview of existing literature on the effectiveness of MB interventions for vulnerable parents during pregnancy and infancy, highlighting a small but significant effect in improving parental mentalization and infant attachment. This review also identified key intervention components reported by programme developers, setting the stage for further exploration of the impact and mechanisms of change of interventions such as the Daisy

Programme (DP) (Paper 2) and the Lighthouse Parenting Programme (LPP) (Paper 3) both aimed at supporting parents in improving the parent-infant relationship and reducing the risk of abuse.

The qualitative study on the Daisy Programme triangulated the perspectives of various stakeholders, including participants and professionals, to explore its impact and mechanisms of change. The realist evaluation of the Lighthouse Parenting Programme investigated a subset of data from parents with infants, identifying different patterns of context, mechanisms, and outcomes among those who benefited most from the intervention versus those who did not or experienced adverse effects.

A consistent finding across the three studies was the importance of the relational aspect of MB interventions, particularly the facilitator's role in creating a safe and empathetic environment where parents can feel listened to, understood, and invited to reflect on their own and others' mental states. However, the presence and importance of mechanisms such as addressing the participant's attachment history and trauma, and provision of practical support, varied across interventions.

Moreover, the realist evaluation highlighted the role of individual differences and contextual factors in shaping intervention outcomes. Parents with lower levels of childhood adversity and external pressures tended to benefit more from the interventions, while those facing multiple stressors experienced poorer outcomes. External protective factors, such as financial stability and social support, mitigated the negative effects of childhood adversity on intervention outcomes.

In the following section, overarching findings from this thesis will be discussed, and synthesized into three themes: 1) The impact of mentalization-based interventions on parents and their infants, 2) Mechanisms of change of MB interventions from pregnancy to infancy, and 3) Possible parental characteristics influencing parents' capacity to benefit from MB interventions. Subsequently, strengths and limitations of this DPhil thesis will be reflected upon, along with implications for future research.

1.1. The impact of mentalization based interventions on parents and their infants

1.1.1. Parental reflective functioning

The meta-analysis (Paper 1) found a significant but small improvement in parental reflective functioning within the intervention group, as assessed by measures such as the Reflective Functioning Scale and the Parental Reflective Functioning Questionnaire. However, this improvement disappeared when applying sensitivity analysis adjusting for possible risk of bias.

Participants in the qualitative study (Paper 2) didn't explicitly identify an improvement in parents' reflective functioning. However, they agreed that the intervention had helped mothers to become more reflective about their own experiences, how these had impacted their behaviour, and how their behaviour had impacted their children's lives. This reflection often resulted in mothers' taking action to seek reparation. One could argue that these changes in parents' capacity to think about their own experiences which implied not just factual but more prominently emotional aspects as well as their children's, implicitly reflects parents' growing reflective functioning capacities.

Findings from both studies have considerable limitations; however, they show that MBT interventions have a potential impact on parental mentalization which should be explored further in order to identify the mechanisms by which such change might occur.

1.1.2. Infant attachment

The systematic review (Paper 1) revealed a small but significant effect of mentalization-based interventions on infant attachment, with infants of mothers who received the interventions being more likely to be classified as securely attached compared to those in the control group. This finding aligns with previous research indicating an association between parental reflective functioning and infant attachment (Zeegers et al., 2017). However, it's essential to note that the observed intervention effect was modest.

1.1.3. Parent-infant relationship

The findings from the systematic review and meta-analysis (Paper 1) did not provide support for the hypothesis that mentalization-based interventions improve parental sensitivity within the parent-infant relationship. This contrasts with the qualitative study's observations (Paper 2), where stakeholders described positive changes in mothers' relationships with their children, including increased positive feelings and more reciprocal interactions. Additionally, the realist evaluation (Paper 3) indicated that while some parents demonstrated improvement in their feelings of emotional connection towards their children, others experienced a decrease in bonding, suggesting that the intervention had variable effects.

This divergence in findings could be attributed to several factors. Given that the systematic review found a significant effect on infant attachment, it might be expected that there would also be an improvement in maternal sensitivity in line with the wider literature which suggests that sensitivity is a significant, albeit not exclusive, precursor of attachment security (Deans, 2020). The non-significant results could be due to the limited number of studies included in the meta-analysis which likely influenced its ability to detect significant effects. It's possible that with a larger and more diverse sample of studies, the meta-analysis might have yielded different results. Furthermore, each study focused and measured different aspects of the parent-infant interaction contributing to inconsistencies in findings. For instance, the systematic review focused on parental sensitive behaviour whereas the realist evaluation focused on bonding which is the emotional aspect of the relationship, and the qualitative study reported both behavioural and emotional aspects.

We can conclude that evidence regarding the impact of mentalization based interventions on the parent-infant relationship for parents with infants is currently inconsistent, which perhaps is related to the multidimensional nature of this relationship.

The inconsistency in the evidence could also suggest that mentalization based interventions in this period primarily impact infant attachment through improved maternal reflective functioning. This aligns with previous research suggesting that interventions targeting parental reflective functioning

can lead to positive outcomes in child attachment (Zeegers et al., 2017). Mothers' enhanced capacity to reflect on their own experiences and understand their children's mental states may facilitate the sense of a secure base for the child, even if the parents' responses are not always sensitive. This suggests that fostering maternal reflective functioning may be a key mechanism underlying the effectiveness of mentalization-based interventions in promoting secure parent-infant attachments.

The realist evaluation offers another relevant contribution about the parent-infant relationship. In our sample all the parents who at post treatment had reduced or maintained a low risk of abuse also had increased their feelings of emotional closeness to their children. This suggest there might be an association between the affective aspect of the parent-infant relationship and the risk of abuse, perhaps acting as a protective factor against harmful parenting practices. Evidence suggests the relevance of parent-infant bonding, highlighting its association with parent-infant interaction and parenting behaviours such as responsiveness and sensitivity (Trombetta *et al.,* 2021; Muzik, *et al.,* 2012). Future research should further examine the role that the parent-infant affective bond plays in the occurrence of child maltreatment.

