Thesis Submitted in Partial Fulfilment of the Degree of Doctor of Clinical Psychology (DClinPsych)

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Word Counts

Component	Words
Systematic Review of the Literature (SRL): The Lived Experience of Adolescent Depression: A Meta-Aggregation	7158
Service Improvement Project (SIP): The Needs and Experiences of Young People When Their Cancer Treatment Ends	5305
Theoretically Driven Research Project (TDRP): Adolescent Depression: The Role of Social Media	5299
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Systematic Review of the Literature

Background: The under-recognition of depression in adolescents suggests that a better understanding of its presentation may be needed. Conceptualisations of adolescent depression are largely the same as adult depression, with minimal consideration of developmental stage. Exploration of first-hand accounts could help to identify any unique features of adolescent depression. Therefore, this review aimed to gain an understanding of the lived experience of adolescents with depression to inform clinical practice.

Method: A systematic review was performed to identify qualitative studies on first-hand experiences of adolescent depression. Methodological quality of included papers was assessed and key data was extracted. Meta-aggregation was the method of synthesis, whereby extracted themes from the papers were grouped according to shared meanings.

Results: Fifteen studies were identified for inclusion. Aggregation of 56 themes resulted in 16 categories and three synthesised findings encompassing key aspects of adolescent depression: causes, symptoms and coping.

Conclusions: Individual differences were evident in adolescents' perspectives on causes, symptoms and coping in the context of depression, thus detailed assessment by practitioners is indicated. It is noteworthy that adolescents reported some experiences, such as social disconnection and anger, that are not captured by current diagnostic criteria. Practitioners should be aware of the potential differences in presentation of adolescent and adult depression.

Service Improvement Project

Background: Existing literature implies there may be gaps in post-treatment support for young people with cancer. This service improvement project aimed to understand the needs and experiences of young people when ending active cancer treatment in a UK children's hospital.

Methods: Semi-structured interviews were conducted with nine young people, aged 13 -18 years, who had finished cancer treatment and were receiving follow-up care. The data was analysed using thematic analysis.

Results: Four main themes were developed: being in the dark; separation from the hospital; consequences of cancer; and getting back to normal life.

Discussion: Young people faced varying physical, psychological and social challenges when adjusting to life after cancer treatment. There is a need for a consistent approach to assessing young people's biopsychosocial needs at the end of treatment, with subsequent provision of individualised support.

Theoretically Driven Research Project

Objective: Depression often arises during adolescence. Social media forms a significant part of adolescents' lives, yet its impact on depression is unclear. We aimed to develop a questionnaire assessing positive and negative ways of using social media in order to understand the potential role of social media in adolescent depression.

Method: 1140 adolescents (including 569 with depression) aged 11-18 (M_{age} = 16.3 years; 62.2% female; 82.5% White) completed the original item pool. Factor analyses were conducted to derive the Social Media Scale (SMS). SMS scores were compared in adolescents with and without depression.

Results: The 45-item, nine-factor, SMS, had an acceptable model fit and adequate internal consistency ($\alpha = .70$ to .92). There was no significant difference between groups in factor scores for 'Pleasure' and 'Connecting with others'. However, factor scores were higher ($p < .001$) in the depressed group with large effect sizes for 'Social comparison' and 'Passing time', medium effect sizes for 'Impression management', 'Hostility towards others' and 'Hostility from others', and small effect sizes for 'Fear of social exclusion' and 'Seeking support'.

Conclusions: The SMS may be a useful tool to assess motivations, behaviours, thoughts, and experiences related to social media use. Positive aspects of social media use were no less common among adolescents with depression than adolescents without depression. Yet, negative aspects of social media use were more common among adolescents with depression, with the largest differences for social comparison and using social media to pass time. These may be specific targets for future psychological interventions.

Systematic Review of the Literature (SRL)

Title: The Lived Experience of Adolescent Depression: A Meta-Aggregation

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Proposed Journal: Child and Adolescent Mental Health was chosen because it publishes reviews that are pertinent to clinical practice. Additionally, the review was deemed relevant to a range of professionals working with adolescents, matching the multidisciplinary audience of the journal. Author guidelines are located here: https://acamh.onlinelibrary.wiley.com/hub/journal/14753588/forauthors.html

Abstract

Background: The under-recognition of depression in adolescents suggests that a better understanding of its presentation may be needed. Conceptualisations of adolescent depression are largely the same as adult depression, with minimal consideration of developmental stage. Exploration of first-hand accounts could help to identify any unique features of adolescent depression. Therefore, this review aimed to gain an understanding of the lived experience of adolescents with depression to inform clinical practice.

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Conclusions: Individual differences were evident in adolescents' perspectives on causes, symptoms and coping in the context of depression, thus detailed assessment by practitioners is indicated. It is noteworthy that adolescents reported some experiences, such as social disconnection and anger, that are not captured by current diagnostic criteria. Practitioners should be aware of the potential differences in presentation of adolescent and adult depression.

Keywords: adolescence, depression, qualitative, systematic review, meta-aggregation

Introduction

Adolescence is a time of rapid developmental changes that confer vulnerability to the onset of mental health problems (Rapee et al., 2019). 34% of adolescents worldwide are estimated to have raised depressive symptoms (Shorey et al., 2022). Depression is associated with increased risk of suicide, which is a leading cause of death in young people (World Health Organisation, 2021). Adolescent depression also has long-term consequences for health, social and educational outcomes (Clayborne et al., 2019). Whilst the detrimental impact of untreated adolescent depression is evident, it is frequently undetected (Fazel & Stein, 2015; Kramer & Garralda, 1998; Mullen, 2018). A better understanding of the symptoms and contributory factors may help to improve recognition of adolescent depression.

The conceptualisation of unipolar depression (i.e. depressive disorders), according to the criteria set out in the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5; American Psychiatric Association, 2013) and the International Classification of Diseases-11 (ICD-11; World Health Organization, 2022), is largely the same in adolescents and adults. Symptoms include low mood, anhedonia, appetite changes, psychomotor changes, fatigue, impaired concentration or thinking abilities, suicidal ideation, worthlessness, hopelessness, and sleep problems (American Psychiatric Association, 2013; World Health Organization, 2022). The only difference for adolescents is that DSM-5 recognises irritability as an alternative symptom to low mood (Bernaras et al., 2019). Although research indicates that adult criteria can be applied to adolescents (Pearce, 1978; Roberts et al., 1995), differences in frequency of symptoms according to age have been identified (Carlson & Kashani, 1988; Nardi et al., 2013; Rice et al., 2019). For example, physical symptoms (e.g. fatigue) were found to be more common in adolescents, whilst anhedonia and concentration difficulties were more common in adults (Rice et al., 2019). Furthermore, the use of measures and clinical interviews based on diagnostic criteria in quantitative studies imposes constraints on whether any qualitative differences in symptoms of adolescent depression are captured.

A review of theories regarding the onset and maintenance of adolescent depression found that current understanding draws primarily from adult models (Bernaras et al., 2019). The lack of adolescent-specific aetiological models of depression thus mirrors the lack of adolescent-specific diagnostic criteria. The main psychological theories applied to adolescents are cognitive-behavioural models and interpersonal models (Méndez et al., 2021). A negative cognitive style (Beck, 1979) and relationship disturbances (Weissman & Markowitz, 2002) are thought to contribute to the onset and maintenance of depression in each of these theories respectively, which has been supported by some empirical findings (McCarty et al., 2007; Weersing et al., 2017). However, a review found that psychological therapy benefits were smaller for adolescents than adults with depression (Cuijpers et al., 2020), thus there may be age-related aetiological differences (Rice et al., 2019).

Although there has been some support for the application of conceptualisations and aetiological models of adult depression to adolescents, this top-down approach has limitations. Notably, the lack of attention to the influence of developmental stage has received criticism (Bernaras et al., 2019). It has long been recognised that adolescents are not simply smaller versions of adults when it comes to understanding and treating physical health conditions (Larcher, 2015). Due to biological, social and cognitive differences between adolescents and adults, this is likely to also apply to mental health conditions (Weiss & Garber, 2003). In order to identify any unique aspects of adolescent depression, beyond existing conceptualisations and models, a bottom-up approach is needed.

Qualitative research has the potential to advance our understanding of adolescent depression. There is increasing recognition of the value in obtaining service user perspectives in healthcare research (Al-Busaidi, 2008); it enables us to learn from people with lived experience i.e. first-hand experiences of a phenomenon (Given, 2008; Manen, 1990). Furthermore, aggregation of qualitative studies (i.e. meta-aggregation) allows one to go beyond individual studies and make recommendations to inform practice (Lockwood et al., 2020). By collating the subjective experiences of adolescents with depression, it could inform assessment practices (Flanagan et al., 2010) and ultimately improve recognition of depression.

A previous qualitative systematic review on adolescent depression identified features that are not captured in diagnostic criteria, such as a sense of disconnection from self and others (Dundon, 2006). A limitation of this review was that it did not appraise study quality. Additionally, further qualitative research on adolescent depression has been conducted since 2006, thus a more recent review is warranted. The current systematic review aimed to:

- Gain an understanding of the lived experience of adolescent depression i.e. first-hand experiences of developing and living with depression.
- Assess the quality of qualitative studies exploring adolescents' experience of depression.
- Generate recommendations for practice, particularly with regards to recognition of adolescent depression.

Methods

This systematic review used the Joanna Briggs Institute (JBI) approach to meta-aggregation (Lockwood et al., 2015; Lockwood et al., 2020). The underpinning philosophy of meta-aggregation is pragmatism i.e. the practical usefulness of findings is considered central to this methodology (Hannes & Lockwood, 2011). This matched the review aims to produce recommendations for practice based on the lived experiences of adolescents with depression. The review was prospectively registered with PROSPERO (CRD42020198141).

Study Eligibility

Types of Participants

This review included papers with an adolescent sample, which was defined as an age range of 10-19 years (World Health Organisation, n.d.). Provided the mean age was within the 10-19 age range, samples up to 24 years old were included to allow for more recent conceptualisations of adolescence (Sawyer et al., 2018). Participants were required to have a diagnosis of unipolar depression. Co-morbid mental health diagnoses were permitted to reflect the high rates of comorbidity in clinical practice (Rohde, 2008). For mixed samples, papers were only included where the analysis was separate for adolescents with depression. Papers were excluded if the sample were selected on the basis of having a physical health condition or drawn from a perinatal population.

Phenomena of Interest

This review included papers which explored the lived experience of depression (i.e. experiences of features, symptoms, causes, consequences, impact, coping, or social support). Papers were excluded where the focus was predominantly on experiences related to contact with services (i.e. experiences of formal help-seeking, diagnosis, treatment, intervention, or recovery).

Context

The review only included papers written in English, but there were no restrictions on geographical location.

Types of Studies

This review included studies that utilised a recognised qualitative methodology and were published in a peer-reviewed journal. Studies with samples that were retrospectively reporting on experiences (i.e. participants no longer had depression) were excluded.

Search Strategy

PsycINFO (via OVID), CINAHL (via EBSCO), MEDLINE (via OVID), and EMBASE (via OVID) were searched. These are deemed the major databases for health-related research and qualitative studies (Booth, 2016). Variations of search terms related to adolescent, depression, and qualitative research were used for the keywords and subject headings (see Appendix 1.A). The search strategy was informed by literature on search strategies (Aromataris & Riitano, 2014; Booth, 2016), text and keywords in papers on adolescent depression, and consultation with a librarian. Preliminary searches were completed to obtain a balance between specificity and sensitivity of terms. Searches were initially conducted on 7th August 2021 and rerun on 1st March 2022 to identify new studies since the initial search. There was no restriction on publication date.

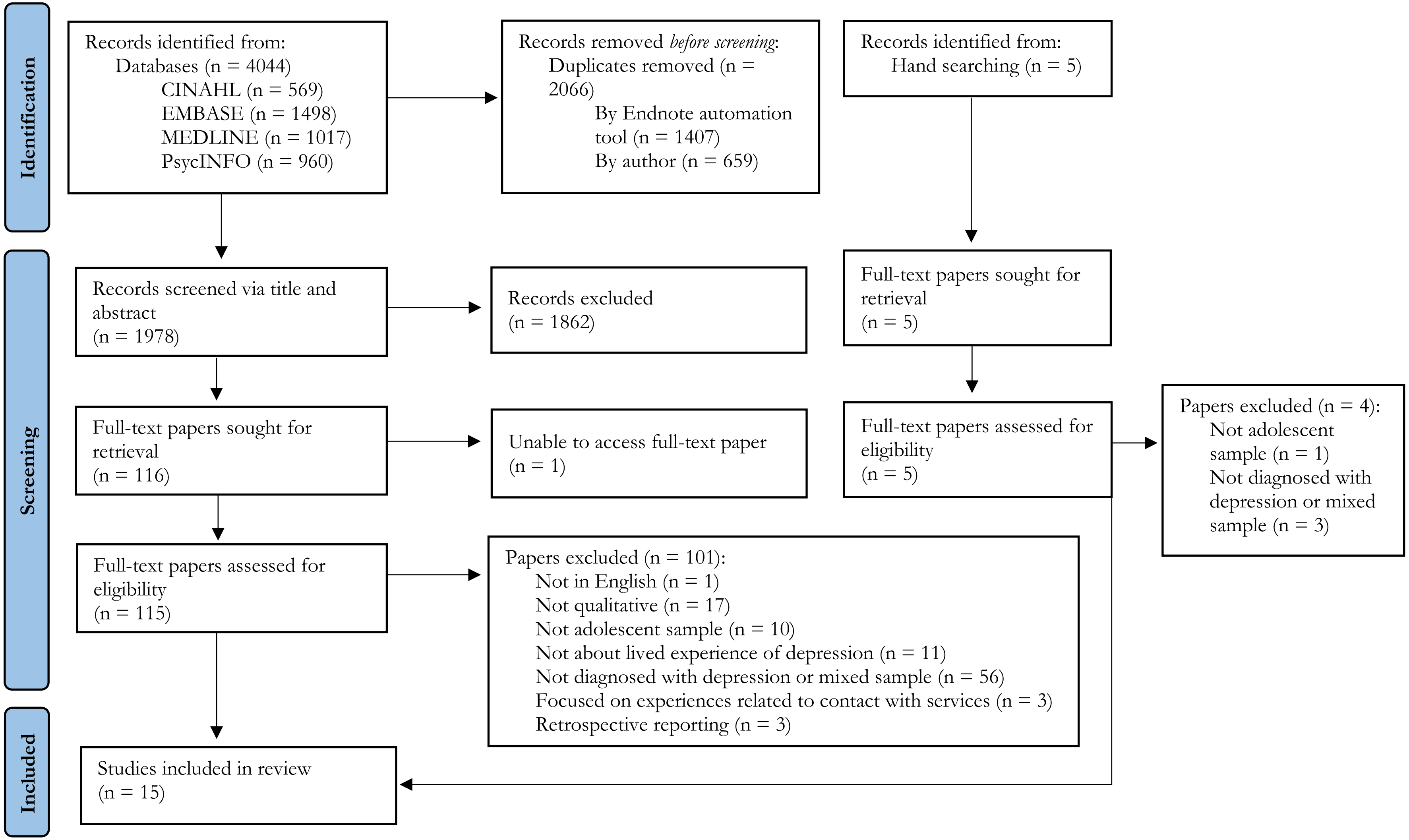
Study Selection

The study selection process is illustrated in Figure 1 using the PRISMA diagram (Page et al., 2021). The initial and updated database searches resulted in a total of 4044 references. References were exported to Endnote X9 and 2066 duplicates were removed. Subsequently, 1978 references were exported to an Excel database for screening against the inclusion and exclusion criteria. Firstly, screening of title and abstracts was completed. Pilot screening was conducted by the reviewers on 30 references to test the criteria. The second reviewer (MK) independently screened 25% of references from the initial search. Inter-rater reliability, calculated using Cohen's kappa, was moderate (k = 0.46; Altman, 1990). Therefore, screening criteria were refined. A further 10% of references were screened by MK, resulting in a near perfect agreement (k = 0.90). Disagreements were discussed and any disputed papers went through to full text screening. In total, 1862 papers were excluded at this stage, resulting in 116 papers. The full text of one paper could not be accessed and thus was excluded.

Subsequently, 115 papers were assessed for eligibility via full text screening. Authors of papers were contacted where insufficient information was provided. Pilot screening was conducted by the reviewers on five papers. Additionally, the second reviewer (MK) independently screened 20% of the papers from the initial search, and there was perfect agreement (k = 1.0). In total, 101 papers were excluded at this stage, with primary reasons for inclusion reported in Figure 1 (Liberati et al., 2009). Fourteen papers were identified for inclusion via the database searching. Reference lists of these papers were scanned to identify any additional studies. This resulted in one further paper for inclusion, thus bringing the total to 15.

Figure 1

PRISMA Diagram of Study Selection Process



Quality Appraisal

The methodological quality of studies was critically appraised using the JBI checklist for qualitative research (Joanna Briggs Institute, 2017; Lockwood et al., 2015). This has been compared favourably to other tools, especially with regards to its focus on assessing methodological congruence (Hannes et al., 2010). The checklist also evaluates reflexivity, ethics, interpretive validity, and accuracy of conclusions. No studies were excluded on the basis of quality. The checklist was piloted on two papers by the reviewers. Additionally, the second reviewer (MK) independently completed quality appraisal on five papers. Cohen's kappa indicated good agreement (k = 0.63; Altman, 1990). Quality criteria were refined and a further two papers were independently rated by MK, resulting in near perfect agreement (k = 0.86). Discrepancies in ratings were resolved through discussion or via the third reviewer (MC).

Data Extraction

Data was extracted from papers using the JBI data extraction tool (Lockwood et al., 2020), which included information on aims, methodology, methods, analysis, participants, context, and conclusions. Findings were also extracted. Findings were defined as themes or categories presented within the results section of included papers (Lockwood et al., 2020). Where there were sub-themes, findings were extracted at the major theme level to minimise overlapping concepts (Braun & Clarke, 2013) and ensure roughly equal weightings of findings across papers. Each finding was assigned a credibility rating in accordance with how well the findings were supported by a participant quote (Lockwood et al., 2015; Lockwood et al., 2020). Unequivocal findings were those where the accompanying quote clearly and explicitly supported the theme without question. Credible findings were those where the accompanying quote partly supported the theme or was somewhat ambiguous. Unsupported findings were those where the quote did not support the theme or no quote was provided (Hunter et al., 2019; Lockwood et al., 2020). Where multiple quotes were presented, the quote most closely aligned with the finding was rated (Hunter et al., 2019). The second reviewer (MK) independently performed data extraction on seven papers to ensure accuracy. Discrepancies in credibility ratings were resolved through discussion or via the third reviewer (MC).

Data Synthesis

NVivo software was used to facilitate meta-aggregation of the included findings. Categories were developed through aggregation of two or more findings that shared a characteristic or meaning (Lockwood et al., 2020). Some findings were placed in more than one category due to encompassing multiple components. Subsequently, these categories were grouped to form three synthesised findings (Lockwood et al., 2020) representing key features of the lived experience of adolescent depression.

Results

Study Characteristics

The extracted characteristics for the 15 studies are presented in Appendix 1.B. The studies were published between 2002 and 2021 and covered seven different countries: USA (n = 5), UK (n = 4), Australia (n = 2), Germany (n = 1), Canada (n = 1), Belgium (n = 1), and Latvia (n = 1). All studies explored the lived experience of adolescents with depression. Seven studies had narrowed aims, such as exploring perspectives on social support (McCann et al., 2012b), interpersonal relationships (Elsina & Martinsone, 2020), beliefs about causes of depression, (Midgley et al., 2017), the role of social media (Radovic et al., 2017), the role of social representations (De Mol et al., 2018), and specific experiences of rumination (Oliver et al., 2015) and sleep problems (Jernslett et al., 2021). Some studies had a particular cultural stance, including understanding the experience of Black adolescents in rural areas (Hannor-Walker et al., 2020) and African American adolescents in an inner city (Ofonedu et al., 2013).

Nine studies used phenomenology as the overarching methodology (De Mol et al., 2018; Farmer, 2002; Hannor-Walker et al., 2020; McCann et al., 2012a, 2012b; Ofonedu et al., 2013; Oliver et al., 2015; Weitkamp et al., 2016; Woodgate, 2006). One study used a grounded theory approach (Wisdom & Green, 2004) and another used a qualitative description approach

(Radovic et al., 2017). Four studies did not specify a specific qualitative methodology and adopted theoretically flexible methods of framework analysis (Midgley et al., 2015; Midgley et al., 2017) and thematic analysis (Elsina & Martinsone, 2020; Jernslett et al., 2021). All studies used interviews for data collection.

Across the studies, sample size varied from 5 to 77 participants and ages ranged from 11 to 22 years. Studies had more females than males, reflecting gender differences in depression prevalence rates (Hankin et al., 2015). Whilst all papers stated that participants had a diagnosis of depression, a minority gave specific details. Diagnoses specified included depressive episode (Elsina & Martinsone, 2020; Weitkamp et al., 2016), recurrent depressive disorder (Elsina & Martinsone, 2020), moderate to severe depression (Midgley et al., 2015; Midgley et al., 2017), and major depressive disorder (De Mol et al., 2018; Jernslett et al., 2021).

Methodological Quality

Table 1 provides the quality appraisal ratings of studies. The questions (Q1-Q10) in the JBI quality appraisal tool (Joanna Briggs Institute, 2017) are in Appendix 1.C. A paper (Parkinson et al., 2016) outlining the methodology adopted by Midgley et al. (2015) and Midgley et al. (2017) was used to inform quality appraisal decisions for these papers.

Individual papers ranged from satisfying 40% to 100% of the questions on the quality appraisal tool. A collective strength was that all studies received ethical approval. Additionally, all studies except one (Hannor-Walker et al., 2020) had a clear relationship between the data and conclusions drawn. A further strength was the congruence between the methodology and interpretation of results for most studies. The two studies which didn’t meet this criterion did not state an overarching methodology or philosophical perspective, which may have been influenced by them being secondary analysis of data (Elsina & Martinsone, 2020; Jernslett et al., 2021). Whilst these papers used the theoretically flexible method of thematic analysis, a specific stance should have been adopted and stated (Braun & Clarke, 2013). Consequently, all the questions about congruence with the methodology were rated as unclear for these papers. The other studies largely had good congruence between the methodology and research question, data collection, and analysis. The inconsistencies that existed included addressing a causal question (De Mol et al., 2018), use of data saturation (McCann et al., 2012a, 2012b), inter-rater reliability checks (Oliver et al., 2015), and positivist content analysis (Hannor-Walker et al., 2020) all within the context of interpretive phenomenology. A further inconsistency was the use of purposive sampling in a grounded theory study (Wisdom & Green, 2004).

An area of weakness across the papers was situating the researcher and addressing their influence on the research. Even for the 53% of studies which did provide theoretical or cultural attributes of the researcher, the information tended to be brief, such as stating their job role. Furthermore, only 33% of studies addressed the influence of the researcher, such as using a bracketing interview or reflexive log (De Mol et al., 2018; Farmer, 2002; Hannor-Walker et al., 2020; Jernslett et al., 2021; Midgley et al., 2017).

Table 1

Quality Appraisal Ratings

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total (/10)
McCann et al. (2012b)	Y	Y	N	N	Y	N	N	Y	Y	Y	6
McCann et al. (2012a)	Y	Y	N	Y	Y	N	N	Y	Y	Y	7
Weitkamp et al. (2016)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	9
Farmer (2002)	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	9
Woodgate (2006)	Y	Y	Y	Y	Y	Y	N	N	Y	Y	8
Hannor-Walker et al. (2020)	Y	Y	Y	N	Y	Y	Y	N	Y	U	7
Midgley et al. (2017)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
Ofonedu et al. (2013)	Y	Y	Y	Y	Y	N	U	Y	Y	Y	8
Radovic et al. (2017)	U	Y	Y	U	Y	Y	N	Y	Y	Y	7
Midgley et al. (2015)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8

Oliver et al. (2015)	Y	Y	Y	N	Y	N	N	Y	Y	Y	7
De Mol et al. (2018)	U	N	Y	Y	Y	Y	Y	Y	Y	Y	8
Jernslett et al. (2021)	U	U	U	U	U	Y	Y	Y	Y	Y	5
Wisdom and Green (2004)	U	Y	N	Y	Y	N	N	N	Y	Y	5
Elsina and Martinsone (2020)	U	U	U	U	U	Y	N	Y	Y	Y	4
% Yes	67	80	67	60	87	53	33	80	100	93	72

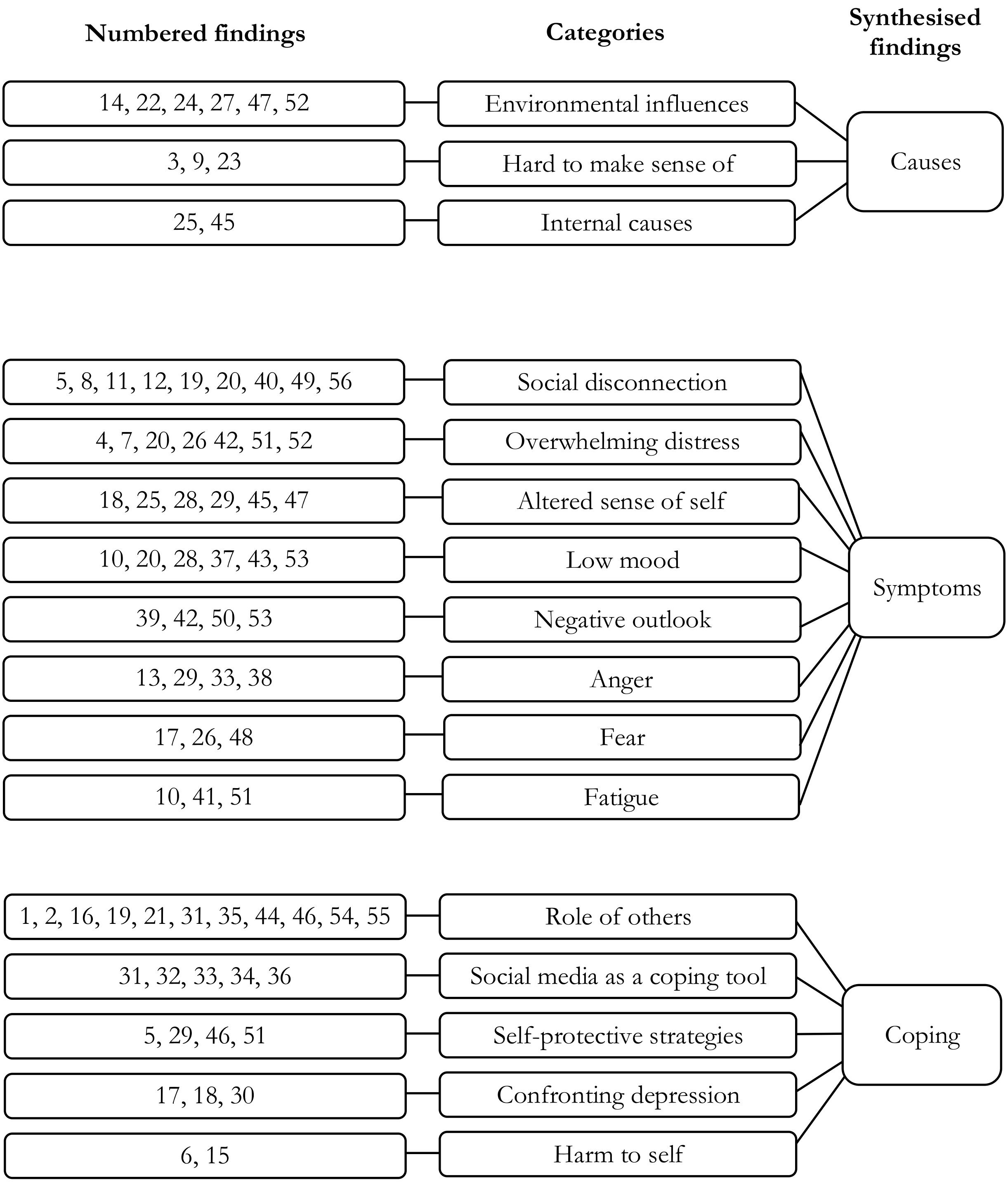
Note. N = No; Y = Yes; U = Unclear

Synthesised Findings

It was noted that McCann et al. (2012b) and McCann et al. (2012a) drew on the same overall dataset, and Midgley et al. (2015) and Midgley et al. (2017) drew on the same overall dataset. However, the papers had different aims, the themes were informed by distinct areas within the datasets, and there was no overlap in participant quotes used. Therefore, findings from all these papers were included. Sixty-four findings were initially extracted from the 15 papers. Six findings were excluded due to not being relevant to the review question as they focused on experiences related to contact with services. Two findings were excluded due to being unsupported by any participant quotes. The resulting 56 included findings are displayed in Appendix 1.D with credibility ratings. As displayed in Figure 2, aggregation of findings resulted in 16 categories, which were further aggregated into three synthesised findings.

Figure 2

The Process of Aggregating Findings Into Categories and Synthesised Findings



Note. Each extracted finding was assigned a number. See Appendix 1.D for the finding associated with each number.

