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Emotion regulation and psychological mechanisms in parenthood

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	Main text	**Appendices (including references, figures, and tables)**	**Total**
Abstract	296	-	296
Literature Review	7217	9194	16,411
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Abstract

The arrival of an infant can be a rewarding yet challenging time for parents. There is a need to adapt and navigate their new roles and contexts with reduced resources. This research aimed to explore psychological mechanisms in parents of infants which are important during this period of adjustment.

Chapter 1 outlines a review of quantitative literature examining the relationship between emotion regulation and psychological distress (defined as depression, anxiety, and stress) in parents of infants. Four databases were systematically searched, and seventeen papers met the requirements for inclusion. The findings of the review highlighted reduced emotion regulation correlated with depression, anxiety, and stress. Emotion regulation and psychological distress were also found to be crucial mechanisms in mediation models with additional variables related to parenthood. Recognising the relationship between specific measures of emotion regulation and psychological distress for parents, may allow for clinical interventions which focus more on reducing dysregulation, rather that improving regulating skills.

Chapter 2 reports an empirical study investigating the relationship between childhood adversity and parental reflective functioning in fathers. The role of emotion regulation was also considered in this relationship. Fathers (n = 140) of infants completed online self-report measures to assess the study variables. No relationship was found between adverse childhood experiences (ACEs) and two domains of parental reflective functioning (PRF). Emotion regulation was found to mediate the relationship between ACEs and the PRF domain certainty about mental states. The results suggest that ACEs do not influence certain PRF domains, but that emotion dysregulation is an important mechanism in understanding this

relationship. The study proposed that reducing emotion dysregulation for fathers can help promote parental reflective functioning.

Chapter 3 outlines the main findings and discusses key decision making throughout the research process. Finally, reflections on the thesis journey are described.

Declaration

This thesis documents research undertaken for the Doctorate in Clinical Psychology at Lancaster University. The work presented in this thesis is my own except where reference to other authors is made. This work has not been submitted for any other academic award.

Gina Bannister

2nd May 2022

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Firstly, I would like to thank all the fathers who participated in the study. Thank you for giving up your precious time and being so open and honest with your responses about such a difficult topic. It would not have been possible without you and I hope the findings prove meaningful.

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Finally, to my partner Tom, thank you for being my biggest supporter and always believing in me. You've provided so much wisdom, laughter, and enthusiasm. I will be eternally grateful for your thoughtfulness and last minute proofreads!

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Chapter One: Systematic Literature Review

Parental emotion regulation and psychological distress during infancy: a systematic review

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Abstract

The postpartum period is a challenging time for parents, physically and emotionally. Parents can be at risk of experiencing psychological distress when adapting to these new demands. Emotion regulation seems to be a critical feature for sensitive and responsive parent-infant relationships during this time and it may play a key role in perinatal psychological distress. This review aimed to explore the associations between emotion regulation and psychological distress in parents of children under two. A systematic review was conducted in which key electronic databases and reference lists of relevant articles were searched in January 2022. Eligible studies were identified, data extracted, and the quality of studies appraised. A narrative review design was used to synthesise findings. Seventeen reports were included and an association between decreased emotion regulation and increased psychological distress (defined as depression, anxiety, and stress) was found in the majority of papers. A smaller association was identified between psychological distress and specific emotion regulation strategies compared to general difficulties regulating emotions. Emotion regulation and psychological distress were also found to be crucial mechanisms in mediation models with additional variables related to parenthood across papers. However, these relationships often appeared to be bidirectional in nature. Recognising the relationship between emotion regulation and psychological distress for parents, may allow for clinical interventions which focus more on reducing dysregulation, rather that improving regulating skills.

Keywords: emotion regulation, psychological distress, parents, depression, anxiety, stress, wellbeing

Introduction

Whilst the transition to parenthood can be rewarding, it also leads to a number of hormonal, psychological, behavioural and neurobiological changes which can be challenging for parents (Feldman, 2007). Parents have to adapt to their new roles, navigate changes in their own relationships, usually within the context of reduced resources such as sleep and finances, all whilst managing the responsibilities of caring for their new infant (Cowan & Cowan, 1992; Feeney et al., 2001; Parfitt & Ayers, 2014). Studies have highlighted the severity of shock, isolation and exhaustion raising a child can bring (Deave et al., 2008; Roy et al., 2014). These emotional experiences can be influenced by a number of individual and contextual factors, such as mental health history, relationship quality, and socioeconomic inequalities (Beck, 2001; Epifanio et al., 2015; O'hara & Swain, 1996). This period of vulnerability can leave parents at increased risk of experiencing mental health difficulties (Wisner et al., 2006). If parents experiencing psychological distress (defined here as symptoms of depression, anxiety, and stress; Viertiö et al., 2021) are not supported, it can lead to detrimental effects for themselves and their families. For instance, depression during the postpartum period has been linked with poorer outcomes for children (Deave et al., 2008; Mandl et al., 1999).

Parental psychological distress during the perinatal period can have a profound effect on the way in which a parent thinks about, interacts, and responds to their child (Fonagy et al., 2018; Tronick & Beeghly, 2011). Parents are not at fault for experiencing distress, there are many individual, relational, and socioeconomic challenges during the perinatal period (da Fonseca, 2014). Nonetheless, the detrimental impact of distress on parental wellbeing and infant outcomes demonstrates that research remains relevant. Studies have shown that children of parents with depression were at an increased risk for depression later in life (Halligan et al., 2007; Hay et al., 2008; Murray et al., 1992). It is reported that the perinatal

period is also a time when parents experience a decline in relationship satisfaction (Mitnick et al., 2009). Arguments and conflict can reduce parents' ability to support each other and add to increasing difficulties in tolerating stressful situations (Feinberg, 2002). Psychological distress can have a significant impact on parents' ability to cope with challenges that occur when caring for their infant (Rutter & Quinton, 1984; Singer et al., 2003). For example, research has found that symptoms of depression can make it more difficult for a caregiver to respond to an infant's social interactions (Stein et al., 2010). Infant cues might go unnoticed or misinterpreted as the parent is preoccupied with their own internal struggles (Diego et al., 2006). A repeated lack of attunement in parent-infant interactions, can have a detrimental impact on a child's social and emotional development, their attachment in childhood and later adult relationships (Saunders et al., 2015). Furthermore, when an infant is upset or cannot be soothed, this can become unbearable for parents experiencing their own distress (Zeifman & Roberts, 2017). These experiences, together with societal pressures can lead to a perpetuating cycle of self-criticism and increasing distress (Respler-Herman et al., 2012).

Nevertheless, findings are not definitive, many factors can support parent-infant interactions and experiencing psychological distress does not inevitably lead to poor child outcomes (Smith, 2004). Murray (1992) found that screening for maternal depression and implementing therapeutic support resulted in positive child outcomes later on in life. Furthermore, Tronick (2007) reported the best functioning mother-infant pairs at three months were only in an attuned stated 28% of the time, which points towards attunement being 'good enough' rather than perfect. Given that psychological distress can be detrimental for parents and infants, but that the impact can be reduced through appropriate support, it appears crucial to know how to offer this support. Therefore, further understanding of the features involved in parental psychological distress is needed.

Emotion regulation and psychological distress

One mechanism that may be associated with psychological distress is emotion regulation. Research suggests that difficulty regulating emotions could be a risk factor for mental health difficulties such as anxiety and depression (Aldao et al., 2010; Gross, 1999; Prefit et al., 2019). Emotion regulation refers to how a person experiences and responds to their emotions (Gratz & Roemer, 2004). Individuals may attempt to increase, maintain, or decrease emotions they perceive as positive or negative (Gross, 1999). Critically however, attempts to modify emotional experiences may not move people closer to the desired emotional state; for example, one emotional regulation strategy, thought suppression, can cause unwanted thoughts to occur more frequently (Wegner et al., 1987). Problems can occur when a person develops maladaptive strategies and responses to difficult emotional experiences, which can lead to particular mental health difficulties. For example, a recent meta-analysis found an association between emotion regulation and the development of eating disorders (Prefit et al., 2019) and Seligowski et al. (2015) found that emotion regulation was associated with post-traumatic stress symptoms across a variety of samples. Importantly Rutherford et al. (2015) propose that emotion regulation during parenthood differs from emotion regulation skills implemented during other periods of life.

Emotion regulation during the perinatal period

Emotion regulation is a complex skill, and it evolves across the lifespan, most significantly during childhood (Bariola et al., 2012; Steinberg, 2005). Life experience and environmental changes are thought to offer continued opportunity for change during adulthood (Suri & Gross, 2012). It is proposed that the transition to parenthood facilitates changes in emotion regulation (Leckman et al., 2004) and previous successful strategies for dealing with distress may become ineffective. When faced with the challenges that are involved with this transition and combined with continued exposure to an infant's uncontained emotions, emotion regulation may become challenging (Fraiberg et al., 2018;

O'Mahen et al., 2012). Current findings indicate that parents' neuro-cognitive responses differ to non-parents in response to an infant's cries and laughter (Nishitani et al., 2011; Seifritz et al., 2003). In addition, changes in brain structures and functioning are thought to be linked with managing the emotional demands of caring for an infant (Kim et al., 2010; Swain, 2011).

Parental emotion regulation is thought to play a key role in facilitating attuned caregiving, regardless of infant emotions (Thompson, 1994). Early infant communication is largely non-verbal, and distress is expressed through crying. When an infant is distressed and crying, the 'alarm system' in parents is activated. In order to soothe and help regulate their infant, parents need to be able to recognise and manage their own anxiety or frustration that may be triggered by infant distress (Thompson, 1994). If a parent is unable to regulate their emotions and is also distressed, it may have a detrimental impact on how they respond to their infant (Bariola et al., 2012; Zeman et al., 2006). Parental and infant emotion regulation has been likened to a 'dance', in which they both regulate each other (Tronick, 2007). Poor parental emotional regulation can lead to poor soothing which can prolong infant distress (Tronick, 2007). Repeated over time, the infant learns alternative ways to cope with their distress that can lead to poor child outcomes (Lieberman & Van Horn, 2011; Rutherford et al., 2015). Both emotion regulation and psychological distress appear to have significant influence on parents and infants during the perinatal period. If there is a significant relationship between these variables, it may be that emotion regulation difficulties can be identified and supported earlier on and may prevent future psychological distress.

Aims

In summary, it appears that the ability to regulate emotions may change across the lifespan. During the perinatal period emotion regulation seems to be a critical feature for

sensitive and responsive parent-infant relationships (Thomson, 1994). Furthermore, it may be that difficulties in emotion regulation (emotion dysregulation) plays a key role in perinatal psychological distress. It is important to understand this relationship in order to support parents more effectively during this time.

Many theories of emotion regulation exist, however there is a lack of a consensual definition within the literature. For the purpose of this review, it seemed appropriate to use a definition that related to parental emotion regulation (Rutherford et al., 2015) and encompassed a broad range of characteristics. As such, it will be operationalised as "extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994, p. 27-28).

To date, no systematic review has specifically explored the relationship between emotion regulation and psychological distress in parents of infants. This review will provide a synthesis of findings and hopes to draw conclusions which can inform clinical practice. Therefore, this review asks: what are the associations between emotion regulation and psychological distress in parents of children under two?

Method

To ensure clarity and transparency in reporting, this systematic review has been conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Page et al., 2021).

Identification of literature

Initial scoping searches were conducted via Google Scholar and EBSCO to identify the most relevant emotion regulation literature. Consultation with an academic librarian at Lancaster University was sought and four databases were searched on 4th January 2022:

CINAHL, MEDLINE, Psycinfo and Web of Science. These databases were selected with the purpose of gathering literature from a range of disciplines, for example, nursing, medicine, and psychology. Each database was searched using the same key terms and phrases related to emotion regulation, psychological distress, and parents. Search terms were selected by reviewing relevant literature on the topics of interest (for example, Hu et al. 2014) and considering the operationalised definitions for this review. Thesaurus/MeSH headings were utilised in combination with free text searches of titles and abstracts. No restrictions were applied for date of publication. The full search criteria are provided in Tables 1.1-1.4.

[TABLE 1.1, 1.2, 1.3, 1.4 ABOUT HERE]

Papers were considered for inclusion if: 1) participants identified as a parent; 2) they included an assessment of emotion regulation using a self-report measure; 3) they included an assessment of psychological distress using a self-report measure; 4) emotion regulation and psychological distress were measured quantitatively; 5) paper reported on the relationship between emotion regulation and psychological distress; 6) reports included parents of children under 24 months; 7) papers were available in English; 8) papers were published in a peer-reviewed journal.

Papers were excluded from consideration in this review if: 1) only child outcomes of emotion regulation and psychological distress were measured; 2) they were study protocols, conference presentations, theoretical discussions, unpublished articles, theses, dissertations, or abstracts.