1.1.4. Risk of abuse

The aim of this thesis was not to establish the effectiveness of interventions in reducing the risk of child maltreatment. However, data from the qualitative study and the realist evaluation revealed that 75% of the mothers who took part in each study had retained custody of their children (in the LPP 63% had reduced their social care involvement) after completing the interventions. It is important to note that both samples were likely not representative of the universe of parents with child maltreatment risk that had participated in the interventions. The qualitative study had a highly self-selected sample, having only four mothers that had accepted to be interviewed. Possibly these were mothers who had found the programme particularly beneficial. Similarly, the sample from the realist evaluation were parents who had engaged particularly well with the programme and consented to be interviewed at the end of the programme. Their engagement could suggest that they were parents who

felt they were that the programme had been useful. Considering self-selection of the samples, is not surprising that a large percentage of parents had obtained positive social care results.

For the realist evaluation and the context-mechanisms-outcomes analysis, we opted to utilize a standardized measure of abuse (CAPI) rather than the social care outcome. This decision stemmed from the recognition that social care decisions often consider a range of factors beyond just parental characteristics or capacities, including the specific needs of the child, the parental social network and support, and the parents' own additional needs. Given the aim of the realist evaluation to understand changes within parents' capacities and risks, we deemed a more "subjective" measure appropriate. However, this approach has its limitations, as the measure focuses on physical abuse, overlooking the broader definition of maltreatment that also encompasses emotional abuse and neglect.

Using this measure of abuse risk, half of the parents in the sample demonstrated a reduction or stability in their risk of abuse to a low level, while the remaining half either maintained or increased their risk, potentially experiencing adverse effects. These findings underscore the complexity of addressing child maltreatment within vulnerable populations and highlight the variability in intervention outcomes among different individuals.

In conclusion, while the interventions showed potential in reducing the risk of child maltreatment for some participants, the use of subjective measures and the focus on physical abuse alone present limitations. Further research with larger sample sizes and comprehensive assessment tools is needed to provide a more nuanced understanding of interventions effectiveness and its impact on reducing the multifaceted risks associated with child maltreatment.

1.1.5. Other parental outcomes

The qualitative study provided valuable insights into various perceived positive outcomes for mothers participating in the Daisy programme. Stakeholders reported improvements in mothers' capacity to take accountability for their actions, their confidence, and their relationships. According to the reports

mothers demonstrated an enhanced understanding of the impact of their past traumas on their decision-making processes, without using these traumas as justification for their behaviour. Instead, they took ownership of their stories and actions, indicating a significant shift towards self-awareness and responsibility.

Moreover, participating mothers experienced positive changes in their confidence, with stakeholders noting increased self-worth, and a sense of accomplishment. This transformation in self-perception was reflected in mothers' descriptions of themselves as capable and proud of their achievements, particularly in their role as mothers. Additionally, improvements in mothers' relationships were observed across various domains, including their relationships with their children, family of origin, and partners/friends. Stakeholders noted more positive interactions, greater understanding, and enhanced support within these relationships, indicating a broader impact beyond individual well-being.

Furthermore, the systematic review and meta-analysis revealed a small improvement in maternal depression among mothers who received a mentalization-based intervention compared to those in the control group. Theoretical links between depression and mentalization have been drawn suggesting that depressive disorders might be the result of interactive impairments in stress regulation, reward and mentalizing systems (Fonagy and Luyten, 2018). This hypothesis has found some support in the literature indicating associations between depression and lower levels of mentalizing (Fischer-Kern et al., 2013; Fischer-Kern et al., 2008; Uekermann et al., 2008). Other studies have also shown positive effects of mentalization based interventions on depression outcomes (Bressi *et al.,* 2016; Jakobsen *et al.,* 2014; Salo *et al.,* 2019). However, these studies had substantial limitations and therefore the strength of these associations is yet to be determined.

The quantitative and qualitative findings could suggest that MB interventions have the potential to impact not only parents' parenting capacities but also to positively impact their self-perception, accountability, and mental health. We could hypothesise that the reflective exercises and cognitive

reframing, characteristic of MB interventions, could have helped mothers to perceive themselves in a more integrated way impacting their confidence and capacity to take accountability. This change in perception could also have been involved in the reduction of depressive symptoms. It is possible that exercises that particularly support parents to reflect and make sense of their own early experiences addressed parents' depressive symptomatology by giving them space to work through experiences of childhood adversity which is considered an important factor in the genesis of adult depression (Giano *et al.,* 2021; Dagnino *et al.,* 2020). More research is needed to assert the link between depression and mentalization as well as to determine the effect of MB interventions on parents' depressive symptoms.

1.2. Mechanisms of change of MBT interventions from pregnancy to infancy

As with the systematic review, the evidenced gathered in this thesis has been grouped into two main aspects of the interventions: relational and practical.

1.2.1. Relational aspects of interventions

The three studies undertaken in this thesis underscore the relational nature of mentalization-based parenting interventions. Both the systematic review and our examination of the mechanisms within the Daisy and Lighthouse programmes converged on two key relational mechanisms of change: the promotion of reflection and awareness of mental states, and the establishment of safety within the therapeutic relationship.

1.2.1.1. Promotion of reflection on mental states (present and/or past)

The three studies highlight the central role of promoting reflection on mental states, both present and past, as a core mechanism within mentalization-based parenting interventions. This mechanism encourages parents to contemplate their own internal states and those of their children, examining how these states influence their behaviours within the context of relationships.

In the systematic review, the fostering reflectiveness subcomponent was consistently present across all interventions, aiming to support parents in understanding the connection between their internal states and early experiences, as well as their infants' internal worlds. Similarly, the qualitative study identified the programme's emphasis on inviting parents to reflect on themselves, others, and the past and present, fostering a deeper understanding of their thoughts, feelings, intentions, and behaviours. This reflection often extended to considering how past experiences shaped their present circumstances and parenting practices. Additionally, the realist evaluation found that the majority of parents acknowledged the significance of support in enhancing their awareness of others' mental states, particularly regarding their children's behaviour.

However, the Lighthouse Parenting Programme's realist evaluation reported less prominence in terms of the importance parents attached to reflecting on their attachment history and its impact on their relationships. While most parents acknowledged the support provided to enhance their awareness of others' mental states, discussions related to early childhood experiences were vague and did not significantly contribute to understanding current relationships, including those with their children.