Synthesised Finding 1: Causes (i.e. Making Sense of Why Depression Arose)

11 findings and 3 categories contributed to the first synthesised finding. Adolescents expressed varying perspectives regarding the causes of their depression. The category with the most findings was 'Environmental influences', indicating that many adolescents identified events and contextual factors that contributed to depression. A range of challenging life experiences were described. This included traumatic experiences (e.g. abuse, neglect, domestic violence, bullying, and physical health complications), family challenges (e.g. conflict, parental physical or mental illness, and parental separation), transitions (e.g. leaving school, exams, moving country, and being taken into care), and losses (e.g. death of someone close, relationship breakups, and becoming homeless; De Mol et al., 2018; Farmer, 2002; Hannor-Walker et al., 2020; Midgley et al., 2017; Ofonedu et al., 2013; Wisdom & Green, 2004). These experiences were linked to feelings of inadequacy or anger by some (Midgley et al., 2017): "I have lot of hate in my heart about everything that happened" (Ofonedu et al., 2013, p. 100). Wider societal views and pressures were also identified as being influential, such as expectations that they should be happy as a teenager (Wisdom & Green, 2004) or should be in a romantic relationship (De Mol et al., 2018). When these expectations were not met, it contributed to depressive symptoms.

In the process of trying to understand why they became depressed, some adolescents focused on 'Internal causes' including genetic factors, personality, and individual responses to stressors (De Mol et al., 2018; Midgley et al., 2017). This could result in a sense of personal failure and self-blame: "I sorta brought it upon myself" (Midgley et al., 2017, p. 31).

Causes were not always known, and a common experience was that depression was 'Hard to make sense of.' Some adolescents were unsure why they had become depressed and didn't understand what they were going through (McCann et al., 2012a; Midgley et al., 2017): "I only know that I, well, suffer constantly, but why, I don't know" (Weitkamp et al., 2016, p. 6). This confusion could cause considerable distress (Weitkamp et al., 2016) and frustration (Midgley et al., 2017).

Synthesised Finding 2: Symptoms (i.e. Perceived Psychological, Physical and Social Features of Depression)

33 findings and 8 categories contributed to the second synthesised finding. Adolescents with depression described varied psychological, physical and social symptoms. The category with the most findings was 'Social disconnection', which encompassed social withdrawal and isolation: "you want to isolate yourself and you don't actually want to be a part of all the normal things" (McCann et al., 2012a, p. 337). This could be in the form of physical separation, which could be due to being excluded by others (Midgley et al., 2015). Additionally, some chose to be on their own (Farmer, 2002; McCann et al., 2012a) due to tiredness, academic demands (Elsina & Martinsone, 2020), or fear of harm from or towards others (Hannor-Walker et al., 2020; Midgley et al., 2015). Emotional distance was created by not feeling understood (Midgley et al., 2015; Weitkamp et al., 2016; Woodgate, 2006), lack of affection from or towards others (Farmer, 2002; Midgley et al., 2017), or not disclosing difficulties (Elsina & Martinsone, 2020). The latter could be due to stigma, mistrust, or concerns about being a burden (Elsina & Martinsone, 2020; McCann et al., 2012a; Weitkamp et al., 2016). Some described isolation leading to feelings of loneliness (Hannor-Walker et al., 2020; Weitkamp et al., 2016): "you feel like you don't have anybody" (Farmer, 2002, p. 574). Additionally, societal views on the importance of social connectedness could further exacerbate distress (De Mol et al., 2018).

'Altered sense of self' was another feature of depression experienced by adolescents. Disruptions in daily life tasks could result in adolescents feeling different to their normal self or to others (Ofonedu et al., 2013; Woodgate, 2006). Aspects of their identity could be threatened or lost: "People can lose their athletic side or their literature side or their schooling side" (Woodgate, 2006, p. 265). Adolescents also described feeling bad about themselves, such as feeling like a failure or inadequate (De Mol et al., 2018; Midgley et al., 2017; Ofonedu et al., 2013). This could be influenced by perceived opinions of others: "I think that people think that I'm not capable to have a relationship" (De Mol et al., 2018, p. 6).

Adolescents also described experiences consistent with 'Low mood'. Sadness was commonly described (Hannor-Walker et al., 2020; Midgley et al., 2015; Oliver et al., 2015) and was often prolonged: "It's just like the wind, sadness, and it's just smacking you and smacking you" (Ofonedu et al., 2013, p. 100). This could be felt in the body as a heaviness (Wisdom & Green, 2004), with descriptions such as "dragging feeling" (Midgley et al., 2015, p. 273). Sadness appeared to result in frequent crying and poor motivation (Farmer, 2002; Midgley et al., 2015; Ofonedu et al., 2013; Wisdom & Green, 2004).

Low mood seemed to coexist with a 'Negative outlook' on life (Wisdom & Green, 2004). Some adolescents talked about having repetitive negative thoughts or images about the past or future (Midgley et al., 2015): "Well there's nothing good to look back on. Is there anything good to look forward to?" (Oliver et al., 2015, p. 5). This could interfere with sleep (Jernslett et al., 2021). Indeed, 'Fatigue' was another symptom described by adolescents. A major impact of this was academic difficulties due to problems with oversleeping and concentration (Farmer, 2002; Jernslett et al., 2021): "I can never get up so I am always late for school…when I am in lessons I don't concentrate and then I - you know I get really behind" (Midgley et al., 2015, p. 275).

In addition to sadness, adolescents talked about having "a short fuse" (Midgley et al., 2015, p. 274), such that 'Anger' was a common emotion. It could be felt towards self or others: "I hated myself… I hated them, them being the rest of the world" (Farmer, 2002, p. 576). Some found it helpful to express anger by ranting on social media (Radovic et al., 2017). Anger could also be expressed through aggression towards family and teachers, such as shouting, throwing objects, or hitting (Farmer, 2002; Midgley et al., 2015; Ofonedu et al., 2013). Aggression could also be directed inwards through self-harm (Midgley et al., 2015). For some, this aggression appeared to arise out of feelings of vulnerability (Ofonedu et al., 2013). Others noticed that the aggression made them feel worse about themselves (Midgley et al., 2015).

Adolescents' distress could worsen as depression progressed (Wisdom & Green, 2004) resulting in 'Overwhelming distress.' Immense and relentless suffering was evident when depression was likened to “a heart ripping apart” (Ofonedu et al., 2013, p. 100), a “black hole” (Weitkamp et al., 2016, p. 4), and “a pit where you just can’t get out anymore” (McCann et al., 2012a, p. 337). Facing symptoms could be “a disorienting battle” (Oliver et al., 2015, p. 5) leading to feelings of helplessness and hopelessness (Jernslett et al., 2021; McCann et al., 2012a).

Given the level of suffering, it is unsurprising that adolescents described ‘Fear’ in the context of depression. This included concerns that negative emotions would be ceaseless and stop them having a good future (De Mol et al., 2018). Some adolescents talked about having moments when they felt happy and problems felt more manageable (Ofonedu et al., 2013; Woodgate, 2006). However, a sense that depression “is waiting in the shadows” (Woodgate, 2006, p. 264) led to considerable anxiety about things deteriorating again. Indeed, relapse was described as part of living with depression (Ofonedu et al., 2013).

Synthesised Finding 3: Coping (i.e. Positive and Negative Ways of Responding to Depression)

23 findings and 5 categories contributed to the third synthesised finding. Adolescents described both positive and negative forms of coping and social support. The ‘Role of others’ in coping with depression was commonly mentioned (Farmer, 2002; McCann et al., 2012b). Some adolescents talked about helpful support from family, partners, friends, teachers, and online communities (Elsina & Martinsone, 2020; McCann et al., 2012b; Radovic et al., 2017). This included actual or desired experiences of people recognising difficulties, being understanding, being available to talk and listen, remaining in regular contact, helping with daily tasks, and suggesting activities (Elsina & Martinsone, 2020; Farmer, 2002; McCann et al., 2012b; Woodgate, 2006). Some adolescents described how sharing thoughts or feelings with others could be helpful: “I get up and go and tell my mum that I’m thinking like that and she’ll calm me down” (Oliver et al., 2015, p. 8).

Conversely, some adolescents spoke about an absence of social support (Hannor-Walker et al., 2020): “I get nothing (support) from my parents and my friends. I try to explain to what degree it is, and it scares them" (McCann et al., 2012b, p. 457). Experiences included being excluded by peers, lack of communication or involvement from parents, receiving criticism or verbal aggression, academic pressures, and the failure of others to recognise depression or take it seriously (De Mol et al., 2018; Elsina & Martinsone, 2020; Farmer, 2002). Some adolescents described how unhelpful interactions could negatively impact coping. For example, family arguments could trigger rumination (Oliver et al., 2015) and encountering others' posts about risky behaviour on social media could lead to urges to engage in these behaviours (Radovic et al., 2017).

In addition to the role of others in coping, adolescents described their own personal ways of responding to depression. This included 'Self-protective strategies' that aimed to protect themselves from difficult emotions and the world. Concerns about stigma, judgement, and bullying led to some adolescents being aggressive (Ofonedu et al., 2013) or hiding their depression (De Mol et al., 2018; McCann et al., 2012b): "I have programmed myself not to show any sadness at that school because they will take it and eat it up" (Ofonedu et al., 2013, p. 100). Furthermore, oversleeping could be a way to escape from the painful reality of depression (Jernslett et al., 2021). Adolescent's also described ways that 'Harm to self' could occur in response to depression. Risky behaviours existed on a spectrum and included cutting, drug and alcohol misuse, risky sexual behaviour, and suicide attempts (Farmer, 2002; McCann et al., 2012a). These actions could reflect apathy or ways of escaping emotional distress: "I don't really have a place to lead a productive life so let's just end it" (Farmer, 2002, p. 578).

Some adolescents described using 'Social media as a coping tool', which could be helpful or unhelpful (Radovic et al., 2017). Social media could be an outlet to express feelings, look at positive or funny posts, or gain social support: "they would tweet at me and say, 'Are you okay? Text me if you need anything.'" (Radovic et al., 2017, p. 7) However, social media use could also result in negative social comparisons and judgement from others, thus adolescents were more careful with their use over time (Radovic et al., 2017).

A positive form of coping described by adolescents was 'Confronting depression.' This including acknowledging their difficulties, doing enjoyable activities, holding onto happy moments (Ofonedu et al., 2013), and trying to "look on the bright side" (Woodgate, 2006, p. 265). Some adolescents expressed that they wanted to get better, but were also fearful of things getting worse (Ofonedu et al., 2013; Woodgate, 2006).

Discussion

This systematic review primarily aimed to understand the lived experience of adolescents with depression. Meta-aggregation of results from 15 qualitative studies resulted in three synthesised findings. These represent adolescents' perspectives on 1) causes, 2) symptoms, and 3) coping within the context of depression. Although included studies had mixed methodological quality, only results that were supported by participant quotes were included in the meta-aggregation, thus ensuring the synthesised findings were credible (Hannes et al., 2018). Each synthesised finding is discussed in relation to existing literature and implications for clinical practice.

Causes

Adolescents' accounts of the causes of their depression varied, however negative environmental circumstances were commonly mentioned. The inclusion of two papers specifically focused on experiences of Black adolescents may have contributed to the prominence of this topic, given that this population is at greater risk of experiencing adverse childhood experiences (Hicks et al., 2020). The negative life events reported by adolescents largely comprised of challenging relational experiences, thus corresponding with theorised triggers around transition, grief, and conflict within the interpersonal model of depression (Weissman et al., 2017). Failing to meet societal expectations of a 'normal' adolescent also appeared to feed into depression thus indicating a need to consider systemic influences at a broader level too. Some adolescents referred to personal characteristics (e.g. personality) that caused their depression, which could result in self-blame. Thus, it may be important for practitioners to attend to the meanings adolescents attach to causes of depression.

Whilst some adolescents could identity causes, this review highlighted that a common subjective experience was confusion about why they were depressed. Given that this could result in considerable distress, it is important for practitioners to be aware that asking adolescents questions about the onset of depression may require sensitivity, patience, and exploration. Furthermore, it is important for practitioners themselves to be aware of the risks factors, as indicated in guidelines by the National Institute for Health and Care Excellence (NICE; 2019).

Symptoms

Individual differences in depressive symptoms were evident from this review, as has been found in other research (Manfro et al., 2021; Nardi et al., 2013). Many experiences described by adolescents were analogous to core symptoms within DSM-5 (American Psychiatric Association, 2013) and ICD-11 (World Health Organization, 2022) criteria, including low mood and fatigue. Additionally, hopelessness was evident in the 'Negative outlook' and 'Overwhelming distress' categories and worthlessness was captured in the 'Altered sense of self' category. In relation to the latter, adolescents appeared to describe a broad impact on their identity because depression interfered with daily life tasks. Indeed, a quantitative study found that adolescents with depression viewed themselves more negatively than controls across varied domains such as academic ability, sports, and appearance (Dozois et al., 2012). Thus, sense of self might be particularly important for practitioners to pay attention to, as is indicated in cognitive therapy (Beck, 1979). Given that adolescence is a time of identity development (Erikson, 1994; Mahler et al., 1975), the significance of self-concept is understandable.

Some depressive symptoms listed in diagnostic criteria were absent from the results of this review. There were infrequent references to difficulties concentrating at school, with little mention of broader difficulties with thinking ability. Additionally, whilst there were occasional descriptions of poor motivation and apathy, anhedonia was not explicitly described by adolescents. Indeed, a quantitative study found that both anhedonia and impaired concentration were less common in adolescents than in adults (Rice et al., 2019). The minimal reporting of anhedonia by adolescents is particularly significant given that it is one of the two core symptoms, alongside low mood, in DSM-5 and ICD-11 criteria. Appetite and psychomotor changes were also rarely mentioned in the studies included in this review, but have been reported in quantitative research with adolescents (Orchard et al., 2017; Rice et al., 2019). It may be that adolescents do not link these specific symptoms to depression. Discrepancies in findings could also be explained by individual variation, thus assessment of a variety of symptoms is likely needed to inform individualised treatment targets.

This review further adds to our understanding of adolescent depression by capturing features which are not part of diagnostic criteria. One of the most common experiences described was social disconnection. This was in the form of physical or emotional isolation, which could result in loneliness. Indeed, another systematic review identified a cyclical relationship between loneliness and depression in young people (Achterbergh et al., 2020). Furthermore, loneliness was a central symptom of adolescent depression in network analyses (Manfro et al., 2021; Mullarkey et al., 2019). The impact of social disconnection may be especially significant during adolescence given the importance of social acceptance and peer relationships (Blakemore, 2012; Pitman et al., 2018).

Another symptom described by adolescents was anger. Whilst irritability is captured within the DSM-5 criteria, adolescents' accounts indicated that this often progressed to anger. This could be felt very intensely and result in aggressive behaviours towards self or others. The prominence of anger in adolescent depression is supported by other research (Crowe et al., 2006; Hammen & Compas, 1994; Jackson et al., 2011; Manfro et al., 2021). Hormonal changes as a result of puberty may make adolescents more vulnerable to anger (Buchanan et al., 1992). However, it is important that where anger is persistent, it is not disregarded as typical adolescent mood swings (Dundon, 2006; Moreh & O'Lawrence, 2016).

Another important experience identified in this review was the immense suffering that adolescents with depression face. Adolescents indicated that this was not always recognised or understood by people in their lives (De Mol et al., 2018; Elsina & Martinsone, 2020; McCann et al., 2012b). This may partly reflect the fact that, historically, depressive symptoms were seen as a normal part of adolescence (Arnett, 1999). Not only could adolescents' suffering lead to hopelessness, but also considerable fear about depression stealing their future. This may be understood in the context of their life stage: existential concerns can arise as young people develop abstracting thinking abilities (Wadsworth, 1996) and transition to adulthood (Berman et al., 2006). Adolescents' accounts, in addition to evidence on the detrimental long-term impact of depression (Clayborne et al., 2019), clearly indicate that depression needs to be taken seriously.

The NICE (2019) guidelines suggest that recognition of depression in adolescents should use self-report questionnaires and clinical interviews. Current assessment tools are largely based on diagnostic criteria which, in light of this review, appear to match many but not all of the lived experiences of adolescents with depression. This review indicates it would be important for practitioners to consider additional features, such as social disconnection and anger, and assess the level of distress and fear with regards to symptoms.

Coping

In relation to coping with depression, interpersonal influences were commonly described by adolescents. This adds to current literature indicating the importance of social support in outcomes for depression (George et al., 1989). The review findings suggest it is important for practitioners to assess support from family, friends, and teachers as this will likely impact on coping. Furthermore, it may be important to involve others in treatment, as is indicated in interpersonal therapy (Lipsitz & Markowitz, 2013). Interpersonal influences extended to the impact of social media, which appeared to encompass both positive and negative coping mechanisms. Given that social media has become so prominent in the lives of young people

(Pew Research Centre, 2018), it may be helpful for practitioners to assess nature of social media use.

To manage concerns about stigma, adolescents described how they might hide their depression from others. Indeed, adolescence is time of heightened attention to social evaluation (Somerville, 2013). Thus, this should be held in mind by practitioners when assessing depression, and a trusting relationship may need to be built initially before young people feel comfortable to disclose (Georgakakou-Koutsonikou & Williams, 2017). Another way that adolescents tried to cope with distress was by harming themselves, which is well-documented and supports the need for risk assessments. Adolescents also described helpful coping strategies they had developed independently; thus, it may be beneficial for practitioners to acknowledge the resilience and strengths that adolescents have.

Limitations

A drawback of the studies included in this review was a general lack of reflexivity. Indeed, this has been noted as a limitation of qualitative papers in other literature (Barusch et al., 2011). The lack of transparency regarding how the authors may have influenced the research prevents the review from determining the lenses through which the results of the included studies were generated (Florczak, 2021).

To ensure the review explored depression in a way that was useful for clinical services, only papers where adolescents had a depression diagnosis were included. However, this may limit the extent to which the findings capture early warning signs or aspects of depression beyond diagnostic criteria. Given that research evidence supports the view of depression as existing on a continuum (Bowins, 2015), it may be helpful for future reviews to synthesise the lived experience of elevated depressive symptoms to inform early recognition and prevention.

A further limitation of this review was having minimal studies which incorporated the experiences of depression in early adolescence (10-13 years old). This may reflect the onset of depression typically occurring from mid-adolescence (Malhi & Mann, 2018) or challenges conducting research with younger participants (Daelman et al., 2020). Given that rapid changes occur between 10-19 years old (Backes & Bonnie, 2019), stage of development within adolescence may influence the presentation of depression.

Investigating differences in depression based on demographics, including age, gender, and ethnicity, was beyond the scope of this review. The meta-aggregative approach extracts themes at the study-level, rather than findings at the level of the individual (Hannes & Lockwood, 2011). Given that most studies had samples with mixed age, gender, and ethnicity, the review is unable to systematically explore the potential influence of individual-level characteristics on the lived experience of depression. Most of the included studies do not link participant quotes to detailed demographic data, thus this would have been difficult to investigate even if a different synthesis approach had been used. Comparative studies on the lived experience of depression could be conducted in the future to assess any differences in themes according to age, gender, and ethnicity.

Conclusions

This review highlights that adolescents with depression experience considerable distress. Adolescents may be confused about what is happening to them and may try to hide their symptoms, thus accurate assessment of depression could take time. This review also indicates that the symptoms described by adolescents with depression do not fully map onto diagnostic criteria, which are largely based on adults (Roberts et al., 1995; Weitkamp et al., 2016). Social disconnection and anger were described by adolescents but do not feature in diagnostic criteria. Conversely, anhedonia, impaired concentration, appetite changes, and psychomotor changes barely featured in adolescents' accounts yet are part of diagnostic criteria. These findings add to research that has identified differences in the presentation of depression in adolescents compared to adults. To make progress in recognising and understanding adolescent depression, there is a need to move away from viewing adolescents as smaller versions of adults.

References

Achterbergh, L., Pitman, A., Birken, M., Pearce, E., Sno, H., & Johnson, S. (2020). The experience of loneliness among young people with depression: A qualitative meta-synthesis of the literature. *BMC Psychiatry*, *20*(1), Article 415. https://doi.org/10.1186/s12888-020-02818-3

Al-Busaidi, Z. Q. (2008). Qualitative research and its uses in health care. *Sultan Qaboos University Medical Journal*, *8*(1), 11. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3087733/

Altman, D. G. (1990). *Practical statistics for medical research.* CRC press.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association Publishing.

Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist*, *54*(5), 317-326. https://doi.org/10.1037/0003-066X.54.5.317

Aromataris, E., & Riitano, D. (2014). Systematic reviews: Constructing a search strategy and searching for evidence. *American Journal of Nursing*, *114*(5), 49-56. https://doi.org/10.1097/01.NAJ.0000446779.99522.f6

Backes, E. P., & Bonnie, R. J. (2019). *The promise of adolescence: Realizing opportunity for all youth*. National Academies Press (US).

Barusch, A., Gringeri, C., & George, M. (2011). Rigor in qualitative social work research: A review of strategies used in published articles. *Social Work Research*, *35*(1), 11-19. https://doi.org/doi.org/10.1093/swr/35.1.11

Beck, A. T. (1979). *Cognitive therapy of depression*. Guilford Press.

Berman, S. L., Weems, C. F., & Stickle, T. R. (2006). Existential anxiety in adolescents: Prevalence, structure, association with psychological symptoms and identity development. *Journal of Youth and Adolescence*, *35*(3), 285-292. https://doi.org/10.1007/s10964-006-9032-y

Bernaras, E., Jaureguizar, J., & Garaigordobil, M. (2019). Child and adolescent depression: A review of theories, evaluation instruments, prevention programs, and treatments. *Frontiers in Psychology*, *10*, Article 543. https://doi.org/10.3389/fpsyg.2019.00543

Blakemore, S. J. (2012). Development of the social brain in adolescence. *Journal of the Royal Society of Medicine*, *105*(3), 111-116. https://doi.org/10.1258/jrsm.2011.110221

Booth, A. (2016). Searching for qualitative research for inclusion in systematic reviews: A structured methodological review. *Systematic Reviews*, *5*(1), Article 74. https://doi.org/10.1186/s13643-016-0249-x

Bowins, B. (2015). Depression: Discrete or continuous? *Psychopathology*, *48*(2), 69-78. https://doi.org/10.1159/000366504

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. SAGE Publishing.

Buchanan, C. M., Eccles, J. S., & Becker, J. B. (1992). Are adolescents the victims of raging hormones? Evidence for activational effects of hormones on moods and behavior at adolescence. *Psychological Bulletin*, *111*(1), 62-107. https://doi.org/10.1037/0033-2909.111.1.62

Carlson, G. A., & Kashani, J. H. (1988). Phenomenology of major depression from childhood through adulthood: Analysis of three studies. *The American Journal of Psychiatry*, *145*(10), 1222–1225. https://doi.org/10.1176/ajp.145.10.1222

Clayborne, Z. M., Varin, M., & Colman, I. (2019). Systematic review and meta-analysis: Adolescent depression and long-term psychosocial outcomes. *Journal of the American Academy of Child & Adolescent Psychiatry*, *58*(1), 72-79. https://doi.org/10.1016/j.jaac.2018.07.896

Crowe, M., Ward, N., Dunnachie, B., & Roberts, M. (2006). Characteristics of adolescent depression. *International Journal of Mental Health Nursing*, *15*(1), 10-18. https://doi.org/10.1111/j.1447-0349.2006.00399.x

Cuijpers, P., Karyotaki, E., Eckshtain, D., Ng, M. Y., Corteselli, K. A., Noma, H., . . . Weisz, J. R. (2020). Psychotherapy for depression across different age groups: A systematic review and meta-analysis. *JAMA Psychiatry*, *77*(7), 694-702. https://doi.org/10.1001/jamapsychiatry.2020.0164

Daelman, S., De Schauwer, E., & Van Hove, G. (2020). Becoming-with research participants: Possibilities in qualitative research with children. *Childhood*, *27*(4), 483-497. https://doi.org/10.1177/0907568220927767

De Mol, J., D'Alcantara, A., & Cresti, B. (2018). Agency of depressed adolescents: Embodiment and social representations. *International Journal of Qualitative Studies on Health and Well-being*, *13*(1), Article 1564516. https://doi.org/10.1080/17482631.2018.1564516

Dozois, D. J., Eichstedt, J. A., Collins, K. A., Phoenix, E., & Harris, K. (2012). Core beliefs, self-perception, and cognitive organization in depressed adolescents. *International Journal of Cognitive Therapy*, *5*(1), 99-112. https://doi.org/10.1521/ijct.2012.5.1.99

Dundon, E. E. (2006). Adolescent depression: A metasynthesis. *Journal of Pediatric Health Care*, *20*(6), 384-392. https://doi.org/10.1016/j.pedhc.2006.02.010

Elsina, I., & Martinsone, B. (2020). Interpersonal relationship aspects as perceived risk and social support factors in a clinical sample of adolescents with depression. *Journal of Relationships Research*, *11*, Article e1. https://doi.org/10.1017/jrr.2019.20

Erikson, E. (1994). *Identity and the life cycle.* WW Norton & Company.

Farmer, T. J. (2002). The experience of major depression: Adolescents' perspectives. *Issues in Mental Health Nursing*, *23*(6), 567-585. https://doi.org/10.1080/01612840290052776

Fazel, M., & Stein, K. (2015). Depression in young people often goes undetected. *Practitioner*, *259*(1782), 17-22. https://www.thepractitioner.co.uk/Symposium/Psychiatry/6387-/Depression-in-young-people-often-goes-undetected

Flanagan, E. H., Davidson, L., & Strauss, J. S. (2010). The need for patient-subjective data in the DSM and the ICD. *Psychiatry*, *73*(4), 297-307. https://doi.org/10.1521/psyc.2010.73.4.297

Florczak, K. L. (2021). Reflexivity: Should it be mandated for qualitative reporting? *Nursing Science Quarterly*, *34*(4), 352-355. https://doi.org/10.1177/08943184211031593

Georgakakou-Koutsonikou, N., & Williams, J. (2017). Children and young people's conceptualizations of depression: A systematic review and narrative meta-synthesis. *Child: Care, Health and Development*, *43*(2), 161-181. https://doi.org/10.1111/cch.12439

George, L. K., Blazer, D. G., Hughes, D. C., & Fowler, N. (1989). Social support and the outcome of major depression. *The British Journal of Psychiatry*, *154*(4), 478-485. https://doi.org/10.1192/bjp.154.4.478

Given, L. (2008). *The SAGE encyclopedia of qualitative research methods*. Sage Publications. https://doi.org/10.4135/9781412963909

Hammen, C., & Compas, B. E. (1994). Unmasking unmasked depression in children and adolescents: The problem of comorbidity. *Clinical Psychology Review*, *14*(6), 585-603. https://doi.org/doi.org/10.1016/0272-7358(94)90018-3

Hankin, B. L., Young, J. F., Abela, J. R., Smolen, A., Jenness, J. L., Gulley, L. D., . . . Oppenheimer, C. W. (2015). Depression from childhood into late adolescence: Influence of gender, development, genetic susceptibility, and peer stress. *Journal of Abnormal Psychology*, *124*(4), 803-816. https://doi.org/10.1037/abn0000089

Hannes, K., & Lockwood, C. (2011). Pragmatism as the philosophical foundation for the Joanna Briggs meta-aggregative approach to qualitative evidence synthesis. *Journal of Advanced Nursing, 67*(7), 1632-1642. https://doi.org/10.1111/j.1365-2648.2011.05636.x

Hannes, K., Lockwood, C., & Pearson, A. (2010). A comparative analysis of three online appraisal instruments’ ability to assess validity in qualitative research. *Qualitative Health Research*, *20*(12), 1736-1743. https://doi.org/10.1177/1049732310378656

Hannes, K., Petry, K., & Heyvaert, M. (2018). The meta-aggregative approach to qualitative evidence synthesis: A worked example on experiences of pupils with special educational needs in inclusive education. *International Journal of Research & Method in Education*, *41*(3), 291-305. https://doi.org/10.1080/1743727X.2017.1299124

Hannor-Walker, T., Bohecker, L., Ricks, L., & Kitchens, S. (2020). Experiences of Black adolescents with depression in rural communities. *Professional Counselor*, *10*(2), 285-300. https://doi.org/10.15241/thw.10.2.285

Hicks, M. R., Kernsmith, P., & Smith-Darden, J. (2020). The effects of adverse childhood experiences on internalizing and externalizing behaviors among black children and youth. *Journal of Child & Adolescent Trauma, 14*(1), 115–122. https://doi.org/10.1007/s40653-020-00316-y

Hunter, H., Lovegrove, C., Haas, B., Freeman, J., & Gunn, H. (2019). Experiences of people with Parkinson's disease and their views on physical activity interventions: A qualitative systematic review. *JBI Evidence Synthesis*, *17*(4), 548-613. https://doi.org/10.11124/JBISRIR-2017-003901

Jackson, J., Kuppens, P., Sheeber, L. B., & Allen, N. B. (2011). Expression of anger in depressed adolescents: The role of the family environment. *Journal of Abnormal Child Psychology*, *39*(3), 463-474. https://doi.org/10.1007/s10802-010-9473-3

Jernslett, M., Thackeray, L., Orchard, F., & Midgley, N. (2021). The experience of sleep problems for adolescents with depression in short-term psychological therapy. *Clinical Child Psychology and Psychiatry*, *26*(4), 938–953. https://doi.org/10.1177/13591045211006157

Joanna Briggs Institute. (2017). *Checklist for qualitative research.* https://jbi.global/sites/default/files/2019-05/JBI_Critical_Appraisal-Checklist_for_Qualitative_Research2017_0.pdf

Kramer, T., & Garralda, M. E. (1998). Psychiatric disorders in adolescents in primary care. *The British Journal of Psychiatry*, *173*(6), 508-513. https://doi.org/10.1192/bjp.173.6.508.