The PRISMA flow diagram is provided in Figure 1.1 to summarise the selection process for papers. Duplicates, grey literature, and reports that had not been peer-reviewed were removed using EndNote prior to screening. Titles and abstracts of 2403 records were screened, leading to the exclusion of 2286 records. Subsequently, 117 full text records were

retrieved and assessed for eligibility. This resulted in 103 records being excluded based on the inclusion and exclusion criteria. The reference lists and citations of the remaining 14 eligible reports were hand searched and three additional records were identified. A total of 17 reports which represented the findings from 16 studies were selected for inclusion in this review.

[FIGURE 1.1 ABOUT HERE]

Data extraction

Data were extracted from each paper on (a) participant demographics (where the study was conducted, type of sample, number of participants, ethnicity, parent age, infant age, and recruitment) and (b) study characteristics (design, measures, analysis, statistics).

Quality assessment

A large proportion of the studies included in this review were observational, cross-sectional in design, therefore the Appraisal tool for Cross-Sectional Studies (AXIS; Downes et al., 2016) was selected to evaluate quality (Appendix 1.2). The AXIS consists of 20 yes or no questions that help the reviewer to interpret and critically appraise research papers systematically. The tool does not provide a numerical scale for assessing quality; therefore, the interpretation is subjective and more flexible in judging quality of reporting. The tool comes with an explanatory help text which was used to support the appraisal process. To interpret quality, trends were examined across the literature included in this review and comparative weaknesses identified. Results were examined to identify any findings which relied solely on weaker papers. Quality assessment was conducted independently by the author and a random sample of papers were rated by a colleague (n = 3). Minimal discrepancies were found and discussed, with the final ratings being agreed between both raters.

Results

Study characteristics

A summary of the included reports can be found in Tables 1.5 and 1.6, which will be referred to by number for ease of reference. Out of 17 reports, two used the same primary data set for analysis (3, 4) therefore, there are 16 independent samples in this review. The size of samples ranged from 26 to 450, with a total of 2480 participants. Eleven out of the 16 separate samples were cross-sectional in design (1, 2, 6, 7, 10, 11, 12, 14, 15, 16, 17) and the other five used a prospective research design (3/4, 5, 8, 9, 13), mostly to investigate changes from pregnancy to after birth of child. Three studies (10, 15, 16) included fathers or other caregivers in their participants, only one study investigated variables with fathers alone (15) and the remaining studies exclusively examined mothers. Studies were conducted between 2012 – 2021 within a range of different countries. Seven of the studies were conducted in Europe (1, 6, 8, 9, 11, 12, 15), four in North America (3/4, 7, 16, 17), two in Asia (10, 14), two in Australia (2, 13) and one in South America (5). Most of the studies recruited participants using a response to an advert in a non-clinical population (13 out of 16 samples: n = 4132), two studies recruited from mother and baby units (2, 11; n = 153) and the remaining study screened participants for postnatal depression (14; n = 32). Eight of the studies did not report on ethnicity (2, 5, 6, 8, 10, 12, 14, 15), the remaining eight samples had a majority of White participants.

[TABLE 1.5 ABOUT HERE]

Measures

Emotion regulation Eleven studies (1, 2, 3, 4, 5, 11, 12, 13, 14, 16, 17) used the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) or the Difficulties in Emotion Regulation Scale – Short Form (DERS-SF; Kaufman et al., 2015). The DERS

allows for a total score as well as scores across six domains: 1) NONACCEPTANCE of emotional responses, 2) Difficulty engaging in GOAL-directed behaviour, 3) IMPULSE control difficulties, 4) Lack of emotional AWARENESS, 5) Limited access to emotion regulation STRATEGIES and 6) Lack of emotional CLARITY. The sum of all subscales yields a DERS TOTAL score. The DERS aims to measure a breadth of emotion regulation difficulties across multiple cognitive, affective, and behavioural domains. Four studies (6, 7, 10, 15) used the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), the ERQ consists of two subscales measuring cognitive reappraisal (e.g., I control my emotions by changing the way I think about the situation) and expressive suppression (e.g., I control my emotions by not expressing them). The ERQ unlike the DERS focusses on more specific cognitive process orientated emotion regulation strategies that are considered adaptive or maladaptive. One study (8) used the Interpersonal Emotional Regulation Questionnaire (IERQ; Hofmann et al., 2016). The IERQ measures four strategies that people use to regulate their own emotions through others: 1) enhancing positive affect, 2) perspective taking, 3) emotional soothing, 4) social modelling. Finally, one study (9) employed the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski & Kraaij, 2006). The CERQ measures nine different cognitive coping strategies: 1) blaming yourself, 2) accepting, 3) ruminating, 4) concentrating on other positive aspects, 5) concentrating on planning, 6) positive reinterpretation, 7) putting into perspective, 8) catastrophising, 9) blaming others.

Psychological distress All of the studies included a measure of anxiety, depression, or stress, however, there was little consistency of measures used across studies. One study (10) used the Chinese version of the Depression Anxiety Stress Scale (DASS; Wang et al., 2016) to measure depression, anxiety, and stress. One study (12) used a measure to assess depression and anxiety, the Portuguese version of the Hospital Anxiety and Depression Scale (HADS; Pais-Ribeiro et al., 2007). Eight studies (50%; 2, 5, 6, 8, 9, 12, 13, 14) utilised the

Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987), with five others using measures of depression including; the Edinburgh Gotland Depression Scale (EDGD; Psouni et al., 2017; 15), the 20 Item Centre for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977;3/4), the Beck Depression Inventory (BDI; Beck et al., 1961; 11) and the Beck Depression Inventory II (BDI-II; Beck et al., 1996; 1, 7). Six studies used a measure of anxiety, including the Perinatal Anxiety Screening Scale (PASS; Somerville et al., 2014; 5, 15), the Beck Anxiety Inventory (BAI; Beck et al., 1988; 7), the Spielberger Trait Anxiety Inventory (STAI; Spielberger et al., 1970; 8, 13) and the Anxiety subscale of the German version of the Symptom Checklist - 90- Revised (SCL - 90- R; Schmitz et al., 2000; 11). Two studies (16, 17) measured stress using the Perceived Stress Scale (PSS; Cohen et al., 1983). Wellbeing was measured in two studies (16, 17) using the Warwick-Edinburgh Mental Well-Being Scale (WEMBMS; Tennant et al., 2007).

Additional Variables Other factors that were included in the models alongside parental emotion regulation and psychological distress were: birth satisfaction (6), breastfeeding self-efficacy (9), parent and child attachment (1, 2, 3, 4, 12, 15), behaviour (3, 4, 7, 16, 17) and temperament (1), mother-infant gaze behaviour (11), social support (8, 9), interpersonal emotion regulation (5), couple functioning (3, 4, 10), interpersonal emotion management (5), coping (16, 17), mindfulness (13), suicidal ideation (14), childhood trauma (4, 10) and traumatic growth (8).

[TABLE 1.6 ABOUT HERE]

Quality appraisal

The reports included in this review were quality appraised using the AXIS checklist (Downes et al., 2016) as previously described. The evaluation for each paper is provided in Table 1.7. On the whole, most of the papers scored well on AXIS domains. Strengths

included description of aims, appropriate design, accuracy in reporting results and thorough discussion of findings. One study stood out which did not meet as many of the domains as the other papers and could be interpreted as comparatively weak (14), however, no findings relied solely on this study. This study was published in The International Journal of Indian Psychology and therefore may have culturally different guidelines for research. Throughout the literature included in this review, the methodology and results sections generally had the most limitations, with many papers not reporting sample size justification, or providing sufficient information about non-responders. In addition, across several papers it was difficult to identify whether the sample recruited was generalisable to the target population.

[TABLE 1.7 ABOUT HERE]

Emotion regulation and psychological distress overview

Overall, 12 out of 17 reports described a significant direct association between emotion regulation and at least one measure of psychological distress. Correlations ranged from small to large. Two reports did not find any association between emotion regulation and psychological distress (7, 8). In the first report (7), cognitive reappraisal and expressive suppression were not found to significantly correlate with combined depression (BDI-II) and anxiety (BAI) scores. The measure of emotion regulation used in the other report (8) was the IERQ (Hofmann et al., 2016) which asks about the strategies that people use to regulate their own emotions through others. This differs from the other emotion regulation measures that tend to focus on individual and intrinsic emotion regulation, which may explain why similar associations were not found.

Emotion regulation and depression

Emotion dysregulation (measured by the DERS) and depression were significantly positively correlated in eight reports; as difficulties in emotion regulation increased so did

indicators of depression (1, 2, 3, 4, 11, 12, 13, 14). Effect sizes ranged from medium (DERS Total; 1, 4, 14, DERS awareness subscale; 12) to large (DERS Total; 2, 3, 11, 13, DERS nonacceptance, goals, impulse, strategies, and clarity subscales; 12). Two of these reports investigated how the association between emotion regulation and depression changed across time. Both found significant correlations between emotion regulation and depression during pregnancy and significant correlations between emotion regulation and depression postpartum (3, 13; medium and large effect sizes). One report looked at whether emotion dysregulation at six months postpartum was associated with depression at 12 months postpartum and found a significant correlation (4; medium effect size).

Depression and emotion regulation strategies (assessed by the ERQ) were measured in two reports (10,15). Both reports found a significant positive correlation between expressive suppression and depression scores in fathers (small effect); interestingly, there was not a significant association between these variables for mothers (10). Furthermore, a significant negative correlation was found between cognitive reappraisal and symptoms of depression in mothers (10) and fathers (15), however in the first report (10) they did not find a significant association in fathers.

Three reports included regression analyses (5, 6, 15) and found that emotion regulation accounted for a significant amount of variance in depression. One report (5) found that after childbirth, difficulty with emotion regulation (DERS subscales; non-acceptance, goals, and awareness) explained 61% of the variance in depression. Furthermore, emotion dysregulation variables (lack of control and goal directed behaviour) were reported to reduce from pregnancy to postpartum. Another report (6) investigated birth satisfaction in a sample of women who had experienced an unplanned caesarean section. It was found that emotion regulation strategies combined with birth satisfaction, explained 20% of the variance in depression scores, however only birth satisfaction was a significant predictor. Finally, one

report (15) completed a hierarchical multiple regression and found that when controlling for anxiety, cognitive reappraisal in fathers predicted lower depression, explaining 2% of the variance.

Other studies looked at more complex interplay of variables including emotion regulation and psychological distress. One report utilised multi-level modelling (9) and examined emotion regulation strategies across three time points (6 weeks, 3 months, and 6 months). It was found that mothers who used the cognitive emotion regulation strategies of self-blame, rumination and catastrophising reported increased indicators of depression, whereas mothers who used positive reappraisal and planning reported lower scores of post-partum depression at all timepoints. Interestingly, however the use of different emotion regulation strategies did not predict changes in depression over time.

Nine reports conducted mediation analyses (1, 2, 3, 4, 7, 10, 11, 12, 13) to explore how emotion regulation and depression may influence relationships with other constructs in parents. Emotion regulation was investigated as a mediator in three reports (11, 12, 13). The relationship between attachment insecurity and depression was mediated by emotion dysregulation (12). Another study found that emotion regulation did not mediate the relationship between mindful awareness and depression (13). In one study, depression was investigated as a predictor variable (11). The relationship between increased depression and lower mother-infant gaze synchrony was mediated by emotion dysregulation. In three other papers (2, 4, 10) emotion regulation and depression were identified as serial mediators. Firstly, when emotion dysregulation predicted depression, they mediated the relationship between attachment insecurity and reduced postnatal attachment quality (2). Secondly, emotion dysregulation, depression and adult attachment anxiety mediated the relationship between childhood maltreatment and couple functioning (4). Lastly, emotion regulation and depression mediated the relationship between increased childhood maltreatment and greater

marital dissatisfaction (10). Depression was investigated as a mediator in one report (3). Emotion dysregulation was investigated as an outcome variable and it was found that depression did not mediate the relationship between recalled childhood emotions and emotional dysregulation. Another report (7) found that increased expressive suppression was indirectly related to infants' negative affect through combined depression and anxiety scores. Furthermore, lower cognitive reappraisal was also indirectly related to infant's negative affect through combined depression and anxiety scores.

Emotion regulation and anxiety

Anxiety and emotion dysregulation (measured by the DERS) were significantly positively correlated in three reports; as difficulties in emotion regulation increased so did indicators of anxiety (11, 12, 13). Effect sizes ranged from medium (DERS Total; 11, DERS awareness subscale; 12) to large (DERS Total; 13, DERS nonacceptance, goals, impulse, strategies, and clarity subscales; 12). One of these reports found significant associations across two time points from pregnancy to between three and six months postpartum (13; large effect size).