The differences in finding across the studies may stem from various factors. For instance, the individual delivery of the Daisy programme allowed practitioners to dedicate full sessions to exploring parents' past experiences, fostering deeper reflection. In contrast, the group format of the Lighthouse Parenting Programme may have limited opportunities for in-depth exploration of individual experiences. Additionally, differences in interview formats, such as the length and depth of questioning, could have influenced participants' reports, with the qualitative study providing a more detailed account due to its extensive follow-up questions and examples.

Despite these differences, the findings align with Slade's (2007) description of mechanisms of change in mentalization-based interventions. For example, she suggests that the therapist's role in modelling reflectiveness and reframing techniques helps parents develop a more integrated perspective of their

experiences and relationships. Moreover, that promoting curiosity in parents about their children's experiences fosters a mentalizing stance that encourages reflective thinking in relationships.

In conclusion, while the three studies underscore the importance of promoting reflection on mental states within mentalization-based parenting interventions, variations in results across papers highlights the complexity of this mechanism. Further research is needed to explore how differences in intervention delivery and assessment methodologies influence the depth and effectiveness of reflective practices in supporting parental change and improving child outcomes.

1.2.1.2. Sense of safety in the therapeutic relationship

The promotion of a therapeutic relationship characterized by a sense of safety, trust, and non-judgment emerged as a core mechanism of change in the three studies, although the findings provide varying perspectives on this theme.

The systematic review emphasized the therapeutic mentalizing relationship as a key component in most reviewed interventions. It highlighted the importance of practitioners maintaining a curious stance about parents' thoughts and feelings, fostering an environment of trust and safety.

Similarly, the qualitative study underscored the crucial role of the therapeutic relationship in achieving positive outcomes. Stakeholders emphasized the practitioners' genuine belief in the parents' potential for change, creating an environment where parents felt listened to, valued, and safe from judgment. This relationship was perceived to have facilitated the development of trust in participating parents, fostering engagement and learning from the programme.

The realist evaluation provided further insights into the therapeutic relationship's significance, particularly within the group environment. Participants valued the practitioners' and group members' capacity to listen without judgment and to create a consistent and structured environment conducive

to open communication. Interestingly, this aspect was universally valued regardless of participants' ultimate outcomes.

The broader literature suggests that epistemic trust (ET), defined as the individual's trust in new knowledge from another person, is crucial for intervention engagement and effectiveness (Fonagy & Allison, 2014; Knappen et al 2022). Mentalization interventions in general aim to cultivate ET within the therapeutic relationship, with the goal of extending this trust to other interpersonal connections. The qualitative findings of the studies suggest that the interventions promoted the development of ET within the therapeutic relationship by creating an environment of safety, openness, curiosity, and non-judgment.

Despite participants in the Daisy programme presenting with histories of adverse childhood experiences and mistrust, they reported benefiting from the therapeutic relationship, suggesting that the cultivation of ET facilitated engagement and positive outcomes. However, it's worth noting that while all participants in the LPP intervention acknowledged or appreciated the safe environment, not all reported an improvement in their mistrust; in fact, two individuals reported worsened mistrust. Nevertheless, these parents were among the most engaged with the programme, as a minimum of 40% of session attendance was one of the inclusion criteria for the study. This suggests that although some level of trust may have been built within the group possibly leading to engagement, it may not have necessarily translated into improved overall mistrust post-treatment. This nuanced response to epistemic trust underscores the complexity of its role in intervention’s engagement and outcomes.

The practitioner's stance of curiosity and ability to think about mental states, along with their mentalizing approach seems to have been a pivotal aspect within the therapeutic relationship described above. It is possible that their mentalizing stance modelled mentalization within relationships for parents. By fostering an environment where clients' minds were considered, the therapeutic relationship appears to have provided a powerful therapeutic experience, eliciting the development of mentalization.

In conclusion, the three studies converge on the importance of a therapeutic relationship characterized by safety, trust, and non-judgment as a mechanism of change in mentalization-based parenting interventions. This mechanism likely fostered engagement, learning, and positive outcomes, highlighting its critical role in supporting parents and promoting intervention effectiveness. However, while the therapeutic relationship might have impacted participants engagement, it seems likely that other factors could have influenced parents' overall mistrust despite the positive therapeutic relationship. Future studies should explore factors such as cumulative childhood adversity and parents' prior history with services and their impact on mistrust change.

1.2.2. Practical aspects of interventions

The three studies highlighted that along with the relational and therapeutic components of interventions, most programmes also offered some form of more practical information, advice or support. The literature review revealed that interventions often did so through parental education, guidance on maternal mental health, and assistance with basic needs. Out of these three, interventions most commonly offered parental education which typically included providing information on child development and directive parenting strategies. However, the practical support provided by the Daisy and the Lighthouse programmes were very different in their focus and their intensity.

The qualitative study of the Daisy programme demonstrated robust practical support, information and advice beyond parenting issues, addressing issues such as housing, attending appointments, accessing clean clothes, and connecting parents with services for substance misuse and perinatal health. Additionally, practical advice was provided on financial matters and parenting. External professionals noted that the multidisciplinary nature of the service enabled the provision of diverse support beyond therapy. It's plausible that the programme's attention to parents' concrete problems contributed to the positive relationship between the service and the parents. This effective response to practical issues may have made parents feel heard, validated, and understood, fostering a sense of holistic care and trust. Furthermore, this aspect of the intervention aligns with the wider literature emphasizing the role

of health, social, and educational services in promoting adequate parenting and protecting against child maltreatment (Austin et al., 2020). Thus, the programme's support in connecting parents with community services may have served as an additional protective factor in reducing parental risk.

The Lighthouse programme didn't provide support for participants' basic needs. Instead, the practical support offered focused on providing psychoeducation and parenting advice. Interestingly only parents with unfavourable outcomes highlighted this aspect of the intervention as beneficial; it was not mentioned by parents who showed improvement in risk and bonding with their children. It is possible that the difference in reports between parents with better and worse outcomes in relation to this mechanism was shaped by participants' treatment preferences. Evidence suggests that clients' attachment style and/or personality traits make them more likely to prefer one therapeutic approach than other and that interventions that match these preferences result in better treatment outcomes (Petronzi and Masciale, 2015; Swift *et al.,* 2010; Swift *et al.,* 2018). For instance, a study by Petronzi and Masciale (2015) found that people with a personality characterised by openness and a secure attachment style preferred a psychodynamic approach whereas people with fearful (avoidant) attachment preferred a cognitive-behavioural approach. This could suggest that parents' who highlighted the parenting education and advise mechanism might have been parents who showed a preference for a more cognitive approach and therefore benefited less from the more introspective psychodynamic aspect of the intervention. In this sense their preference and capacity to benefit from an intervention that is mostly psychodynamic could have been influenced by their attachment style and personality traits.