Larcher, V. (2015). Children are not small adults: Significance of biological and cognitive development in medical practice. In T. Schramme & S. Edwards (Eds.), *Handbook of the philosophy of medicine* (pp. 1-23). Springer, Dordrecht. https://doi.org/10.1007/978-94-017-8706-2_16-1

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., . . . Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: Explanation and elaboration. *BMJ*, *339*, Article b2700. https://doi.org/10.1136/bmj.b2700

Lipsitz, J. D., & Markowitz, J. C. (2013). Mechanisms of change in interpersonal therapy (IPT). *Clinical Psychology Review*, *33*(8), 1134-1147. https://doi.org/10.1016/j.cpr.2013.09.002

Lockwood, C., Munn, Z., & Porritt, K. (2015). Qualitative research synthesis: Methodological guidance for systematic reviewers utilizing meta-aggregation. *JBI Evidence Implementation*, *13*(3), 179-187. https://doi.org/10.1097/xeb.0000000000000062

Lockwood, C., Porrit, K., Munn, Z., Rittenmeyer, L., Salmond, S., Bjerrum, M., . . . Stannard, D. (2020). Chapter 2: Systematic reviews of qualitative evidence. In E. Aromataris & Z. Munn (Eds.), *JBI manual for evidence synthesis*. https://synthesismanual.jbi.global/.

Mahler, M. S., Pine, F., & Bergman, A. (1975). *The psychological birth of the human infant symbiosis and individuation*. Basic Books.

Malhi, G. S., & Mann, J. J. (2018). Depression. *The Lancet*, *392*(10161), 2299-2312. https://doi.org/10.1016/S0140-6736(18)31948-2

Manen, V. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. State University of New York Press.

Manfro, P. H., Pereira, R. B., Rosa, M., Cogo-Moreira, H., Fisher, H. L., Kohrt, B. A., . . . Kieling, C. (2021). Adolescent depression beyond DSM definition: A network analysis. *European Child & Adolescent Psychiatry*. https://doi.org/10.1007/s00787-021-01908-1

McCann, T. V., Lubman, D. I., & Clark, E. (2012a). The experience of young people with depression: A qualitative study. *Journal of Psychiatric and Mental Health Nursing*, *19*(4), 334-340. https://doi.org/10.1111/j.1365-2850.2011.01783.x

McCann, T. V., Lubman, D. I., & Clark, E. (2012b). Views of young people with depression about family and significant other support: Interpretative phenomenological analysis study. *International Journal of Mental Health Nursing*, *21*(5), 453-461. https://doi.org/10.1111/j.1447-0349.2012.00812.x

McCarty, C. A., Stoep, A. V., & McCauley, E. (2007). Cognitive features associated with depressive symptoms in adolescence: Directionality and specificity. *Journal of Clinical Child and Adolescent Psychology*, *36*(2), 147-158. https://doi.org/10.1080/15374410701274926

Méndez, J., Sánchez-Hernández, Ó., Garber, J., Espada, J. P., & Orgilés, M. (2021). Psychological treatments for depression in adolescents: More than three decades later. *International Journal of Environmental Research and Public Health*, *18*(9), Article 4600. https://doi.org/10.3390/ijerph18094600

Midgley, N., Parkinson, S., Holmes, J., Stapley, E., Eatough, V., & Target, M. (2015). Beyond a diagnosis: The experience of depression among clinically-referred adolescents. *Journal of Adolescence*, *44*(1), 269-279. https://doi.org/10.1016/j.adolescence.2015.08.007

Midgley, N., Parkinson, S., Holmes, J., Stapley, E., Eatough, V., & Target, M. (2017). “Did I bring it on myself?” An exploratory study of the beliefs that adolescents referred to mental health services have about the causes of their depression. *European Child & Adolescent Psychiatry*, *26*(1), 25-34. https://doi.org/10.1007/s00787-016-0868-8

Moreh, S., & O'Lawrence, H. (2016). Common risk factors associated with adolescent and young adult depression. *Journal of Health and Human Services Administration*, *39*(2), 283-310. https://pubmed.ncbi.nlm.nih.gov/29389092/

Mullarkey, M. C., Marchetti, I., & Beevers, C. G. (2019). Using network analysis to identify central symptoms of adolescent depression. *Journal of Clinical Child & Adolescent Psychology*, *48*(4), 656-668. https://doi.org/10.1080/15374416.2018.1437735

Mullen, S. (2018). Major depressive disorder in children and adolescents. *Mental Health Clinician*, *8*(6), 275-283. https://doi.org/10.9740/mhc.2018.11.275

Nardi, B., Francesconi, G., Catena-Dell'osso, M., & Bellantuono, C. (2013). Adolescent depression: Clinical features and therapeutic strategies. *European Review for Medical and Pharmacological Sciences*, *17*(11), 1546-1551. https://www.europeanreview.org/article/4387

National Institute for Health and Care Excellence. (2019). *Depression in children and young people: Identification and management.* https://www.nice.org.uk/guidance/ng134

Ofonedu, M. E., Percy, W. H., Harris-Britt, A., & Belcher, H. M. (2013). Depression in inner city African American youth: A phenomenological study. *Journal of Child and Family Studies*, *22*(1), 96-106. https://doi.org/10.1007/s10826-012-9583-3

Oliver, J., Smith, P., & Leigh, E. (2015). 'All these negative thoughts come flooding in': How young people with depression describe their experience of rumination. *The Cognitive Behaviour Therapist*, *8*, Article e15. https://doi.org/10.1017/S1754470X15000306

Orchard, F., Pass, L., Marshall, T., & Reynolds, S. (2017). Clinical characteristics of adolescents referred for treatment of depressive disorders. *Child and Adolescent Mental Health*, *22*(2), 61-68. https://doi.org/10.1111/camh.12178

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., . . . Brennan, S. E. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, *372*, Article n71. https://doi.org/10.1136/bmj.n71

Parkinson, S., Eatough, V., Holmes, J., Stapley, E., & Midgley, N. (2016). Framework analysis: A worked example of a study exploring young people's experiences of depression. *Qualitative Research in Psychology*, *13*(2), 109-129. https://doi.org/10.1080/14780887.2015.1119228

Pearce, J. (1978). The recognition of depressive disorder in children. *Journal of the Royal Society of Medicine*, *71*(7), 494-500. https://doi.org/10.1177/014107687807100707

Pew Research Centre. (2018, November 28). *Teens' social media habits and experiences.* https://www.pewresearch.org/internet/2018/11/28/teens-social-media-habits-and-experiences/ - fn-21827-1

Pitman, A., Mann, F., & Johnson, S. (2018). Advancing our understanding of loneliness and mental health problems in young people. *The Lancet Psychiatry*, *5*(12), 955-956. https://doi.org/10.1016/S2215-0366(18)30436-X

Radovic, A., Gmelin, T., Stein, B. D., & Miller, E. (2017). Depressed adolescents' positive and negative use of social media. *Journal of Adolescence*, *55*(1), 5-15. https://doi.org/10.1016/j.adolescence.2016.12.002

Rapee, R. M., Oar, E. L., Johnco, C. J., Forbes, M. K., Fardouly, J., Magson, N. R., & Richardson, C. E. (2019). Adolescent development and risk for the onset of social-emotional disorders: A review and conceptual model. *Behaviour Research and Therapy*, *123*, Article 103501. https://doi.org/10.1016/j.brat.2019.103501

Rice, F., Riglin, L., Lomax, T., Souter, E., Potter, R., Smith, D. J., . . . Thapar, A. (2019). Adolescent and adult differences in major depression symptom profiles. *Journal of Affective Disorders*, *243*, 175-181. https://doi.org/10.1016/j.jad.2018.09.015

Roberts, R. E., Lewinsohn, P. M., & Seeley, J. R. (1995). Symptoms of DSM-III-R major depression in adolescence: Evidence from an epidemiological survey. *Journal of the American Academy of Child & Adolescent Psychiatry*, *34*(12), 1608-1617. https://doi.org/10.1097/00004583-199512000-00011

Rohde, P. (2008). Comorbidities with adolescent depression. In S. Nolen-Hoeksema & L. M. Hilt (Eds.), *Handbook of depression in adolescents* (pp. 155-194). Routledge.

Sawyer, S. M., Azzopardi, P. S., Wickremarathne, D., & Patton, G. C. (2018). The age of adolescence. *The Lancet Child & Adolescent Health*, *2*(3), 223-228. https://doi.org/10.1016/S2352-4642(18)30022-1

Shorey, S., Ng, E. D., & Wong, C. H. (2022). Global prevalence of depression and elevated depressive symptoms among adolescents: A systematic review and meta-analysis. *British Journal of Clinical Psychology*, *61*(2), 287-305. https://doi.org/10.1111/bjc.12333

Somerville, L. H. (2013). Special issue on the teenage brain: Sensitivity to social evaluation. *Current Directions in Psychological Science*, *22*(2), 121-127. https://doi.org/10.1177/0963721413476512

Wadsworth, B. J. (1996). *Piaget's theory of cognitive and affective development: Foundations of constructivism* (5th ed.). Longman Publishing.

Weersing, V. R., Jeffreys, M., Do, M.-C. T., Schwartz, K. T., & Bolano, C. (2017). Evidence base update of psychosocial treatments for child and adolescent depression. *Journal of Clinical Child & Adolescent Psychology*, *46*(1), 11-43. https://doi.org/10.1080/15374416.2016.1220310

Weiss, B., & Garber, J. (2003). Developmental differences in the phenomenology of depression. *Development and Psychopathology*, *15*(2), 403-430. https://doi.org/10.1017/s0954579403000221

Weissman, M. M., & Markowitz, J. C. (2002). Interpersonal psychotherapy for depression. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 404-421). The Guilford Press.

Weissman, M. M., Markowitz, J. C., & Klerman, G. L. (2017). *The guide to interpersonal psychotherapy: Updated and expanded edition*. Oxford University Press.

Weitkamp, K., Klein, E., & Midgley, N. (2016). The experience of depression: A qualitative study of adolescents with depression entering psychotherapy. *Global Qualitative Nursing Research*, *3*, 1-12. https://doi.org/10.1177/2333393616649548

Wisdom, J. P., & Green, C. A. (2004). "Being in a funk": Teens' efforts to understand their depressive experiences. *Qualitative Health Research*, *14*(9), 1227-1238. https://doi.org/10.1177/1049732304268657

Woodgate, R. L. (2006). Living in the shadow of fear: Adolescents' lived experience of depression. *Journal of Advanced Nursing*, *56*(3), 261-269. https://doi.org/10.1111/j.1365-2648.2006.04020.x

World Health Organisation. (2021, September 13). *Depression.* http://www.who.int/mediacentre/factsheets/fs369/en/

World Health Organisation. (n.d.). *Adolescent health.* https://www.who.int/health-topics/adolescent-health - tab=tab_1

World Health Organization. (2022). *International statistical classification of diseases and related health problems (11th ed).* https://icd.who.int/en

Service Improvement Project (SIP)

Title: The Needs and Experiences of Young People When Their Cancer Treatment Ends

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Proposed Journal: The Journal of Pediatric Hematology/Oncology Nursing was chosen because this paper is relevant to healthcare professionals working with young people with cancer. This journal publishes 'Quality Improvement' papers that seek to address a clinical issue, which is in line with the nature of this paper. Author guidelines are located here: https://journals.sagepub.com/author-instructions/JPO

Abstract

Background: Existing literature implies there may be gaps in post-treatment support for young people with cancer. This service improvement project aimed to understand the needs and experiences of young people when ending active cancer treatment in a UK children's hospital.

Methods: Semi-structured interviews were conducted with nine young people, aged 13 -18 years, who had finished cancer treatment and were receiving follow-up care. The data was analysed using thematic analysis.

Results: Four main themes were developed: being in the dark; separation from the hospital; consequences of cancer; and getting back to normal life.

Discussion: Young people faced varying physical, psychological and social challenges when adjusting to life after cancer treatment. There is a need for a consistent approach to assessing young people's biopsychosocial needs at the end of treatment, with subsequent provision of individualised support.

Keywords: cancer, adolescent, survivorship, qualitative, quality improvement

Introduction

Young People (YP) with cancer have unique care needs due to the rapid developmental changes that occur during adolescence (Docherty et al., 2015; Marshall et al., 2019). The five-year survival rate of 0-24 year olds with cancer in the UK has recently increased to 86% (Public Health England, 2021). In part, this has been attributed to the development of more specialised and age-appropriate services (Mayor, 2019; Public Health England, 2021). With these promising advances in curative care, there is a greater need to support YP in life beyond treatment (Galán et al., 2018). Increased understanding of the experiences of adolescents when ending active treatment (i.e. the end of curative cancer treatment) and entering early survivorship is needed (Lea et al., 2018).

The Biographical Disruption framework was developed to understand experiences and responses to chronic health conditions (Bury, 1982, 1991). Biographical disruption is a process by which a significant event alters one's life path as well as how one views oneself, the world, and the future (Bury, 1982; Pranka, 2018). Cancer has potential to cause biographical disruption given the long-term impact it can have on people's lives and identities (Balmer et al., 2015; Grinyer, 2007; Hubbard & Forbat, 2012). This may be especially pertinent for adolescents, as according to psychosocial theory, this is a critical time for developing identity i.e. one's sense of self (Erikson, 1994; Grinyer, 2007). Cancer can disrupt developmental tasks that support self-exploration, such as gaining independence and building peer relationships (Docherty et al., 2015). To minimise the life disruptions caused by cancer, it is important to consider how YP can be supported with 'getting back on track' when treatment ends.

Current research indicates that the end of treatment can be a challenging time for YP and families due to the ongoing physical and psychosocial impact of cancer (Bessell, 2001; Choquette et al., 2016; Galán et al., 2018; Lea, Martins, Fern, et al., 2020) i.e. "the end of treatment is not the end" (McKenzie & Curle, 2012, p. 649). A qualitative study found that young adults, aged 19 to 26 years, did not feel prepared for managing difficulties encountered post-treatment (Lea, Martins, Cable, et al., 2020). Furthermore, a survey identified that 73% of YP and parents do not think there is adequate access to post-treatment support across physical, social and psychological domains (All Party Parliamentary Group on Children Teenagers and Young Adults with Cancer [APPG CTYAC] 2018). Thus, existing patient experience data indicates that improvements in end of treatment care are required. Indeed, there is a recognised need for greater commissioning of services in England to support people in their recovery beyond cancer treatment (Independent Cancer Taskforce, 2015). Furthermore, the National Institute for Health and Care Excellence (NICE, 2014) quality standards identifies follow-up care as a priority area for improvement in cancer services for children and YP. It proposes the implementation of end of treatment summaries so that YP receive information about their cancer and treatment, the long-term impact, and ongoing care arrangements. NICE (2005, 2014) guidance also recommends having a psychosocial assessment at the end of treatment, which covers diverse needs from educational to spiritual.

This service improvement project set out to explore the needs and experiences of YP when ending active cancer treatment at a Principal Treatment Centre (PTC) for children and YP (≤ 18 years old) in England. The children's hospital concerned had identified a need to review their end of treatment processes due to a lack of service standards for end of treatment care. Based on informal, verbal patient feedback, the hospital was considering setting up an end of treatment day for YP, with the broad aim of helping YP to cope with life after treatment. Existing service provision included end of treatment medical summaries and medical follow-up clinics. Referrals to psychology were made by doctors or nurses reviewing YP in these clinics. By interviewing YP, this project aimed to evaluate service provisions and make recommendations regarding end of treatment care.

This project falls within the plan stage of the Plan-Do-Study-Act (PDSA) cycle of improvement (Langley et al., 2009). NHS guidance indicates that before carrying out an improvement, it is necessary to gain a good understanding of the current situation (NHS

England, n.d.). Therefore, it is important to understand YP's perceptions of ending cancer treatment in order to develop patient-centred improvements that can subsequently be implemented and evaluated.

Methods

Ethics

The Research and Development department at the PTC approved this project as an audit (see Appendix 2.A). Prior to participation, informed verbal consent was obtained for YP ≥ 16 years old and parents of YP <16 years old. Assent was obtained for YP <16 years old.

Participants

The inclusion criteria were YP aged 11-18 years, who had completed active cancer treatment within the past 5 years, and were attending follow-up clinics at the PTC or shared care centres. A further criterion was completion of active treatment prior to March 2020 to minimise the impact of the COVID-19 pandemic on experiences of care. This decision was guided by preferences of staff at the PTC. They felt this would ensure that care received was representative of typical service provision and therefore particularly informative for improvements. Potential participants, and their parents, were asked during follow-up clinics whether they were happy to be contacted about the project.

Interviews took place between November 2020 and February 2021. There were nine participants (6 female, 3 male), all White British. At the time of participation, age ranged from 13-18 years ($M = 16.3$), with length of time off-treatment ranging from one year to three and a half years. Age at the end of treatment ranged from 11 to 16 years ($M = 14.4$). Five YP had Acute Lymphoblastic Leukaemia, two had Hodgkin Lymphoma, and two had an ovarian tumour. All YP had undergone chemotherapy, and two also had surgery. Length of active treatment ranged from a few months to a few years.

Semi-Structured Interview

A semi-structured interview schedule was developed (see Appendix 2.B). This was informed by relevant theories and literature (Grinyer, 2007; Lea, Martins, Fern, et al., 2020), as well as feedback from hospital staff and a children's patient experience group. The questions covered experiences of healthcare during treatment, at the end of treatment, and during early follow-up care. The questions also explored any difficulties that YP faced when ending treatment and gained their perspective on what helped them, or might have helped them, to cope.

Interviews were conducted individually with YP using Microsoft Teams video calls. One participant had their parent present during the interview. Interviews lasted between 45 minutes and 80 minutes and were audio recorded. Prompts were used to gain additional information or clarify understanding.

Design and Analysis

This qualitative project adopted a critical realist stance. The data was analysed using thematic analysis (Braun & Clarke, 2006). This method is suited to understanding people's experiences and views, developing themes shared across participants, and informing implications for healthcare practice (Braun & Clarke, 2014, 2020).

The interview recordings were transcribed, and familiarisation notes were made whilst reading and re-reading the transcripts. NVivo software was used for data management and coding. Initial coding was performed using an inductive and semantic approach. Subsequently, the codes were collated to develop initial themes, which were meaningful to the project aims. The initial themes were reviewed by determining whether the coded quotations matched each theme, and whether the themes were representative of the dataset. As part of this process, the initial themes were refined to develop the final themes and sub-themes, which were named and defined. Whilst YP spoke about a range of experiences relating to these themes, this report focuses on those most relevant to informing service improvements for the PTC.

Project Team and Reflexivity

The data collection and analysis was performed by ET, a female trainee clinical psychologist in her mid-twenties. ET previously worked in a paediatric psycho-oncology team and had people in her personal life who had cancer. A bracketing interview was completed by ET (see Appendix 2.C for excerpts) to increase self-awareness of her experiences, assumptions and values that may impact data collection or analysis. Transcripts of the first two interviews were reviewed by MK, a clinical psychologist who has expertise in qualitative methodology. Reviewing and refining the themes took place in consultation with MK. The implications of the analysis were discussed with HG, a consultant clinical psychologist who has expertise in paediatric psycho-oncology.

Results

Four main themes were developed: 1) being in the dark, 2) separation from the hospital, 3) consequences of cancer, and 4) getting back to normal life. These are presented below with supporting quotations (see Appendix 2.D for additional quotations). Each YP was assigned a participant (P) number.

Theme 1: Being in the Dark

This theme describes YP's awareness of what happens when cancer treatment ends. Most YP described being in the dark about aspects of this. There were two sub-themes: preparedness for ending and peer guidance.

Preparedness for Ending

Most YP didn't feel prepared for what life would be like or how they would feel when treatment ended. YP generally expected the end of treatment to be a joyous and easy time, but the reality was different for most: "I thought it was just kind of gonna go back to normal and I was gonna be able to do everything again but it wasn't, it was very difficult" (P9); "I thought that I'd feel a lot happier" (P7).

YP reported receiving varying levels of information from the hospital about the end of treatment. Information that was received had a predominantly practical focus around ongoing medical care. YP appreciated when care arrangements were clearly set out. Roughly half of YP described not knowing how to adjust back to everyday life, and would have liked more guidance around "what actually happens like with your life and how it changes, like and if there any ways that they could help" (P8). Awareness of the hospital support available to YP post-treatment also varied: "they did make it really clear that I could always get the support if I needed it" (P4); "I feel like there wasn't really an option, like I didn't really know who to go to" (P9). To increase preparedness for ending treatment, some YP highlighted the need for age-appropriate sharing of information. Ideas included directly giving YP information as well as parents, and having videos in addition to written material.

Peer Guidance

To help navigate the uncertainty of life after treatment, YP felt they would have benefitted from peer guidance. Eight YP described wanting to connect with other adolescents who had experienced cancer. This appeared to be partly driven by a desire to feel understood and less alone: "I don't know anyone who has been through something that I've been through…I don't have anyone that I know of who is like me" (P3). Additionally, YP spoke about wanting to learn from peers about how they coped with the return to everyday life: "I think it would be nice to talk to someone about how they found the end of treatment and how they coped with it and just like get advice from them" (P6).

Most YP described having minimal opportunities to build up peer support networks during treatment, largely due to being an older patient in a paediatric ward. YP expressed positivity about the hospital setting up an end of treatment day for YP who are a similar age. They felt this would be a good opportunity to meet peers who they could relate to and build friendships: 'I think it's definitely good for like kids to meet other kids that have been through like the same and that are gonna go through the same" (P8). It was felt that centring the day around an activity, such as having food or going on a trip out, would make it easier to socialise:

> I feel, if, if you just put a load of sort of like teenagers into a room and asked them to talk, talk to each other about their feelings, I feel like there would be a deep silence there [both laugh] so, maybe to arrange it around some sort of activity, or something to break the ice, something to get people talking. (P3)

Theme 2: Separation From the Hospital

This theme describes YP's experiences of separation from the hospital when ending treatment. This theme had two sub-themes: bonds with the hospital and coping on your own.

Bonds With the Hospital

The hospital was described as a secure base for YP whilst having treatment: a place where they felt welcomed, supported, and comforted by staff. As one YP explained: "I did really feel like I was cared for properly. And like they all genuinely actually did care about me" (P4). At the end of treatment, most YP expressed sadness, anxiety, or frustration around suddenly losing staff relationships: "it was kind of like more separation from the hospital itself, which was more scary in a way, because I wasn't having that comfort from them" (P1). YP that saw familiar staff at post-treatment appointments generally valued opportunities to catch-up and receive reassurance: "I think it was just nice to like be checked in on again, just like they know that I'm still there, I still might need help" (P4). Roughly half of YP expressed a desire to stay more connected to staff post-treatment: "because I had a, such a relationship with the nurses, I kind of completely stopped seeing them all of a sudden, and like I wish there was something like I could see them maybe once or twice" (P1).

Coping on Your Own

Most YP shared experiences of coping independently from the hospital after ending treatment. Some YP did not feel the need for ongoing support: "I didn't feel like I needed um to have the support like because I was fine…nothing really affected me at the time" (P2). Others felt they were required to manage alone, due to less frequent contact with staff: "it wasn't necessarily that they said it as that, but it was more that you kind of just knew in the way that it was like you kind of just have to figure things out on your own" (P7). The reported reduction in support available from staff was challenging for some: "I think my mum found it quite difficult…she's the one that had to like chasing up everything and like all the appointments because, yeah it's just 'do it yourself' basically, which is really hard" (P6).

Another factor contributing to experiences of coping alone was the perceived barrier to seeking hospital support. A key reason was YP feeling less deserving of support given they had completed treatment:

> Everyone on the ward is just like always so busy, like it's always jam packed…and I just don't wanna be like an extra thing for them to like worry about because like you've gone through treatment, like you're done, kind of thing, it's like the next child's opportunity. (P6)

Another key barrier reported was the lack of space to talk about feelings or ask for support in medical appointments: "they'll like check me up, make sure nothing's come back and there's nothing wrong with me, like nothing to do with like mental health and how I'm like feeling" (P9). Some YP spoke about needing support to ask for support as it felt daunting. Ideas included having a mental health professional at the final treatment session, having time alone from parents at appointments, and asking specific questions about how YP are coping with the changes associated with ending treatment.

Theme 3: Consequences of Cancer

This theme describes the experience and management of the physical and psychological consequences of cancer. YP described how the impact of cancer and side effects of treatment persisted beyond the end of treatment: "I finished treatment but there was still a lot, like I still wasn't well in myself, I didn't really feel myself and I didn't feel like I looked like myself" (P1).

Most YP reported physical difficulties when ending treatment, mostly related to fatigue, being overweight, and ongoing vulnerability to infections: "I had a infection in the side of my face…and then, I had [pause] um shingles…which was uh induced by, uh well obviously people who have cancer, I know it's quite common" (P5). This led to ongoing restrictions in activities for some, such as sports. YP talked about the availability of hospital support if they were physically unwell, but some felt they would have benefitted from more input in getting exercise and eating back on track.

Most YP reported psychological difficulties after ending treatment, including anxiety and mood changes. Concerns about appearance and weight were common, and were linked to a loss of confidence for some: "because I put on so much weight, I kind of became obsessed with like trying to lose weight, um, and yeah just I, I suffered from that quite badly" (P1). Some YP also struggled with difficult memories of treatment: "I only remember like extremely traumatic things…so I remember like certain bits very vividly, like just like things that are very difficult to think about" (P9). To help cope, some YP talked about gaining emotional support from family, friends and dogs. Roughly half of YP mentioned receiving psychology support from the hospital post-treatment, with some reporting this being a positive experience: "it was fantastic, and it was extended as an offer to, to all my family so they could all get the support that they needed" (P3). Others felt that there were unhelpful aspects, such as being suited to younger children, not feeling understood, and having infrequent support: "it wasn't really that helpful in a way, because they wouldn't come in that much, so you didn't get to know that person a lot, so be kind of helpful if that person came in more" (P7).

Theme 4: Getting Back to Normal Life

This theme describes the process of shifting from hospital life to normal everyday life. There were two sub-themes: ending as a process and the shift to everyday life.

Ending as a Process

YP described ending treatment as a process of recovery, given the abovementioned ongoing difficulties faced:

> The end of treatment is actually, you know, you could argue a year long process where you sort of [laughs] try and get back to the person you were before or the person that

> you want to be going forwards, um, so you can't pinpoint really that finish to, to a single day. (P3)

YP had varied responses to this process, with some expressing frustration about the long recovery period: "I had to just sit around and wait for my immunity to get back, um, so that's a bit annoying, um, and I was res…, still quite restricted from quite a few things" (P8). Some noted the benefits of pacing themselves when returning to activities, and appreciated when this was recognised by others.

Some of the YP who underwent maintenance chemotherapy described a somewhat different recovery process. Some YP spoke about returning to normal activities, such as school, during maintenance treatment, thus they felt adjusted to normal life by the time treatment ended:

> Throughout the entire thing of maintenance, I sort of forgot that I had it because, it, it's like yeah, I had to take tablets every day but it was normal, and coming out of that I didn't really notice much difference. (P2)

The Shift to Everyday Life

Roughly half of YP spoke about hospital life dominating during treatment, and how this became their new normal: "I had periods where there was like one day in a few weeks that I didn't actually have to go to the hospital so it just became part of life" (P5). Most YP described happiness and relief when treatment ended, and some welcomed the freedom of normal life: "It's just not having to think about it all the time and just be able to do things without second thoughts is like the main thing" (P4).

However, most YP also described difficulties when returning to everyday life. YP spoke about missing out on socialising with friends during treatment, and subsequently struggling with social reintegration post-treatment: "whilst you're having your treatment…you just get to talk to your friends like every now and then so yeah, so when you actually kind of stop treatment, you didn't, you weren't really knowing of things as much" (P7). Additionally, returning to school was challenging given that YP were behind their peers academically: "by the time I got back to school I was so behind and it was GCSE year, as well, so um, it was very, it was very difficult going back to school" (P8). YP had varying experiences of school support post-treatment. Most YP had positive school adjustments, but some felt teachers lacked understanding of ongoing difficulties. When the hospital liaised with school post-treatment this was deemed beneficial: "I had to join like a pre-16 programme at a college, um and that helped a lot, um they worked really closely with people from the hospital to kind of like liaise with them" (P6).

As part of their transition from hospital life to everyday life, YP spoke about valuing opportunities to celebrate the end of treatment with family and friends. Roughly half of YP also expressed a desire to mark the end of treatment with the hospital, with some suggesting this might have helped them to move on: "I would've loved to ring a bell, to mark the end of treatment…it's just the final verification of you're leaving the hospital now, your journey's over, if that makes sense, the battle is won and you get to leave" (P5).

Discussion

This project explored the needs and experiences of YP when ending cancer treatment at a PTC to inform service provisions. YP were very complimentary about the care received during treatment, whilst post-treatment care experiences were mixed. YP described experiencing varying physical, psychological, and social difficulties at the end of treatment, which they generally did not feel prepared for. Furthermore, YP sometimes felt alone in managing these difficulties due to the separation from hospital staff, and not knowing other YP who had experienced cancer. Most YP felt they would have benefitted from more information and support.

These findings are consistent with existing literature, which indicates that YP have unmet needs when ending cancer treatment (APPG CTYAC, 2018; Lea et al., 2018; Lea, Martins, Fern, et al., 2020). Comparable themes were obtained in a qualitative study with young adults (Lea, Martins, Cable, et al., 2020). Both projects had themes relating to the insecurity arising from losing valued staff support. Another similar finding was the mismatch between expectations that life would go back to normal and the reality of managing ongoing difficulties. However, YP faced distinct difficulties in the current study, such as returning to school, owing to differences in life stage (Grinyer, 2007). Thus, the current study adds to existing findings by sharing the voices of YP in early to mid-adolescence (i.e. aged 11- 16 years at the end of treatment), who are less represented in patient experience literature (APPG CTYAC, 2018).