Anxiety and emotion regulation strategies (assessed by the ERQ) were measured in two reports (10, 15). Both reports found a significant positive correlation between expressive suppression and anxiety scores in fathers (small effect), however, similar to symptoms of depression, there was not a significant association between expressive suppression and anxiety for mothers (10). In addition, a significant negative correlation was found between cognitive reappraisal and anxiety in mothers (10), however in fathers (10, 15) a significant association was not found.

One report (15) completed a hierarchical multiple regression and found that when controlling for depression, the addition of emotion regulation strategies improved the model, but were not significant predictors of anxiety.

One report employed a moderation analyses (5) and examined interpersonal emotion regulation in a social support person of parents. They found that the relationship between low emotion regulation and high maternal anxiety was significantly moderated by interpersonal emotion regulation strategies reported by the parent's social support person.

Three reports conducted mediation analyses (11, 12, 13) to explore how emotion regulation and anxiety may influence relationships with other constructs in parents. Emotion regulation was investigated as a mediator (11, 12, 13). One study found that the relationship between attachment insecurity and anxiety occurred both directly and indirectly through emotion dysregulation (12). In another study, emotion regulation also mediated the relationship between lower mindful awareness and increased anxiety (13). In one study, anxiety was investigated as a predictor variable rather than an outcome variable (11). The relationship between increased anxiety and lower mother-infant gaze synchrony was not mediated by emotion dysregulation.

Emotion regulation and stress

Stress and emotion dysregulation (measured by the DERS) were investigated in two reports (16, 17). A significant positive correlation was found in both between emotion dysregulation and stress. In the first report (16), a medium effect size was found when mothers and fathers scores were combined together, whereas, in the second report (17) only mothers participated, and a large effect size was shown.

Stress and emotion regulation strategies (assessed by the ERQ) were measured in one report (10). A significant positive correlation between expressive suppression and stress in

fathers was found (small effect), whereas no significant relationship was found for mothers. On the other hand, a significant negative correlation was found between cognitive reappraisal and stress in mothers, but not in fathers.

Emotion regulation and wellbeing

Wellbeing, and emotion dysregulation (measured by the DERS) were investigated in two reports (16, 17). A significant negative correlation was only found in one report between wellbeing and emotion regulation (17; large effect size); as wellbeing increased in mothers, difficulties with emotion regulation decreased.

One report conducted mediation analysis (16) to explore how emotion regulation, stress and wellbeing may influence relationships with other constructs in parents. Lower wellbeing was used as a variable to predict emotion dysregulation. It was found that the association between stress and emotion dysregulation was mediated by coping strategies and wellbeing. However, direct effects were also significant and stronger than the indirect effects.

Discussion

Summary of findings

This review aimed to retrieve and synthesise the literature on emotion regulation and psychological distress in parents of infants. A systematic search identified 17 reports, using samples from 16 studies, which predominantly focussed on mothers. Although this area of research is limited and relatively new (the earliest paper was from 2012), the results are fairly consistent across papers. Furthermore, the general quality of the literature was strong, which suggests confidence in the findings reported. The available research suggests that better emotion regulation is related to reduced psychological distress in parents.

Non-significant associations were found in only two of the reports included in this review (7, 8). A direct association was found between lower emotion regulation and increased depression in 12 papers (1, 2, 3, 4, 5, 6, 10, 11, 12, 13, 14, 15). In addition, six reports found a significant association between lower emotion regulation and higher anxiety (5, 10, 11, 12, 13, 15). Further, a significant correlation was found between lower emotion regulation and higher stress in three studies (10, 16, 17). Finally, a significant correlation was found between lower emotion regulation and lower wellbeing in two reports (16, 17).

The effect sizes here were variable across reports ranging from small to large in size. In comparison, Hu et al. (2014) conducted a meta-analysis exploring the relationship between specific emotion regulation strategies and mental health in the general adult population. They examined both cognitive reappraisal and expressive suppression which are theorised to typically improve and worsen emotion regulation respectively (Gross & John, 2003). Hu et al. (2014) found small effect sizes for both strategies, indicating similar associations between mental health outcomes and both adaptive and maladaptive strategies. In the current review, the use of specific emotion regulation strategies similarly had small-medium effect sizes in the association with psychological outcomes. However, previous studies which used measures of emotion dysregulation tended to find much larger effect sizes (medium-large). For example, a recent meta-analysis (Miu et al., 2022) investigating the mediating effect of emotion regulation on the relationship between childhood adversity and psychopathology found small-large effect sizes for the association between multiple dimensions of emotion regulation and psychopathology overall. When these dimensions were looked at individually, medium to large associations were found between emotion dysregulation and psychopathology, whereas cognitive reappraisal showed small associations with psychopathology. The authors noted the differences between adaptive and maladaptive aspects of emotion regulation. They suggest that the larger associations with maladaptive

emotion regulation indicate that it is the use of maladaptive strategies (e.g., trying to control emotions by not expressing them) that impacts the most on psychological distress, rather than the lack of adaptive strategies (e.g., reducing unwanted emotions by changing the way you think about a situation). In the current study, comparable findings were noted, giving support to the idea that maladaptive strategies/emotion dysregulation has the most influence on psychological distress.

In the current review, the association between emotion regulation and psychological distress appeared to also be influenced by the measure of emotion regulation utilised and whether difficulties in emotion regulation or emotion regulation strategies were measured. For example, when deficits in emotion regulation were measured (difficulties), the associations were stronger compared to when cognitive reappraisal (strategy) and expressive suppression (strategy) were measured. Furthermore, when interpersonal emotion regulation (strategies) was measured (8), it did not significantly correlate with depression or anxiety. Interestingly, Zelkowitz and Cole (2016) reviewed measures of emotion regulation and found that the DERS (measuring difficulty in emotion regulation), ERQ (measuring cognitive reappraisal and expressive suppression strategies) and CERQ (measuring strategies) do not show convergent or discriminant validity, indicating they are not measuring the same construct. Therefore, it could be suggested that the different measures included in the current review are measuring different constructs of emotion regulation, which may also help to explain some of the variation in effect size.

Despite the potential differences between measures, a clear link between parental emotion regulation and psychological distress has been reported. Longitudinally however, emotion regulation did not predict change in depression over time (9). Researchers found alternatively that breastfeeding self-efficacy predicted variance in depression over time. They suggest that this was more important for levels of depression in new mothers than social

support and emotion regulation. It could be argued that the strength of the relationship between emotion regulation and psychological distress may change during the transition to parenthood. Although the current review focussed on parents of infants under two years old, five reports included longitudinal data across the perinatal period (5, 7, 8, 9, 13). The majority of these studies found a significant decrease in psychological distress from pregnancy to postpartum but did not compare how emotion regulation changed over time. One study found that greater emotion regulation difficulties in pregnancy predicted increased depression and anxiety postpartum (13). Moreover, one study did investigate how emotion regulation changed over time (5). They found that anxiety significantly reduced from pregnancy to after childbirth as did some domains of emotion dysregulation, however some domains did not (goals, awareness, and clarity). Results from these longitudinal studies suggest that the transition to parenthood may have an impact on psychological distress and that emotion regulation could potentially be involved in this relationship. Although investigating this relationship over time is more powerful and can take us a step closer to understanding causation, the results are limited, and investigation is still needed to further understand the impact of emotion regulation on psychological distress in the perinatal period.

Emotion regulation was identified as a possible moderator and mediator in the relationship between parenting variables and psychological distress in four reports (5, 11, 12, 13). In three other papers (2, 4, 10) emotion regulation and depression were identified as serial mediators in the relationship between variables, such as increased childhood maltreatment and greater marital dissatisfaction (10). In two reports (3, 16), emotion regulation was explored as an outcome variable rather than as a mediator. Depression was found not to mediate the relationship between recalled childhood emotions and emotion regulation in one report (3). In another report coping strategies and wellbeing mediated the relationship between stress and emotion regulation (16). Overall, emotion dysregulation

seems to frequently predict psychological distress, which in turn helps to form a mediation effect with other predictor variables and increases our understanding of mechanisms in the parent infant relationship. These relationships however are complex and appear to be bidirectional, thus could be affected, and affect various other factors as demonstrated in the sequential mediation models. It is likely that emotion regulation influences psychological distress and psychological distress influences emotion regulation.

Limitations of the literature

A number of limitations were identified across the included reports. Firstly, as the studies within this review utilised self-report measures, there is a risk of reporting bias throughout the findings. Inevitably, it can be hard to accurately report on internal psychological experiences and interpretation of the questions is entirely subjective. Future research will benefit from assessing variables via multiple methods, for example physiologically (Ginton et al., 2021) or observationally (Northrup et al., 2020). Secondly, it is important to be cautious when interpreting or generalising findings. The quality appraisal identified a general weakness in whether the sample was from a representative population. This may, however, be an inevitable challenge for this literature due to recruitment from a large target population of parents using predominantly convenience sampling. Further, only three studies included fathers (10, 15, 16) and differences between gender were observed. Fathers are often neglected within the parenting literature and evidence suggests that they play a unique role in child development (Cabrera et al., 2007). Further investigations with fathers will be needed to produce findings that are applicable across parents. In addition, the majority of studies in the current review were conducted in westernised countries. Emotion is heavily influenced by the environment and cross-cultural differences have been consistently demonstrated, particularly in perceptions of ideal affect (Lim, 2016). Mekawi et al. (2020) discussed how racial discrimination can have a significant impact on emotion regulation for

African Americans experiencing PTSD. Again, for this review, the majority of participants in the studies that reported ethnicity were White and therefore generalisations cannot be made for all parents. Finally, as noted previously, different assessments of emotion regulation may be measuring separate concepts, such as strategies versus difficulties. 'Strategies' could be interpreted as how someone behaves and responds, whereas 'difficulties' may be asking more about internal cognitive struggles. Indeed, more broadly there is a lack of consensus in how emotion regulation is defined within the wider literature (Thompson, 1994) and within the literature included in this review. Future work should aim to describe the main theoretical definitions of emotional regulation that they are interested in exploring and the appropriate measurement tool that aligns with the definition.

Strengths and limitations of the review

The current review was the first to explore the association between emotion regulation and psychological distress in parents of infants. PRISMA guidelines were adhered to as closely as possible which enables replication and allows the reader to assess the quality of the review. In addition, although papers were not excluded based on level of quality, they were assessed using a quality appraisal tool, which allowed for the overall strength of the papers to be evaluated. Moreover, a thorough approach to literature searching of peer reviewed articles was applied. Multiple databases that covered a range of subject areas were searched and the results were then examined by hand.

This review, however, must be considered in the context of some limitations. Firstly, the review did not include grey literature, articles that were not peer-reviewed or those published in languages other than English. This may have led to some appropriate findings not being included. Studies with significant findings are often more likely to be published in peer reviewed journals (Easterbrook et al., 1991), therefore there is the potential for this

review to contribute to publication bias. Secondly, despite inter-rater quality appraisal being conducted for a random sample of papers, this review was primarily completed independently by a single author, which raises the risk of bias.

Clinical implications

Whilst conclusions are tentative, given that the studies included in this review are largely cross-sectional, emotion regulation may be beneficial for improving wellbeing and reducing depression, anxiety, and stress. Additionally, emotional dysregulation has the potential to be an indicator for future mental health difficulties in parents. Likewise, the bidirectional nature of the relationship between emotion regulation and psychological distress suggests interventions may be successful at reducing both distress and emotion dysregulation regardless of which variable is targeted. As previously discussed, the postpartum period is a physically and emotionally challenging time. Professionals working in perinatal services will likely be aware of the frequent occurrence of psychological distress for parents and its impact on their own and their infant's wellbeing (Haga et al., 2012). In the UK for example, funding for maternal perinatal mental health care has significantly increased from 2016 (NHS England, 2016). However, there are still many barriers to accessing support and parents will often tolerate substantial distress before seeking help (Christie & Bunting, 2011). Due to the stigma associated with psychiatric diagnoses, such as post-natal depression (Mcloughlin, 2013), using language such as 'managing emotions', might be easier for new parents to discuss with professionals rather than mental health or psychological distress. These conversations may help normalise stressful and frustrating experiences for parents and reduce barriers to accessing support.