The amount and type of practical support offered by interventions in these studies was different. Findings highlight the importance of addressing both therapeutic relational components as well as practical, concrete ones to adequately support the multifaceted needs of vulnerable families. Furthermore, they prompt consideration of the association between parents' attachment styles and

their preferences for a particular therapeutic approach and how that might impact the effectiveness of the MB interventions.

1.2.3. Delivery aspects of interventions

The two interventions that were evaluated as part of this thesis, the Daisy and Lighthouse programmes were very different in some aspects of their delivery. In this section we will discuss how these differences could have influenced their different results.

1.2.3.1. Flexibility of delivery

The mentalization-based interventions examined in this thesis demonstrated varying degrees of flexibility in terms of their frequency, topics, location of contact, and intensity. Stakeholder reports from the Lighthouse programme, which adhered to a manualized approach, indicated that the frequency and duration of contact were consistent and predetermined. While this provided a clear structure, it also restricted the program's ability to accommodate individual needs regarding intensity, frequency, and location. Although individual sessions were available, offering some flexibility, parents did not view them as a significant mechanism of change. Instead, they emphasised the importance of the predictability of the programme's frequency and structure, which was described as having fostered a sense of safety and strengthened relationships among group members.

In contrast, the qualitative study on the Daisy programme identified the tailoring of the intervention to participants' needs as a key mechanism of change. The programme exhibited flexibility in adjusting intensity, timing, topic, length, frequency, and practitioner availability to match participants' circumstances, state of mind, and skills. While some external practitioners questioned the frequency of contact, service users perceived it as validating their needs. This flexibility, combined with the frequency of contact, likely contributed to the development of a therapeutic relationship perceived as reliable by participants.

Practitioners attributed the Daisy programme's flexibility to its extended duration, supporting parents for up to 9 months, compared to the 20-week duration of the Lighthouse programme. This longer timeframe and the individual delivery of this intervention was regarded positively as it allowed for more comprehensive support and provided the opportunity to tailor the intervention's pace and intensity according to the parents' preferences.

Even though qualitative reports indicate that the extended duration of the intervention contributed to positive outcomes, the wider literature might contradict this assertion. For example, the meta-analysis conducted by Bakermans-Kranenburg and colleagues (2003) on sensitivity and attachment interventions found that shorter interventions were the most effective. Further investigation is needed to assess if these findings are consistent in the context of risk of child maltreatment considering the complexity of needs among parents attending these programmes.

In conclusion, these findings suggest that while manualized interventions provide structure and predictability, likely contributing to parents' sense of safety and consistency, flexibility in tailoring interventions to individual needs offers validation and is likely to enhance engagement.

1.2.3.2. Individual vs group

Another notable distinction between the two interventions examined in this thesis is their delivery format, either individually or in a group setting. The Daisy programme was delivered on an individual basis, which, as discussed earlier, likely allowed for a more tailored intervention to meet the specific needs of each participant. For instance, a practitioner highlighted the importance of adapting language and pacing when working with a parent who had learning difficulties and cognitive processing challenges. Such individualized adjustments would be difficult to implement in a group setting like the Lighthouse programme, making individual delivery advantageous in this scenario.

However, the realist evaluation provided insights into elements from group interventions that could have been beneficial for parents attending the Lighthouse programme. Analysis of the data revealed

that participants reported deriving value from learning from others' experiences and appreciated the openness of sharing stories within the group. All participants who achieved more positive outcomes highlighted the benefit of this mechanism, as did the majority of parents (3 out of 4) who experienced deterioration in one or two outcomes. Interestingly, the sole parent who viewed this aspect of the intervention as unhelpful and unnecessary also exhibited the poorest outcomes, demonstrating a deterioration in the risk of child abuse, parental bonding, and mistrust.

In summary, both modalities offered different advantages to participants. The individual intervention provided flexibility allowing practitioners to tailor it to parents' needs, while the group offered parents the possibility to learn from others' experiences. However, it seems that learning from others wasn't necessarily beneficial for all parents.

1.2.3.3. In person vs online

Another notable aspect of the interventions was their mode of delivery, either in person or virtually.

The Daisy programme was conducted in person, often within the parents' homes, providing numerous opportunities for reflection. This setting allowed the practitioner to adapt to the parents' pace and readiness in a familiar and comfortable environment, potentially enhancing the effectiveness of the intervention. We could hypothesise that this helped parents to engage in deeper discussions and reflections about their own childhood history and how this had impacted their current relationships. This could explain why this was a mechanism that seemed to have been more relevant for parents who joined the Daisy programme compared to the ones who participated in the Lighthouse programme.

In contrast, the Lighthouse programme utilized an online format, prompting varied feedback from participants. Parents who experienced more positive outcomes generally expressed favourable views regarding the online delivery method, noting its ability to help them overcome initial hesitations, such as feelings of anxiety or shyness about joining a group. Instead, participants with less favourable outcomes expressed frustrations with technological failures and expressed a preference for face-to-

face interactions. This disparity in feedback highlights potential benefits and barriers associated with the online format, which could either promote or hinder participant engagement and satisfaction. Recent meta-analyses indicate that parenting interventions offered online seem to be as effective as face-to-face interventions (Leijten *et al.,* 2024; van Ijzendoorn *et al.*, 2023). Research has also explored parents' preferences for online or in-person modalities (Gonzales *et al.,* 2021). The evidence suggests that parents who prefer face-to-face interventions tend to have younger children, present with higher psychological distress, have higher concern about their children's emotions and behaviour, and inconsistency in their parenting (Gonzales *et al.,* 2021). In contrast, parents who preferred media-based programmes had older children, were less concerned about their psychological distress and about their child's behaviour and emotions and less inconsistent in their parenting (Gonzales *et al.,* 2021). Despite the findings that argue that online interventions are as effective as in person interventions, it is possible that parents who reported a preference for in-person support were experiencing higher levels of distress and concern which were felt to be insufficiently supported through the online intervention.