The needs of YP in this study can be understood within the context of the psychosocial theory of identity development (Erikson, 1994). For example, concerns related to appearance post-treatment were common, which may have been exacerbated by the heightened self-consciousness and high levels of peer comparison among adolescents (Grinyer, 2007; Rapee et al., 2019). Additionally, the importance of peer relationships and belonging during adolescence (Rapee et al., 2019) may have contributed to the strong desire for peer support. Furthermore, YP highlighted the need for age-appropriate care of adolescents treated in a paediatric setting. To support YP's growing autonomy, it is important to directly involve them in their care (Duncan & Sawyer, 2010). Overall, this study highlights the need to attend to developmental stage when supporting young cancer survivors.

Potential Recommendations for Clinical Practice

The potential recommendations for clinical practice outlined below are based on the areas of improvement identified in this project. Overall, a more consistent approach to providing information and assessing need for support at the end of treatment may help to ensure equal access to care.

- As recommended in NICE (2014) quality standards, it may be helpful to provide end of treatment summaries and care plans to YP and parents, which clearly set out ongoing care arrangements, and information on accessing support for longer term medical and psychological needs.
- Prior to ending treatment, it may be helpful to provide YP with resource packs that provide guidance around adjusting to everyday life, and signposting to other resources

(e.g. charity websites). Use of videos and incorporation of lived experience could help to ensure that the information is accessible for adolescents.

- Liaison with schools at the end of treatment may aid understanding of ongoing needs and ensure any necessary adjustments are made.
- An individualised approach to care seems important given the varying levels of need reported. A multidisciplinary review at the end of treatment, which assesses biopsychosocial needs, may be beneficial in ensuring consistent topics are covered with each family and any specific needs identified. Given that some difficulties may emerge later on, follow-up medical appointments could involve a review of any unmet biopsychosocial needs, with an onward psychology referral if needed. Screening questionnaires could support this process.
- To help YP voice any concerns in appointments it may be helpful to normalise help-seeking post-treatment, allow space for YP to talk about their emotions, ask specific questions about how they are coping, and give them time alone from their parents. Given that YP built trusting relationships with hospital staff during treatment, it may be beneficial for conversations to be held with familiar staff.
- Expressed positivity about the hospital setting up an end of treatment day for YP indicate that this would likely be well received. Feedback from YP indicate it would be valuable to focus the day around a social activity.
- Given the strong desire to connect with others who had experienced cancer and were a similar age, a peer support programme could be set up. Peer support may reduce feelings of isolation and improve wellbeing (Campbell et al., 2004) and is suggested in NICE (2005) guidance.
- As indicated in YP's feedback, it might be helpful to provide opportunities to mark or celebrate the end of treatment and say goodbye to staff. Additionally, YP could be told

how to keep in touch with staff if they wish to (e.g. that the ward would be happy to receive updates on how they are doing).

- It may be helpful to consider whether any issues could be addressed whilst YP are having treatment, in order to minimise the difficulties experienced post-treatment. For example, supporting YP to keep in touch with friends.

Service Response to Findings

The project was presented to the PTC and the wider paediatric cancer alliance group in the region. The findings were well received and generated discussions where staff reflected on current practice, and expressed enthusiasm around incorporating patient feedback into service improvements where possible and appropriate. A key discussion was around the need for individualised care given that each family is different. Some improvements were deemed more achievable, such as organising end of treatment summaries and care plans. The PTC was already in the process of developing video resources throughout the care pathway for YP, families, and schools. Staff spoke about the possibility of including a physiotherapy video for YP ending treatment, and a video for school staff around supporting YP post-treatment. Resource constraints impacted on the feasibility of some recommendations, such as having a multidisciplinary review for every YP. However, it was suggested that a screening tool could be developed to identify needs, or staff could ensure that YP ending treatment are discussed in multidisciplinary team meetings. Staff had mixed feelings about 'ringing the bell' on the ward to mark the end of treatment. The importance of considering the impact on other YP on the ward who might have relapsed or might not be curative was highlighted. It was suggested that the meaning of 'ringing the bell' to a YP could be explored and met in another way. The PTC planned to have ongoing meetings to discuss future service provision.

Limitations

There were limitations to this project. Retrospective reporting of end of treatment experiences may have resulted in recall bias. Indeed, some YP noted that it was difficult to remember aspects of healthcare received or how they felt at the end of treatment. Whilst the completeness of accounts was likely impacted by forgetting over time, accuracy of recalled information tends to remain high for personally experienced events (Diamond et al., 2020). Interviewing YP at the time of ending treatment may have been inappropriate given that recounting details can be difficult in the immediate aftermath of an emotional event (Van Giezen et al., 2005). Furthermore, a strength of retrospective reporting was the additional reflections on how end of treatment experiences impacted YP further down the line. However, this meant that perspectives on healthcare may have been viewed through the lens of adolescents at a later stage in biopsychosocial development compared to when they finished treatment. Additionally, study participation occurred during the COVID-19 pandemic, thus the different environmental context at the time of recall could have also influenced perceptions.

Another limitation was the use of convenience sampling, which may have led to a biased sample. Whilst the somewhat homogeneous nature of participants aided the development of themes (Braun & Clarke, 2013), it limits the representativeness of the sample. Firstly, all participants were White British, thus reducing the transferability of the findings to other ethnic groups. This is pertinent given that ethnic minority groups have reported poorer experiences of cancer care in England (Independent Cancer Taskforce, 2015; Pinder et al., 2016). Thus, future studies should explore the post-treatment needs of YP from ethnic minority backgrounds and ascertain any recommendations for clinical practice beyond those indicated in the present study. Secondly, whilst the type of cancers in the sample are typical in YP, there was a fairly narrow range of diagnoses. Other common cancers in this age group, including brain and spinal cord tumours, skin cancer, and testicular cancer (Irvine, 2021), were not represented. There are preliminary indications from this study and other research (Ruccione et al., 2013) that type of cancer and treatment may influence experiences of early survivorship. Future research could explore in-depth end of treatment experiences of specific types of cancer to inform more tailored service provision.

Conclusions

The findings of this study indicate that YP can face physical, psychological, and social challenges when ending cancer treatment. Therefore, YP would likely benefit from a biopsychosocial assessment of needs and provision of age-appropriate, tailored support at this stage of care. Recognition that some YP find it hard to ask for support should be considered when assessing needs. To increase confidence in managing any difficulties, there should be consistent provision of post-treatment information to YP, families, and schools. Additionally, opportunities for peer support may help YP feel less alone when navigating the transition back to everyday life.

References

All Party Parliamentary Group on Children Teenagers and Young Adults with Cancer. (2018). *Listen up! What matters to young cancer patients.* https://www.teenagecancertrust.org/sites/default/files/APPG CTYAC Listen Up%21 Report - July 2018.pdf

Balmer, C., Griffiths, F., & Dunn, J. (2015). A 'new normal': Exploring the disruption of a poor prognostic cancer diagnosis using interviews and participant-produced photographs. *Health*, *19*(5), 451-472. https://doi.org/10.1177/1363459314554319

Bessell, A. G. (2001). Children surviving cancer: Psychosocial adjustment, quality of life, and school experiences. *Exceptional Children*, *67*(3), 345-359. https://doi.org/10.1177/001440290106700304

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. SAGE Publishing.

Braun, V., & Clarke, V. (2014). What can "thematic analysis" offer health and wellbeing researchers? *International Journal of Qualitative Studies on Health and Well-being*, *9*(1), Article 26152. https://doi.org/10.3402/qhw.v9.26152

Braun, V., & Clarke, V. (2020). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, *21*, 37-47. https://doi.org/10.1002/capr.12360

Bury, M. (1982). Chronic illness as biographical disruption. *Sociology of Health & Illness*, *4*(2), 167-182. https://doi.org/10.1111/1467-9566.ep11339939

Bury, M. (1991). The sociology of chronic illness: A review of research and prospects. *Sociology of Health & Illness*, *13*(4), 451-468. https://doi.org/10.1111/j.1467-9566.1991.tb00522.x

Campbell, H. S., Phaneuf, M. R., & Deane, K. (2004). Cancer peer support programs—do they work? *Patient Education and Counseling*, *55*(1), 3-15. https://doi.org/10.1016/j.pec.2003.10.001

Choquette, A., Rennick, J. E., & Lee, V. (2016). Back to school after cancer treatment: Making sense of the adolescent experience. *Cancer Nursing*, *39*(5), 393-401. https://doi.org/10.1097/NCC.0000000000000301

Diamond, N. B., Armson, M. J., & Levine, B. (2020). The truth is out there: Accuracy in recall of verifiable real-world events. *Psychological Science, 31*(12), 1544–1556. https://doi.org/10.1177/0956797620954812

Docherty, S. L., Kayle, M., Maslow, G. R., & Santacroce, S. J. (2015). The adolescent and young adult with cancer: A developmental life course perspective. *Seminars in Oncology Nursing*, *31*(3), 186-196. https://doi.org/10.1016/j.soncn.2015.05.006

Duncan, R. E., & Sawyer, S. M. (2010). Respecting adolescents' autonomy (as long as they make the right choice). *Journal of Adolescent Health*, *47*(2), 113-114. https://doi.org/10.1016/j.jadohealth.2010.05.020

Erikson, E. (1994). *Identity and the life cycle*. WW Norton & Company.

Galán, S., de la Vega, R., & Miró, J. (2018). Needs of adolescents and young adults after cancer treatment: A systematic review. *European Journal of Cancer Care*, *27*(6). https://doi.org/10.1111/ecc.12558

Grinyer, A. (2007). The biographical impact of teenage and adolescent cancer. *Chronic illness*, *3*(4), 265-277. https://doi.org/10.1177/1742395307085335

Hubbard, G., & Forbat, L. (2012). Cancer as biographical disruption: Constructions of living with cancer. *Supportive Care in Cancer*, *20*(9), 2033-2040. https://doi.org/10.1007/s00520-011-1311-9

Independent Cancer Taskforce. (2015). *Achieving world-class cancer outcomes: A strategy for England 2015-2020*. https://www.cancerresearchuk.org/sites/default/files/achieving_world-class_cancer_outcomes_-_a_strategy_for_england_2015-2020.pdf

Irvine, L. (2021, March 15) *Cancer in children and young people – what do the statistics tell us?* UK Health Security Agency. https://ukhsa.blog.gov.uk/2021/03/15/cancer-in-children-and-young-people-what-do-the-statistics-tell-us/

Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The improvement guide: A practical approach to enhancing organizational performance* (2nd ed.). Jossey-Bass.

Lea, S., Martins, A., Bassett, M., Cable, M., Doig, G., Fern, L. A., Morgan, S., Soanes, L., Smith, S., Whelan, M., & Taylor, R. M. (2018). Issues experienced and support provided to adolescents and young adults at the end of active treatment for cancer: A rapid review of the literature. *European Journal of Cancer Care*, *27*(6). https://doi.org/10.1111/ecc.12972

Lea, S., Martins, A., Cable, M., Fern, L. A., Morgan, S., Soanes, L., Whelan, M., & Taylor, R. M. (2020). Exploring young people's experience of ending active cancer treatment: When the "little cancer treatment bubble" pops. *Cancer Nursing*, *44*(4), 288-294. https://doi.org/10.1097/NCC.0000000000000798

Lea, S., Martins, A., Fern, L. A., Bassett, M., Cable, M., Doig, G., Morgan, S., Soanes, L., Whelan, M., & Taylor, R. M. (2020). The support and information needs of adolescents and young adults with cancer when active treatment ends. *BMC Cancer*, *20*(1), Article 697. https://doi.org/10.1186/s12885-020-07197-2

Marshall, S., Grinyer, A., & Limmer, M. (2019). Dual liminality: A framework for conceptualizing the experience of adolescents and young adults with cancer. *Journal of Adolescent and Young Adult Oncology*, *8*(1), 26-31. https://doi.org/10.1089/jayao.2018.0030

Mayor, S. (2019). Cancer: More young people in England are surviving. *BMJ*, *364*, Article l258. https://doi.org/10.1136/bmj.l258

McKenzie, S. E., & Curle, C. (2012). 'The end of treatment is not the end': Parents' experiences of their child's transition from treatment for childhood cancer. *Psycho-Oncology*, *21*(6), 647-654. https://doi.org/10.1002/pon.1953

National Institute for Health and Care Excellence. (2005). *Improving outcomes in children and young people with cancer*. https://www.nice.org.uk/guidance/csg7

National Institute for Health and Care Excellence. (2014). *Cancer services for children and young people*. https://www.nice.org.uk/guidance/qs55

NHS England. (n.d.). *Quality, service improvement and redesign (QSIR) tools by stage of project*. https://www.england.nhs.uk/quality-service-improvement-and-redesign-qsir-tools/tools-by-stage-of-project/ - stage-1

Pinder, R. J., Ferguson, J., & Møller, H. (2016). Minority ethnicity patient satisfaction and experience: Results of the National Cancer Patient Experience Survey in England. *BMJ Open*, *6*(6), Article e011938. https://doi.org/10.1136/bmjopen-2016-011938

Pranka, M. (2018). Biographical disruption and factors facilitating overcoming it. *SHS Web of Conferences*, *51*, Article 03007. https://doi.org/10.1051/shsconf/20185103007

Public Health England. (2021). *Children, teenagers and young adults UK cancer statistics report 2021*. https://publichealthmatters.blog.gov.uk/2021/03/15/cancer-in-children-and-young-people-what-do-the-statistics-tell-us/

Rapee, R. M., Oar, E. L., Johnco, C. J., Forbes, M. K., Fardouly, J., Magson, N. R., & Richardson, C. E. (2019). Adolescent development and risk for the onset of social-emotional disorders: A review and conceptual model. *Behaviour Research and Therapy*, *123*, Article 103501. https://doi.org/10.1016/j.brat.2019.103501

Ruccione, K., Lu, Y., & Meeske, K. (2013). Adolescents' psychosocial health-related quality of life within 6 months after cancer treatment completion. *Cancer Nursing, 36*(5), E61-E72. https://10.1097/NCC.0b013e3182902119

Van Giezen, A. E., Arensman, E., Spinhoven, P., & Wolters, G. (2005). Consistency of memory for emotionally arousing events: A review of prospective and experimental studies. *Clinical Psychology Review, 25*(7), 935–953. https://doi.org/10.1016/j.cpr.2005.04.011

Theoretically Driven Research Project (TDRP)

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Proposed Journal: The Journal of Clinical Child and Adolescent Psychology was chosen because their scope covers papers which develop assessment tools for clinical adolescent populations, and papers which investigate the factors contributing to adolescent mental health problems. Author guidelines are located here: https://www.tandfonline.com/action/authorSubmission?show=instructions&journalCode=hcap20

Abstract

Objective: Depression often arises during adolescence. Social media forms a significant part of adolescents' lives, yet its impact on depression is unclear. We aimed to develop a questionnaire assessing positive and negative ways of using social media in order to understand the potential role of social media in adolescent depression.

Method: 1140 adolescents (including 569 with depression) aged 11-18 (M_{age} = 16.3 years; 62.2% female; 82.5% White) completed the original item pool. Factor analyses were conducted to derive the Social Media Scale (SMS). SMS scores were compared in adolescents with and without depression.

Results: The 45-item, nine-factor, SMS, had an acceptable model fit and adequate internal consistency (α = .70 to .92). There was no significant difference between groups in factor scores for 'Pleasure' and 'Connecting with others'. However, factor scores were higher ($p < .001$) in the depressed group with large effect sizes for 'Social comparison' and 'Passing time', medium effect sizes for 'Impression management', 'Hostility towards others' and 'Hostility from others', and small effect sizes for 'Fear of social exclusion' and 'Seeking support'.

Conclusions: The SMS may be a useful tool to assess motivations, behaviours, thoughts, and experiences related to social media use. Positive aspects of social media use were no less common among adolescents with depression than adolescents without depression. Yet, negative aspects of social media use were more common among adolescents with depression, with the largest differences for social comparison and using social media to pass time. These may be specific targets for future psychological interventions.

Keywords: social media, depression, adolescence, measure development

Introduction

Adolescent Depression

Depression is the most common mental health problem worldwide (Friedrich, 2017), and has a peak period of onset during adolescence (Hankin et al., 2015). Adolescent depression is associated with poorer long-term psychosocial outcomes (Clayborne et al., 2019). Therefore, it is imperative to determine which factors contribute to adolescent depression and can be targeted in interventions. Social media is an integral part of adolescents' social world (West et al., 2021), however current understanding of its impact on depression is limited.

Social Media

Social Media is an umbrella term for applications and websites that allow people to interact online. The social world gains increased importance as adolescents develop their independence and identity (Rapee et al., 2019), with estimates that 97% of teenagers use social media (Pew Research Centre, 2018). Social media is frequently cited as a cause for the rise in mental health problems in adolescents (Twenge et al., 2018), however the evidence is inconclusive (Odgers & Jensen, 2020). Systematic reviews have identified cross-sectional associations between social media use and adolescent depression, yet the effects are small and inconsistent (Keles et al., 2020; McCrae et al., 2017). Most studies have assessed quantity of use, such as time spent online (Granic et al., 2020; Odgers & Jensen, 2020), thus there is minimal understanding regarding the nature of online interactions.

In qualitative studies, young people have expressed that social media is a double-edged sword (O'Reilly et al., 2018; Radovic et al., 2017; Singleton et al., 2016). There have been calls for research to investigate the positive and negative ways that adolescents use social media and how this impacts on mental health (Orben et al., 2020; Piteo & Ward, 2020; Prinstein et al., 2020). Young people have also identified this as a priority research area (McPin Foundation, 2021). Overall, the field would benefit from a more nuanced exploration of social media use informed by an understanding of psychological theory.

Psychological Models of Depression

The predominant psychological understanding and treatment of adolescent depression draws on cognitive and behavioural models (Bernaras et al., 2019; National Institute for Health and Care Excellence, 2019; Weersing et al., 2017). The interaction of adverse life events and negatively biased processing of information is proposed to increase vulnerability to developing depression (Lakdawalla et al., 2007). Core maintaining factors include negative thoughts about the self, world, and future, rumination, inactivity, and unhelpful coping behaviours (Beck, 1979; Moorey, 2010; Verduyn et al., 2009). Whilst research indicates that cognitive and behavioural processes play a role in adolescent depression in an offline context, there is a need to consider how they play out in the online social world.

Potential Psychological Processes Involved in Social Media Use

Negative self-beliefs, which characterise depression, could be exacerbated by comparing one's attributes to others on social media. Social comparison theory (Festinger, 1954) proposes that upward social comparisons (i.e. comparisons to people perceived to be better than you) can lead to negative self-beliefs. Social comparisons are common during adolescence (Rapee et al., 2019), and social media provides opportunities for upward comparisons as people tend to present their best selves online. A prior study found that social comparison on social media was associated with adolescent depression (Nesi & Prinstein, 2015), however replication is required.

Another way in which negative self-beliefs might interact with social media use is via impression management (i.e. actions taken to carefully present yourself, in order to control how you are perceived by others). Attempts to hide true self could be conceptualised as safety-seeking behaviours (Salkovskis, 1991), which prevent disconfirmation of negative self-beliefs. Social media provides opportunities for impression management due to the lack of immediate response required and technology features, such as photo filters. However, this has not been studied empirically in the context of adolescent depression.

Social media could also be used in ways that resemble unhelpful coping behaviours in depression (i.e. ineffective attempts to cope with distress or counteract negative beliefs; Beck, 1995; Moorey, 2010). A qualitative study found that adolescents with depression used social media as a coping tool when feeling low, such as oversharing information or ranting (Radovic et al., 2017). These strategies could lead to unintended negative consequences, such as judgement from others, and thus may exacerbate low mood.

Another psychological process that might occur within the context of social media use is rumination (i.e. repetitive negative past-oriented thinking; Nolen-Hoeksema, 1991). The ambiguous nature of online interactions, due to limited non-verbal cues, may trigger rumination. Preliminary evidence indicates that rumination about social media is associated with psychological distress (Parris et al., 2020), however further research is needed. A related concept to rumination is worry (i.e. repetitive negative future-oriented thinking), which has also been associated with adolescent depression (Blain-Arcaro & Vaillancourt, 2016; Danielsson et al., 2013). Delays between posting online and gaining a response may trigger worry. Adolescents with mental health difficulties have reported fears that bad things will happen on social media (Calancie et al., 2017; Singleton et al., 2016), but this requires quantitative investigation.

A protective psychological process that might be fostered on social media is social connectedness. This is thought to create a sense of belonging, which is considered a fundamental human need (Maslow, 1943). Social connectedness is also considered a protective factor against depression in adolescents (McLoughlin et al., 2019). The potential benefits of connecting with others on social media, given the constant availability and access to wider communities, has been highlighted during the Covid-19 pandemic (Hamilton et al., 2021; Magson et al., 2021).

Rationale for Study

Despite the dominant discourse about social media negatively impacting adolescent depression, closer inspection of the evidence base reveals inconclusive findings. Prior research has primarily focused on measuring time spent on social media, rather than exploring the different ways that adolescents engage with social media. Given the lack of existing measures, there was a need to develop a self-report questionnaire assessing positive and negative behaviours and thoughts occurring in the context of social media use. Subsequently, by comparing aspects of social media use in adolescents with and without depression, it could provisionally indicate if they are clinically relevant.

Aims and Predictions

In this study, we aimed to 1) develop a measure of adolescent social media use and assess its psychometric properties, and 2) explore whether the nature of social media use differs between adolescents with and without depression. Adolescents with depression were predicted to use social media more often in negative ways and less often in positive ways compared to adolescents without depression.

Methods

Design and Procedure

This study was an exploratory cross-sectional study. Participants completed an online survey via Qualtrics XM Platform.

Ethics

This study received Health Research Authority (HRA) and Health and Care Research Wales (HCRW) approval (Reference: 21/LO/0775, see Appendix 3.A). In accordance with guidelines for online research (British Psychological Society, 2013; Health Research Authority, 2018), informed consent was obtained via an information sheet and checkboxes. Participants ≥ 16 years provided consent. Participants < 16 years provided assent, in addition to parental consent.

Participants

Participants were adolescents aged 11-18 years in the United Kingdom who used social media. A further inclusion criteria was enrolment at secondary school or sixth form college. Exclusion criteria was a diagnosis of a moderate or severe learning disability. Presence of depression was determined using the clinical cut-off ($T \geq 70$) on the depression subscale of the Revised Children's Anxiety and Depression Scale (Chorpita et al., 2000). Participants were recruited between December 2021 to March 2022 through social media adverts, schools, charities, and Child and Adolescent Mental Health Services (CAMHS). The majority of participants (81.1%) were recruited via social media, with schools being the second largest source of participants (11.8%). To achieve a minimum participant to variable ratio of 5:1 (Gorsuch, 1983; Stevens, 1996) for the exploratory and confirmatory factor analysis of the new questionnaire, the study aimed to recruit ≥ 930 participants. The power calculation was 2(93 x 5), due to two factor analyses and 93 original items.

Measures

Demographics

Demographic variables were obtained, including age, school year, gender, and ethnicity.

Revised Children's Anxiety and Depression Scale (RCADS)

Depression and anxiety were measured using the RCADS (Chorpita et al., 2000). This is a 47-item self-report measure with frequency of symptoms reported on a scale from 0 (never) to 3 (always). Total raw scores for depression and anxiety are converted into standardised T-scores according to gender and school year. Good psychometric properties of the RCADS have been reported in both clinical and non-clinical samples (Chorpita et al., 2005; Donnelly et al., 2018).

Time Spent on Social Media

Time spent on social media in a typical day was obtained via self-report.

Social Media Scale (SMS)

The SMS captured motivations, behaviours, thoughts, and experiences related to social media use that had theoretical relevance to adolescent depression. The original version had 93 items (see Appendix 3.B), which were rated on a frequency scale of 0 (none of the time) to 4 (all the time). The questionnaire predominantly consisted of new content developed by the authors, along with some items from existing social media measures (Bird et al., 2018; Parris et al., 2020; Warnock-Parkes & Clark, Unpublished).

Item Development. Consistent with measure development guidance (Boateng et al., 2018) complementary methods were used to identify domains to incorporate in the SMS. Firstly, cognitive-behavioural models of adolescent depression were reviewed (Bernaras et al., 2019; Lakdawalla et al., 2007). Secondly, a review was conducted of nine qualitative studies on young people's perspectives of social media and how it influences their mental health (Baker et al., 2019; Burnette et al., 2017; Calancie et al., 2017; MacIsaac et al., 2018; O'Reilly, 2020; O'Reilly et al., 2018; Radovic et al., 2017; Scott & Woods, 2019; Singleton et al., 2016). Thirdly, a focus group was held with four adolescents (aged 17-18 years) with lived experience of depression to explore how social media impacts on their mood. Lastly, opinions of clinicians and researchers in the field were obtained.

By applying psychological theory to the qualitative information gathered, the following cognitive and behavioural processes were identified that might occur within the context of social media use: social comparison, impression management, unhelpful coping strategies, rumination, worry, and connecting with others. Motivations for using social media (i.e. avoiding exclusion, fear of missing out, connection, coping, and pleasure) and experiences on social media (i.e. negative feedback from others) were also deemed important to provide context to these processes. The generation of items for each theorised domain (see Appendix 3.B) was informed by qualitative accounts of adolescents, and existing measures of social media use and psychological processes 'offline'. Lastly, five adolescents with lived experience of depression reviewed the items to ensure relevance and readability.

Data Analysis

A Mann-Whitney U test was conducted in SPSS (Version 27.0.1.0) to determine whether adolescents with and without depression differed on time spent on social media.

Data from the SMS was treated as a continuous variable across the analyses (Norman, 2010; Robitzsch, 2020; Zumbo & Zimmerman, 1993). Factor analysis of the SMS was conducted in JASP (Version 0.16.1). Prior to this, the sample was divided to form a derivation sample and a validation sample using random case selection in SPSS (Version 27.0.1.0). Using the derivation sample, exploratory factor analysis (EFA) was conducted to determine the underlying factor structure (Fabrigar & Wegener, 2011). The estimation method was principal axis factoring with promax rotation, because some factors were expected to be related (Kahn, 2006). Items were removed before EFA if bivariate correlations between items were very high ($r > .85$) or very low ($r < .3$; Yong & Pearce, 2013). The number of factors retained was determined by parallel analysis and the requirement for there to be at least 3 items per factor (Knekta et al., 2019). To obtain a clean structure, items were removed during EFA if none of their factor loadings were > 0.4 or if they had cross-loadings > 0.4 across multiple factors. The analysis was repeated each time items were removed. Subsequently, items were considered for removal for content reasons (i.e. awkward wording, mismatch with construct, or redundancy).

Using the validation sample, confirmatory factor analysis (CFA) was conducted to assess the factor model arising from EFA (Fabrigar & Wegener, 2011). The estimation method was robust maximum likelihood (MLR) due to having non-normal data, thus robust chi-square values were reported (Brown, 2015). Items with factor loadings < 0.4 were removed, and modification indices were examined (Brown, 2015). Acceptable model fit was determined by a Comparative Fit Index (CFI) and Tucker Lewis Index (TLI) above 0.9 (Awang, 2012; Hoyle, 1995), a Root Mean Square Error of Approximation (RMSEA) below 0.1 (MacCallum et al., 1996), and a Standardised Root Mean Square Residual (SRMR) below 0.08 (Hu & Bentler, 1999).

The internal consistency of the factors derived from CFA were measured using Cronbach's alpha, whereby $\alpha \geq .7$ was considered acceptable (Taber, 2018). The factor scores were obtained using the regression method (DiStefano et al., 2009) in R (Version 4.2.0).

To determine any differences in the SMS factors between adolescents with and without depression, a series of independent samples *t*-tests were conducted in JASP (Version 0.16.1). The independent variable was depression status (depressed and non-depressed) and the dependent variable was the factor score. Since this was exploratory research, multiplicity corrections were not deemed appropriate (Bender & Lange, 2001; Ranstam, 2016). Cohen's *d* was used to calculate the effect size (Sullivan & Feinn, 2012).

Results

Participant Characteristics

1141 participants (aged 11-18 years) completed the SMS. One participant was excluded due to invalid survey responses, resulting in 1140 included participants. Of these participants, 1102 also completed the RCADS. Demographic and clinical characteristics are presented in Table 1. The participants were largely female and White.

Table 1

Participant Characteristics

Characteristic	**Total sample** (n = 1140)	**Depressed participants** (n = 569)	**Non-depressed participants** (n = 443)
Age		**Mean (*SD*)**	
	16.27 (1.14)	16.37 (0.98)	16.14 (1.37)
Gender		**n (%)**	
Female	709 (62.2)	375 (65.9)	309 (69.8)
Male	339 (29.7)	194 (34.1)	134 (30.2)
Other (including non-binary, gender fluid, transgender, and agender)	92 (8.1)	-	-
Ethnicity		**n (%)**	
White	941 (82.5)	477 (83.8)	356 (80.4)
Mixed or Multiple	72 (6.3)	40 (7.0)	26 (5.9)
Asian	93 (8.2)	37 (6.5)	48 (10.8)
Black, Caribbean or African	19 (1.7)	8 (1.4)	8 (1.8)
Other	15 (1.3)	7 (1.2)	5 (1.1)

Currently receiving mental health services		**n (%)**	
	360 (31.6)	230 (40.4)	90 (20.3)
RCADS T-Scores[a]		**Mean (*SD*)**	
Depression	-	85.84 (10.67)	54.75 (9.92)
Anxiety	-	77.15 (14.12)	53.98 (12.57)
Time spent on social media in a typical day		**n (%)**	
Less than 1 hour	27 (2.4)	4 (0.7)	22 (5.0)
1-2 hours	171 (15.0)	68 (12.0)	81 (18.3)
2-4 hours	421 (36.9)	196 (34.4)	187 (42.2)
4-6 hours	322 (28.2)	165 (29.0)	117 (26.4)
6+ hours	199 (17.5)	136 (23.9)	36 (8.1)

[a] T-scores ≥ 70 are in the clinical range, T-scores ≥ 65 and < 70 are in the borderline clinical range, T-scores < 65 are in the normal range.