The evidence in this review demonstrates that emotion regulation is associated with psychological distress in parents of infants. Therefore, there would be value in integrating

emotion regulation into interventions for parents experiencing psychological distress. Currently, there is limited evidence for effective interventions which focus on helping parents specifically regulate their emotions (Rutherford et al., 2015). There is a shift towards implementing parenting programs such as Triple P, which focus on behavioural management skills for parents (Sanders et al., 2000). Importantly however, they also attend to how parents are feeling and provides strategies for coping and managing emotions for parents. It is suggested that these skills help to support parents to manage their own emotional reaction in stressful situations such as excessive crying and help towards improving parent-infant interactions (Papousek et al., 2007; Russell & Lincoln, 2016). Furthermore, Dialectical Behaviour Therapy which has been effective at reducing emotional dysregulation (Neacsiu et al., 2014) has been evaluated for use with women in the perinatal period (Kleiber et al., 2017; Wilson & Donachie, 2018). Both studies reported improved emotion regulation and reduced distress, although there were challenges in retaining participants. However, given the stronger association with emotion dysregulation compared to strategies in the current review, it may be that clinical interventions aiming to reduce distress should focus more or reducing dysregulation rather than improving regulating skills. In particular, mentalization-based and attachment-based interventions, such as Minding the Baby (Slade et al., 2005) and Circle of Security (Cooper et al., 2011) have reported effective outcomes in reducing distress and emotion dysregulation (Sadler et al., 2013; Yaholkoski et al., 2016). These interventions focus less on teaching skills and more on developing awareness and understanding through relational experiences. Furthermore, as well as reducing distress and emotion dysregulation, these models help to facilitate responsive parent-infant relationships that can lead to improved child outcomes (Huber et al., 2015).

Directions for future research

Future research needs to include a more diverse sample of participants from different cultures and ethnicities. A more diverse sample would highlight any population differences and help inform the development of culturally appropriate interventions. Despite the limited data, the current review highlights emerging gender differences, suggesting that it would be worthwhile focusing on fathers in future research. Moreover, as previously mentioned, it would be beneficial for future research to use additional tools to self-report measures. With regards to parenting, it would be interesting to investigate whether emotion regulation changes more dynamically situation to situation by investigating how parents regulate emotions in different real-life scenarios. There might be something specific about these processes when caring for an infant. Other variables such as birth satisfaction or relationship changes, may also become more or less impactful on emotion regulation and psychological distress during different stages of parenthood.

Conclusions

This review found significant associations between greater emotion dysregulation and greater psychological distress in parents of infants. The results suggest that both emotion regulation and psychological distress were both crucial mechanisms in the relationship between other parenting variables such as attachment or couple functioning, however their place in these relationships needs to be further explored in future research. Understanding the importance of parental mental health and the mechanisms involved, particularly in a more diverse population is needed clinically to underpin interventions during the perinatal period. The effects of support during this time can have a lifelong impact on parental wellbeing and child development.

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Table 1.1: Search strategy for CINAHL

	Search Terms (Boolean)
	(MH "Emotional Regulation") OR TI ("emotion* regulation" OR "emotion* dysregulation" OR "emotion* modulation" OR "affect* regulation" OR "affect* dysregulation" OR "affect* modulation" OR "mood regulation" OR "mood dysregulation" OR "mood modulation") OR AB ("emotion* regulation" OR "emotion* dysregulation" OR "emotion* modulation" OR "affect* regulation" OR "affect* dysregulation" OR "affect* modulation" OR "mood regulation" OR "mood dysregulation" OR "mood modulation")
AND	((MH "Anxiety") OR (MH "Depression") OR (MH "Mental Disorders") OR (MH "Mental Health") OR (MH "Psychological Distress") OR (MH "Affect") OR (MH "Stress Disorders, Post-Traumatic") OR (MH "Psychological Well-Being")) OR TI (anxiety OR depression OR "mental disorders" OR "mental health" OR "psychological distress" OR affect OR "post traumatic stress disorder*" OR mood OR stress OR wellbeing) OR AB (anxiety OR depression OR "mental disorders" OR "mental health" OR "psychological distress" OR affect OR "post traumatic stress disorder*" OR mood OR stress OR wellbeing)
AND	(MH "Parents+") OR TI (parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal) OR AB (parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal)

Note: MH (CINAHL subject heading)

Table 1.2: Search strategy for MEDLINE

	Search Terms (Boolean)
	(MH "Emotional Regulation") OR TI ("emotion* regulation" OR "emotion* dysregulation" OR "emotion* modulation" OR "affect* regulation" OR "affect* dysregulation" OR "affect* modulation" OR "mood regulation" OR "mood dysregulation" OR "mood modulation") OR AB ("emotion* regulation" OR "emotion* dysregulation" OR "emotion* modulation" OR "affect* regulation" OR "affect* dysregulation" OR "affect* modulation" OR "mood regulation" OR "mood dysregulation" OR "mood modulation")
AND	((MH "Anxiety") OR (MH "Depression") OR (MH "Mental Disorders") OR (MH "Mental Health") OR (MH "Psychological Distress") OR (MH "Affect") OR (MH "Stress Disorders, Post-Traumatic")) OR TI (anxiety OR depression OR "mental disorders" OR "mental health" OR "psychological distress" OR affect OR "post traumatic stress disorder*" OR mood OR stress OR wellbeing) OR AB (anxiety OR depression OR "mental disorders" OR "mental health" OR "psychological distress" OR affect OR "post traumatic stress disorder*" OR mood OR stress OR wellbeing)
AND	(MH "Parents+") OR TI (parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal) OR AB (parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal)

Note: MH (MEDLINE subject heading)

Table 1.3: Search strategy for Psycinfo

	Search Terms (Boolean)
	(DE "Emotional Regulation")OR TI ("emotion* regulation" OR "emotion* dysregulation" OR "emotion* modulation" OR "affect* regulation" OR "affect* dysregulation" OR "affect* modulation" OR "mood regulation" OR "mood dysregulation" OR "mood modulation") OR AB ("emotion* regulation" OR "emotion* dysregulation" OR "emotion* modulation" OR "affect* regulation" OR "affect* dysregulation" OR "affect* modulation" OR "mood regulation" OR "mood dysregulation" OR "mood modulation")
AND	((DE "Anxiety") OR (DE "Depression) OR (DE “Emotion”) OR (DE "Mental Disorders") OR (DE "Mental Health") OR (DE "Distress") OR (DE "Posttraumatic Stress Disorder") OR (DE "Emotional Health") OR (DE "Well Being") OR (DE "Trauma Reactions")) OR TI (anxiety OR depression OR "mental disorders" OR "mental health" OR "psychological distress" OR affect OR "post traumatic stress disorder*" OR mood OR stress OR wellbeing) OR AB (anxiety OR depression OR "mental disorders" OR "mental health" OR "psychological distress" OR affect OR "post traumatic stress disorder*" OR mood OR stress OR wellbeing)
AND	(DE "Parents" OR DE "Adoptive Parents" OR DE "Expectant Parents" OR DE "Fathers" OR DE "Foster Parents" OR DE "Homosexual Parents" OR DE "Mothers" OR DE "Parental Characteristics" OR DE "Single Parents" OR DE "Stepparents" OR DE "Surrogate Parents (Humans)") OR TI (parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal) OR AB (parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal)

Note: DE (thesaurus term)

Table 1.4: Search strategy for Web of Science

	Search Terms (Boolean)
	(TI=("emotion* regulation" or "emotion* dysregulation" or "regulation of emotion")) OR AB=("emotion* regulation" or "emotion* dysregulation" or "regulation of emotion")
AND	(TI=(anxiety OR depression OR stress OR mood OR wellbeing OR "psychological distress" OR "psychiatric disorder*" OR "mental health")) OR AB=(anxiety OR depression OR stress OR mood OR wellbeing OR distress OR "psychiatric disorder*" OR "mental health")
AND	(TI=(parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal)) OR AB=(parent* OR mother* OR father* OR caregiver* OR guardian* OR maternal OR paternal)

Note: There are no thesaurus functions on Web of Science

Table 1.5: Summary of participant demographics

	Authors (year)	Location	Type of Sample	Participants	Ethnicity (%)	Mean age of parent (SD)	Mean age of infant (SD)	Recruitment
1	Behrendt et al. (2019)	Germany	Community	66 women	Caucasian (100)	31.70 (3.7), range 22-39	6.6 months (.7), range 6-8 months	Community clinics
2	Brake et al. (2020)	Australia	Clinical	85 women	Not reported	34.37 (4.70)	4 months (3.78)	Mother and baby unit
3	Cao et al. (2018)	USA	Community	196 women	European American (56.6), African American (43)	25.66 (5.66), range 18-44	6 months (T2)	Prenatal clinics and education classes
4	Cao et al. (2020)	USA	Community	159 women	European American (59.1), African American (40.9)	26.23 (5.66)	6 months (T2), 12 months(T3), 24 months (T4)	Prenatal clinics and education classes
5	Coo et al. (2020)	Chile	Community	253 women (T1), 122 women (T2)	Not reported	28.60 (5.55), range 18-44	10-14 weeks (T2)	Response from health services advert

6	Deninotti et al. (2020)	France	Community	50 women	Not reported	27.10 (3.99)	10 months (5.38)	Response from advert
7	Edwards et al (2017)	USA	Community	99 women	Caucasian/European American (70.4), Hispanic/Latina (12.2), African American/Black (11.2), Native American (2), other (4.1)	22.78 (6.40), range 17-42	4 months	Invite from birth announcements or response from flyers
8	Gonzalez-Garcia et al. (2021)	France	Community	90 women (T1), 26 women (T2)	Not reported	30 (4)	1 month (T2)	Response from advert
9	Haga et al. (2012)	Norway	Community	344 women	Norwegian (85) , other (15)	32 (4.32)	6 weeks (T1), 3 months (T2) and 6 months (T3)	Response from hospital invite

10	Liu et al. (2019)	China	Community	312 parents	Not reported	30.86 (3.83) mothers, 33.31 (4.58) fathers	6.34 months (.32) range 5.77-7.20 months	Response from healthcare advert
11	Lotzin et al. (2015)	Germany	Clinical	68 women	European Caucasian (M=67, SD=98.5) African (M=1, SD=1.5)	32.2 (5.4), range 20-44	6.3 months (1.8), range 4-9 months	Psychiatric mother-infant outpatient unit
12	Marques et al. (2018)	Portugal	Community	450 women	Not reported	31.14 (4.57)	4.83 months (3.26)	Response from advert
13	McDonald et al. (2021)	Australia	Community	149 women	Caucasian (91.9), other (7.4)	33.7 (4.3), range 26-46	3-6 months (T2)	Response from prenatal advert
14	PallaviSolanki & Sharma (2019)	India	Clinical	32 mothers	Not reported	range 18-40	4 weeks	Post birth screening
15	Psouni et al. (2021)	Sweden	Community	186 fathers	Not reported	32.5 (5.4)	7.9 months (5.9) range 1-18 months	Response from advert

16	Russell et al. (2021)	USA	Community	188 parents	Non-Hispanic/Latino (87.8), Caucasian (64.4), Asian (23.9), Black/African American (5.9), American Indian/Alaskan Native (4.3)	32.18 (5.11) mothers, 32.62 (5.97) fathers	14.66 months (5.49)	Response from advert
17	Russell & Lincoln (2016)	USA	Community	107 women	European American (95), Latin American (3), Asian American (1), other (1)	33 (3.9)	11 weeks (5.4)	Response from hospital advert and parenting group

Table 1.6: Summary of study characteristics

	Design	Measure of ER	Measures of PD	Other Measures	Relevant Analysis	Correlation and Regression	Mediation, moderation, and multi-level modelling
1	Prospective (variables of interest are cross-sectional)	DERS	BDI-II	EAS, MPAS, BIT-SEA	Correlation and mediation	r = .40, p < .01 (DERS and BDI-II)	Attachment mediated the relationship between DERS/depression and poor child outcomes
2	Cross-sectional	DERS	EPDS	ASQ, MPAS	Correlation and mediation	r = .67, p = < .01 (DERS and EPDS)	DERS and depression mediated the relationship between attachment insecurity and postnatal attachment
3	Prospective T1 - pregnancy, T2 - 6 months	DERS	CES-D	CCNE, AAI	Correlation and mediation	r = .56, p = <.05 (DERS T2 and CES-D T2)	Depression did not mediate the relationship between childhood emotions and DERS

	(secondary data)						
4	Prospective T1 - pregnancy, T2 - 6 months, T3 - 1year, T4 - 2 years (secondary data)	DERS	CES-D	RRQ, CTQ, ECRS, IBQ-SF	Correlation and mediation	r = .40, p = <.05 (DERS T2 and CES-D T3)	DERS, depression and attachment mediated the relationship between maltreatment and couple functioning
5	Prospective T1 - 3rd trimester, T2 - 10-14 weeks	DERS	EPDS, PASS	IEMS, EROS	Hierarchical regression and moderation	ED accounted for 61% of the variance in depression at T2, ED accounted for 45% of the variance in anxiety at T2, ED in pregnancy accounted for 21% of the variance in	IEMS moderated the relationship between DERS and anxiety

						depression at T2, ED in pregnancy accounted for 39% of the variance in anxiety at T2	
6	Cross-sectional	ERQ	EPDS	PCLS, QMAALD	Multiple regression	ER and birth satisfaction accounted for 20% of the variance in depression and 15% of the variance in PTSD	
7	Prospective (variables of interest are cross-sectional)	ERQ	BDI-II, BAI	SCID-IV	Correlation and mediation	r = - .22, ns (ERQ: R and BDI+BAI), r = .21, p = ns (ERQ:S and BDI+BAI),	Depression and anxiety mediated the relationship between ERQ and infant affect
8	Prospective T1 - pregnancy, T2 - 1 month	IERQ	STAI, EPDS	CBTS, MSPSS, PGI	Correlation	IERQ factors not significant with STAI, EPDS or CBTS	