This emphasise the importance of considering individual preferences and needs when designing intervention formats. Additionally, they underscore the need for flexibility in delivery methods to accommodate diverse participant circumstances and preferences effectively. Further research into the efficacy of virtual interventions, particularly in addressing the needs of vulnerable populations, is warranted to inform future programme design and implementation strategies.

1.3. Possible parental characteristics influencing capacity to benefit from MBT interventions

The realist evaluation provided information that could be relevant to understanding what enables some parents to benefit more from interventions such as the Lighthouse programme.

1.3.1. Multiple difficulties on multiple areas

Upon examining the data, a notable pattern emerged regarding the contextual factors impacting parental outcomes. It became evident that parents facing challenges in only one of the three contexts—ACEs, internal difficulties, or external pressures—appeared to achieve more favourable outcomes. These outcomes included either a reduction in risk, maintaining a low level of risk, enhancing parental bonding, or sustaining or reducing mistrust to below average levels. However, it's essential to acknowledge an exception to this trend: one parent, despite having a high number of ACEs and experiencing internal difficulties, still showed improvement across all outcomes, and we will address this exception later in our discussion.

Conversely, parents who experienced poorer outcomes tended to encounter difficulties in at least two areas: external pressures, such as not cohabiting with a partner, having multiple children, or facing financial challenges, coupled with either multiple sources of childhood adversity or internal difficulties. This suggests that the accumulation of contextual pressures may contribute to less favourable intervention outcomes.

This finding underscores the significance of considering the complexity of contextual factors when designing and implementing interventions. It highlights the importance of addressing multiple sources of stress and adversity to effectively support parents and enhance outcomes.

1.3.2. Cumulative childhood adversity

The realist evaluation has also brought to light a crucial aspect regarding how parents' childhood adversity might impact their response to interventions. Initially, our analysis revealed that the majority of parents who experienced positive outcomes tended to have fewer Adverse Childhood Experiences (ACEs), with only one parent in this category reporting six ACEs. This suggests a potential link between lower levels of childhood adversity and successful intervention outcomes.

Within the group of parents who experienced less favourable outcomes, a distinct pattern emerged. Specifically, those who showed a reduction in mistrust despite facing high abuse risk and reduced

bonding tended to have experienced a lower number of adverse childhood experiences. In contrast, parents who saw a deterioration in mistrust alongside other negative outcomes typically had a higher-than-average number of ACEs. This pattern suggests how the extent of childhood adversity may influence parents' ability to benefit from intervention mechanisms, especially in regard to mistrust.

A deeper examination of the subgroup of parents who experienced a decline in mistrust revealed that the parent with the highest number of ACEs had exhibited the biggest deterioration in abuse risk, stepping up from a low to a high-risk category post-treatment. This parent reported boredom and disinterest regarding other parents' stories, failing to derive insight from others' experiences. This might suggest that for individuals with extensive trauma histories, the intervention may be less effective or even counterproductive. The link between mistrust and childhood adversity and its impact on treatment outcomes has been addressed theoretically. For instance, in the context of psychopathology and personality disorder treatment, Knapen and colleagues (2020) propose a pathway through which the impact of interpersonal trauma and interpersonal dysfunction on treatment outcomes is mediated by the client's disposition to be epistemically (mis)trustful. They propose that for information provided as part of an intervention to lead to social, emotional, cognitive, or behavioural changes, the client needs to be able to accept, value, and integrate such information. In other words, the client needs to release vigilance and mistrust in order to be receptive to the information. The authors propose that this 'openness' will depend on the dispositional trust or mistrust of the client which is likely the result of his/her attachment history (Knapen *et al.* 2020). More importantly, the authors highlight that a mistrustful disposition could impair clients' social learning ability which could impact their capacity to benefit from interventions. Moreover, they hypothesize that more severe dispositional forms of epistemic mistrust will become an obstacle for the therapeutic alliance making it less effective or even detrimental. The theoretical pathway drawn by these authors could help us to better understand the detrimental results obtained by the parent discussed above. The multiple cumulative childhood adverse events that this mother reported could explain her epistemic

mistrust and with this her inability to learn from others' experiences, which then resulted in adverse outcomes as suggested by the model proposed by Knapen and colleagues (2020).

While this theoretical hypothesis hasn't yet been supported by research, exploratory studies such as the one conducted by Blair and colleagues (2019) with a welfare population, obtained similar associations finding that the number of parents' ACEs had an impact on the effect of a parenting intervention.

This highlights the need for future interventions to be more attuned to the needs of participants with complex trauma histories. For instance, Knapen (2020) recommends specialist treatment that focuses on the therapeutic alliance and includes mentalizing techniques. In the case of the LPP intervention, despite its clear mentalizing focus, it is possible that building a therapeutic alliance became more challenging in a group-virtual setting particularly with parents presenting with entrenched epistemic mistrust due to their history of relational trauma. In this sense we could hypothesise that parents with such characteristics might benefit more from robust individual support which can foster the therapeutic alliance following the pace and capacities of parents who are particularly vulnerable. Group interventions such the Lighthouse might pose too big a challenge for individuals who struggle to trust and learn in the context of relationships.

1.3.3. External factors such as income, number of children and single parenting

The analysis has shed light on the significant role of external factors in either facilitating or hindering parental outcomes and mitigating various risk factors. As previously mentioned, parents in the study tended to experience negative outcomes in risk, bonding, and mistrust when they faced at least one form of external difficulty, such as low income, having more children than the sample average, or lacking a live-in partner (E+), alongside other contextual challenges. This aligns with existing literature indicating that single parents, those with low income, and those with more than two children are at higher risk of abuse compared to parents with partners and fewer children (Younas and Gutman,

2023). Similarly, research suggests that marriage or cohabitation can serve as a protective factor against physical abuse (Price-Wolf, 2014).

Within the sample, two parents shared the same high number of ACEs and an additional area of contextual difficulty yet achieved contrasting outcomes. The differentiating factor was the nature of the second difficulty area. The parent with more favourable outcomes grappled with issues such as relationship stress with their partner, emotional closeness to their child, and high levels of mistrust but benefited from external protective factors like higher income and having a cohabiting partner. Conversely, the parent with less favourable outcomes, despite fewer internal difficulties, fell into the lowest income bracket and lacked a live-in partner. This suggests that external protective factors, such as financial stability and social support, may offset the adverse effects of ACEs on parents' ability to benefit from interventions like the Lighthouse Parenting Programme (LPP).