Time Spent on Social Media

Self-reported time spent on social media for depressed adolescents (mean rank = 562.87) was significantly higher than for non-depressed adolescents (mean rank = 434.09), U = 158110.50, $z = 7.27$, $p < .001$.

Development of the SMS

EFA using the derivation sample (n = 570) was suitable because Bartlett's test of sphericity was significant ($X^2 = 29756.12$, $df = 4005$, $p < .001$) and the overall Kaiser-Myer-Olkin test for sampling adequacy was high (KMO = 0.94; Yong & Pearce, 2013). Three items were deleted prior to EFA: one item (thoughts20) had high correlations with similar items, and two items (behaviours10, behaviours16) had low correlations with all items (see Appendix 3.B for item content).

Parallel analysis initially suggested 12 possible factors, however after removal of items during EFA, parallel analysis suggested 9 factors. A total of 44 items were deleted during EFA:

26 items had low factor loadings (reasons6, 7, 8, 10, 11, 12, 18; behaviours1, 8, 9, 11, 12, 13, 24, 30, 34, 36, 37, 42, 43, 44, 47; thoughts4, 9, 10, 13), five items had cross-loadings (behaviours3, 21, 29; thoughts3, 11), five items were redundant (reasons2, 9; behaviours17, 33; thoughts22), five items were theoretically inconsistent with other items in the factor (reasons14; behaviours39; thoughts1, 6, 7), and three items had awkward wording (behaviours14, 23, 35). EFA of the remaining 46 items resulted in a nine-factor model, which explained 55% of the variance. The factors were labelled as: 'Impression management', 'Hostility from others', 'Social comparison', 'Fear of social exclusion', 'Pleasure', 'Connecting with others', 'Passing time', 'Seeking support', and 'Hostility towards others'. Factor loadings are in Table 2. Correlations between factors were not indicative of a higher-order model (see Appendix 3.C).

CFA, using the validation sample (n = 570), was conducted using the nine-factor model derived from EFA. One item ('I ask others to tell me that everything will be okay') was deleted due to a low factor loading. After examining the modification indices, the residual correlations of three pairs of items were added into the model. There were conceptual reasons that might account for why these items shared variance beyond that explained by the model: 'I don't look as good as other people' and 'My body shape isn't as nice as other people' both captured appearance-related aspects of social comparison, 'I am not as likeable as other people' and 'I'm not as funny as other people' both captured personality-related aspects of social comparison, and 'I make a special effort with my appearance for photos/videos that may be put online' and 'I retake photos multiple times before posting or sending' both related to preparation of visual content as a form of impression management. The resulting model had an acceptable fit ($\chi2$ = 1954.84, $df = 906$, $p < .001$, CFI = 0.911, TLI = 0.903, RMSEA = 0.045, SRMR = 0.054). Factor loadings are in Table 2, and factor correlations are in Appendix 3.D. All factors had correlations < 0.85, thus indicating discriminant validity between factors (Kline, 2011). See Appendix 3.E for the final 45-item SMS.

The internal consistency of the factors, assessed across the whole sample, ranged from acceptable to excellent: ‘Seeking support’ (α = .70), ‘Connecting with others’ (α = .73), ‘Hostility towards others’ (α = .76), ‘Passing time’ (α = .78), ‘Pleasure’ (α = .81), ‘Fear of social exclusion’ (α = .84), ‘Social comparison’ (α = .90), ‘Hostility from others’ (α = .92), and ‘Impression management’ (α = .92).

Table 2

Factor Loadings From EFA and CFA on the SMS

Factors	Items	EFA loadings	CFA loadings
Impression management	I reword messages or posts multiple times.	0.450	0.469
	I make a special effort with my appearance for photos/videos that may be put online	0.953	0.704
	I retake photos multiple times before posting or sending.	1.003	0.747
	I edit, manipulate or use filters on photos/snaps.	0.503	0.525
	I get my friend's opinion on my photos before posting.	0.460	0.566
	I make an effort to come across well.	0.610	0.501
	I try to look perfect.	0.779	0.757
	I try to picture how I appear to others on social media.	0.729	0.774
	I check how others respond to my posts.	0.728	0.683
	Worries that people will judge my posts pop into my mind.	0.616	0.765
	I worry that I won't look attractive in social media posts.	0.657	0.816
	I keep thinking about how other people have reacted to my posts.	0.629	0.743
Hostility from others	I get nasty comments from others on social media.	0.798	0.819

	People send me threats on social media.	0.775	0.764
	People criticise me on social media.	0.872	0.866
	People make fun of me on social media.	0.906	0.890
	I get bullied on social media.	0.767	0.823
Social comparison	I don't look as good as other people.	0.719	0.814
	My body shape isn't as nice as other people.	0.719	0.753
	Other people have better social lives than me.	0.597	0.793
	I am not as likeable as other people.	0.902	0.812
	I'm not as funny as other people.	0.768	0.724
Fear of social exclusion	To make sure I am not left out	0.629	0.723
	To fit in at school/college.	0.841	0.817
	To be accepted by others.	0.788	0.860
	To make sure I don't miss out on anything.	0.649	0.622
Pleasure	To have fun.	0.705	0.765
	To cheer me up.	0.677	0.706
	To keep up my interests.	0.689	0.607
	To have a laugh.	0.717	0.740
Connecting with others	I keep in touch with friends or family.	0.598	0.557
	I reconnect with people who I lost touch with.	0.447	0.440
	I share memes, pictures or videos with friends or family.	0.587	0.648
	I make plans on social media to meet up with friends.	0.681	0.585
	I joke around with friends	0.611	0.698
Passing time	To fill my time when I am bored or unmotivated.	0.716	0.696
	To distract myself from what is going on around me.	0.646	0.712

	To pass the time when I can't sleep.	0.598	0.699
	I spend hours scrolling through social media.	0.571	0.711
Seeking support	To get support.	0.772	0.593
	I seek support from people who I can rely on.	0.603	0.731
	I connect with people who have been through similar experiences.	0.549	0.612
	I ask others to tell me that everything will be okay.	0.490	-
Hostility towards others	I start fights or arguments.	0.604	0.791
	I am aggressive towards others.	0.750	0.844
	I purposefully upset others.	0.742	0.688

Comparing SMS Scores in Adolescents with and without Depression

T-scores (and thus depression status) of adolescents with gender identities other than male or female could not be determined due to a lack of normative data on the RCADS for gender minority groups. Therefore, unfortunately, these adolescents could not be included in the comparison analysis (see Appendix 3.F for correlational data using raw depression scores).

Given that the sample sizes of the depressed (n = 569) and non-depressed groups (n = 443) were not equal, Welch's *t*-test was the most appropriate test to compare the mean factor scores (Delacre et al., 2017; Zimmerman, 2004). Welch's *t*-test does not assume homogeneity of variances, but does assume normality in both populations. Examination of the normal Q-Q plots indicated varying degrees of non-normality of the factors, except for 'Seeking support', which appeared normally distributed. Given that Welch's *t*-test is robust to high levels of skewness and kurtosis in large sample sizes (Delacre et al., 2017), deviations from normality were not considered problematic in this study.

Table 3 summarises the results of the *t*-tests for each SMS factor. Factor scores were used because these are preferable to sum scores (see Appendix 3.G for data on sum scores; McNeish & Wolf, 2020). There was no significant difference in factor scores of the depressed and non-depressed group for ‘Pleasure’ and ‘Connecting with others’. Factor scores were significantly higher in the depressed group compared to the non-depressed group for ‘Impression management’, ‘Hostility from others’, ‘Social comparison’, ‘Fear of social exclusion’, ‘Passing time’, ‘Seeking support’, and ‘Hostility towards others’. The effect sizes ranged from small to large. Appendix 3.H reports the proportion of variance in depression scores explained by the factors.

Table 3

t-test Results Comparing Adolescents With and Without Depression on the SMS Factors

	Mean (*SD*)[a]						
Factor	**Non-depressed**	**Depressed**	**Mean difference (95% CI)**	***t***	***df***	***p***	***d*[b]**
Impression management	-0.22 (0.56)	0.17 (0.55)	-0.38 (-0.45 to -0.31)	-10.83	940.34	< .001	0.69
Hostility from others	-0.23 (0.50)	0.17 (0.76)	-0.40 (-0.48 to -0.32)	-9.97	987.03	< .001	0.62
Social comparison	-0.50 (0.95)	0.38 (0.90)	-0.88 (-0.99 to -0.76)	-14.95	923.91	< .001	0.95
Fear of social exclusion	-0.15 (0.68)	0.13 (0.76)	-0.28 (-0.37 to -0.19)	-6.20	991.12	< .001	0.39
Pleasure	0.02 (0.65)	-0.05 (0.71)	0.06 (-0.02 to 0.15)	1.47	982.01	0.143	0.09
Connecting with others	0.00 (0.46)	-0.01 (0.50)	0.01 (-0.05 to 0.07)	0.19	985.39	0.850	0.01
Passing time	-0.22 (0.47)	0.16 (0.41)	-0.38 (-0.44 to -0.33)	-13.57	887.56	< .001	0.87
Seeking support	-0.14 (0.52)	0.08 (0.58)	-0.21 (-0.28 to -0.15)	-6.21	991.42	< .001	0.39

Hostility towards others	-0.22 (0.42)	0.16 (0.69)	-0.37 (-0.44 to -0.30)	-10.61	963.09	< .001	0.65

Note. CI is an abbreviation for Confidence Interval.

[a] The factor scores are standardised scores with a mean of zero across the whole sample, thus a negative score is below average and a positive score is above average.

[b] $d = 0.2$ is a small effect size; $d = 0.5$ is a medium effect size; $d = 0.8$ is a large effect size.

Discussion

The current study developed a novel social media scale (SMS), and explored whether the nature of social media use differed in adolescents with and without depression. The nine-factor SMS had good psychometric properties. The underlying constructs within the SMS included motivations for using social media (passing time, fear of social exclusion, and pleasure) in addition to activity on social media (social comparison, impression management, hostility towards others, hostility from others, connecting with others, and seeking support). Using social media for pleasure, connecting with others, or seeking support were deemed positive usage, whilst all other factors were deemed negative usage. As predicted, adolescents with depression used social media more often in negative ways than adolescents without depression (i.e. controls). The largest differences were for social comparison and using social media to pass time. Contrary to predictions, adolescents with depression did not use social media less often in positive ways than controls.

In line with prior research (Keles et al., 2020), adolescents with depression reported spending more time overall on social media than controls. However, not all aspects of social media use were more common in adolescents with depression. Therefore, how time is spent, rather than time itself, is likely to be important.

Motivations for Using Social Media

Adolescents with depression reported using social media to pass time and out of fear of social exclusion more frequently than controls. These findings were expected theoretically, given that respectively related concepts of boredom (Fahlman et al., 2009) and belongingness (Parr et al., 2020) are associated with depression (Verduyn et al., 2009). These results support emerging evidence that motivations behind social media use are important in the context of adolescent mental health (Barry et al., 2017; Keles et al., 2020; Stockdale & Coyne, 2020). Future research could consider the relationships between reasons for using social media and online activity.

There was no difference in how often adolescents with and without depression reported using social media for pleasure. This was unexpected given that lack of pleasure is a feature of depression (Beck, 1979; Moorey, 2010), however actual experiences of enjoyment might differ. This finding was also contrary to a previous study which found that using social media to seek positive emotions was negatively correlated with depression scores (Brailovskaia et al., 2020). However, this prior study was conducted with adults, and differences between adolescent and adult depression exist (Rice et al., 2019).

Activity on Social Media

Adolescents with depression reported engaging in more social comparison on social media compared to controls. This builds on previous research with adults (Appel et al., 2016) to highlight the pertinence of online social comparison to adolescent depression (Nesi & Prinstein, 2015). A further finding was that adolescents with depression reported more frequent impression management on social media. This was predicted theoretically, however empirical investigations to date have been minimal. Whilst causal inferences cannot be drawn in this study, it is possible that both social comparison and impression management have a bi-directional relationship with negative self-beliefs in the context of depression.

Adolescents with depression also reported more hostile interactions on social media than controls, which included greater hostility towards others. Indeed, previous research has found that depression is associated with increased aggression towards others (Dutton & Karakanta, 2013), which may be a coping strategy. This study's findings indicate that expressions of hostility extend to social media. This study also found that adolescents with depression reported receiving hostility from others more frequently. This is in accordance with substantial research associating cyberbullying with increased depressive symptoms (Nixon, 2014; Reed et al., 2016). Prospective studies are still required to determine the direction of this relationship (Kaltiala-Heino & Fröjd, 2011; Nixon, 2014).

There was no difference in how often adolescents with and without depression reported connecting with others on social media. This was unexpected given that depression has been associated with social withdrawal (Moorey, 2010), however this may not extend to social media interactions. Another social interaction which did find differences between groups was seeking support on social media. Adolescents with depression reported seeking support more often than controls. It would be interesting for future research to consider if this corresponds to experiences of support, given that perceived social support is a protective factor for depression (Frison & Eggermont, 2015a, 2015b).

Limitations

There were limitations with the study measures. Regarding the SMS, test-retest reliability data was not collected and convergent validity was not determined. Additionally, some of the psychological processes (i.e. rumination and worry) that we aimed to capture in the SMS did not emerge as distinct constructs. Therefore, the SMS may not capture all aspects of social media that are relevant to adolescent depression.

Whilst the clinical cut-offs on the RCADS have good specificity and sensitivity for detecting depression diagnosis (Chorpita et al., 2005), the accuracy of the groupings may have been somewhat limited. A more significant drawback of the RCADS is the lack of normative data to determine clinical cut-offs for adolescents with minority gender identities. Since these adolescents could not be included in the comparison analysis, the findings may not generalise to this population. A tentative indication of this was that 'Hostility towards others' was not associated with raw depression score in the gender minority sample. Existing literature suggests that social media may be an important way for adolescents from minority groups to gain support

(Granic et al., 2020; Hamilton et al., 2021), however they are also more vulnerable to cyberbullying (Abreu & Kenny, 2017). Given that gender minority adolescents are at higher risk of depression (Fox et al., 2020), further research is needed to consider the role of social media in this population. It is also noteworthy that 8% of adolescents in this study identified with a gender other than male or female. A non-binary approach to measuring gender (Cameron & Stinson, 2019; Ho & Mussap, 2019) seems important for any future studies investigating gender differences in social media use.

The findings may also have limited generalisability to younger adolescents, given that the majority of participants were > 15 years. Recruitment of younger adolescents was likely impacted by the requirement for parental consent, and official age restrictions on social media sites. A meta-analysis found that the peak age at onset of depressive symptoms is 15.5 years (Solmi et al., 2022), therefore the study sample represents a group for which the SMS is likely to be particularly useful. The factors within the SMS are anticipated to be applicable to younger adolescents given that relevant psychological processes, such as social comparison and impression management, emerge during childhood (Aloise-Young, 1993; Eccles, 1999). However, the nature of social media use and its impact might vary according to stage of adolescent development (Orben et al., 2022). For example, the onset of puberty may give rise to more appearance-related concerns (Markey, 2010) on social media, and more developed impulse control in later adolescence (Meeus, 2021) could result in more purposeful use of social media. The SMS should be validated in a larger sample of 11-15 year olds. Subsequently, age differences in the role of different social media factors in depression could be explored. Opt-out parental consent procedures may facilitate recruitment in younger adolescents (Harris & Porcellato, 2018; Tigges, 2003).

Another notable characteristic of the study sample is that the majority (83%) were White. However, this is representative of the United Kingdom population, which is 87% White (Office for National Statistics, 2013). Furthermore, a recent study found that type of social media use in adolescents did not differ by ethnicity (Winstone et al., 2022), therefore this may not have impacted the study findings.

There were also limitations with the study design. Causal conclusions cannot be drawn from exploratory cross-sectional data, thus longitudinal and experimental studies are needed. Given that the depressed group had higher levels of anxiety than the non-depressed group, it could be argued that the study findings are due to anxiety. However, in order to statistically control for a covariate (i.e. anxiety), the groups (i.e. depressed and non-depressed) must not differ on the covariate (Miller & Chapman, 2001). Given the substantial overlap between depression and anxiety, if you remove the variance explained by anxiety then you also remove variance explained by depression and the resulting findings would not be meaningful (Miller & Chapman, 2001). Therefore, it was inappropriate to control for anxiety. However, it may be helpful for future studies to explore how the SMS constructs relate to transdiagnostic features of mental health conditions.

Conclusions

Social media is an important part of adolescents' lives. This study developed a novel, psychometrically robust questionnaire (SMS) to assess the ways that adolescents with and without depression engage with social media. Prior research has predominantly measured time spent online, however this has prevented exploration of a more nuanced relationship between social media use and depression. In this study, adolescents with and without depression did not differ in their frequency of using social media for pleasure and connecting with others. Additionally, adolescents with depression used social media more often for seeking support than controls. Indeed, in qualitative studies, adolescents with depression have reporting using social media for these positive purposes (Radovic et al., 2017). These aspects of social media are likely beneficial for wellbeing, thus blanket interventions like 'reducing screen time' may not be the solution and could worsen depression.

In this study, negative aspects of social media use were more common among adolescents with depression than controls. Large differences were found for social comparison and using social media to pass time. These findings provide preliminary indications that aspects of social media use play a role in adolescent depression and may be specific targets for future psychological interventions. The potential for social media to exacerbate and alleviate adolescent depression, depending on nature of use, warrants further investigation in experimental studies.

References

Abreu, R. L., & Kenny, M. C. (2017). Cyberbullying and LGBTQ youth: A systematic literature review and recommendations for prevention and intervention. *Journal of Child & Adolescent Trauma*, *11*(1), 81-97. https://doi.org/10.1007/s40653-017-0175-7

Aloise-Young, P. A. (1993). The development of self-presentation: Self-promotion in 6- to 10-year-old children. *Social Cognition, 11*(2), 201–222. https://doi.org/10.1521/soco.1993.11.2.201

Appel, H., Gerlach, A. L., & Crusius, J. (2016). The interplay between Facebook use, social comparison, envy, and depression. *Current Opinion in Psychology*, *9*, 44-49. https://doi.org/10.1016/j.copsyc.2015.10.006

Awang, Z. (2012). *Research methodology and data analysis* (2nd ed.). UiTM Press.

Baker, N., Ferszt, G., & Breines, J. G. (2019). A qualitative study exploring female college students' Instagram use and body image. *Cyberpsychology, Behavior, and Social Networking*, *22*(4), 277-282. https://doi.org/10.1089/cyber.2018.0420

Barry, C. T., Sidoti, C. L., Briggs, S. M., Reiter, S. R., & Lindsey, R. A. (2017). Adolescent social media use and mental health from adolescent and parent perspectives. *Journal of Adolescence*, *61*, 1-11. https://doi.org/doi.org/10.1016/j.adolescence.2017.08.005

Beck, A. T. (1979). *Cognitive therapy of depression*. Guilford press.

Beck, J. S. (1995). *Cognitive therapy: Basics and beyond*. The Guilford Press.

Bender, R., & Lange, S. (2001). Adjusting for multiple testing—when and how? *Journal of Clinical Epidemiology*, *54*(4), 343-349. https://doi.org/10.1016/S0895-4356(00)00314-0

Bernaras, E., Jaureguizar, J., & Garaigordobil, M. (2019). Child and adolescent depression: A review of theories, evaluation instruments, prevention programs, and treatments. *Frontiers in Psychology*, *10*, 543. https://doi.org/10.3389/fpsyg.2019.00543

Bird, J. C., Evans, R., Waite, F., Loe, B. S., & Freeman, D. (2018). Adolescent paranoia: Prevalence, structure, and causal mechanisms. *Schizophrenia Bulletin*, *45*(5), 1134-1142. https://doi.org/10.1093/schbul/sby180

Blain-Arcaro, C., & Vaillancourt, T. (2016). Does worry moderate the relation between aggression and depression in adolescent girls? *Journal of Adolescence*, *49*, 10-18. https://doi.org/10.1016/j.adolescence.2016.02.006

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health*, *6*, 149. https://doi.org/10.3389/fpubh.2018.00149

Brailovskaia, J., Schillack, H., & Margraf, J. (2020). Tell me why are you using social media (SM)! Relationship between reasons for use of SM, SM flow, daily stress, depression, anxiety, and addictive SM use–an exploratory investigation of young adults in Germany. *Computers in Human Behavior*, *113*, Article 106511. https://doi.org/10.1016/j.chb.2020.106511

Brown, T. A. (2015). Confirmatory factor analysis for applied research. Guilford Publications.

British Psychological Society. (2013). *Ethics guidelines for internet-mediated research.* https://www.bps.org.uk/sites/www.bps.org.uk/files/Policy/Policy - Files/Ethics Guidelines for Internet-mediated Research.pdf

Burnette, C. B., Kwitowski, M. A., & Mazzeo, S. E. (2017). "I don't need people to tell me I'm pretty on social media:" A qualitative study of social media and body image in early adolescent girls. *Body Image*, *23*, 114-125. https://doi.org/10.1016/j.bodyim.2017.09.001

Calancie, O., Ewing, L., Narducci, L. D., Horgan, S., & Khalid-Khan, S. (2017). Exploring how social networking sites impact youth with anxiety: A qualitative study of Facebook stressors among adolescents with an anxiety disorder diagnosis. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *11*(4). https://doi.org/10.5817/CP2017-4-2

Cameron, J. J., & Stinson, D. A. (2019). Gender (mis) measurement: Guidelines for respecting gender diversity in psychological research. *Social and Personality Psychology Compass, 13*(11), Article e12506. https://doi/10.1111/spc3.12506

Chorpita, B. F., Moffitt, C. E., & Gray, J. (2005). Psychometric properties of the Revised Child Anxiety and Depression Scale in a clinical sample. *Behaviour Research and Therapy*, *43*(3), 309-322. https://doi.org/10.1016/j.brat.2004.02.004

Chorpita, B. F., Yim, L., Moffitt, C., Umemoto, L. A., & Francis, S. E. (2000). Assessment of symptoms of DSM-IV anxiety and depression in children: A revised child anxiety and depression scale. *Behaviour Research and Therapy*, *38*(8), 835-855. https://doi.org/10.1016/s0005-7967(99)00130-8

Clayborne, Z. M., Varin, M., & Colman, I. (2019). Systematic review and meta-analysis: Adolescent depression and long-term psychosocial outcomes. *Journal of the American Academy of Child & Adolescent Psychiatry*, *58*(1), 72-79. https://doi.org/10.1016/j.jaac.2018.07.896

Danielsson, N. S., Harvey, A. G., MacDonald, S., Jansson-Fröjmark, M., & Linton, S. J. (2013). Sleep disturbance and depressive symptoms in adolescence: The role of catastrophic worry. *Journal of Youth and Adolescence*, *42*(8), 1223-1233. https://doi.org/10.1007/s10964-012-9811-6

Delacre, M., Lakens, D., & Leys, C. (2017). Why psychologists should by default use Welch's t-test instead of Student's t-test. *International Review of Social Psychology*, *30*(1), 92-102. https://doi.org/10.5334/irsp.82

DiStefano, C., Zhu, M., & Mindrila, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research, and Evaluation*, *14*(1), Article 20. https://doi.org/10.7275/da8t-4g52

Donnelly, A., Fitzgerald, A., Shevlin, M., & Dooley, B. (2018). Investigating the psychometric properties of the Revised Child Anxiety and Depression Scale (RCADS) in a non-clinical sample of Irish adolescents. *Journal of Mental Health*, *28*(4), 345-356. https://doi.org/10.1080/09638237.2018.1437604

Dutton, D. G., & Karakanta, C. (2013). Depression as a risk marker for aggression: A critical review. *Aggression and Violent Behavior*, *18*(2), 310-319. https://doi.org/10.1016/j.avb.2012.12.002

Eccles, J. S. (1999). The development of children ages 6 to 14. *The Future of Children, 9*(2), 30–44. https://doi.org/10.2307/1602703

Fabrigar, L. R., & Wegener, D. T. (2011). *Exploratory factor analysis.* Oxford University Press.

Fahlman, S. A., Mercer, K. B., Gaskovski, P., Eastwood, A. E., & Eastwood, J. D. (2009). Does a lack of life meaning cause boredom? Results from psychometric, longitudinal, and experimental analyses. *Journal of Social and Clinical Psychology*, *28*(3), 307-340. https://doi.org/10.1521/jscp.2009.28.3.307

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*(2), 117-140. https://doi.org/10.1177/001872675400700202

Fox, K. R., Choukas-Bradley, S., Salk, R. H., Marshal, M. P., & Thoma, B. C. (2020). Mental health among sexual and gender minority adolescents: Examining interactions with race and ethnicity. *Journal of Consulting and Clinical Psychology*, *88*(5), 402-415. https://doi.org/10.1037/ccp0000486

Friedrich, M. (2017). Depression is the leading cause of disability around the world. *JAMA*, *317*(15), Article 1517. https://doi.org/10.1001/jama.2017.3826

Frison, E., & Eggermont, S. (2015a). Exploring the relationships between different types of Facebook use, perceived online social support, and adolescents' depressed mood. *Social Science Computer Review*, *34*(2), 153-171. https://doi.org/10.1177/0894439314567449

Frison, E., & Eggermont, S. (2015b). The impact of daily stress on adolescents' depressed mood: The role of social support seeking through Facebook. *Computers in Human Behavior*, *44*, 315-325. https://doi.org/10.1016/j.chb.2014.11.070

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Lawrence Erlbaum Associates.

Granic, I., Morita, H., & Scholten, H. (2020). Beyond screen time: Identity development in the digital age. *Psychological Inquiry*, *31*(3), 195-223. https://doi.org/10.1080/1047840X.2020.1820214

Hamilton, J. L., Nesi, J., & Choukas-Bradley, S. (2021). Reexamining social media and socioemotional well-being among adolescents through the lens of the COVID-19 pandemic: A theoretical review and directions for future research. *Perspectives on Psychological Science*, *17*(3), 662-679. https://doi.org/10.1177/17456916211014189

Hankin, B. L., Young, J. F., Abela, J. R., Smolen, A., Jenness, J. L., Gulley, L. D., . . . Oppenheimer, C. W. (2015). Depression from childhood into late adolescence: Influence of gender, development, genetic susceptibility, and peer stress. *Journal of Abnormal Psychology*, *124*(4), 803-816. https://doi.org/10.1037/abn0000089

Harris, J., & Porcellato, L. (2018). Opt-out parental consent in online surveys: Ethical considerations. *Journal of Empirical Research on Human Research Ethics, 13*(3), 223–229. https://doi.org/10.1177/1556264618766953

Health Research Authority. (2018). *HRA and MHRA publish joint statement on seeking and documenting consenting using electronic methods*. https://www.hra.nhs.uk/about-us/news-updates/hra-and-mhra-publish-joint-statement-seeking-and-documenting-consent-using-electronic-methods-econsent/

Ho, F., & Mussap, A. J. (2019). The gender identity scale: Adapting the gender unicorn to measure gender identity. *Psychology of Sexual Orientation and Gender Diversity, 6*(2), 217–231. https://doi.org/10.1037/sgd0000322

Hoyle, R. H. (1995). The structural equation modeling approach: Basic concepts and fundamental issues. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 1-15). Sage Publications.

Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Kahn, J. H. (2006). Factor analysis in counseling psychology research, training, and practice: Principles, advances, and applications. *The Counseling Psychologist, 34*(5), 684-718. https://doi.org/10.1177/0011000006286347

Kaltiala-Heino, R., & Fröjd, S. (2011). Correlation between bullying and clinical depression in adolescent patients. *Adolescent Health, Medicine and Therapeutics*, *2*, 37-44. https://doi.org/10.2147/AHMT.S11554

Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: The influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, *25*(1), 79-93. https://doi.org/10.1080/02673843.2019.1590851

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guildford Press.