9	Prospective T1 - 6 weeks, T2 - 3 months, T3 - 6 months	CERQ	EPDS	BSES, BSSS	Multi-level modelling		Breastfeeding self-efficacy, CERQ and support predicted depression.
10	Cross-sectional	ERQ	DASS	CTQ, LWMAT	Correlation and mediation	Mothers: r = - .41, p = <.001 (ERQ:R and DASS:D), r = -.19, p = < .05 (ERQ:R and DASS:A), r = -.33, p = < .001 (ERQ:R and DASS:S) r = -.07 ns (ERQ:S and DASS:D), r = .08 ns (ERQ:S and DASS:A), r = .04, ns (ERQ:S and DASS:S), Fathers: r = -.01 ns (ERQ:R and DASS:D), r = .01 ns (ERQ:R and DASS:A), r = - .04, ns (ERQ:R and DASS:S), r = .24, p =	ERQ and depression mediated the relationship between maltreatment and marital dissatisfaction

						< .01 (ERQ:S and DASS:D), r = .21, p = < .01 (ERQ:S and DASS:A), r = .25, p = < .01 (ERQ:S and DASS:S)	
11	Cross Sectional (secondary data from intervention study)	DERS	BDI, SCL - 90- R	SFP, MRSS	Correlation and mediation	r = .75, p = <.01 (DERS and BDI) r = .48, p = < .01 (DERS and SCL-90-R)	DERS mediated the relationship between depression and gaze synchrony
12	Cross-sectional	DERS	EPDS, HADS	ECR-RS	Correlation and mediation	r = .69, p = <.01 (DERS-S and EPDS), r = .69, p = < .01 (DERS-S and HADS), r = .57, p = < .01 (DERS-N and EPDS), r = .56, p = < .01 (DERS-N and HADS), r = .36, p = <.01 (DERS-A and EPDS), r = .36, p = < .01 (DERS-A and HADS), r =	DERS mediated the relationship between attachment insecurity and depression

						.56, p = <.01 (DERS-I and EPDS), r = .60, p = < .01 (DERS-I and HADS), r = .55, p = <.01 (DERS-G and EPDS), r = .57, p = < .01 (DERS-G and HADS), r = .63, p = <.01 (DERS-C and EPDS), r = .60, p = < .01 (DERS-C and HADS)	
13	Prospective T1 - pregnancy, T2 - 3-6 months	DERS	EPDS, STAI	MASS	Correlation and mediation	r = .74, p = <,01 (DERS and EPDS T2), r = .68, p = < .01 (DERS and STAI T2)	DERS did not mediate the relationship between mindful awareness and depression. DERS did mediate the relationship between mindful awareness and anxiety
14	Cross-sectional	DERS	EPDS	BSS	Correlation	r = .487, p = <.01 (DERS and EPDS)	
15	Cross-sectional	ERQ	PASS, EGDS	ASQ-SF	Correlation and	r = -.30, p = <.01 (ERQ:CR and EGDS), r = .28, p = <.01 (ERQ:ES	

					hierarchical regression	and EGDS), r = -.13 ns (ERQ:CR and PASS), r = .32, p = < .01 (ERQ:ES and PASS) ER accounted for 2% of the variance in depression when controlling for anxiety. ER did not predict anxiety when controlling for depression	
16	Cross-sectional	DERS-SF	PSS, WEMBMS	PWBS	Correlation and mediation	r= .40, p = < .01 (DERS-SF and PSS), r = .02 (ns) (DERS-SF and WEMBMS)	Coping strategies and wellbeing mediated the relationship between stress and DERS
17	Cross-sectional	DERS	PSS, WEMBMS	DBT-WCCL, BDD	Correlation	r= .82, p = < .01 (DERS and PSS), r = -.74, p = < .01 (DERS and WEMBMS)	

Notes: DERS (Difficulties in Emotion Regulation Scale), BDI-II (Beck Depression Inventory II), EAS (Emotion Availability Scale), MPAS (Maternal Postnatal Attachment Scale), BIT-SEA (Brief Infant-Toddler Social and Emotional Assessment), EPDS (Edinburgh Postnatal Depression Scale), ASQ (Attachment Style Questionnaire), CES-D (20 Item Centre for Epidemiologic Studies Depression Scale), CCNS (Coping with Children's Negative

Emotions Scale), AAI (Adult Attachment Interview), RRQ (Romantic Relationship Questionnaire), CTQ (Childhood Trauma Questionnaire), ECRS (Experiences in Close Relationships Scale), IBQ-SF (Infant Behaviour Questionnaire- Short Form), PASS (Perinatal Anxiety Screening Scale), IEMS (Interpersonal Emotion Management Scale), EROS (Emotion Regulation of Others and Self), ERQ (Emotion Regulation Questionnaire), PCLS (Post-Traumatic Checklist Scale), QMAALD (Questionnaire measuring attitudes about labour and delivery), BAI (Beck Anxiety Inventory), SCID-IV (Structural Clinical Interview), IERQ (Interpersonal Emotional Regulation Questionnaire), STAI (Spielberger Trait Anxiety Inventory) ,CBTS (City Birth Trauma Scale), MSPSS (Multidimensional Scale of Perceived Social Support), PGI (Post Traumatic Growth Inventory), CERQ (Cognitive Emotion Regulation Questionnaire), BSES (Breastfeeding Self Efficacy Scale), BSSS (Berlin Social Support Scales), DASS (Depression Anxiety Stress Scale), LWMAT (Locke-Wallace Marital Adjustment Test), BDI (Beck Depression Inventory), SCL-90-R (Anxiety Subscale of Symptom Checklist – 90 – Revised), SFP (Still Face Paradigm), MRSS (Maternal Regulatory Scoring System), HADS (Hospital Anxiety and Depression Scale), ECR-RS (Experiences in Close Relationships -Relationship Structures), MASS (Mindful Attention and Awareness Scale), BSS (Beck Scale for Suicidal Ideation), EGDS (Edinburgh Gotland Depression Scale), ASQ-SF (Attachment Style Questionnaire- Short Form), DERS-SF (Difficulties in Emotion Regulation Scale – Short Form), PSS (Perceived Stress Scale), WEMBMS (Warwick Edinburgh Mental Wellbeing Scale, PWBS (Parenting When Baby Cries Scale), DBT-WCCL (Dialectical Behavioural Therapy Ways of Coping Checklist), BDD (Baby Day Diary)

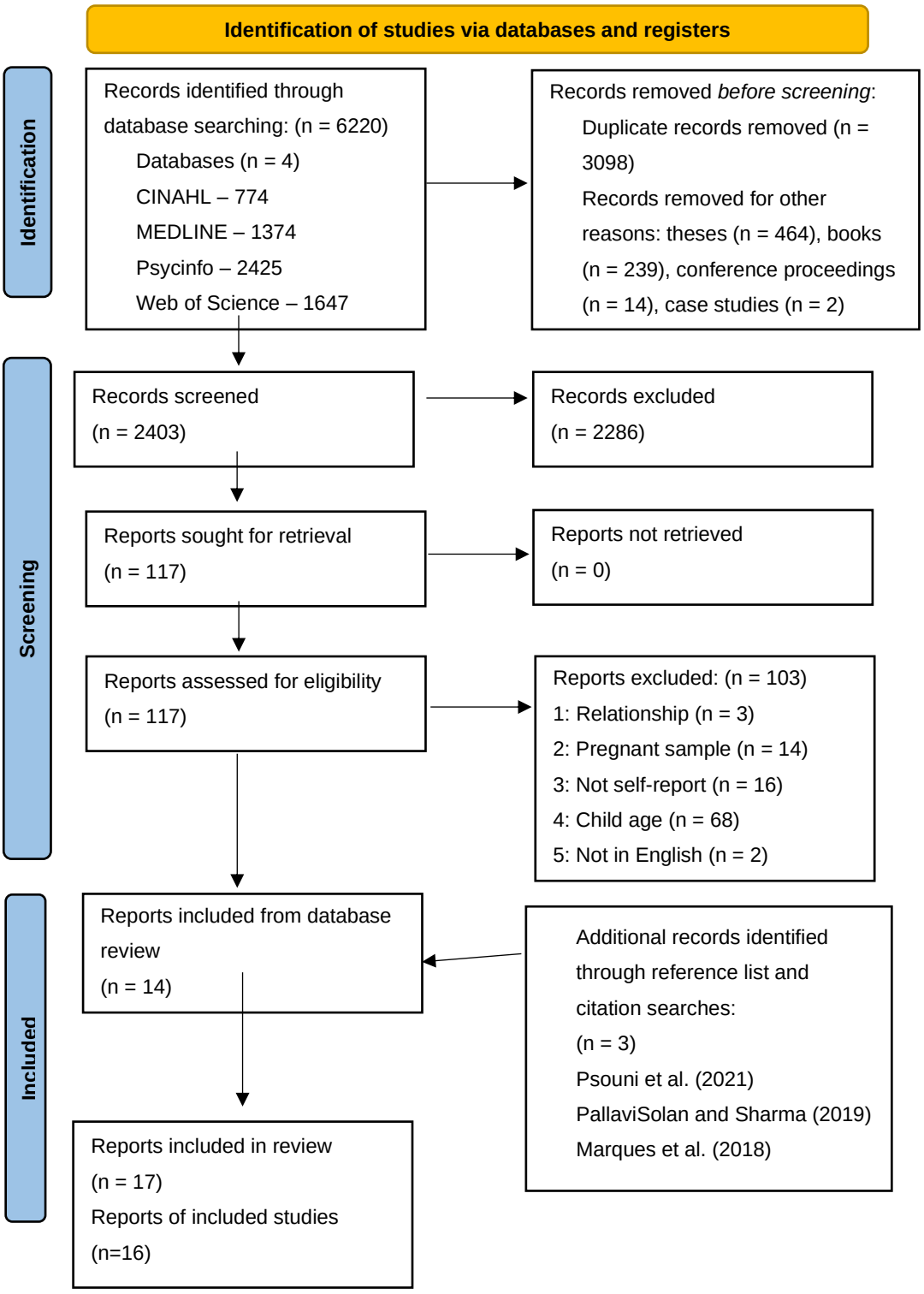
Table 1.7: Quality Appraisal

Study No.		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
1	Were the aims/objectives clear?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
2	Was the study design appropriate for the aims?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3	Was the sample size justified?	N	N	N	Y	N	Y	N	N	Y	N	Y	N	N	N	N	N	N
4	Was the target population clearly defined?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5	Sample frame from appropriate population base?	N	Y	N	N	Y	N	Y	N	N	N	Y	N	N	DK	N	Y	Y
6	Was the selection process likely to select those representative of target population?	N	Y	N	N	Y	N	Y	N	N	Y	Y	Y	Y	DK	N	Y	Y
7	Measures undertaken to address non-responders?	N	Y	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N
8	Were variable measures appropriate to the aims?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9	Were variable measured correctly using measures piloted and published?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10	Is it clear what was used to determine statistical significance/ precision estimates?	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	N	N

Study No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
11	Were the methods sufficiently described to be repeated?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
12	Were the basic data adequately described?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
13	Does the response rate raise concerns about non-response bias?	N	N	Y	N	Y	DK	N	DK	N	DK	N	N	DK	DK	N	N	N
14	Was information about non-responders described?	N	Y	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	N	Y
15	Were the results internally consistent?	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
16	Were results presented for all analyses described in the method?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N
17	Were the authors discussions/conclusions justified by results?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
18	Were limitations discussed?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
19	Were there any funding sources/COI?	N	N	DK	DK	DK	N	DK	N	DK	N	DK	N	N	N	N	N	DK
20	Was ethical approval/consent attained?	Y	Y	Y	Y	Y	Y	DK	Y	Y	Y	Y	Y	Y	Y	DK	Y	DK

Y = yes, N = no and DK = don't know

Figure 1.1: PRISMA flow diagram (Page et al., 2021)



Appendix 1.1

Author guidelines for Infant Mental Health Journal

1. Article Types

Original Papers are reports of new research, empirical findings or conceptual analyses that make a significant contribution to knowledge, to the extant literature, and to the science of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. Abstracts are unstructured and no more than 225 words. All manuscripts must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health.

Brief Reports are no more than 5,000 words and are appropriate for preliminary findings of cutting-edge pilot studies. Case reports reflecting novel or highly significant clinical approaches may be considered as well. Abstracts are unstructured and no more than 225 words. All brief reports must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health.