Furthermore, interventions like the LPP primarily target internal difficulties, focusing on promoting epistemic trust and enhancing parents' understanding of themselves and their children. While addressing the needs of parents with psychological and relational challenges, they may overlook external stressors that impede progress.

This finding resonates with Maslow's hierarchy of needs theory, which posits that individuals must satisfy basic physiological and safety needs before fulfilling higher-order needs like belongingness and self-actualization (Maslow, 1943). This may explain why parents with more external resources derived greater benefit from the intervention than those lacking basic needs. Other interventions, such as the Daisy programme, place greater emphasis on providing integrated support that considers both emotional and practical needs. However, not all programmes can offer such comprehensive support, underscoring the importance of collaborating with broader support systems encompassing mental health services, social services, and community organizations.

2. Limitations and strengths

2.1. Limitations of the study

2.1.1. Small sample sizes

The small sample sizes observed across the three studies presented in this thesis represent a notable limitation. For instance, despite encompassing twice the number of studies compared to the most recent previous review on interventions targeting reflective functioning, the systematic review and meta-analysis were still constrained by a relatively limited pool of studies. Consequently, the meta-analyses may have lacked statistical power, potentially resulting in nonsignificant results for certain outcomes or failing to capture the size of the effect of the intervention.

Similarly, the qualitative study focusing on the Daisy programme encountered challenges in recruiting a sufficient sample of mothers. Out of the twenty-one mothers who had participated in the programme at the time of recruitment, only four agreed to participate in the study. Among them, three successfully maintained custody of their babies, while the remaining participant had her baby placed in foster care. Engaging a larger number of women, especially those experiencing separation from their babies, proved challenging. However, efforts were made to incorporate the experiences of the broader group of women through the accounts of their keyworkers and other involved professionals.

In the realist evaluation, sampling challenges were primarily related to limited access to data for secondary analysis due to participant inclusion criteria. With a sample size of only 8 parents, the study's ability to identify clear Context-Mechanism-Outcome (CMO) patterns was constrained. While the study provides valuable insights into intervention mechanisms and outcomes, further in-depth hypothesis development may be necessary before the hypotheses developed are evaluated further.

These limitations highlight the complexities and challenges inherent in conducting research within vulnerable populations. Future studies should aim to address these limitations by identifying more effective methods of involving such vulnerable families in studies to ensure that larger and more diverse sample are included. By addressing these challenges, researchers can enhance the robustness

and applicability of their findings, ultimately contributing to the development of more effective interventions and policies for supporting vulnerable populations.

2.1.2. Lack of multiple coders/ reviewers

The studies conducted in this thesis were limited by the use of a single main coder and reviewer, primarily due to constraints in available resources. While efforts were made to mitigate this limitation, such as seeking feedback from supervisors and external researchers, the reliance on a single coder may have affected the trustworthiness and depth of the data collected compared to studies with multiple reviewers and coders.

In the systematic review, only one reviewer conducted the search and selection of studies during the title and abstract screening phase, precluding the calculation of inter-rater reliability. However, a second reviewer validated the selected studies during the full-text screening stage and concurred with the final selection. Additionally, the data extraction process was consistent with that of an earlier review.

Similarly, in the qualitative study, the coding process was undertaken by the thesis candidate, with subsequent review and feedback provided by the supervisor. Further review and refinement of the data and assigned codes were carried out by an external researcher, leading to agreement on the final themes included in the study.

In the realist evaluation, deductive coding of parents' interviews was conducted based on the theoretical mechanisms outlined in the program's theory of change. The supervisor reviewed the assigned codes and reached consensus on their appropriateness.

The candidate followed recommendations for qualitative research suggested by Lincoln and Guba (1986) to establish credibility, transferability, dependability and confirmability. As described, however, even though there was only one main coder, we used techniques such as peer debriefing and

external audit to strengthen the study credibility and dependability. Further techniques such as triangulation and thick description of circumstances were used to improve confirmability and transferability of the studies (Lincoln and Guba, 1986). For instance, the qualitative study included triangulation of reports from multiple stakeholders, and a detail description of the coding processes and interventions settings were included in the three studies.

Despite the measures taken to reduce subjectivity in the coding process, future studies could benefit from employing multiple reviewers and coders to enhance the trustworthiness of the findings.

2.1.3. Measuring reflective functioning and risk of abuse

The measurement of outcomes in the systematic review and realist evaluation posed methodological challenges that could have influenced the study findings.

In the meta-analysis of interventions targeting parental reflective functioning (PRF), studies included in the analysis utilized either interview-based measures (Parent Developmental Interview PDI) or self-report questionnaires (PRFQ) to assess PRF. While this decision was made thoughtfully, the synthesis of outcomes from different measures raises questions about the comparability and validity of the findings. Moreover, concerns have been raised regarding ability of these measures to capture the concept of parental mentalization. For example, verbal-based measures like the PDI may inadvertently assess parents' verbal skills rather than their capacity to mentalize, potentially confounding the results (Håkansson *et al.*, 2018). Additionally, issues such as test-retest reliability and the unidimensional scoring further complicate the interpretation of PRF outcomes. Despite these challenges, the PDI remains a widely used measure due to its established reliability and validity, albeit with acknowledged limitations. Criticism of the other measure, the Parental Reflective Functioning Questionnaire (PRFQ), focuses on the limited data regarding its validity, reliability, and practical applicability (Katznelson, 2014).

In the realist evaluation, the measurement of outcomes, in terms of the assessment of the risk of child abuse, was problematic. The study employed the Child Abuse Potential Inventory (CAPI) abuse subscale, a subjective measure of parental risk of physical abuse. While this measure was chosen for its feasibility and relevance to the intervention focus, it may not fully capture the multifaceted nature of parental risk. By primarily focusing on the risk of physical abuse, the use of this measure may overlook other dimensions of parental risk, such as neglect or emotional abuse, which could impact intervention outcomes. Furthermore, the level of social care involvement, the objective measure of this outcome, despite looking at the risk of maltreatment in a more integrative way also presented challenges. Social care decisions often take into consideration factors beyond the parents' abilities, such as for example, the child's additional needs, parents' health, the support around the family, etc. This complexity and our lack of access to information regarding the rationale behind the social care decisions for our sample, would have made our CMO analysis unviable.