Knekta, E., Runyon, C., & Eddy, S. (2019). One size doesn't fit all: Using factor analysis to gather validity evidence when using surveys in your research. *CBE–Life Sciences Education*, *18*(1). https://doi.org/10.1187/cbe.18-04-0064

Lakdawalla, Z., Hankin, B. L., & Mermelstein, R. (2007). Cognitive theories of depression in children and adolescents: A conceptual and quantitative review. *Clinical Child and Family Psychology Review*, *10*(1), 1-24. https://doi.org/10.1007/s10567-006-0013-1

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, *1*(2), 130-149. https://doi.org/10.1037/1082-989X.1.2.130

MacIsaac, S., Kelly, J., & Gray, S. (2018). 'She has like 4000 followers!': The celebrification of self within school social networks. *Journal of Youth Studies*, *21*(6), 816-835. https://doi.org/10.1080/13676261.2017.1420764

Magson, N. R., Freeman, J. Y. A., Rapee, R. M., Richardson, C. E., Oar, E. L., & Fardouly, J. (2021). Risk and protective factors for prospective changes in adolescent mental health during the COVID-19 pandemic. *Journal of Youth and Adolescence*, *50*(1), 44-57. https://doi.org/10.1007/s10964-020-01332-9

Markey C. N. (2010). Invited commentary: Why body image is important to adolescent development. *Journal of Youth and Adolescence, 39*(12), 1387–1391. https://doi.org/10.1007/s10964-010-9510-0

Maslow, A. (1943). A theory of human motivation. *Psychological Review 50*(4), 370-396. https://doi.org/10.1037/h0054346

McCrae, N., Gettings, S., & Purssell, E. (2017). Social media and depressive symptoms in childhood and adolescence: A systematic review. *Adolescent Research Review*, *2*(4), 315-330. https://doi.org/10.1007/s40894-017-0053-4

McLoughlin, L. T., Spears, B. A., Taddeo, C. M., & Hermens, D. F. (2019). Remaining connected in the face of cyberbullying: Why social connectedness is important for mental health. *Psychology in the Schools*, *56*(6), 945-958. https://doi.org/10.1002/pits.22232

McNeish, D., & Wolf, M. G. (2020). Thinking twice about sum scores. *Behavior Research Methods*, *52*(6), 2287-2305. https://doi.org/10.3758/s13428-020-01398-0

McPin Foundation. (2021). *Screen time: Research priorities for screen time and young people's mental health.* https://mcpin.org/screen-time-researching-the-priorities-for-screen-time-and-young-peoples-mental-health/

Meeus, W., Vollebergh, W., Branje, S., Crocetti, E., Ormel, J., van de Schoot, R., Crone, E. A., & Becht, A. (2021). On imbalance of impulse control and sensation seeking and adolescent risk: An intra-individual developmental test of the dual systems and maturational imbalance models. *Journal of Youth and Adolescence, 50*(5), 827–840. https://doi.org/10.1007/s10964-021-01419-x

Miller, G. A., & Chapman, J. P. (2001). Misunderstanding analysis of covariance. *Journal of Abnormal Psychology*, *110*(1), 40-48. https://doi.org/10.1037//0021-843x.110.1.40

Moorey, S. (2010). The six cycles maintenance model: Growing a" vicious flower" for depression. *Behavioural and Cognitive Psychotherapy*, *38*(2), 173-184. https://doi.org/10.1017/S1352465809990580

National Institute for Health and Care Excellence. (2019). *Depression in children and young people: Identification and management.* https://www.nice.org.uk/guidance/ng134

Nesi, J., & Prinstein, M. J. (2015). Using social media for social comparison and feedback-seeking: Gender and popularity moderate associations with depressive symptoms. *Journal of Abnormal Child Psychology*, *43*(8), 1427-1438. https://doi.org/10.1007/s10802-015-0020-0

Nixon, C. L. (2014). Current perspectives: The impact of cyberbullying on adolescent health. *Adolescent Health, Medicine and Therapeutics*, *5*, 143-158. https://doi.org/10.2147/AHMT.S36456

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, *100*(4), 569-582. https://doi.org/10.1037//0021-843x.100.4.569

Norman, G. (2010). Likert scales, levels of measurement and the “laws” of statistics. *Advances in Health Sciences Education*, *15*(5), 625-632. https://doi.org/10.1007/s10459-010-9222-y

O’Reilly, M. (2020). Social media and adolescent mental health: The good, the bad and the ugly. *Journal of Mental Health*, *29*(2), 200-206. https://doi.org/10.1080/09638237.2020.1714007

O’Reilly, M., Dogra, N., Whiteman, N., Hughes, J., Eruyar, S., & Reilly, P. (2018). Is social media bad for mental health and wellbeing? Exploring the perspectives of adolescents. *Clinical Child Psychology and Psychiatry*, *23*(4), 601-613. https://doi.org/10.1177/1359104518775154

Odgers, C. L., & Jensen, M. R. (2020). Annual Research Review: Adolescent mental health in the digital age: Facts, fears, and future directions. *Journal of Child Psychology and Psychiatry*, *61*(3), 336-348. https://doi.org/10.1111/jcpp.13190

Office for National Statistics. (2013, October 11). 2011 Census: Key statistics and quick statistics for local authorities in the United Kingdom. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/keystatisticsandquickstatisticsforlocalauthoritiesintheunitedkingdom/2013-10-11

Orben, A., Przybylski, A. K., Blakemore, S.-J., & Kievit, R. A. (2022). Windows of developmental sensitivity to social media. *Nature Communications*, *13*(1), Article 1649. https://doi.org/10.1038/s41467-022-29296-3

Orben, A., Tomova, L., & Blakemore, S.-J. (2020). The effects of social deprivation on adolescent development and mental health. *The Lancet Child & Adolescent Health*, *4*(8), 634-640. https://doi.org/10.1016/S2352-4642(20)30186-3

Parr, E. J., Shochet, I. M., Cockshaw, W. D., & Kelly, R. L. (2020). General belonging is a key predictor of adolescent depressive symptoms and partially mediates school belonging. *School Mental Health*, *12*(3), 626-637. https://doi.org/10.1007/s12310-020-09371-0

Parris, L., Lannin, D. G., Hynes, K., & Yazedjian, A. (2020). Exploring social media rumination: Associations with bullying, cyberbullying, and distress. *Journal of Interpersonal Violence*, *37*(5-6), 3041-3061. https://doi.org/10.1177/0886260520946826

Pew Research Centre. (2018). *Teens' social media habits and experiences.* https://www.pewresearch.org/internet/2018/11/28/teens-social-media-habits-and-experiences/ - fn-21827-1

Piteo, E. M., & Ward, K. (2020). Social networking sites and associations with depressive and anxiety symptoms in children and adolescents– a systematic review. *Child and Adolescent Mental Health*, *25*(4), 201-216. https://doi.org/10.1111/camh.12373

Prinstein, M. J., Nesi, J., & Telzer, E. H. (2020). Commentary: An updated agenda for the study of digital media use and adolescent development – future directions following Odgers & Jensen (2020). *Journal of Child Psychology and Psychiatry*, *61*(3), 349-352. https://doi.org/10.1111/jcpp.13219

Radovic, A., Gmelin, T., Stein, B. D., & Miller, E. (2017). Depressed adolescents' positive and negative use of social media. *Journal of Adolescence*, *55*, 5-15. https://doi.org/10.1016/j.adolescence.2016.12.002

Ranstam, J. (2016). Multiple P-values and Bonferroni correction. *Osteoarthritis and Cartilage*, *24*(5), 763-764. https://doi.org/10.1016/j.joca.2016.01.008

Rapee, R. M., Oar, E. L., Johnco, C. J., Forbes, M. K., Fardouly, J., Magson, N. R., & Richardson, C. E. (2019). Adolescent development and risk for the onset of social-emotional disorders: A review and conceptual model. *Behaviour Research and Therapy*, *123*, Article 103501. https://doi.org/10.1016/j.brat.2019.103501

Reed, K. P., Cooper, R. L., Nugent, W. R., & Russell, K. (2016). Cyberbullying: A literature review of its relationship to adolescent depression and current intervention strategies. *Journal of Human Behavior in the Social Environment*, *26*(1), 37-45. https://doi.org/10.1080/10911359.2015.1059165

Rice, F., Riglin, L., Lomax, T., Souter, E., Potter, R., Smith, D., . . . Thapar, A. (2019). Adolescent and adult differences in major depression symptom profiles. *Journal of Affective Disorders*, *243*, 175-181. https://doi.org/10.1016/j.jad.2018.09.015

Robitzsch, A. (2020). Why ordinal variables can (almost) always be treated as continuous variables: Clarifying assumptions of robust continuous and ordinal factor analysis estimation methods. *Frontiers in Education*, *5*, Article 589965. https://doi.org/10.3389/feduc.2020.589965

Salkovskis, P. M. (1991). The importance of behaviour in the maintenance of anxiety and panic: A cognitive account. *Behavioural and Cognitive Psychotherapy*, *19*(1), 6-19. https://doi.org/10.1017/S0141347300011472

Scott, H., & Woods, H. C. (2019). Understanding links between social media use, sleep and mental health: Recent progress and current challenges. *Current Sleep Medicine Reports*, *5*(3), 141-149. https://doi.org/10.1007/s40675-019-00148-9

Singleton, A., Abeles, P., & Smith, I. C. (2016). Online social networking and psychological experiences: The perceptions of young people with mental health difficulties. *Computers in Human Behavior*, *61*, 394-403. https://doi.org/10.1016/j.chb.2016.03.011

Solmi, M., Radua, J., Olivola, M., Croce, E., Soardo, L., Salazar de Pablo, G., Il Shin, J., Kirkbride, J. B., Jones, P., Kim, J. H., Kim, J. Y., Carvalho, A. F., Seeman, M. V., Correll, C. U., & Fusar-Poli, P. (2022). Age at onset of mental disorders worldwide: Large-scale meta-analysis of 192 epidemiological studies. *Molecular Psychiatry, 27*(1), 281–295. https://doi.org/10.1038/s41380-021-01161-7

Stevens, J. (1996). *Applied multivariate statistics for the social sciences* (3rd ed.). Lawrence Erlbaum Associates.

Stockdale, L. A., & Coyne, S. M. (2020). Bored and online: Reasons for using social media, problematic social networking site use, and behavioral outcomes across the transition from adolescence to emerging adulthood. *Journal of Adolescence*, *79*, 173-183. https://doi.org/https://doi.org/10.1016/j.adolescence.2020.01.010

Sullivan, G. M., & Feinn, R. (2012). Using effect size—or why the P value is not enough. *Journal of Graduate Medical Education*, *4*(3), 279-282. https://doi.org/10.4300/JGME-D-12-00156.1

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*(6), 1273-1296. https://doi.org/10.1007/s11165-016-9602-2

Tigges, B. B. (2003). Parental consent and adolescent risk behavior research. *Journal of Nursing Scholarship, 35*(3), 283-289. https://doi.org/10.1111/j.1547-5069.2003.00283.x

Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among US adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science*, *6*(1), 3-17. https://doi.org/10.1177/2167702617723376

Verduyn, C., Rogers, J., & Wood, A. (2009). *Depression: CBT with children, adolescents and families.* Routledge.

Warnock-Parkes, E., & Clark, D. M. (Unpublished). *Social media safety behaviours questionnaire.* Department of Experimental Psychology, University of Oxford.

Weersing, V. R., Jeffreys, M., Do, M.-C. T., Schwartz, K. T., & Bolano, C. (2017). Evidence base update of psychosocial treatments for child and adolescent depression. *Journal of Clinical Child & Adolescent Psychology*, *46*(1), 11-43. https://doi.org/10.1080/15374416.2016.1220310

West, M., Rice, S., & Vella-Brodrick, D. (2021). Exploring the "social" in social media: Adolescent relatedness—thwarted and supported. *Journal of Adolescent Research.* https://doi.org/10.1177/07435584211062158

Winstone, L., Mars, B., Haworth, C. M. A., Heron, J., & Kidger, J. (2022). Adolescent social media user types and their mental health and well-being: Results from a longitudinal survey of 13–14-year-olds in the United Kingdom. *JCPP Advances, 2*(2), Article e12071. https://doi.org/10.1002/jcv2.12071

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, *9*(2), 79-94. https://10.20982/tqmp.09.2.p079

Zimmerman, D. W. (2004). A note on preliminary tests of equality of variances. *British Journal of Mathematical and Statistical Psychology*, *57*(1), 173-181. https://doi.org/10.1348/000711004849222

Zumbo, B. D., & Zimmerman, D. W. (1993). Is the selection of statistical methods governed by level of measurement? *Canadian Psychology*, *34*(4), 390-400. https://doi.org/10.1037/h0078865

Executive Summary

Why Did We Do This Study?

Depression is the most common mental health problem worldwide. It tends to arise during adolescence, and has negative consequences for individuals and their families. Most adolescents use social media, but we don't have a good understanding of its impact on depression. So far, most research has looked at quantity of social media use. The findings are unclear: some studies, but not others, have found that more time spent on social media is linked to depression.

When young people have been interviewed, they have said that social media can have both positive and negative effects on their mood depending on how it is used. Therefore, we wanted to explore the different ways that adolescents engage with social media. Previous research has found that the way young people think and act in the 'offline' world has an impact on their mood. We wanted to find out if the ways that adolescents think about and use social media are also important.

Due to a lack of existing measures, we aimed to create a questionnaire assessing positive and negative ways of engaging with social media. Following this, we wanted to explore whether there were differences in the ways that adolescents with and without depression use social media.

How Was the Study Carried Out?

Adolescents (aged 11-18) were recruited through social media adverts, secondary schools, charities, and Child and Adolescent Mental Health Services. Participants completed a one-off online survey. This included the newly created social media questionnaire for adolescents. The 93 original items (i.e. questions on the questionnaire) were developed based on input from adolescents with lived experience of depression, a review of the existing research, and opinions of clinicians and researchers who work in this area. Analyses were done to make the questionnaire shorter and work out the different aspects of social media use that the questionnaire was measuring.

Participants' depression scores on the Revised Children's Anxiety and Depression Scale were used to work out if they had depression. This led to two groups of participants: adolescents with depression and adolescents without depression. Average scores on the different aspects of social media use were then compared in these groups.

What Did the Study Find Out?

1140 adolescents took part in this study. The average age of participants was 16 years. 62% of participants were female, 30% were male, and 8% identified with other gender identities. The analysis suggested that the social media questionnaire was measuring nine different aspects of social media use, which are described below in Table 1. Further analyses confirmed that the questionnaire had these nine components, and that items within the same component were measuring the same thing. The final version of the questionnaire had 45 items.

Table 1

Aspects of Social Media Use Measured in the Social Media Questionnaire

Aspect of social media use	Description	Example item
Impression management	Being careful about how you present yourself on social media.	I retake photos multiple times before posting or sending.
Hostility from others	Other people being nasty to you on social media.	People make fun of me on social media.
Social comparison	Comparing yourself to other people on social media.	I don't look as good as other people.
Fear of social exclusion	Using social media to be included by others.	To make sure I am not left out.
Pleasure	Using social media to feel good.	To have fun.
Connecting with others	Connecting with people via social media.	I keep in touch with friends or family.
Passing time	Using social media to pass the time.	To fill my time when I am bored or unmotivated.

Seeking support	Looking for social support on social media.	I seek support from people who I can rely on.
Hostility towards others	Being nasty to other people on social media.	I purposefully upset others.

When we compared the social media questionnaire scores of adolescents with and without depression, some differences were found. Adolescents with depression had higher scores for ‘Impression management’, ‘Hostility from others’, ‘Social comparison’, ‘Fear of social exclusion’, ‘Passing time’, ‘Seeking support’, and ‘Hostility towards others.’ The largest differences were for ‘Social comparison’ and ‘Passing time.’ However, there was no difference in scores between the groups for ‘Pleasure’ and ‘Connecting with others’.

What Did We Conclude?

Social media is an important part of adolescents’ lives. This study developed a new questionnaire to assess the ways that adolescents engage with social media. Adolescents with and without depression differed in certain motivations, thoughts, experiences and behaviours related to social media use. In particular, large differences were found for social comparison and using social media to pass time, which were more frequent in adolescents with depression. These negative aspects of social media use might play a role in adolescent depression, however further research is needed to come to any definitive conclusions.

Not all aspects of social media use were found to be more common in adolescents with depression. There was no difference in how often adolescents with and without depression used social media for pleasure and connecting with others. These aspects of social media may have a positive impact on wellbeing. Therefore, instead of just ‘reducing screen time’, it is likely that any future mental health interventions will need to consider the ways that adolescents are using social media.

Connecting Narrative

Overview of Projects

My papers share a common theme: adolescence. In order to ultimately improve support for adolescents facing adversity, I recognised the need to understand difficulties in the context of developmental stage, rather than assuming that the adult literature is applicable. Through my involvement in these projects and clinical work, it has led me to further reflect on the substantial changes that occur within adolescence. The age at which a young person reaches different stages in biological, cognitive, and psychosocial development varies considerably, and it seems important for future research to consider this. My reflections on the process of conducting each project are detailed below.

TDRP

The negative press regarding social media and its harmful effects on adolescent mental health drew my attention to this topic. Suggestions to limit time spent on social media appeared too simplistic, and thus I was motivated to research the ways adolescents engage with social media.

Item development for the social media questionnaire was challenging as it required the integration of psychological theory and qualitative information. When I felt stuck, I noticed my natural tendency was to read more information. However, my supervisors encouraging me to have ‘thinking time’ is what ultimately helped. When my project was being reviewed by the course, a staff member highlighted the importance of outlining the stages of developing the questionnaire so it could be replicated. This made me reflect on the cognitive-behavioural lens I had adopted for the study, and how someone else with a different theoretical lens may have developed different content. I also thought about how social media platforms are constantly evolving. There has been increased popularity of image-based platforms since I was a teenager, which made it vital to have input from adolescents in developing the measure. As new platforms develop in the future, the measure may require updating to remain relevant.

Recruitment was a valuable learning experience. I was fortunate to have funds for adverts on social media, which was a successful way of recruiting adolescents over 16 years. I also found that contacting psychology teachers was a useful way to gain initial interest from schools. Recruitment from CAMHS was more difficult, which was likely due to the added pressure teams were under as a result of the Covid-19 pandemic and under-staffing. In general, it was harder to recruit under 16s as this required initially gaining parental consent. With hindsight, it may have been helpful to have tried to gain ethical approval for opt-out parental consent in school settings.

At times, I felt stressed about completing this project given the time pressures of the doctorate. My supervisor encouraged me to re-connect with why I was doing the research and the young people I ultimately want to help. This was helpful in keeping me motivated.

SRL

The idea for my SRL arose whilst I was searching for models of depression for my TDRP. It drew my attention to the lack of adolescent-specific conceptualisations of depression, and the potential value of exploring the lived experience of adolescents with depression.

Discussions with my supervisor and librarians were valuable in refining the search strategy. For example, I found that broad search terms for identifying qualitative papers, such as 'interview' or 'experiences', led to a number of irrelevant references; it was more helpful to specify types of qualitative methodologies. At the time, I was concerned that I was spending too long on the search strategy, however ultimately this was valuable in producing a manageable and focused search.

I found the critical appraisal of papers to be the most challenging aspect of the review. As a new qualitative researcher, it required me to spend time reading about qualitative research methodologies and their philosophical foundations. Sharing this learning experience with the second reviewer was helpful in pooling our knowledge and enhancing our understanding. Ultimately, it has helped me feel more confident about designing my own qualitative research.

SIP

The initial idea for my SIP came from previous clinical work with young people who had finished cancer treatment. My supervisor indicated that end of treatment care had also been identified as an area to evaluate in the children's hospital she worked in. The service wanted to gain feedback from service users, which fit with my desire to develop qualitative research skills.

Recruitment was difficult because, due to the Covid-19 pandemic, I wasn't able to go into the hospital. Furthermore, the doctors and nurses, who we relied on to refer young people, were incredibly busy. I was grateful to my supervisor for using her established place in the team to generate interest and referrals for the study.

Another challenging aspect of this project was the thematic analysis. I initially tried to seek definitive answers about completing the analysis, which was likely influenced by my background in quantitative research. Through supervision discussions, I came to terms with the inherent subjectivity of the analysis. When developing themes, I found myself wanting to try to incorporate everything that each young person said before realising this was near impossible. I valued Braun and Clarke's advice that your goal should be to communicate a story about the data that addresses your research question, rather than trying to include all the data. Additionally, my supervisor advised me to start writing the results section of the paper early on; this helped to determine whether the themes made sense. Overall, my involvement in this project motivated me to get involved in areas of service improvement on my clinical placements.

Concluding Remarks

I am proud of the research contributions I had made to the field of adolescent mental health and hope to publish the papers. I also hope to pursue research post-training in a way that is integrated into my job. For example, I may consider jobs within clinical psychology research teams, or request to have dedicated time for service improvement work within a clinical role.

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Appendices

Appendix 1.A

Search Terms by Database

PsycINFO

1. (Adolescen* or teen* or youth or "young people" or "young person" or "high school student*" or "secondary school student*").ti,ab.
2. Depress*.ti,ab.
3. (qualitative or theme* or "thematic analysis" or "grounded theor*" or "discourse analysis" or phenomenol* or "framework analysis" or "narrative analysis" or "content analysis" or ethnograph* or "constant compar*" or "conversation analysis" or hermeneutic* or heuristic*).ti,ab.
4. exp *adolescent development/
5. *"Depression (Emotion)"/ or *Major Depression/
6. *Qualitative Methods/ or *Qualitative Measures/
7. 1 or 4
8. 2 or 5
9. 3 or 6
10. 7 and 8 and 9
11. limit 10 to peer reviewed journal

MEDLINE

1. (Adolescen* or teen* or youth or "young people" or "young person" or "high school student*" or "secondary school student*").ti,ab.
2. Depress*.ti,ab.
3. (qualitative or theme* or "thematic analysis" or "grounded theor*" or "discourse analysis" or phenomenol* or "framework analysis" or "narrative analysis" or "content analysis" or ethnograph* or "constant compar*" or "conversation analysis" or hermeneutic* or heuristic*).ti,ab.
4. *Adolescent/
5. *Depressive Disorder/ or *Depression/
6. *Qualitative Research/
7. 1 or 4
8. 2 or 5
9. 3 or 6
10. 7 and 8 and 9

EMBASE

1. (Adolescen* or teen* or youth or "young people" or "young person" or "high school student*" or "secondary school student*").ti,ab.
2. Depress*.ti,ab.
3. (qualitative or theme* or "thematic analysis" or "grounded theor*" or "discourse analysis" or phenomenol* or "framework analysis" or "narrative analysis" or "content analysis" or ethnograph* or "constant compar*" or "conversation analysis" or hermeneutic* or heuristic*).ti,ab.
4. *adolescence/ or *adolescent/
5. *qualitative research/

6. *depression/ or *adolescent depression/
7. 1 or 4
8. 2 or 6
9. 3 or 5
10. 7 and 8 and 9

CINAHL

1. TI (Adolescen* or teen* or youth or “young people” or “young person” or “high school student*” or “secondary school student*”) OR AB (Adolescen* or teen* or youth or “young people” or “young person” or “high school student*” or “secondary school student*”)
2. TI Depress* OR AB Depress*
3. TI (qualitative OR theme* OR "thematic analysis" OR "grounded theor*" OR "discourse analysis" OR phenomenol* OR "framework analysis" OR "narrative analysis" OR "content analysis" OR ethnograph* OR "constant compar*" OR "conversation analysis" OR hermeneutic* OR heuristic*) OR AB (qualitative OR theme* OR "thematic analysis" OR "grounded theor*" OR "discourse analysis" OR phenomenol* OR "framework analysis" OR "narrative analysis" OR "content analysis" OR ethnograph* OR "constant compar*" OR "conversation analysis" OR hermeneutic* OR heuristic*)
4. (MM “Adolescence”)
5. (MM “Depression”)
6. (MM “Qualitative Studies”)
7. S1 OR S4
8. S3 OR S6
9. S2 OR S5
10. S7 AND S8 AND S9
11. **Limiters** - Peer Reviewed

Appendix 1.B

Characteristics of Included Studies

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
McCann et al. (2012b)	Interpretative Phenomenological Analysis (Smith & Osborn, 2008). Purposive Sampling. Semi-structured interviews.	Perspectives of young people on how support from family and friends impacts on coping with depression.	Recruitment from March to September 2009 from a primary care mental health service for young people in Melbourne, Australia.	Demographics: • 26 participants. • 16-22 years old (*M* = 18, *SD* = 1.78). • 16 females, 10 males. • 19 single, 4 married, 2 in relationships. • 24 English as primary language, 2 other primary language. • 21 born in Australia, 4 in Asia-Pacific, 1 in Africa. Clinical characteristics: • Diagnosis of depression by mental health clinician. • Co-morbid anxiety (n = 13) and substance use (n = 4). • Average time under mental health service was 4.5 months.	Young people believe that family and friends play a significant role in coping with depression. The results are in line with Lazarus and Folkman's (1984) theory that support from family and friends increases positive coping, and lack of support compromises coping.

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
McCann et al. (2012a)	Same as McCann et al. (2012b).	The lived experience of young people with depression.	Same as McCann et al. (2012b).	Same as McCann et al. (2012b).	Young people experience difficulties accepting and managing depression. Improving awareness and understanding of depression in young people and the wider community would be beneficial.
Weitkamp et al. (2016)	Interpretative Phenomenological Analysis (Smith, Flowers, & Osborn, 1997). Semi-structured interviews.	Adolescents' lived experience of depression and their route to accessing therapy in Germany.	Recruitment from September to December 2014 from outpatient psychotherapy clinics in Hamburg, Germany.	Demographics: • 6 participants • 15-19 years old. • 5 females. • All German speaking. Clinical characteristics: • Diagnoses of mild to moderate depressive episodes according to ICD-10 criteria. • Co-morbid post-traumatic stress disorder (n = 4) and anxiety disorder (n = 2). • All commencing psychotherapy and had received up to 2 sessions.	Adolescents with depression experience considerable suffering. The lived experience of adolescents largely maps onto diagnostic criteria of depression but with some differences, such as experiences of anger and loneliness. The implications are to educate people about the warning signs of depression in adolescents beyond the diagnostic criteria.
Farmer (2002)	Phenomenology.	To explore adolescents'	Recruitment from an outpatient mental health	Demographics: • 5 participants.	Key aspects of adolescents' experience of

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
	Purposive sampling. In-depth interviews. Colaizzi's (1978) data analysis method.	experience of major depression in order to inform conceptualisation of the disorder.	centre in Southwestern USA.	• 13-17 years old. • 3 females, 2 males. • Ethnicities were Caucasian, Hispanic, and African American. Clinical characteristics: • Diagnosis of depression by qualified therapist.	depression are anger, fatigue, and interpersonal difficulties. Greater awareness and understanding is needed around symptoms of depression in context of the developmental stage of adolescence.
Woodgate (2006)	Hermeneutic Phenomenology. Open-ended interviews and focus groups. Van Manen's (1990) method of data analysis.	To understand what it is like to live with depression as an adolescent.	Recruitment from July 2001 to June 2002 from outpatient adolescent health centres in a city in Western Canada.	Demographics: • 14 participants. • 13.5 to 18 years old (*M* = 16). • 11 females, 3 males. • All English speaking. • 12 Caucasian ethnicity. Clinical characteristics: • Diagnosis of depression for at least 18 months. • Co-morbid mental health problem and/or learning disability (n = 12). • All undergoing treatment.	A key finding was that even when depression is perceived to be under control, adolescents are worried about future setbacks. Adolescents demonstrated resilience in managing depression, and would benefit from support from others to develop coping strategies.
Hannor-Walker et al. (2020)	Phenomenology. Interpretive qualitative method (Merriam, 2009).	The experiences of Black adolescents with depression living	Recruitment of adolescents who identified as black through public schools in low-income area	Demographics: • 10 participants. • 13-17 years old. • 6 females, 4 males. • All Black ethnicity.	There is a lack of attention paid to aspects of black adolescents' experiences of depression. The onset of depression is

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
	Purposive sampling. Semi-structured interviews. Content analysis (Patton, 1987).	in rural South-eastern USA.	within rural South-eastern USA.	Clinical characteristics: • Diagnosed with depression. • Currently undergoing counselling.	linked to environmental circumstances. The symptoms described by adolescents are consistent with cultural dysthymia, although adolescents did not talk about systemic experiences.
Midgley et al. (2017)	Framework Analysis (Ritchie & Spencer 1994) Semi-structured interviews.	The beliefs of adolescents about the causes of their depression before starting therapy.	Recruitment from September 2011 to December 2012 from Child and Adolescent Mental Health Services in North London, UK as part of a larger randomised controlled trial.	Demographics: • 77 participants. • 11-17 years old (*M* = 15.86). • 55 females, 22 males. • White British (50%), mixed ethnic background (14%), Black/black British (7%), Asian/Asian British (5%), other (8%), unknown (16%). Clinical characteristics • Diagnosis of moderate to severe unipolar depression using Kiddie Schedule for Affective Disorders and Schizophrenia. • Number of co-morbid diagnosis ranged from 0 to 5 (*M* = 0.91, *SD* = 1.24), including	Young people had varying beliefs about the causes of their depression, including internal and/or external causes. The majority of young people expressed confusion around how they became depressed. It might be helpful for clinicians to explore causal beliefs with adolescents at the start of therapy.