Review Articles reflect critical, thorough literature reviews or theoretical/conceptual articles that synthesize and critique the research literature to date or offer new theoretical and conceptual frameworks that are highly relevant to the field of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. All manuscripts must include a data availability statement (if applicable), an ethics statement (if applicable), key findings, and statement of relevance of the work for infant and early childhood mental health.

Special Collections/Special Sections are collections of three to five manuscripts on a topic highly relevant to the field of infant and early childhood mental health. Authors interested in

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Your manuscript: This can be a single Word file including text, three key findings and statement of relevance to infant and early childhood mental health, figures, and tables, or separate files—whichever you prefer. All required sections should be contained in your manuscript, including abstract, introduction, methods, results, and conclusions. Figures and tables should have legends. References may be submitted in any style or format, as long as it is consistent throughout the manuscript. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers. If your manuscript is difficult to read, the editorial office may send it back to you for revision.

Before you submit, you will need the following:

- A cover letter to the editor confirming the following: 1) the manuscript and its content are not under review or in publication elsewhere; 2) all research protocols were approved by the appropriate research ethics board(s) prior to initiation of the study; 3) all authors have meaningfully contributed to the work and approved the submitted manuscript.
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- Up to six keywords appearing below the abstract;
- Relevance and Key Findings
    - 3 key findings/practitioner points appearing below the abstract: Authors will need to provide no more than 3 'key points', written with the practitioner in mind, that summarize the key messages of their paper to be published with their article. Each finding should be one sentence in length.
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Updated 02-05-2022

Appendix 1.2

Appraisal tool for cross-sectional studies (AXIS; Downes et al., 2016)

	Question	Yes	No	Don't know/ Comment
Introduction				
1	Were the aims/objectives of the study clear?			
Methods				
2	Was the study design appropriate for the stated aim(s)?			
3	Was the sample size justified?			
4	Was the target/reference population clearly defined? (Is it clear who the research was about?)			
5	Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?			
6	Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?			
7	Were measures undertaken to address and categorise non-responders?			
8	Were the risk factor and outcome variables measured appropriate to the aims of the study?			
9	Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialled, piloted or published previously?			
10	Is it clear what was used to determined statistical significance and/or precision estimates? (e.g. p-values, confidence intervals)			
11	Were the methods (including statistical methods) sufficiently described to enable them to be repeated?			
Results				
12	Were the basic data adequately described?			
13	Does the response rate raise concerns about non-response bias?			
14	If appropriate, was information about non-responders described?			
15	Were the results internally consistent?			
16	Were the results presented for all the analyses described in the methods?			
Discussion				
17	Were the authors' discussions and conclusions justified by the results?			
18	Were the limitations of the study discussed?			
Other				
19	Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?			
20	Was ethical approval or consent of participants attained?			

Chapter Two: Research Paper

History not destiny: the role of emotion regulation in the relationship between childhood adversity and parental reflective functioning in fathers

Word count: 7897 (excluding references, tables, and appendices)

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Prepared for submission to *Infant Mental Health Journal* (see appendix 2.1)

Abstract

Adversity in childhood is proposed to influence future parenting behaviours. This study aimed to explore whether there was a relationship between childhood adversity and parental reflective functioning in fathers and whether emotion dysregulation played a role in this relationship. 140 fathers of infants under 24 months completed self-report measures assessing adverse childhood experiences (ACEs), difficulty in regulating emotions (emotion dysregulation), and parental reflective functioning (PRF). No relationship was found between ACEs and the two PRF domains, certainty about mental states and interest and curiosity about mental states. Increased emotion dysregulation was significantly associated with higher ACEs and less PRF certainty. An indirect effect of ACEs on PRF certainty through emotion dysregulation was found. The results suggest that ACEs do not influence PRF certainty or interest and curiosity, but that emotion dysregulation is an important mechanism in understanding this relationship. This study suggests that reducing emotion dysregulation for fathers of infants can help promote parental reflective functioning.

Keywords: adverse childhood experiences, emotion regulation, parental reflective functioning

Introduction

The birth of a new child can be both rewarding and challenging. This period is filled with hormonal, psychological and physical changes for parents. Parents have to manage this, whilst also adjusting to changes in relationships and identity (Cowan & Cowan, 1995). During this time, parents may adapt with ease or they may find navigating these changes more disruptive and distressing (Epifanio et al., 2015; Wisner et al., 2006). A parent's ability to provide responsive parenting is a product of their own experience (Bowlby, 1951; Fraiberg et al., 1975), with multiple historical factors interacting with their current circumstances. For example, parents' exposure to Adverse Childhood Experiences (ACEs; Felitti et al., 1998) and their experience of being cared for both as a child and an adult, will have a profound impact on their ability to provide responsive parenting (Law et al., 2018). The first two years of a child's life is a time when the brain develops at its fastest rate and is a key determinant for a child's future intellectual, social, and emotional health (Golding, 2008). When responsive parenting is available to the developing child, they are significantly more likely to experience psychological wellbeing in later life (Sroufe, 2005). Attuned parenting and attachment security have an impact not only the child's social and emotional development, but at a more fundamental level on their neurological development. There is robust evidence that the human brain is experience dependent (Siegel, 1999), developing in response to the infant's interpersonal environment (e.g., the relationship with their parent). Given the impact that the parent-infant relationship can have on child development and future outcomes, it is important to understand some of the mechanisms that shape caregiving behaviours.

Early experiences and caregiving

The way in which a parent thinks about, interacts, and responds to their infant does not exist independently of other life experiences and relationships. A substantial body of

literature on attachment theory over the last 70 years has suggested that early childhood experiences have a significant impact on how adults go on to parent their own children (Bowlby, 1951; Fraiberg et al., 1975; Grossmann et al., 2006; Main et al., 1985; Sroufe, 2005; Steele et al., 1996). All parents will have had experience of being parented, for better or for worse, which will have impacted not only their own neurological and psychological development, but also on the more explicit parenting roles that they may have learnt (Music, 2016). As a child's brain develops, it seeks to make sense of patterns in relationships, for example, 'when I laugh my mother smiles at me' or 'when my father holds me, I feel safe'. As the child grows up and starts to make sense of the world at a more cognitive and reflective level, they use their mental maps to understand the world, to anticipate, to manage and negotiate (Bowlby, 1951). Internal working models act as a relationship template or 'blueprint' to guide future relationships with friends, partners, and family. As a result of these blueprints, when becoming a parent, a person has expectations about their own behaviour and how their new baby will respond (Bretherton, 1987).

Parental reflective functioning (PRF) has been recognised to have a significant impact on the quality of caregiving (Baradon et al., 2008; Pajulo et al., 2012; Rostad & Whitaker., 2016; Rutherford et al., 2013; Rutherford et al., 2015b; Smaling et al., 2016; Suchman et al., 2012). The concept of reflective functioning, also referred to as mentalising, emerged in relation to understanding the attachment relationship between a parent and infant (Fonagy et al., 1991). PRF refers to a parent's ability to understand mental states in themselves and their child in order to try to understand behaviours, intentions, thoughts, and feelings (Fonagy et al., 1991). This could be through a parent attempting to see the world through the eyes of their child, for example understanding their infant communicating a need for comfort, food, or sleep, through crying, rather than crying being a behaviour to annoy.

Adverse childhood experiences and caregiving

Parental exposure to adversity and their own experience of being cared for as a child (and as an adult), has a profound effect on their expectations of the world, their mental health, and their ability to attune to their own children (Benoit & Parker, 1994; Hautamaki et al., 2010; van IJzendoorn, 1995). The landmark Adverse Childhood Experiences (ACE) study (Felitti et al., 1998) collected data from over 17,000 adult members of Health Maintenance Organisation in California about their current health and whether they had experienced abuse, neglect, and household dysfunction in childhood. The results demonstrated the strong relationship between childhood adversity and multiple risk factors for future functioning and health outcomes. Following the ACE study, traumatic childhood experiences have repeatedly been linked to experiencing anxiety, depression, and substance misuse in adulthood (De Venter et al., 2013).

Given the impact of ACEs on adult physical and emotional wellbeing (Felitti et al., 1998), it is understandable that ACEs could affect parenting. Reviews have frequently found direct associations between childhood experiences of adversity and negative parenting practices (Lomanowska et al., 2017; Lotto et al., 2021; McLaughlin et al., 2012), such as physical punishment, inconsistent discipline, emotional maltreatment, abuse, and neglect (Gershoff, 2010; Golcuk & Berument, 2021; Iwaniec et al., 2007; Prevatt, 2003). In 1975, before the ACE study, Selma Fraiberg introduced the concept of "ghosts in the nursery", which refers to the relationship between a person's harsh or traumatic experiences of being parented and their own future parenting style. Parents may not remember the abuse, or they might consider it to be 'normal', and without recognition, parent in a similarly harsh or traumatic way to their own parents. These "ghosts" can continue to reappear throughout generations, maintaining cycles of adversity. In addition to multiple ACEs being associated with increased physical and mental health difficulties in adult life, more recently, a significant impact of ACEs on parents' level of education, social support, and economic

deprivation has been reported (Bridgett et al., 2015; Shonkoff et al., 2012). The Family Stress Model (Conger & Conger, 2008; Conger & Donnellan, 2007) summarises the impact economic hardship can have on parenting stress. Cassells and Evans (2017) extend this model to include race, culture and ethnicity which can have a profound impact on stress for parents through mechanisms, such as social inequality. In combination, parents may have many psychological and environmental challenges to overcome which can potentially interfere with sensitive and responsive caregiving.

However, it is important to note that adversity in childhood does not determine parenting outcomes (Masten & Monn, 2015). Despite families having to navigate challenging social and political contexts, negative outcomes are not predetermined. Although, it appears that parenting is transmitted across generations, there is a growing body of literature describing protective mechanisms against the negative effects of ACEs (Garmezy, 1993; Kumpfer & Alvarado, 2003; Luthar et al., 2006). Loving, supportive and satisfying relationships have been shown to help resolve and prevent transmission of negative parenting styles (Madigan et al., 2019). In addition, skills such as PRF which can be nurtured through supportive relationships are thought to help protect against the harmful impact of ACEs continuing to future generations (Håkansson et al., 2018).

Adverse childhood experiences and parental reflective functioning

A person's reflective functioning ability is thought to develop over time in the context of social relationships from infancy (Fonagy & Target, 2002; Slade, 2005). ACEs are associated with navigating unpredictable and stressful environments, which can lead to neurocognitive changes. These adversities are thought to theoretically impair the development of reflective functioning ability in childhood and later into adulthood (Cowell et al., 2015; Fonagy & Target, 2002; Slade, 2005; Teicher et al., 2016). However, there is

limited research examining the relationship between ACEs and PRF and the findings are varied (Camoirano, 2017). Some studies have found no association (Schechter et al., 2005; Stacks et al., 2014), whereas others have found a relationship between certain aspects of childhood maltreatment and PRF (Berthelot et al., 2019; Ensink et al., 2014; Hakansson et al., 2018; Kristiansen et al., 2019; Moser et al., 2019; Pajulo et al., 2012).

Early experiences and emotion regulation

Emotion regulation plays an important role in the caregiving relationship, and similar constructs such as distress tolerance have been proposed to support PRF ability (Rutherford et al., 2013, 2015a; Schultheis et al., 2019). It is suggested that attempting to soothe a crying infant can be demanding for a parent, especially when this may trigger difficult memories and feelings from their own childhood. A parent will need to regulate their own emotions in order to soothe the distressed child (Fonagy, 2006; Slade, 2005).

Theories of attachment have further emphasised how early childhood experiences help to develop systems in the brain related to emotion regulation, such as, processing of emotion, managing emotional reactions and self-regulation (Fonagy et al., 2018; Fonagy & Target, 2002; Mikulincer et al., 2003; Schore, 2015; Schore & Schore, 2008). Emotion regulation refers to the ability to recognise, regulate, interpret, and respond to one's own emotions in an adaptive way, and the absence of these abilities would indicate emotion dysregulation (Gratz & Roemer, 2004). Adversity in childhood and the level of stress associated with these experiences, can have a significant impact on the development of brain networks responsible for inhibition and capacities for emotion regulation (Kim et al., 2013; Schore, 2001). As a way to survive in a stressful environment, children may develop maladaptive coping skills such as becoming highly sensitive and reactive to threat (Perry et al., 1995). Emotion regulation has been recognised to evolve throughout a person's life

(Bariola et al., 2012; Rutherford et al., 2015b), therefore, experiencing childhood adversity does not necessarily predict a person's emotion regulation ability in adulthood. Nevertheless, ACEs have been increasingly identified as a predictor for emotion dysregulation in caregivers (Rodriguez et al., 2021; Smith et al., 2014; Wang, 2021).