These limitations underscore the need for careful consideration and validation of outcome measures in research studies. Future studies should strive to utilize measures that comprehensively capture the constructs of interest while minimizing potential biases and limitations. Additionally, efforts to validate and refine existing measures could enhance the reliability and validity of study findings, ultimately advancing our understanding of intervention effectiveness and outcomes.

2.2. Strengths

Despite its limitations, this thesis makes significant contributions to the study of mentalization-based interventions for vulnerable parents during pregnancy and infancy.

First, the diverse methodology employed in this thesis addresses the multifaceted nature of these interventions. The systematic review and meta-analysis synthesize quantitative data on the effectiveness of mentalization-based interventions and identify their components based on information from intervention manuals and reviewed papers. These findings are further explored in the qualitative

analysis of the Daisy programme, which delves into the perceived impact of the intervention and identifies crucial components for bringing about change. By including perspectives from service users, practitioners, and stakeholders, this study offers a comprehensive understanding of the intervention's mechanisms and outcomes. Additionally, the realist evaluation explores the effectiveness of the Lighthouse Parenting Programme in reducing the risk of maltreatment, considering both intervention mechanisms and participants' contextual factors. Together, these studies provide insight into the impact, mechanisms, and context of mentalization-based interventions, enhancing our understanding of their effectiveness and informing future research and practice.

Second, each paper within the thesis presents unique strengths. The literature review and meta-analysis represent the first comprehensive review of mentalization-based interventions targeting the prenatal, perinatal, and infancy developmental periods, expanding upon previous research in this area. The qualitative study benefits from triangulating perspectives from various stakeholder groups involved in the Daisy programme, thereby increasing the validity of the study's findings. Finally, the realist evaluation adds to the literature by examining the context-mechanisms-outcome patterns of the Lighthouse Parenting Programme, shedding light on both theoretical and practical influences on intervention effectiveness. By elucidating the mechanisms of change and contextual factors that might shape intervention outcomes, this study contributes valuable insights to the field.

In summary, the methodological diversity and individual strengths of each paper contribute to a comprehensive understanding of mentalization-based interventions for vulnerable parents. By addressing various aspects of intervention effectiveness, mechanisms, and context, this thesis advances our knowledge and informs future research and practice in this important area.

3. Implications for practice

The findings of this thesis underscore four issues that could be valuable for the clinical practice:

First, targeting the development of a therapeutic alliance based on trust, safety, validation, and non-judgement is a key aspect of MB interventions particularly when working with vulnerable parents.

The mentalizing stance and curious wondering of practitioners not only promotes trust but also models a different way of interacting with others. In this sense, adequate training, ongoing professional development and supervision in mentalization-based approaches are essential for practitioners.

Second, interventions should consider providing both flexible and more structured elements. While interventions should accommodate the diverse needs and circumstances of participants, they must also recognize the value of providing consistency within interventions. Manualized approaches offer clarity and predictability, fostering a sense of safety and trust among participants, thereby contributing to engagement and positive outcomes.

Third, the suitability of intervention formats and participants' characteristics and preferences should be carefully considered. The power of group dynamics in group-based interventions can enhance engagement and promote learning from others' experiences. However, parents with social learning impairments due to their experiences of childhood adversity and relational trauma might struggle to benefit from this format. In those cases, it might be important to consider more individualized interventions that follow parents' pace to build a positive therapeutic relationship that can promote trust and change. Similarly, careful consideration of the advantages and challenges of in-person and online formats is essential to accommodate diverse participant preferences while ensuring accessibility and engagement.

Fourth, practitioners should consider the influence of external factors, such as income, family structure, and social support, on intervention outcomes. Parents' external stressors and unmet basic needs should be addressed alongside the provision of internal-focused interventions. In this sense, multidisciplinary collaboration with other service providers, including mental health professionals, social workers, and community organizations, is vital to address the complex needs of vulnerable parents comprehensively. Such collaboration facilitates holistic support and access to additional resources and services.

4. Direction for future research

Future research in the field of mentalization-based interventions for vulnerable parents during pregnancy and infancy should focus on several key areas to advance knowledge and improve intervention effectiveness.

First, there is a need to investigate the mechanisms that moderate or mediate the effectiveness of these interventions. Studies should explore psychosocial factors such as maternal depression, history of childhood adversity, and social factors, such as income and cohabitation, that might influence the relationship between intervention participation and outcomes such as parental reflective functioning and risk of maltreatment (RF). Understanding about these mechanisms could provide valuable insights into how interventions work and inform the development of targeted and more effective interventions.

Second, future research should examine the optimal timing and duration of interventions. Studies could investigate whether interventions delivered solely during the antenatal or postnatal periods are more effective than those provided throughout the perinatal period. Additionally, exploring the impact of intervention length on outcomes and identifying the optimal duration for maximum effectiveness is crucial. Understanding these factors can help tailor interventions to better meet the needs of vulnerable parents and improve outcomes for both parents and infants.

Last, further studies should include quantitative methodology with larger and more varied samples of parents to further test the hypotheses generated by this realist evaluation. It would also be important further explore the impact of MBT parenting interventions on children's socioemotional outcomes beyond infant attachment. Given the limited measures available to assess infants' socioemotional wellbeing there is a need for longitudinal research to examine the long-term effects of interventions on children's development. Studies should follow participants over time to assess the sustained impact of interventions on parenting and child outcomes such as emotion regulation and social abilities.

Longitudinal research can provide valuable insights into the lasting effects of interventions and help identify factors that contribute to sustained positive outcomes.

By addressing these key research gaps and incorporating innovative approaches, researchers can develop more effective interventions that better meet the needs of vulnerable parents and their infants.

VIII. Conclusion

This thesis suggests that mentalization-based interventions could play a role in supporting vulnerable parents during pregnancy and infancy. Despite some inconsistencies and limitations in the evidence, the findings collectively contribute to our understanding of the impact and mechanisms of change associated with these interventions.