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
				generalised anxiety disorder (25%), avoidant disorder (18%), oppositional defiant disorder (14%), phobias (13%), and post-traumatic stress disorder (6%). • Interviewed prior to treatment.	
Ofonedu et al. (2013)	Phenomenological. Interviews. Descriptive phenomenological analysis (Giorgi and Giorgi, 2003)	The experience of inner city African American adolescents living with depression.	Recruitment of African American adolescents from an outpatient mental health service in a city in Maryland.	Demographics: • 10 participants. • 13-17 years old. • 60% females, 40% males. • 60% performing below expected academic performance. • All English speaking. • All African American ethnicity. Clinical characteristics: • Diagnosis of depression based on DSM-IV-TR by a qualified clinician. • Undergoing treatment for 1 month or more.	African American adolescents have varying experiences of depression with a wide-ranging impact physically, psychologically, and socially. There is a need to pay attention to cultural differences in presentation of depression, with particular attention to negative life experiences and attitudes around depression being part of life in this population.
Radovic et al. (2017)	Qualitative Description.	To explore how adolescents with depression use social media and	Recruitment from July 2013 to September 2014 from youth academic and specialist mental	Demographics: • 23 participants.	The relationship between social media use and depression is complex. Adolescents with

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
	Convenience sampling. Semi-structured interviews. Content analysis (Morgan, 1993).	how it affects their mood.	health clinics in Pittsburgh, United States.	• 13 to 20 years old (*M* = 16, *SD* = 2.3). • 18 females, 5 males. • 20 Caucasian, 3 African American. Clinical characteristics: • Diagnosed with depression.	depression described how social media can have both positive and negative consequences depending on how it is used. Clinicians could support adolescents to use social media in more purposeful ways.
Midgley et al. (2015)	Same as Midgley et al. (2017).	The lived experience of adolescents with depression referred to a mental health service.	Same as Midgley et al. (2017)	Same as Midgley et al. (2017)	The main features of depression reported by adolescents appear similar to adults, however eating disturbances were notably not mentioned by adolescents, whilst anger and isolation were prominent. There is a need for greater awareness of the unique symptoms of adolescent depression, and for screening measures to reflect these symptoms.
Oliver et al. (2015)	Interpretative Phenomenological Analysis (Smith et al. 1999). Semi-structured interviews.	The experience of rumination in young people with depression.	Recruitment from a specialist Child and Adolescent Mental Health Service for mood disorders covering the UK.	Demographics: • 7 participants. • 16-18 years old (*M* = 16.85, *SD* = 0.90) • 5 females, 2 males.	Adolescents' reports of rumination appeared largely similar to experiences of adults with depression. This included the repetitive nature and

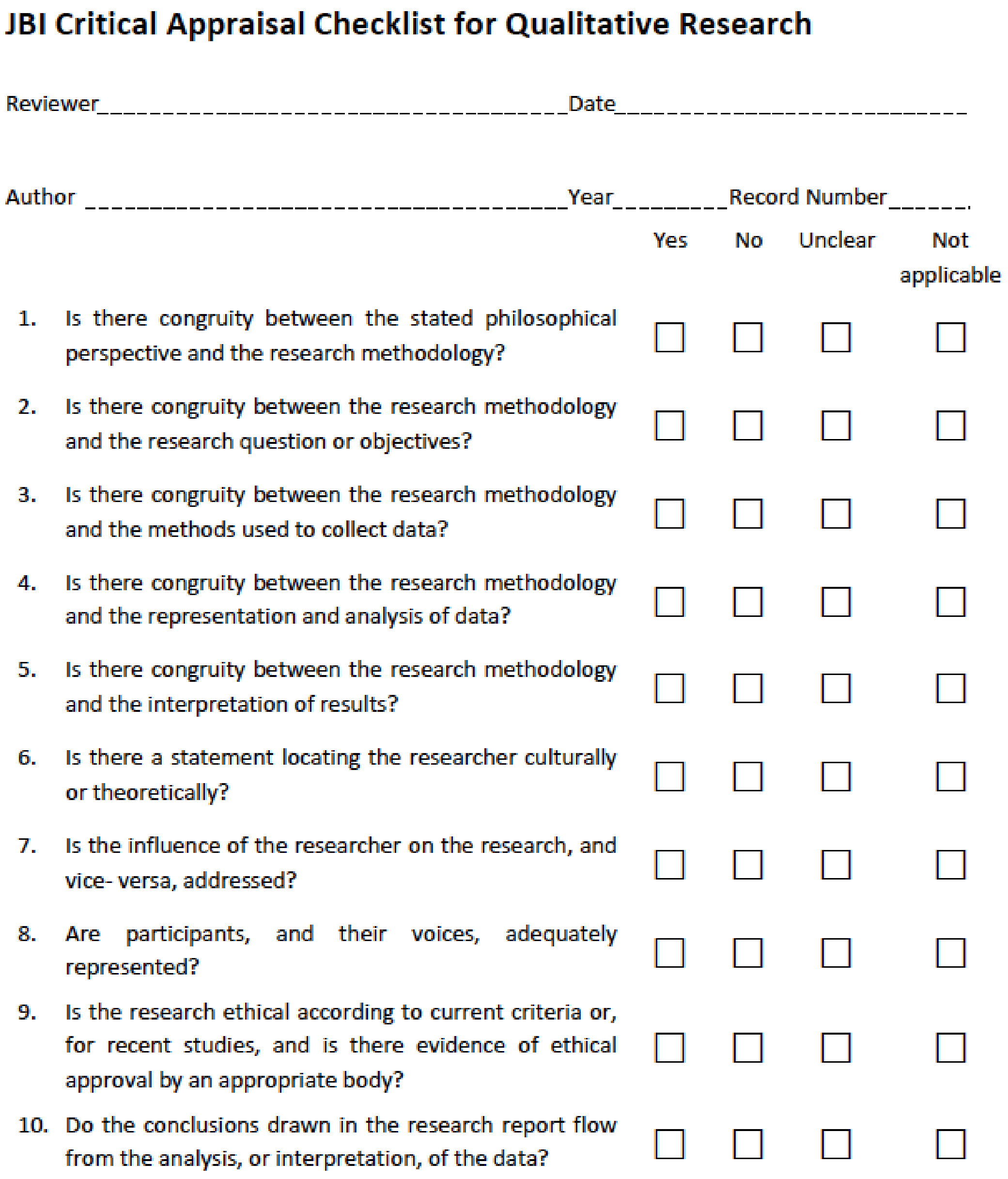
Paper	**Methodology/ Method/Analysis**	**Phenomena of interest**	**Setting/Geographical/ Cultural**	**Participants**	**Author conclusions**
				Clinical characteristics: • Primary diagnosis of depression verified in clinical interviews. • Co-morbid obsessive compulsive disorder (n = 2), post-traumatic stress disorder (n = 1), generalised anxiety disorder (n = 1), social anxiety disorder (n = 1), and anorexia nervosa (n = 1). • Undergoing CBT for 1-13 months (*M* = 6.14 months, *SD* = 4.78).	focus on past, present, or future events, which could involve thoughts and images. Additionally, a common factor was rumination's intertwinement with negative emotions. However, a sense of being overwhelmed by rumination and the interpersonal influences appeared more specific to adolescents.
De Mol et al. (2018)	Interpretative Phenomenological Analysis (Smith, Flowers, & Larkin, 2009). Purposive sampling. Semi-structured interviews.	To examine the role of social representations about normality on the lived experience of adolescents with major depression.	Recruitment from an adolescent psychiatry department, University Hospital of Louvain, Belgium.	Demographics: • 15 participants. • 15-18 years old. • 9 females, 6 males. Clinical characteristics: • Diagnosis of major depression made by a psychiatrist. • Currently an inpatient for 4 months or more due to risk concerns or lack of response to treatment.	Societal discourses about normality impacted on adolescents' sense of identity and experience of depression. Adolescents described not feeling like they were a normal person as they had failed to live up to societal expectations. It may be helpful in clinical work to externalise social representations of

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
					normality and help adolescents develop a sense of personal agency and identity.
Jernslett et al. (2021)	Thematic Analysis (Braun & Clarke, 2006). Semi-structured interviews.	To understand the experience of sleep problems in adolescents with depression in order to inform treatment.	Secondary analysis of post-therapy interviews held as part of a clinical trial which recruited from routine Child and Adolescent Mental Health Services in the UK.	Demographics: • 12 participants. • Aged 13-17 years old (*M* = 16). • 11 females, 1 male. • 8 White British, 4 any other ethnic group. Clinical characteristics: • Diagnosis of Major Depressive Disorder based on Kiddie Schedule for Affective Disorders and Schizophrenia. • Co-morbid sleep disorder diagnoses.	Difficult thoughts and feelings impacted on adolescents' ability to sleep, and using sleep as an escape from life led to oversleeping. The relationship between sleep and depression can vary for each adolescent and therefore is important for clinicians to understand the interaction for each individual.
Wisdom and Green (2004)	Grounded theory (Strauss and Corbin, 1998). Purposive sampling. In-depths interviews.	Adolescents' experiences of depression and contact with healthcare.	Participants recruited from a non-profit healthcare organisation in northwest Oregon and southwest Washington.	Demographics: • 15 participants. • 14-19 years old (*M* = 16.3, *SD* = 1.5). • 8 females, 7 males. • 13 White, 2 Hispanic. Clinical characteristics:	Adolescents described a process of gradually developing and making sense of their depression. Increasing education around depression for adolescents and parents may lead to better recognition. It is important for healthcare

Paper	Methodology/ Method/Analysis	Phenomena of interest	Setting/Geographical/ Cultural	Participants	Author conclusions
	Constant comparative analysis.			• Diagnosis of unipolar depression by a primary care doctor. • Majority not currently undergoing treatment. • 2 obese, 3 significant physical health conditions.	providers to understand adolescents' views about their depression to aid communication.
Elsina and Martinsone (2020)	Thematic Analysis (Braun & Clarke, 2006). Semi-structured interviews.	To explore how adolescents with depression view their interpersonal relationships with parents, peers and teachers.	Used data from a study aiming to adapt the Children's Depression Rating Scale-Revised. Recruitment from January to December 2018 from a children's hospital in Latvia.	Demographics: • 28 participants. • 13-17 years old (*M* = 14.82, *SD* = 1.42). • 20 females, 8 males. • All Latvian as primary language. Clinical characteristics: • Diagnosis of depression by a psychiatrist. • 24 inpatients and 4 outpatients. • 17.5% co-morbid mental health problem.	Interpersonal relationships can act as both risk and protective factors for adolescents with depression. Adolescents predominantly indicated a lack of support and understanding from others. Intrapersonal factors, such as negative cognitions and difficulties with social skills, also contribute to relationship difficulties and isolation. There is a need to educate parents and teachers about depression.

Appendix 1.C

JBI Checklist for Qualitative Research



JBI Critical Appraisal Checklist for Qualitative Research

Reviewer___________________________________Date__________________________

Author ____________________________________Year________Record Number______

	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	☐	☐	☐	☐
2. Is there congruity between the research methodology and the research question or objectives?	☐	☐	☐	☐
3. Is there congruity between the research methodology and the methods used to collect data?	☐	☐	☐	☐
4. Is there congruity between the research methodology and the representation and analysis of data?	☐	☐	☐	☐
5. Is there congruity between the research methodology and the interpretation of results?	☐	☐	☐	☐
6. Is there a statement locating the researcher culturally or theoretically?	☐	☐	☐	☐
7. Is the influence of the researcher on the research, and vice- versa, addressed?	☐	☐	☐	☐
8. Are participants, and their voices, adequately represented?	☐	☐	☐	☐
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	☐	☐	☐	☐
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	☐	☐	☐	☐

Note that for question 8, the reviewers decided that adequate representation of voices would require a minimum of 2 quotes per theme at the major level.

Appendix 1.D

Included Findings and Credibility Ratings

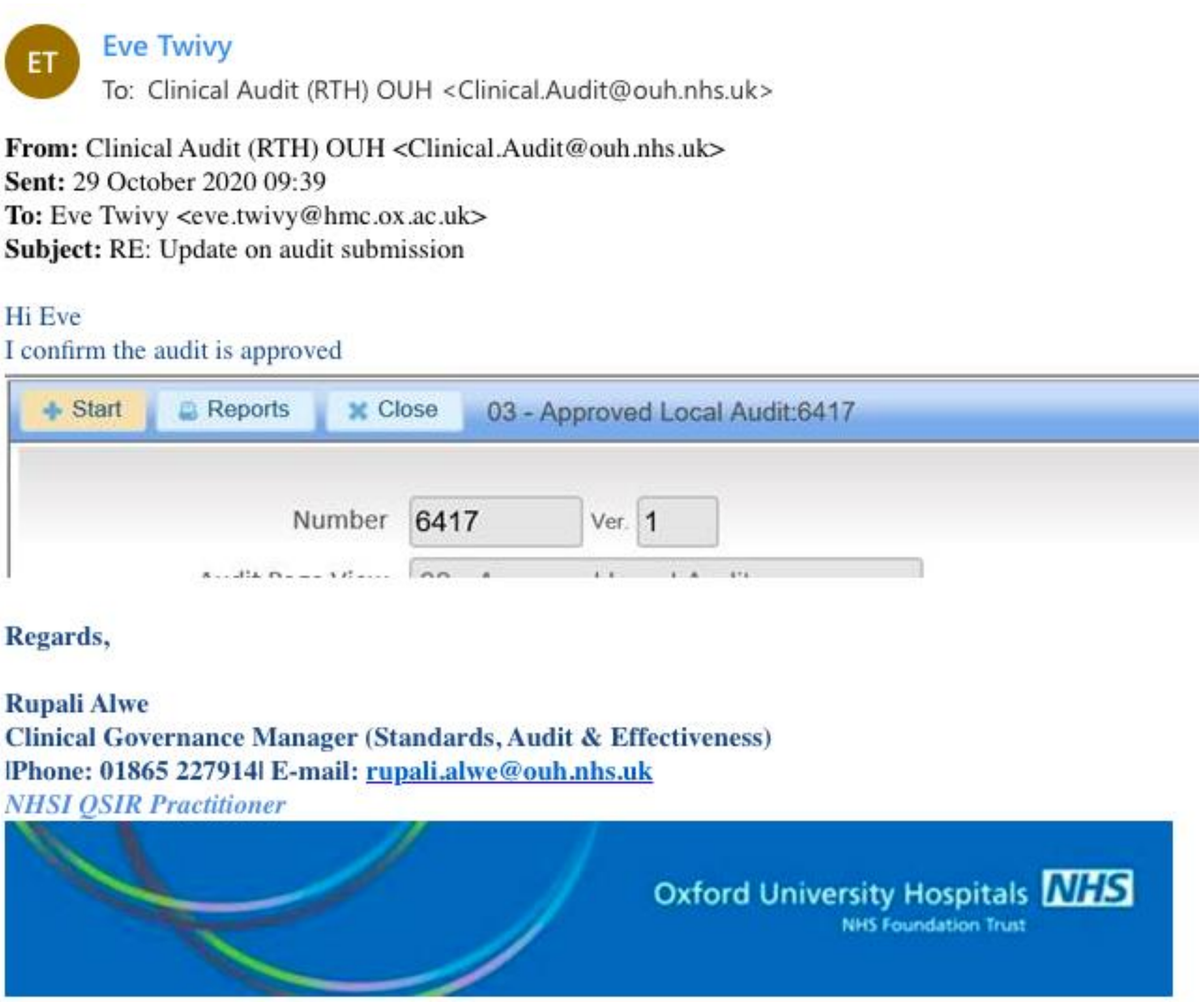
Paper	Finding	Number	Credibility rating
McCann et al. (2012b)	"Being Supportive" (McCann et al., 2012b, p. 456)	1	Unequivocal
	"Being Unsupportive" (McCann et al., 2012b, p. 457)	2	Unequivocal
McCann et al. (2012a)	"Struggling to make sense of their situation" (McCann et al., 2012a, p. 337)	3	Unequivocal
	"Spiralling down" (McCann et al., 2012a, p. 337)	4	Unequivocal
	"Withdrawing" (McCann et al., 2012a, p. 337)	5	Unequivocal
	"Contemplating self-harm or suicide" (McCann et al., 2012a, p. 337)	6	Credible
Weitkamp et al. (2016)	"Suffering is Experienced as Overwhelming" (Weitkamp et al., 2016, p. 4)	7	Unequivocal
	"Experiences of Loneliness and Isolation" (Weitkamp et al., 2016, p. 5)	8	Credible
	"Struggling to Understand the Suffering" (Weitkamp et al., 2016, p. 6)	9	Unequivocal
Farmer (2002)	"Dispirited Weariness" (Farmer, 2002, p. 573)	10	Credible
	"Emotional Homelessness: Sense of Aloneness" (Farmer, 2002, p. 573)	11	Unequivocal
	"Emotional Homelessness: No Safety Where Expected" (Farmer, 2002, p. 573)	12	Unequivocal
	"Unrelenting Anger" (Farmer, 2002, p. 573)	13	Unequivocal
	"Parental Break-ups: Caught in the Middle" (Farmer, 2002, p. 573)	14	Unequivocal
	"Continuum of Escape from Pain" (Farmer, 2002, p. 573)	15	Credible
	"Friendship, Roles and Reactions" (Farmer, 2002, p. 573)	16	Unequivocal
Woodgate (2006)	"Containing the shadow of fear" (Woodgate, 2006, p. 263)	17	Credible
	"Keeping the self alive" (Woodgate, 2006, p. 263)	18	Unequivocal
	"Maintaining a sense of belonging in the world" (Woodgate, 2006, p. 263)	19	Credible

Paper	Finding	Number	Credibility rating
Hannor-Walker et al. (2020)	"Definitions of Depression" (Hannor-Walker et al., 2020, p. 291)	20	Unequivocal
	"Types of Emotional Support" (Hannor-Walker et al., 2020, p. 293)	21	Credible
	"Contributing Factors to Depression" (Hannor-Walker et al., 2020, p. 295)	22	Unequivocal
Midgley et al. (2017)	"Bewilderment about why they were depressed" (Midgley et al., 2017, p. 28)	23	Unequivocal
	"Depression as the result of rejection, victimisation, and stress" (Midgley et al., 2017, p. 29)	24	Credible
	"Something inside is to blame" (Midgley et al., 2017, p. 31)	25	Credible
Ofonedu et al. (2013)	"The Depth of Depression" (Ofonedu et al., 2013, p. 100)	26	Unequivocal
	"Life Events and Experiences as Root Base" (Ofonedu et al., 2013, p. 100)	27	Credible
	"Emotional Sense of Self" (Ofonedu et al., 2013, p. 100)	28	Credible
	"The Survival Self" (Ofonedu et al., 2013, p. 100)	29	Unequivocal
	"The Healing Self" (Ofonedu et al., 2013, p. 100)	30	Credible
Radovic et al. (2017)	"Social media use purpose, positive and negative experiences" (Radovic et al., 2017, p. 4)	31	Unequivocal
	"Social media use and mood" (Radovic et al., 2017, p. 6)	32	Unequivocal
	"Stressed posting" (Radovic et al., 2017, p. 7)	33	Unequivocal
	"Oversharing" (Radovic et al., 2017, p. 8)	34	Credible
	"Triggering posts" (Radovic et al., 2017, p. 9)	35	Unequivocal
	"Positive coping and changing use over time" (Radovic et al., 2017, p. 10)	36	Credible
Midgley et al. (2015)	"Misery, despair, and tears" (Midgley et al., 2015, p. 272)	37	Unequivocal
	"Anger and violence towards self and others" (Midgley et al., 2015, p. 272)	38	Unequivocal
	"A bleak view of everything" (Midgley et al., 2015, p. 272)	39	Unequivocal
	"Isolation and cutting off from the world" (Midgley et al., 2015, p. 272)	40	Unequivocal

Paper	Finding	Number	Credibility rating
	"Impact on Education" (Midgley et al., 2015, p. 272)	41	Unequivocal
Oliver et al. (2015)	"Cognitive experience of rumination: a disorientating battle" (Oliver et al., 2015, p. 5)	42	Unequivocal
	"Emotional experience: a complex association with mood" (Oliver et al., 2015, p. 5)	43	Unequivocal
	"Behavioural experience of rumination: other people have significant impact" (Oliver et al., 2015, p. 5)	44	Unequivocal
De Mol et al. (2018)	"Depression means personal failure" (De Mol et al., 2018, p. 4)	45	Credible
	"Feeling bad is not allowed and is not normal: in fact, depression doesn't really exist" (De Mol et al., 2018, p. 5)	46	Credible
	"You are obliged to have an intimate relationship, otherwise you are not normal" (De Mol et al., 2018, p. 6)	47	Unequivocal
	"It is important to have future projects for personal and social well being" (De Mol et al., 2018, p. 7)	48	Credible
	"Being socially well integrated is normality" (De Mol et al., 2018, p. 7)	49	Credible
Jernslett et al. (2021)	"Thinking about 'the bad stuff'" (Jernslett et al., 2021, p. 7)	50	Unequivocal
	"Sleep as an escape" (Jernslett et al., 2021, p. 9)	51	Unequivocal
Wisdom and Green (2004)	"Growth of distress" (Wisdom & Green, 2004, p. 4)	52	Unequivocal
	"Being in a funk" (Wisdom & Green, 2004, p. 6)	53	Unequivocal
Elsina and Martinsone (2020)	"Receiving Support" (Elsina & Martinsone, 2020, p. 6)	54	Unequivocal
	"Insufficient Support" (Elsina & Martinsone, 2020, p. 6)	55	Unequivocal
	"Social Withdrawal" (Elsina & Martinsone, 2020, p. 6)	56	Credible

Appendix 2.A

Audit Approval



Eve Twivy
To: Clinical Audit (RTH) OUH <Clinical.Audit@ouh.nhs.uk>

From: Clinical Audit (RTH) OUH <Clinical.Audit@ouh.nhs.uk>
Sent: 29 October 2020 09:39
To: Eve Twivy <eve.twivy@hmc.ox.ac.uk>
Subject: RE: Update on audit submission

Hi Eve
I confirm the audit is approved

03 - Approved Local Audit:6417

Number 6417 Ver. 1

Regards,

Rupali Alwe
Clinical Governance Manager (Standards, Audit & Effectiveness)
|Phone: 01865 227914| E-mail: rupali.alwe@ouh.nhs.uk
NHSI QSIR Practitioner

Appendix 2.B

Interview Schedule

Introduction (key points to be covered in opening discussion with young person):

Thank you for meeting me. I am really grateful that you are happy to spend time talking to me. My name is Eve and I am training to be a clinical psychologist. I work with the children's hospital where you had your cancer treatment. We want to try our best to support young people and their families when their cancer treatment finishes. In the hospital, we often call this "end of treatment" – by this we mean when you had your last treatment session (e.g. chemotherapy or radiotherapy). We understand that people can often have a mixture of feelings at the end of treatment and the start of follow up appointments.

We hope to find out what the hospital is doing well, and what we can do better when young people end treatment. You might have some ideas about what you would have found helpful at this time. This will hopefully help us make changes to better support other young people in the future. I am also going to ask a bit about what it was like having cancer treatment, as this will help me understand what young people might need at the end of treatment.

I understand that talking about these experiences can sometimes be hard, so please let me know if there are any questions that you don't want to answer. I have some questions for you, but you will also have the opportunity to talk about anything else that you think is important. We will speak for about half an hour to one hour. Do you have any questions before we start?

If the young person wants their parent/carer to be present during the interview: We will ask your parent/carer to mostly listen to the conversation, so that you can answer the questions yourself. We will ask your parent/carer if they want to say anything at the end of the meeting.

Questions:

1. I would like to start by finding out a bit about you. What are some of the things that you like doing?
   Prompts: What do you do in your free time? What are your interests or hobbies?

2. Can you tell me what it was like going to the hospital for your treatment?
   Prompts: How did it feel being at the hospital? Did you feel supported by the hospital?

3. When you had cancer, did you think about what it would be like to end treatment?
   Prompts: How did you expect to feel at your last treatment session? How did you expect to feel after your last treatment session? Did you feel prepared for what would happen after treatment ended?

4. What was it like having your last treatment session? (*adapt to young person's specific circumstances e.g. radiotherapy, chemotherapy, scan etc.*)
   Prompts: How did you feel before your last session? How did you feel at the last session? How did you feel afterwards? Is there anything that the hospital could have done differently at this session?

5. What was it like having your first follow-up appointment with your doctor or nurse?

Prompts: How did you feel going to the appointment? How did you feel during the appointment? How did you feel afterwards? Is there anything that the hospital could have done differently at this appointment?

6. Did you have any difficulties after finishing treatment? *(if yes)* Could you tell me about them?
   Prompts: Did you have any difficulties with your health/mood/wellbeing/relationships (friends and family)/school? What helped you cope with these difficulties? Do you have any ideas of what might have helped you cope with these difficulties?

7. What information did you get from the hospital about ending treatment?
   Prompts: Did the hospital give you any written information? Did the hospital tell you anything at your appointments or over the phone? What information was helpful/unhelpful? What information would you have liked to be given?

8. What support did you get from the hospital when ending treatment?
   Prompts: Did anyone in the service (e.g. doctor, nurse, psychologist, CLIC Sargent Social worker) talk to you about ending treatment? Did anyone ask how you felt about ending treatment? What aspects of support were helpful/unhelpful? Is there anything that the hospital could have done better to support you?

9. How did you feel about asking for support from the hospital when ending treatment?
   Prompts: Is there anything that made it difficult to ask for support? What could make it easier to ask for support?

10. The hospital is thinking of setting up an end of treatment day for young people. Young people would be invited to attend this day with others who have also finished treatment. We hope that this day would help young people to cope with life after treatment. What do you think about this idea?
    Prompts: What do you think would be helpful to include at an end of treatment day? What might you like to see or do at an end of treatment day? [1]

11. Is there anything else you would like to say about ending cancer treatment?

---

[1] Following review of the first two interviews, this additional prompt was added to aid generation of ideas for the end of treatment day in subsequent interviews where appropriate.

Appendix 2.C

Bracketing Interview Excerpts

Interviewer: Perhaps if you could tell me a bit about your views or experiences with young people on cancer treatment?

ET: I worked in a child and adolescent um psychology team within a hospital with young people um who had cancer or who had finished cancer treatment. Um, and that experience was actually what made me interested in doing clinical psychology…I think I had thought that working with young people with cancer, or who had had cancer, would be quite an upsetting experience and I would find it really difficult, and I did find it difficult but actually I feel like I was quite inspired by the young people and learnt a lot from them, and basically just yeah did um make me think about actually doing clinical psychology as a career.

Interviewer: What things do you expect the young people to say back to you, do you have specific ideas about the support that they would be asking for?

ET: I think I have specific ideas that they will say the end of treatment is difficult, and I know that is probably not going to be reflective of everyone's experience so I think I probably do need to keep that in mind…I guess thinking about it though like a bit more, maybe they would find it difficult to tell me that they didn't get what they want from the service…because you know they might feel like very grateful to the service for the cancer treatment… so I suppose there is that other element that I hadn't really thought about - how much they might feel able to share with me as someone connected to the hospital.

Interviewer: If you could say a bit about how your views on this topic might influence how you ask people those questions and start looking at the themes you might find?

ET: I think it has probably influenced to an extent the questions that I'm planning to ask in the interview schedule already, because I guess they have been informed by theories that exist that are relevant…and I guess it might influence what I am paying attention to or pick up on or ask more about…I just feel really strongly that there needs to be more support for young people at this time…I guess that might influence it as it might make me pay more attention to you know young people saying they don't feel they've had enough support, as opposed to what they are saying about what has actually been helpful.

Interviewer: And yeah this one I think is really interesting about how you think you relate to your sample, so some of the demographics that might influence how you are able to kind of relate and communicate?

ET: So it's gonna be 11 to 18 years olds…I feel an 18 year old, I mean obviously they are not at the same life stage as me, but you know they are probably starting to think about careers or what they might want to do, so I guess they are closer to thinking about things that are also important to me…whereas an 11 year old is just starting secondary school and you know like friends are everything, and like so I think maybe it's just thinking about what I might pay attention to because of what's important to me at my life stage compared to what might be important to the young person at their life stage.

Interviewer: I was wondering if you anticipated any gender differences in how people might be able to communicate or say that they want different sorts of support?

ET: Yeah, no that's a good point, I think, um I guess there is generally, it generally feels like there is an attitude in our society of it being more difficult for boys or young men to ask for support and I guess there is this huge issue around suicide in young men particularly… I guess there are questions in there about how they felt, and I guess maybe that it is an easier question for a girl to answer…maybe even the questions I've asked are guided more by my perspective as a woman and what I feel comfortable talking about. Um, yeah it will be interesting to see though and I wonder if it will be reflected in recruitment to the study and whether there will be more girls than boys that actually agree to take part.

Interviewer: On that note, why do you think people would sign up to take part in the study?

ET: I think people would agree to take part um, I guess probably if they had had a difficult experience at the end of treatment or they weren't happy with something that had gone on... but I guess equally if they've had a really positive experience of the service maybe they would also want to talk to about that. So maybe you are less likely to get young people just in the middle, who just don't have particularly strong views either way. And I guess they'd want to take part if they felt it was gonna help other young people.