Emotion regulation and parental reflective functioning

In childhood, the development of emotion regulation is believed to influence how an individual understands thoughts and feelings in their own mind, namely, reflective functioning ability (Cooper & Redfern, 2015; Ensink & Mayes, 2010; Fonagy & Target, 2002; Luyten et al., 2017; Slade, 2005). Furthermore, recent research has found a significant association between higher levels of emotion dysregulation and difficulties in maternal reflective functioning (Schultheis et al., 2019). Emotion regulation can help parents to manage their own emotional state when caring for the needs of their distressed and dysregulated infant (Morris et al., 2007). Moreover, the ability to understand their own mind and think about their child's mental state may be critical when parents are required to remain persistent in their efforts to soothe (Rutherford et al., 2013, 2015a). It is important to note however, that maternal and paternal emotion regulation has been reported to have an independent impact on their child's development (Lau & Williams, 2021). Importantly, PRF ability has been seen to be significantly higher in mothers, compared to fathers (Esbjørn et al., 2013; Pazzagli et al., 2018). These differences suggest that more research is needed to understand how fathers interact with their children and the quality of the parenting they provide.

Fathers and parenting

Literature has often positioned fathers in a secondary role to mothers in caregiving (Buttitta et al., 2019; Cabrera & Volling, 2019). There is increasing evidence that fathers

contribute independently to their child's development, therefore it is important that father focussed research is considered (Cabrera & Volling, 2019; Lamb, 1975; Weissman et al., 1984).

Historically, the care of an infant has been shared with available adults and not just the responsibility of the mother (Hrdy, 2009). Humans are designed for co-operative breeding and infants need more physical and emotional resources than a mother alone is able to provide (Music, 2016). Big eyes and symmetrical faces have developed through evolution to help infants attract a greater source of care from available adults (Hrdy, 2009). Non-maternal care can take many forms, for example through close relatives (fathers, grandparents, and siblings) or unrelated adults (partners, nurseries, and childminders), and the manner in which this happens varies significantly between different cultures (Music, 2016).

Although, the largest proportion of childcare in nearly all societies is done by mothers (Hrdy, 1999), fathers are now much more likely to be involved in their child's care. In the West, there has been a substantial shift in the fathering role over recent decades. In the 1970s, there was a dramatic increase in the number of fathers attending their child's birth, as hospitals changed their policies about men being present (King, 2017). Evidence suggests that fathers in the UK are spending an increased amount of time with their children compared to 30 years ago and 85% are still living with their child at 9 months old (Panico et al., 2010). Women are also becoming increasingly more active in the work force and attitudes towards paternity leave are changing (Cabrera & Tamis-LeMonda, 2013). This greater father involvement, specifically during infancy would suggest that understanding the fathering role is now more important than ever.

The current study

The present study examined whether father's adverse childhood experiences were associated with their PRF ability. In addition, previous literature suggests that emotion regulation plays a key role in early caregiving interactions and is believed to be valuable for scaffolding reflective functioning (Slade, 2005). Therefore, the role of emotion regulation in the relationship between ACEs and PRF was also considered.

To date, one study has investigated the interaction between ACEs, emotion dysregulation and PRF. Rojas (2021) found a significant association between greater ACEs and increased difficulties with PRF in mothers. Furthermore, the relationship between ACEs and PRF was mediated by emotion dysregulation. This highlights the interactions of these parenting mechanisms and adds to further understanding of the complex nature of childhood adversity on future parenting.

The aims of the current study were to a) explore adverse childhood experiences, difficulties with emotion regulation and parental reflective functioning in a sample of fathers with infants under two years old; b) determine whether there were significant relationships between these variables; and c) explore whether difficulties with emotion regulation would mediate the relationship between adverse childhood experiences and parental reflective functioning.

Based on current theories and previous research, it was hypothesised that (1) greater ACEs would be associated with lower levels of PRF, (2) greater ACEs would be associated with greater emotion dysregulation, (3) greater emotion dysregulation would be associated with lower levels of PRF, and (4) emotion dysregulation would mediate the relationship between ACEs and PRF.

Method

Design

The current study was cross-sectional in design using online self-report measures. The data were quantitatively explored using correlation analyses to examine whether there was an association between ACEs, emotion dysregulation, PRF and demographics. A mediation analysis was then conducted using Hayes PROCESS tool (Hayes, 2018) within SPSS to examine whether emotion dysregulation mediated the relationship between ACEs and PRF.

Participants

Participants were adults aged 18 or over, in a fathering role, with at least one child aged 0-24 months. The survey was written in English, so individuals needed to have sufficient understanding of written English to take part.

A-priori power calculations indicated that a sample of at least 82 participants was required in order to achieve sufficient statistical power for correlation and mediation analysis. G power suggests for a medium effect (0.3) for a two-tailed test, a sample of approximately 82 participants was required for 80% power. Modelling by Fritz and MacKinnon (2007) suggests for a medium effect (0.39) in each arm (ACEs to emotion dysregulation {α} and emotion dysregulation to PRF{β}) a sample size of approximately 71 participants was required for a mediation model using a bias-corrected bootstrap method. A final sample of 140 participants fully completed all sections of the survey and thus met these requirements.

Measures

Demographics: A questionnaire was designed for the current study to collect sociodemographic characteristics of the participants. This included questions about, gender, ethnicity, level of education and household income. Questions were mostly multiple choice, with the option of self-describing or adding comments if preferred.

Adverse Childhood Experiences: The Adverse Childhood Experience (ACE) questionnaire (Felitti et al., 1998) was developed to identify childhood experiences of abuse,

neglect and household dysfunction that occur before the age of 18. It consists of ten items, which result in a cumulative ACE score, with higher scores indicating more ACEs. This questionnaire was selected due to the 'yes' or 'no' structure of the questions as only the presence of ACEs was of interest, not the nature of childhood adversity. The questionnaire has demonstrated excellent internal consistency (Cronbach's alpha= .88) (Murphy et al., 2014).

Parental Reflective Functioning: The Parental Reflective Functioning Questionnaire (PRFQ-; Luyten et al., 2017) was utilised as a self-report measure of fathers' mentalising. The measure consists of 18 Likert scale items which result in scores across three domains of PRF. 1) 'Pre-mentalising modes'(PRFQ-PM) intended to capture evidence of when a parent may be unable to hold their child's mental state in mind. Parents with higher scores might be unable to understand and interpret their child's mental states and behaviour for example, "Often, my child's behaviour is too confusing to bother figuring out". 2) 'Certainty about mental states'(PRFQ-CM) aims to measure how much a parent believes they understand their infants' internal states, for example, "I always know what my child wants". Parents with lower scores on this subscale may have a significant uncertainty about their child's mind and behaviour. 3) 'Interest and curiosity in mental states' (PRFQ-IC) designed to capture how much interest a parent has in their child's mind and to what extent they are able to think about the child's perspective. For example, "I wonder a lot about what my child is thinking and feeling". Lower scores on this subscale may indicate a lack of interest in their child's internal world.

It is important to note that although high PRFQ-CM and PRFQ-IC scores are fundamental for parents to adopt a reflective stance in their interactions with their child, Luyten et al. (2017) indicated that extremely high scores could suggest intrusive mentalising. Parents who are overly certain or curious about their child's mental states may make false

assumptions (Sharp et al., 2013). Nonetheless, higher scores on the subscales PRFQ-CM and PRFQ-IC have demonstrated consistent associations with positive child and parent outcomes (De Roo et al., 2019; Luyten et al., 2017; Pazzagli et al., 2018). In contrast, the PRFQ-PM subscale is frequently correlated with negative outcomes, such as, depression and parental distress (Bottos & Nilsen, 2014; Krink et al., 2018; Rutherford et al., 2013, 2015a). Due to the relationship with positive indicators and in line with previous research (Moreira & Fonseca, 2022; Rutherford et al., 2013, 2015a; Schultheis et al., 2019), higher scores on the PRFQ-CM and PRFQ-IC subscales will be interpreted as indicating increased PRF ability in the current study.

The original validation study (Luyten et al., 2017) completed a confirmatory factor analysis for the three-factor structure and described preliminary reliability and validity with a non-clinical sample (Cronbach's alpha = .70, .82 and .75 for PM, CM and IC respectively). Furthermore, the questionnaire has been translated into multiple languages and demonstrated similar factor structure to the original study (De Roo et al., 2019; Gordo et al., 2020; Lee et al., 2021; Moreira & Fonseca, 2022; Pazzagli et al., 2018). Further evidence supporting the construct validity of the PRFQ has been demonstrated in several studies by showing significant correlations with the three domains and variables which are expected to be associated with PRF. Some examples of these are attachment, parenting stress, parental satisfaction, and parental mental health (De Roo et al., 2019; Lee et al., 2021; Luyten et al., 2017; Pazzagli et al., 2018; Schultheis et al., 2019).

Emotion Regulation: The Difficulties with Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) was used to assess fathers' difficulties in regulating their emotions. The scale consists of 36 Likert scale items which results in a total score. Scores on this scale could range from 36-180 with higher scores considered to be an indication of overall problems with emotion regulation. The DERS measure has demonstrated excellent internal consistency with

a non-clinical population (α = .93), significant construct validity and test-retest reliability over three-to-four and six-to-eight-week periods (Gratz & Roemer, 2004).

Procedure

A representative from a local parent network for fathers was consulted on the design of the study. Participant materials were then reviewed and amended in line with the feedback provided. Ethical approval from the Lancaster University Faculty of Health and Medicine Research Ethics Committee was granted and participants were recruited online between March 2021 and February 2022. The study was advertised through online parent forums and social media platforms such as, Reddit, Twitter and Facebook. Participants were also able to forward the link to others who may be interested. A link from the advert directed participants to information about the study, this was followed by forced choice questions asking participants to confirm that they had read and agreed to the information and that they gave their consent to participate. Participants were led through the survey measures and provided with a debrief at the end, which contained details of support and resources. All participant materials are included in Chapter Four.

Data Analysis

Data analysis was conducted using IBM SPSS statistics software, version 27. All measures were compulsory except the ACE questionnaire and although participants could leave the survey part way through, questions that had already been answered were recorded.

Descriptive analyses were conducted to summarise and explore demographic characteristics of the sample and the measures. The distribution of the data was inspected visually using histograms and the skewness and kurtosis values checked. Sensitivity analyses were then completed to check for unusual scores which could influence the outcomes (multivariate outliers). Excluding outliers did not make any material difference to the main

findings so these scores were included. The majority of scores were skewed, therefore Spearman's rho correlation coefficients were utilised for the correlation analyses which examined the relationship between demographic variables (parent age, child age, income), ACE scores, DERS score and PRFQ domains. Following this, regression analyses (which form part of the mediation analyses) were conducted to confirm there was no heteroscedasticity and histograms were inspected to confirm normal distribution of the residuals. Finally, a series of mediation analyses were conducted using Hayes PROCESS Tool (Hayes, 2018) to examine whether DERS scores mediated the relationship between ACE scores and PRFQ domains.

Results

Demographics

A total of 140 participants fully completed the survey. A further 94 participants recorded partial responses by completing only demographic information and/or just the PRFQ. Fathers who completed the survey (n = 140) were compared to those with partial data (n = 94). A significant difference was found between those that had completed the survey and those who had not in terms of child gender (χ^2 = .14, p = .029). Fathers who completed the survey were more likely to have a female child, whereas fathers with partial data were more likely to have a male child. There were no significant differences between those who completed the survey and those who did not in terms of parent age, child age, income and whether they had other children. Demographic characteristics for the participants who fully completed the survey are presented in Table 2.1.

In the final sample (n = 140), the mean age of participants was 33.87 years, ranging from 21-48 and the majority of parents identified as male (98.6%). The mean age of their children was 11.19 months, ranging from 0-23 months with just over half of children being

female (55%). Most of the sample lived in Europe (60.7%) or North America (35%) and a large proportion reported being White (92.9%). The majority of fathers reported an equivalent household income of £64,000 or above (60%) and a large proportion of fathers had a university education (77.1%). The majority of participants were in full time employment (80.7%).

Most fathers lived with their child all of the time (97.1%), one father reported being a single parent (0.7%) and most lived with a spouse or partner (96.4%). 31.4% of fathers reported having other children, their ages ranging between one month and 21 years. 5% of fathers reported having additional needs, with one father reporting their child had additional needs (0.7%).

[TABLE 2.1 ABOUT HERE]

Descriptives

Descriptive statistics for the main variables are included in Table 2.2. The reliability analysis demonstrated acceptable levels of internal consistency ($\alpha > .7$; Gliem & Gliem, 2003) for most of the scales used: ACE-T $\alpha = .775$; DERS $\alpha = .947$; PRFQ-CM $\alpha = .799$ and PRFQ-IC $\alpha = .750$. However, unacceptable internal consistency was found for the PRFQ-PM ($\alpha = .381$), with little improvement available if any items were deleted (no better than $\alpha = .408$). More in-depth examination of the scale indicated that all inter-item correlations were low ($r < .355$), thus casting doubt over the construction of this subscale with these items for this population. Consequently, the PRFQ-PM subscale could not be included in further analyses.