The results indicate qualitative signs of improvement in parental reflective functioning following participation in mentalization-based interventions. However, quantitatively these results are inconclusive due to modest effect sizes and risk of bias.

The studies shed light on the multifaceted nature of mentalization-based interventions, which can encompass both relational and practical components. The relational focus of mentalization based interventions emerged as a key mechanism of change, specifically a therapeutic relationship characterized by safety, trust, and non-judgmentalism, facilitated engagement, learning, and positive outcomes for participants. Practical support, including parental education and assistance with basic needs, complemented the relational aspects of interventions, addressing the diverse needs of vulnerable families.

Despite these promising findings, several avenues for future research and practice emerge from this thesis. First, there is a need for larger-scale studies with more rigorous methodologies to further elucidate the impact and mechanisms of mentalization-based interventions. Such studies should explore the role of moderators and mediators in intervention outcomes, considering individual differences and contextual factors that may influence effectiveness.

Furthermore, given the variability in intervention delivery and content, future studies should examine the optimal balance between relational and practical components to maximize intervention effectiveness. This entails exploring the differential impact of various intervention elements on parental outcomes and identifying the core ingredients that contribute to positive change.

In conclusion, while mentalization-based interventions qualitatively show promise in supporting vulnerable parents and their infants, further research is needed to assess their quantitative effectiveness, optimize intervention strategies, enhance understanding of mechanisms of change, and tailor interventions to diverse populations' needs. By addressing these gaps, we will have a clearer view on the real impact of these interventions to better inform policies and programmes to effectively promote positive parenting outcomes, mitigate the risk of child maltreatment, and ultimately improve the well-being of families in vulnerable circumstances.

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Appendices

Appendix 1.1. Ethics approval from University of Oxford. DREC of the Department of Social Policy and Intervention, University of Oxford (SPI_DREC_20-21-004)

Department of Social Policy and Intervention
University of Oxford

Barnett House, 32 Wellington Square,
Oxford, OX1 2ER, United Kingdom
www.spi.ox.ac.uk

Ana Fernandez
Department of Social Policy and Intervention
University of Oxford

SPI_DREC_20-21_004

3rd March 2021

Dear Ana,

The effectiveness of mentalization based programmes to improve perinatal reflective functioning and parent-infant interaction during the perinatal stage: A systematic review and component analysis

Your application for research ethics approval in connection with your research project has been considered by the Departmental Research Ethics Committee (DREC) in accordance with the procedures laid down by the University for Ethical Approval.

I am pleased to inform you that, on the basis of the information provided, the proposed research has been judged as meeting appropriate ethical standards and DREC approval has been granted.

If any revisions to your research methodology are made subsequent to this approval, these must be detailed in writing and submitted to DREC immediately.

Yours sincerely,

Dr Jamie Lachman
Chair of DREC

Point of contact: ethics@spi.ox.ac.uk | +44 (0) 1865 280734
General enquiries: tel. +44 (0) 1865 270325

Appendix 1.2. Ethics approval from University of Oxford. I-DREC of the Social Sciences and Humanities Division, University of Oxford (R79282/RE001)

SOCIAL SCIENCES & HUMANITIES
INTERDIVISIONAL RESEARCH ETHICS COMMITTEE

Research Governance, Ethics & Assurance Team, Research Services, University of Oxford,
Boundary Brook House, Churchill Drive, Headington, Oxford OX3 7GB, UK
Tel: +44(0)1865 289881 Email: ethics@socsci.ox.ac.uk



Ana Beatriz Fernandez Jondec
Department of Social Policy and Intervention
University of Oxford

6 January 2022

Dear Ana,

Research ethics approval

Research title: Pregnant women at risk of child removal: Impact evaluation of an intensive attachment and mentalization based perinatal programme

Research ethics reference: R79282/RE001

The above application has been considered by the Social Sciences and Humanities Interdivisional Research Ethics Committee (SSH IDREC) in accordance with the University's procedures for ethical approval of all research involving human participants.

I am pleased to confirm that, on the basis of the information provided to the IDREC, ethics approval has now been granted for this study.

Please note the following:

Personal data: It is the responsibility of the PI to ensure that all personal data collected during the project is managed in accordance with the University's guidance and legal requirements.

In-person activities: Any data collection involving in-person interactions with participants must have an up-to-date Covid-19 fieldwork risk assessment in place; further guidance is available from the Safety Office's website.

Amendments: Please notify the committee if you intend to make any amendments to the information in your ethics application as submitted at date of this approval, as all changes must receive ethical approval prior to implementation. The amendment form is available on the SSH IDREC webpage.

Adverse events: The SSH IDRECs must be notified within seven days of any unexpected adverse consequences to the research participants or other people involved in this research project.

Audit: The SSH IDREC audits a sample of projects each year to enable the Committee to monitor the ethical aspects of research in progress.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ethics@socsci.ox.ac.uk.

Yours sincerely

DocuSigned by:
Alison Monk
162CBC83B879410...

Alison Monk
Research Ethics Administrator

for

Jennifer Blaikie
Research Ethics Manager (SSH IDREC)

Appendix 1.3. Ethics approval from University of Oxford. DREC of the Department of Social Policy and Intervention, University of Oxford (SPI_C1A_23_017)

Department of Social Policy and Intervention
University of Oxford

Barnett House, 32 Wellington Square,
Oxford, OX1 2ER, United Kingdom
www.spi.ox.ac.uk

Anna Fernandez Jondec
Department of Social Policy and Intervention
University of Oxford

SPI_C1A_23_017

4th March 2024

Dear Ana,

A realist evaluation of the processes and outcomes of an innovative and theory-based intervention for parents with children at-risk of maltreatment

Your application for research ethics approval in connection with your research project has been considered by the Departmental Research Ethics Committee (DREC) in accordance with the procedures laid down by the University for Ethical Approval.

I am pleased to inform you that, on the basis of the information provided, the proposed research has been judged as meeting appropriate ethical standards and DREC approval has been granted.

This approval is subject to the obtaining the required risk assessments where necessary.

If any revisions to your research methodology are made subsequent to this approval, these must be detailed in writing and submitted to DREC immediately.

Yours sincerely,

Dr Jamie Lachman
Chair of DREC

Point of contact: ethics@spi.ox.ac.uk | +44 (0) 1865 280734
General enquiries: tel. +44 (0) 1865 270325