Appendix 2.D

Additional Supporting Quotations

Themes	Sub-themes	Supporting quotations
Being in the dark	Preparedness for ending	YP’s expectations of ending treatment often did not match the reality: “you think it’s gonna be easy but it’s not, and you don’t realise that until you’re in it…so like you just think at the end that it’s just going to go away and like not really going to have anything to do with it anymore but it’s literally completely different.” (P1) “I thought that like [long pause] I would probably be like really overly happy and excited, but it was kind of just like, like running like a really long race and then getting to the finish line but then feeling so exhausted that you don’t really have the energy to kind of celebrate and feel happy about it.” (P6) YP reported receiving differing levels of information: “they gave a breakdown of everything that would happen in the, after treatment, so like being informed of the check-up, you know the intermissions of the check-ups, how they’d be spread out, um, and any other examinations… they informed us of everything that would happen afterwards.” (P5) “I could’ve been better prepared um, better prepared, you know maybe you know have a sit-down conversation with my consultant about what the end of treatment means, what it will look like, how, how I’ll react, when, how I should react to it, what it was like for other people, that sort of thing.” (P3) “me personally I didn’t get a lot of information, a lot of my information went to my Mum. She got a lot of the information with starting treatment and finishing it. So, I was kind of out of the loop in that way…with like my age, I was 15 at

Themes	Sub-themes	Supporting quotations
		the time, I was kind of, I knew what was going on, so having the information probably would've helped." (P8)
	Peer guidance	YP expressed a desire for peer support and guidance: "be better to know more information about how other people may have got through it." (P7) "I don't think that there are many answers to the questions that arise from um, from the end of treatment, sort of scientifically or factually. I think a lot of um, a lot of the, the questions that you're asking can be answered anecdotally, you know so just, just having um people who have been in a similar situation to you talking." (P3) "possibly maybe like um having a few more like links in like speaking to people who have been through the same thing as you like, around your age, I think that could have been nice." (P4) YP's ideas for the end of treatment day centred around socialising with peers: "Um [long pause] definitely just like just talk to people and just see how they're feeling and just kind of form hopefully like some friendships and then you can go to like all the events that are organised by the charities and that kind of thing, and like have that like support unit for like ending treatment, that'd be good." (P6) "possibly like a day out somewhere, um, or, my mind goes to a barbeque I don't know why [laughs]…Um, somewhere they can, people can socialise with others …if there are more than you know one person ask people what sort of things they're interested in or group people together in age ranges." (P5)

Themes	Sub-themes	Supporting quotations
Separation from the hospital	Bonds with the hospital	YP reported feeling very well supported by hospital staff during treatment: "it was kind of like a second home really… I was like felt completely comfortable being there, felt like it was bit more like the people around me I felt like more family than friends." (P1) "I think they went about everything [pause] the right way, um, I had a really supportive consultant, the nurse, the nurses were all really nice, um, they talked you through everything [pause] uh I don't think they could have done it better to be honest." (P5) When ending treatment, YP lost valued relationships with staff: "over the three and a half or so years I've been around them so much, and then to suddenly stop seeing them is just felt really odd, um, cos like I enjoyed seeing them they were all really nice and uh, um [pause] and it just feels weird not being able to see them again." (P2) "It was never really anything said to me it was more like nothing was said. It was kind of just like oh well done, you've done it, you know, known you 3 years or whatever…Um, and then it was just sort of ok you're done now, and then we never really got contacted again until like we needed to go get appointments done." (P9) "I think it would be nice to still like stay in contact or still speak to my community nurse." (P6)
	Coping on your own	YP spoke about experiences of coping on their own after ending treatment: "it was kind of like, if you need like mental health help just you have to make up your own appointments and that, there was like not really any support." (P9)

Themes	Sub-themes	Supporting quotations
		"Um, well I'm, I think just generally as a person I don't really like to bother people, so I don't really, like I try and sort it out as much as I can on my own before I try and ask people." (P4) "I just think I kind of like sat with it myself in a way, and it kind of just got better over time." (P6) YP had suggestions about what might have helped them to seek support: "cos like your consultant meetings are with your parents, with both your parents, so maybe if afterwards you do like a private one with just um with just the consultant so you can be honest and you don't have to be worried, like oh, like I don't wanna say this cos my mum and dad are here." (P8) "Just sort of like well how are you dealing with like the end of treatment, like how are you feeling about sort of not being able to see a nurse every week, how are you doing with sort of like being off medications now, like is there anything like you've noticed different about everything, would've been like a lot more helpful." (P9)
Consequences of cancer		YP spoke about the consequences of cancer and treatment: "another thing about the treatment is that it urgh causes you to have like brittle bones as a side effect, because my cancer was in my bones, removing some of the stuff that was in there made them very brittle so even coming out of treatment, after all the damage is done it's still sort of trying to heal itself so um like I, I could break things very easily, and again it, it didn't bother me because I'd broken a lot of stuff during treatment anyway." (P2)

Themes	Sub-themes	Supporting quotations
		"when I came off treatment, so I was 13 and there was like a lot of people who were like um, sort of getting their periods at that time and there was just sort of me who was still on medication. I, I was really overweight because of medication and a lot of the side effects from it would like make me bloat, would make you just like really hungry, especially with steroids." (P9)
		"my anxiety around crowds, um, and talking to people naturally got worse because my appearance completely changed, so I got a lot more self-conscious." (P3)
		"when you have a lot of weight and stuff, you'd kind of be more sad and things like that, so like you'd be less motivated to do things." (P7)
		YP spoke about the management of these consequences:
		"obviously having my family the whole way, that definitely um helped a lot, I don't, and like my mum I wouldn't have been able to do it without my mum, at all, I couldn't even imagine doing it without her, so those things definitely helped me cope, and my dogs [laughs] they definitely helped me cope as well." (P8)
		"I think they offer you an appointment with like (psychologist name) and that kind of thing, um, which I did do, and then we also got a like family counselling appointment as well, that we used to do as well, and just to kind of like sort out like what was going through our minds…I think it was helpful, but… at the time I just didn't wanna go back to that ward cos I thought it was just a bit too soon." (P6)
		"I think it would be really helpful for people to have a meeting with someone just in, you know afterwards, just to see how they feel, like see if people are ok and, cos it's, although you've finished, it's, although you've finished it's like a big, it's a big shift." (P5)

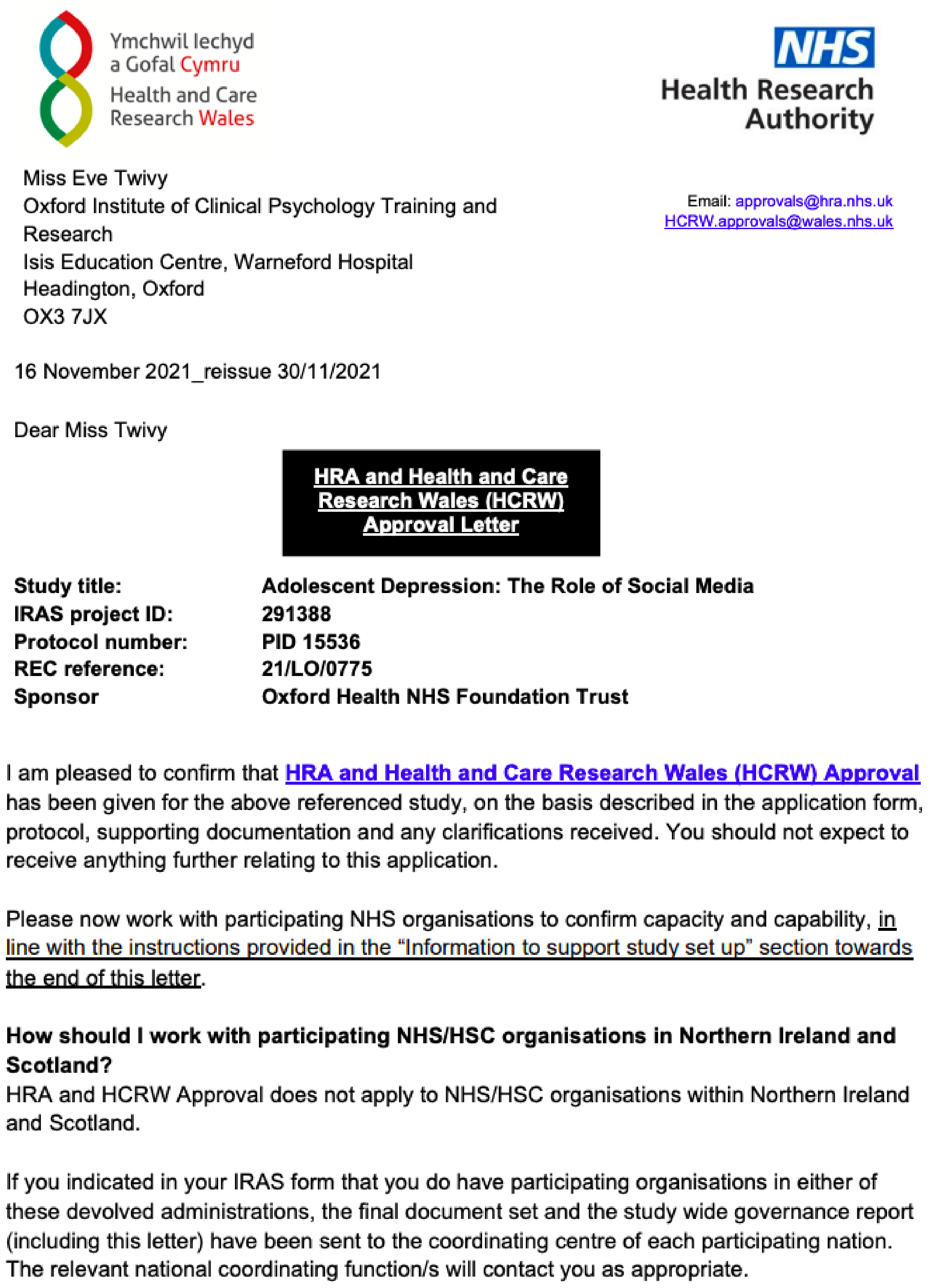
Themes	Sub-themes	Supporting quotations
		"we did go to a private physiotherapist and, and it definitely helped because like I say that's a big part of it, I put on 10 kilograms during treatment which I had to shed to sort of help me feel good about myself again, um, and so it, but that sport side of it was definitely important and something that wasn't even really mentioned by the hospital." (P3)
Getting back to normal life	Ending as a process	YP described the end of treatment as a protracted period of recovery: "I kind of thought that I'd finish it and then I'd recover really quickly and I'd get my life back to normal really quickly, but um, it wasn't quick at all, it obviously took a long time to recover and a long time to get back to normal and go back to school, and then go back to school and nothing's the same." (P8) "so, when it's holidays and that, you'd, they'd say that you could, but you, they say that you might but they recommend not and that, or that you might not be able to because of your past things and that, so you have to like leave your immune system to build up over time." (P7) "it's definitely better now but I was usually like really tired, couldn't really do much in the day, and then like socialising I found it quite hard, because I couldn't keep up with everyone, walking as well, I struggled with that, um, but it does get better over time, and I know that, so I was just kind of like being patient with my body and just listening to it." (P6) Some YP described a period of adjustment during their maintenance treatment: "I think because by the end of my treatment, like my official end of treatment, because I was sort of back to normality and like my hair had grown back and I, I wasn't wearing wigs anymore, it was, I definitely, if you counted like the end of

Themes	Sub-themes	Supporting quotations
		my treatment, the end of my intense treatment, that felt like a big deal because I was not in hospital all the time." (P4)
	The shift to everyday life	YP spoke about the shift from life on treatment to everyday life: "I think it's a lot, like you know when we came out of the first lockdown again, you know, you've spent so long [pause] inside [laughs] it, it's yeah, it's, it was strange I think…I've gotta say that, uh it was very nice, um, I was very happy." (P5) "you just kind of have to go back into like normal life and it's hard to just kind of make your way back when you've been out for so long." (P6) YP spoke about social difficulties when ending treatment: "I didn't really socialise as much cos I'd missed so much school that I've lost quite a few friends, kind of like, I don't want to say like I was forgotten, but like cos I wasn't there everyone had kind of moved on and I was still kind of stuck like 8 months behind." (P1) "I could sort of get like work related anxiety, and sort of obviously no one in anyway um forced me to do work while I was on treatment, and then and then you start having to do work again after treatment and that's, that's a bit of a shock to the system." (P3) YP talked about the liaison between the hospital and school: "they may have been able to … notify the school and stuff about what's happened because like when I actually talked to my PE teachers and that most of them didn't actually know what I went through so they don't really understand fully." (P7)

Themes	Sub-themes	Supporting quotations
		"I got a um letter from my consultant telling, um just, just putting down in writing what I'd been through, but also what effect that would have on me, that I could give to school for example, um, or give to exam boards so I could get extenuating circumstances and things, so there was that that support, which was nice." (P3) YP spoke about marking the end of treatment: "my tablets - I came into school with them and I did them with my mates, and we all celebrated at lunch, because um it was my last set, so that was, that was nice." (P2) "I dunno, maybe like a little like something to say like oh it's your last treatment, maybe like, I dunno, I don't know really, possibly something to like take away would be nice. Sort of mark the occasion." (P4)

Appendix 3.A

Ethical Approval



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16 November 2021_reissue 30/11/2021

Dear Miss Twivy

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Adolescent Depression: The Role of Social Media**
IRAS project ID:	**291388**
Protocol number:	**PID 15536**
REC reference:	**21/LO/0775**
Sponsor	**Oxford Health NHS Foundation Trust**

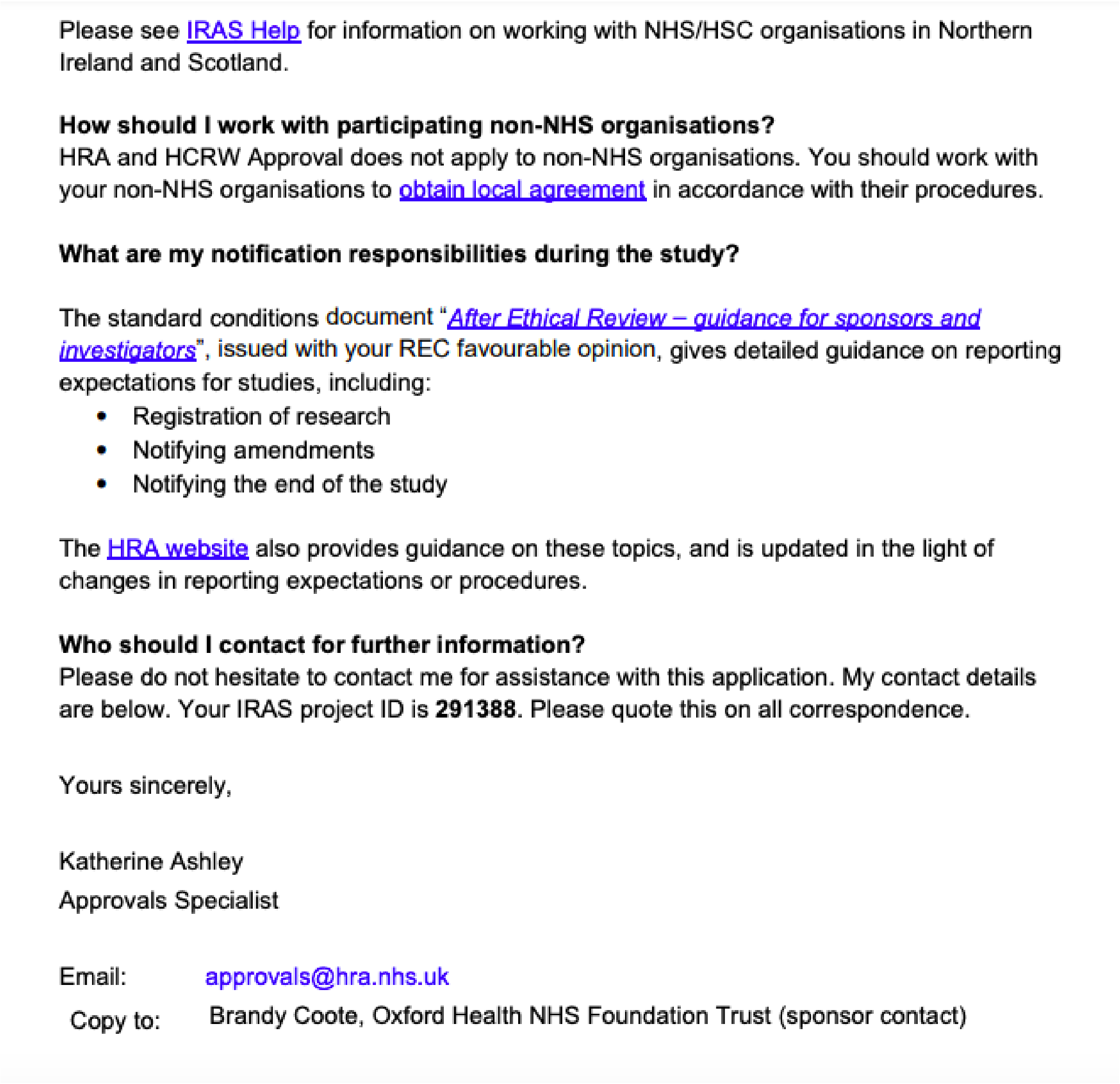
I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?

HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.



Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

What are my notification responsibilities during the study?

The standard conditions document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

Who should I contact for further information?
Please do not hesitate to contact me for assistance with this application. My contact details are below. Your IRAS project ID is **291388**. Please quote this on all correspondence.

Yours sincerely,

Katherine Ashley
Approvals Specialist

Email: approvals@hra.nhs.uk
Copy to: Brandy Coote, Oxford Health NHS Foundation Trust (sponsor contact)

Appendix 3.B

Original Items in the SMS

Label	Item	Theorised domain
	Please select how often you use social media for each of the following reasons.	
Reasons1	To make sure I am not left out.	Avoiding exclusion
Reasons2	To avoid being rejected by others.	
Reasons3	To fit in at school/college.	
Reasons4	To be accepted by others.	
Reasons5	To make sure I don't miss out on anything.	Fear of missing out
Reasons6	To keep up to date with what people are doing.	
Reasons7	To check if friends are having fun without me.	
Reasons8	To keep up with trends.	
Reasons9	To connect with others.	Connection
Reasons10	To feel less lonely.	
Reasons11	To share information or experiences with others.	
Reasons12	To help others.	
Reasons13	To get support.	Coping
Reasons14	To help cope with negative feelings.	
Reasons15	To fill my time when I am bored or unmotivated.	
Reasons16	To distract myself from what is going on around me.	
Reasons17	To pass the time when I can't sleep.	
Reasons18	To freely express myself.	
Reasons19	To have fun.	Pleasure
Reasons20	To cheer me up.	
Reasons21	To keep up my interests.	
Reasons22	To have a laugh.	
	Please select how often you do each of the following things when using social media.	
Behaviours1	I think of something to post or message but decide not to.	Impression management
Behaviours2	I reword messages or posts multiple times.	
Behaviours3	I carefully select words or content that I add to posts/messages/voice-notes/videos.	
Behaviours4	I make a special effort with my appearance for photos/videos that may be put online.	
Behaviours5	I retake photos multiple times before posting or sending.	
Behaviours6	I edit, manipulate or use filters on photos/snaps.	
Behaviours7	I get my friends's opinion on my photos before posting.	
Behaviours8	I follow less people than follow me to appear popular.	

Behaviours9	I check photos that I am tagged in by others.	
Behaviours10	I post anonymously.	
Behaviours11	I try to appear funny, unique, or interesting.	
Behaviours12	I try to keep a low profile and not attract attention.	
Behaviours13	I avoid posting anything too personal about myself.	
Behaviours14	I exaggerate something to appear better to others.	
Behaviours15	I make an effort to come across well.	
Behaviours16	I filter who can see my posts.	
Behaviours17	I try to appear normal.	
Behaviours18	I try to look perfect.	
Behaviours19	I try to picture how I appear to others on social media.	
Behaviours20	I check how others respond to my posts.	
Behaviours21	I delete photos that don't get enough likes.	
	Please select how often you do each of the following things on social media.	
Behaviours22	I keep in touch with friends or family.	Connecting with others
Behaviours23	I communicate with people who I can't see in person.	
Behaviours24	I connect with online groups which share a common interest or identity.	
Behaviours25	I reconnect with people who I lost touch with.	
Behaviours26	I share memes, pictures or videos with friends or family.	
Behaviours27	I make plans on social media to meet up with friends.	
Behaviours28	I seek support from people who I can rely on.	
Behaviours29	I support other people.	
Behaviours30	I share articles and ideas.	
Behaviours31	I joke around with friends.	
Behaviours32	I connect with people who have been through similar experiences.	
Behaviours33	I find out what friends have been up to.	
Behaviours34	I start new relationships.	
Behaviours35	I post about my feelings to get a reaction from others.	Unhelpful coping strategies
Behaviours36	I post revealing photos to be noticed.	
Behaviours37	I post about risky behaviours (e.g. taking drugs, drinking, fighting, self-harm, stunts).	
Behaviours38	I ask others to tell me that everything will be okay.	
Behaviours39	I rant about having a bad day.	
Behaviours40	I start fights or arguments.	
Behaviours41	I spend hours scrolling through social media.	
Behaviours42	I ignore messages from friends.	
Behaviours43	I search for triggering images or information.	
Behaviours44	I send nude photos to others.	

Behaviours45	I am aggressive towards others.	
Behaviours46	I purposefully upset others.	
Behaviours47	I overshare personal things.	
	Please select how often each of the following things happen to you.	
Thoughts1	I worry that people will threaten me on social media.	Worry
Thoughts2	Worries that people will judge my posts pop into my mind.	
Thoughts3	I keep thinking that my posts won't get enough likes.	
Thoughts4	I can't stop worrying that someone will post negative things about me.	
Thoughts5	I worry that I won't look attractive in social media posts.	
Thoughts6	I can't stop thinking about what someone posted on social media.	Rumination
Thoughts7	I spend time alone thinking about what my posts say about who I am.	
Thoughts8	I keep thinking about how other people have reacted to my posts.	
Thoughts9	I keep asking myself why I spend so much time on social media.	
Thoughts10	I keep going over online conversations in my mind.	
Thoughts11	My posts don't get enough likes or attention.	Negative feedback from others
Thoughts12	I get nasty comments from others on social media.	
Thoughts13	I see friends having fun without me on social media.	
Thoughts14	People send me threats on social media.	
Thoughts15	People criticise me on social media.	
Thoughts16	People make fun of me on social media.	
Thoughts17	I get bullied on social media.	
	Please select how often you have each of the following thoughts when using social media.	
Thoughts18	I don't look as good as other people.	Social comparison
Thoughts19	My body shape isn't as nice as other people.	
Thoughts20	I am not as attractive as other people.	
Thoughts21	Other people have better social lives than me.	
Thoughts22	I can't be as popular as other people.	
Thoughts23	I am not as likeable as other people.	
Thoughts24	I'm not as funny as other people.	

Appendix 3.C

Factor Correlations for the SMS from EFA

Factors	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Impression management	-								
2. Hostility from others	.32	-							
3. Social comparison	.63	.30	-						
4. Fear of social exclusion	.58	.24	.43	-					
5. Pleasure	.13	.08	-.05	-.02	-				
6. Connecting with others	.21	-.03	-.09	.06	.40	-			
7. Passing time	.59	.29	.54	.40	.26	.14	-		
8. Seeking support	.46	.34	.22	.27	.37	.37	.30	-	
9. Hostility towards others	.31	.42	.25	.15	.13	.02	.36	.20	-

Note. Correlations were calculated using Pearson's *r*.

Appendix 3.D

Factor Correlations for the SMS from CFA

Factors	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Impression management	-								
2. Hostility from others	.34	-							
3. Social comparison	.76	.33	-						
4. Fear of social exclusion	.62	.35	.52	-					
5. Pleasure	-.07	-.11	-.20	-.11	-				
6. Connecting with others	.07	-.13	-.08	-.11	.58	-			
7. Passing time	.62	.29	.60	.40	.14	.16	-		
8. Seeking support	.23	.18	.17	.14	.39	.46	.27	-	
9. Hostility towards others	.20	.39	.22	.12	.05	.10	.33	.05	-

Note. Correlations were calculated using Pearson's *r*.

Appendix 3.E

Final Version of the SMS

Social Media Scale (SMS)

Introduction
This questionnaire asks about your thoughts, feelings and experiences using social media. Please read each item and select how often it applies to you. There are no right or wrong answers.

Reasons for Using Social Media
Please select how often you use social media for each of the following reasons.

1	**To make sure I am not left out.**	None of the time	Hardly ever	Some of the time	Often	All of the time
2	**To fit in at school/college.**	None of the time	Hardly ever	Some of the time	Often	All of the time
3	**To be accepted by others.**	None of the time	Hardly ever	Some of the time	Often	All of the time
4	**To make sure I don't miss out on anything.**	None of the time	Hardly ever	Some of the time	Often	All of the time
5	**To have fun.**	None of the time	Hardly ever	Some of the time	Often	All of the time
6	**To cheer me up.**	None of the time	Hardly ever	Some of the time	Often	All of the time
7	**To keep up my interests.**	None of the time	Hardly ever	Some of the time	Often	All of the time
8	**To have a laugh.**	None of the time	Hardly ever	Some of the time	Often	All of the time
9	**To fill my time when I am bored or unmotivated.**	None of the time	Hardly ever	Some of the time	Often	All of the time
10	**To distract myself from what is going on around me.**	None of the time	Hardly ever	Some of the time	Often	All of the time
11	**To pass the time when I can't sleep.**	None of the time	Hardly ever	Some of the time	Often	All of the time
12	**To get support.**	None of the time	Hardly ever	Some of the time	Often	All of the time

Behaviours on Social Media
Please select how often you do each of the following things when using social media.

13	**I reword messages or posts multiple times.**	None of the time	Hardly ever	Some of the time	Often	All of the time
14	**I make a special effort with my appearance for photos/videos that may be put online.**	None of the time	Hardly ever	Some of the time	Often	All of the time

15	**I retake photos multiple times before posting or sending.**	None of the time	Hardly ever	Some of the time	Often	All of the time
16	**I edit, manipulate or use filters on photos/snaps.**	None of the time	Hardly ever	Some of the time	Often	All of the time
17	**I get my friend's opinion on my photos before posting.**	None of the time	Hardly ever	Some of the time	Often	All of the time
18	**I make an effort to come across well.**	None of the time	Hardly ever	Some of the time	Often	All of the time
19	**I try to look perfect.**	None of the time	Hardly ever	Some of the time	Often	All of the time
20	**I try to picture how I appear to others on social media.**	None of the time	Hardly ever	Some of the time	Often	All of the time
21	**I check how others respond to my posts.**	None of the time	Hardly ever	Some of the time	Often	All of the time

Please select how often you do each of the following things on social media.

22	**I keep in touch with friends or family.**	None of the time	Hardly ever	Some of the time	Often	All of the time
23	**I reconnect with people who I lost touch with.**	None of the time	Hardly ever	Some of the time	Often	All of the time
24	**I share memes, pictures or videos with friends or family.**	None of the time	Hardly ever	Some of the time	Often	All of the time
25	**I make plans on social media to meet up with friends.**	None of the time	Hardly ever	Some of the time	Often	All of the time
26	**I joke around with friends.**	None of the time	Hardly ever	Some of the time	Often	All of the time
27	**I spend hours scrolling through social media.**	None of the time	Hardly ever	Some of the time	Often	All of the time
28	**I seek support from people who I can rely on.**	None of the time	Hardly ever	Some of the time	Often	All of the time
29	**I connect with people who have been through similar experiences.**	None of the time	Hardly ever	Some of the time	Often	All of the time

30	**I start fights or arguments.**	None of the time	Hardly ever	Some of the time	Often	All of the time
31	**I am aggressive towards others.**	None of the time	Hardly ever	Some of the time	Often	All of the time
32	**I purposefully upset others.**	None of the time	Hardly ever	Some of the time	Often	All of the time

Thoughts and Experiences on Social Media
Please select how often each of the following things happen to you.

33	**Worries that people will judge my posts pop into my mind.**	None of the time	Hardly ever	Some of the time	Often	All of the time
34	**I worry that I won't look attractive in social media posts.**	None of the time	Hardly ever	Some of the time	Often	All of the time
35	**I keep thinking about how other people have reacted to my posts.**	None of the time	Hardly ever	Some of the time	Often	All of the time
36	**I get nasty comments from others on social media.**	None of the time	Hardly ever	Some of the time	Often	All of the time
37	**People send me threats on social media.**	None of the time	Hardly ever	Some of the time	Often	All of the time
38	**People criticise me on social media.**	None of the time	Hardly ever	Some of the time	Often	All of the time
39	**People make fun of me on social media.**	None of the time	Hardly ever	Some of the time	Often	All of the time
40	**I get bullied on social media.**	None of the time	Hardly ever	Some of the time	Often	All of the time

Please select how often you have each of the following thoughts when using social media.

41	**I don't look as good as other people.**	None of the time	Hardly ever	Some of the time	Often	All of the time
42	**My body shape isn't as nice as other people.**	None of the time	Hardly ever	Some of the time	Often	All of the time
43	**Other people have better social lives than me.**	None of the time	Hardly ever	Some of the time	Often	All of the time
44	**I am not as likeable as other people.**	None of the time	Hardly ever	Some of the time	Often	All of the time
45	**I'm not as funny as other people.**	None of the time	Hardly ever	Some of the time	Often	All of the time

Interpretation of the SMS

Scale Scoring

None of the time	Hardly ever	Some of the time	Often	All of the time
0	1	2	3	4

Items by Domain

Domains	Items
Impression management	13,14,15,16,17,18,19,20,21,33,34,35
Hostility from others	36,37,38,39,40
Social comparison	41,42,43,44,45
Fear of social exclusion	1,2,3,4
Pleasure	5,6,7,8
Connecting with others	22,23,24,25,26
Passing time	9,10,11,27
Seeking support	12,28,29
Hostility towards others	30,31,32

Appendix 3.F

Correlations Between SMS Factor Scores and Raw Depression Scores for Adolescents From Gender Minority Groups (n = 90)

Factors	**Raw depression score**
Impression management	.50***
Hostility from others	.35***
Social comparison	.62***
Fear of social exclusion	.27*
Pleasure	-.15
Connecting with others	-.01
Passing time	.46***
Seeking support	.29**
Hostility towards others	.19

Note. Correlations were calculated using Pearson's *r*.

****p* < .001; ***p* < .01; **p* < .05*

Appendix 3.G

Sum Scores for SMS Factors

Factor	Range of sum score[a]	Mean of sum score (*SD*) Non-depressed	Mean of sum score (*SD*) Depressed	*r* between sum score and factor score
Impression management	0-48	22.53 (11.04)	29.29 (10.94)	.99
Hostility from others	0-20	1.85 (2.75)	3.93 (4.25)	.99
Social comparison	0-20	10.20 (5.28)	14.92 (5.07)	.98
Fear of social exclusion	0-16	6.70 (3.55)	7.86 (3.86)	.98
Pleasure	0-16	10.35 (3.02)	10.05 (3.18)	.99
Connecting with others	0-20	14.16 (3.27)	14.14 (3.61)	.97
Passing time	0-16	10.00 (3.25)	12.46 (2.93)	.98
Seeking support	0-12	4.79 (2.51)	5.89 (2.86)	.97
Hostility towards others	0-12	0.87 (1.35)	1.93 (2.21)	.99

Note. Sum scores were calculated by summing the items within each factor.

[a] The possible and actual range of sum scores were the same.

Appendix 3.H

Correlations Between SMS Factor Scores and Depression T-scores

Factors	Depression T-score (variance explained)
Impression management	.40*(16%)
Hostility from others	.36* (13%)
Social comparison	.52* (27%)
Fear of social exclusion	.25* (6%)
Pleasure	-.05 (0.3%)
Connecting with others	-.03 (0.1%)
Passing time	.49* (24%)
Seeking support	.23* (5%)
Hostility towards others	.33* (11%)

Note. Correlations were calculated using Pearson's *r* and the variance in depression scores explained by factor scores is r^2.

$^*p < .001$