The mean scores (with SDs) across the measures were as follows; ACE-T 1.65 (2.06) (*Mdn* = 1), PRFQ-CM 3.51 (1.10), PRFQ-IC 5.68 (.95) and DERS 85.40 (25.19).

[TABLE 2.2 ABOUT HERE]

Correlational analyses

Correlational analyses were conducted to examine the relationships between the variables and demographics. None of the demographics (parent age, child age, income) correlated with any of the main study variables (ACE-T, DERS, PRFQ-CM, PRFQ-IC) and there were no differences in main study variables (ACE-T, DERS, PRFQ-CM, PRFQ-IC) for the categorical demographic variables (child gender, having other children).

Correlations between the main study variables are provided in Table 2.3. There was a small to medium sized association between ACEs and DERS (r = .243, p < .01), which demonstrated that fathers who had experienced more ACEs reported increased difficulty in emotion regulation. Fathers' ACE scores explained 5.7% of the variance in DERS scores. However, ACE scores did not significantly correlate with either of the PRF domains (PRFQ-CM r = .059 *ns*; PRFQ-IC r = .111, *ns*), showing that there was not an association between participants' ACE scores and their certainty or curiosity and interest in their child's mental states.

There was a small to medium sized association between DERS and PRFQ-CM (r = -.243, p < .01); increased emotion dysregulation was associated with lower certainty about mental states. Fathers' DERS scores explained 5.5% of the variance in PRFQ-CM scores, However, DERS scores did not correlate significantly with PRFQ-IC (r = - .073 *ns*), showing that there was not an association between participants' emotion dysregulation and their interest and curiosity in their child's mental states.

[TABLE 2.3 ABOUT HERE]

Mediation analyses

Despite there being no direct effect of ACEs on PRF, a mediation effect is still possible. Hayes (2018) outlines that the concept of needing a simple association between the predictor and the outcome variable before investigating a mediation is outdated. It is entirely possible to find a non-zero indirect effect, even when the total effect is zero (or near zero) in a range of circumstances (Hayes, 2018). Further, Judd and Kenny (1981) discuss how it is unrealistic to not expect the relationship between psychological processes to have a variety of causes. Therefore, mediation analyses were conducted to examine the indirect effect of ACEs on PRF (IC and CM) through emotion dysregulation. The mediation models are outlined in Figures 2.1 and 2.2. The indirect effect was considered significant if the 95% bias-corrected and accelerated confidence interval did not contain zero (Hayes, 2018). A summary of results is provided in Table 2.4.

In Model 1, increased ACEs were related to more emotion dysregulation ($a = 2.91$, $p < .01$) and more emotion dysregulation was related to lower certainty about mental states ($b = -.012$, $p < .01$). Mediation analysis indicated that the 95% confidence interval of the indirect effect through emotion dysregulation was entirely below zero ($ab = -.034$, 95% CI -.070 to -.005) and the direct path remained not significant ($c' = .070$, ns). In contrast, Model 2 indicated that increased ACEs were related to more emotion dysregulation ($a = 2.91$, $p < .01$), however more emotion dysregulation was not related to lower interest and curiosity about mental states ($b = -.004$, ns). Mediation analysis indicated that the 95% confidence interval of the indirect effect through emotion dysregulation was not entirely below zero ($ab = -.013$, -.039 to .004) and the direct path remained not significant ($c' = .076$, ns).

[FIGURE 2.1 ABOUT HERE]

[FIGURE 2.2 ABOUT HERE]

[TABLE 2.4 ABOUT HERE]

Discussion

In contrast to the expected findings, there was no direct association between self-reported adverse childhood experiences and certainty (PRFQ-CM) or interest and curiosity about mental states (PRFQ-IC) in fathers. Additionally, there was no association between emotion dysregulation and interest and curiosity about mental states. However, as predicted, higher ACEs were associated with greater emotion dysregulation and greater emotion dysregulation was associated with lower certainty about mental states. Additionally, an indirect effect was found between ACEs and fathers' certainty about mental states through emotion dysregulation, but no indirect relationship was found with interest and curiosity about mental states as the outcome. The implications of these findings will be discussed further below.

Adverse childhood experiences and parental reflective functioning

Previous research in this area with mothers has had mixed findings, however more frequently, it has been found that early adversity is significantly associated with lower maternal reflective functioning (Ensink et al., 2014; Hakansson et al., 2018; Moser et al., 2019; Pajulo et al., 2012) and specifically lower certainty about their own and other's mental states (Berthelot et al., 2019; Kristiansen et al., 2019). This finding is not universal as other studies have found no relationship between childhood adversity and maternal reflective functioning. (Schechter et al., 2005; Stacks et al., 2014). One previous study with fathers (Mohaupt & Duckert., 2016) also found no relationship. This is somewhat consistent with the current study which found that the number of ACEs fathers reported was not directly associated with two specific aspects of reflective functioning, namely certainty about mental states or interest and curiosity about mental states. However, given the variation in findings, there could be a number of other factors involved.

It must be considered that 77.1% of fathers in the current study were highly educated (with at least one degree) and 60% were part of a household that earned the equivalent annual income of £64,000 or more. It could be argued that these participants with more socioeconomic resources and higher education have better means for accessing resources such as, therapy or social support. These resources can serve as protective factors for the impact of ACEs on PRF (Atzl et al., 2019). Another explanation for there not being a relationship between ACEs and domains of parental reflective functioning, could be the theory of earned-security (Pearson et al., 1994). Earned-security refers to the process in which difficulties in early attachment relationships with a caregiver can be overcome or repaired. It is suggested, that although a person may have negative parenting experiences as a child, they are able to 'earn-security' through developing secure and reparative relationships with an 'alternative support figure' (Roisman et al., 2002). Therefore, it is possible that the current sample may differ in their adaptive experiences (such as reparative relationships) to samples in previous literature, and this may account for the variation in findings. Furthermore, previous literature has suggested that general reflective functioning ability can be a crucial protective factor for preventing the negative effects of ACEs on psychological skills such as parental reflective functioning (Fonagy, 1993). More specifically, reflective functioning about previous trauma can help future parental reflective functioning (Ensink et al., 2014).

At the end of the survey, participants were also given the option to add additional information about how they completed the ACE questionnaire. Four fathers described a connection between their own traumatic, abusive or neglectful childhoods and a drive to understand their own experiences and subsequently parent in a different way. For example, "my wife and I are trying really hard to avoid all the trauma we experienced from continuing to our daughter". These fathers may have tried intentionally to focus on the impact of their

experiences and how it may affect the sort of parent they would like to be, i.e., reflective functioning about adverse experiences. Taken together, it may be that it is not the presence of adversity in itself that affects PRF. Rather, other psychological mechanisms (e.g. emotion dysregulation) and environmental factors may play a more important role, which could help to explain the lack of association within the current sample.

Adverse childhood experiences and emotion dysregulation

As hypothesised, ACEs were associated with greater emotion dysregulation, predicting 5.7% of the variance. These results are consistent with previous literature which consistently demonstrates a significant association between childhood adversity and subsequent emotion dysregulation in adulthood (Carvalho Fernando et al., 2014; Kolk & Fisler, 1994; Messman-Moore & Bhuptani, 2017) and more specifically in parents (Rodriguez et al., 2021; Rojas, 2021; Smith et al., 2014; Wang, 2021). Fathers who experienced ACEs may not have had the same opportunities to develop emotion regulation skills as those individuals with no childhood adversity. This has key implications for parenting, as these fathers may find situations with their child more stressful and overwhelming.

Other factors may also be involved in the association between variables. Two parents from the current study described accessing therapy as a result of their own childhood emotional neglect to help them to understand and manage their emotions and negate the impact on their parenting. One father wrote “lots of therapy has been critical to growing my emotional self, one of my biggest fears is passing my own trauma down to my son”. This relates to the theory of the intergenerational cycle of maladaptive behaviour, Egeland et al. (1988), described how therapy can help parents who have had abusive childhoods break this cycle. A therapist can occupy the role of an ‘alternative support figure’ allowing for a trusting

relationship to develop and fostering of secure attachments in adulthood. Having an understanding about experiences and increased security may allow for improved parental emotion regulation abilities (Fonagy et al., 1991; Saunders et al., 2011). Thus, in our sample, some of the fathers who had ACEs may have had alternative support figures in their lives and/or been able to reflect on their own experiences in order to help them regulate their emotions, whilst others may not have had access to these resources.

Emotion dysregulation and parental reflective functioning

There was a small-medium sized negative association between emotion dysregulation and fathers' certainty about mental states. This suggests that fathers who found it harder to regulate emotions, also felt less certain about understanding and interpreting their child's thoughts and behaviour. Contrastingly, Schultheis et al. (2019) and Rojas (2021) found no relationship between the DERS and PRFQ-CM with similar sample sizes of mothers. Rutherford et al. (2013, 2015a) also found no relationship between distress tolerance and PRFQ-CM in mothers. However, the current results are comparable to a recent paper which found that emotion dysregulation was associated with lower certainty about mental states in a sample of mothers (Moreira & Fonseca, 2022).

Emotion dysregulation was not significantly associated with fathers' interest and curiosity about their child's mental states. This supports previous findings (Rutherford et al., 2015a), however other studies have reported a relationship. Moreira and Fonseca (2022) found that increased emotion dysregulation was associated with lower interest and curiosity. Schultheis et al. (2019) found that mothers with less emotional awareness reported lower levels of interest and curiosity in their child's mental states. Similarly, Rutherford et al. (2013), found that mothers who persisted for longer in soothing a crying baby simulator reported higher levels of interest in mental states. The authors concluded that tolerance of

infant distress was associated with increased interest, however general distress tolerance was not. Rojas (2021) on the other hand, found that mothers who had higher levels of emotion regulation reported increased levels of interest and curiosity about their child's mental states. Therefore, the relationship is not clear and may depend on various factors.

During infancy, parents are required to rely on non-verbal signals from their child as communication and PRF is proposed to be particularly challenging during this time (Luyten et al., 2017). Current theories suggest that it can be more challenging for parents to think about their child's mind when they are having difficulty regulating their own emotions (Fonagy & Target, 2002). It therefore seems understandable that lower emotion dysregulation in fathers would be associated with an increased ability to be certain about their child's mental states. However, despite experiencing distress and finding it difficult to regulate emotions, it seems that fathers' commitment, and interest in understanding their child's mind was not affected.

Adverse childhood experiences, emotion dysregulation and parental reflective functioning

Greater emotion dysregulation mediated the association between ACEs and higher certainty about mental states in fathers. It seems that fathers who had experienced increased childhood adversity were more likely to have difficulties with emotion regulation. In turn, this emotion dysregulation led to less certainty for fathers about their child's mind and behaviour. Interestingly, although the association between ACEs and certainty (i.e. the direct effect) remains non-significant in the mediation model, the direction of the association is positive (i.e. greater ACEs leads to greater certainty), and the association becomes stronger when emotion dysregulation (i.e. the indirect effect) is added to the model. While the indirect effect is still non-significant, so any conclusions are tentative, this appears to indicate that

although fathers who had experienced increased childhood adversity were more likely to have difficulties with emotion regulation (and hence lower certainty), there may also be an effect working the other way. There could be other mechanisms involved, so that for some fathers, increased childhood adversity has led to increased certainty about their child's mental states through another variable. The Dynamic-Maturation Model of attachment and adaption (DMM; Crittenden, 2006) describes the impact of early relationships on future development and functioning and how patterns of relating can change if the environment changes. The model suggests that cutting off from emotions and focussing on cognitive information rather than intense emotional responses, can be a helpful coping strategy in order to survive overwhelming experiences or environments. Parents who rely more on cognitive information rather than emotional information to make sense of the world may report being overly certain that they know what is in their child's mind. Consequently, this may not be adaptive PRF.

Emotion dysregulation did not mediate the relationship between ACEs and interest and curiosity about mental states. Therefore, it seems that although fathers with increased ACEs were more likely to struggle regulating their emotions, this emotion dysregulation did not lead to changes in levels of interest and curiosity. In contrast, Rojas (2021) investigated the same mediation model and found that emotion dysregulation mediated the relationship between ACEs and interest and curiosity about mental states in mothers. This could potentially suggest that there are differences between mothers and fathers but could also be an effect of this largely high functioning sample.

Limitations

The PRFQ-PM lacked internal consistency and could not be used in analysis. Removing items did not meaningfully improve it. This had a substantial impact on what could be concluded from the findings and alludes to potential problems with the measure.

One explanation for this finding could be the construct validity of the PRFQ-PM. Although, there has been evidence supporting the construct validity of the PRFQ, the questions included in the pre-mentalising subscale seem to ask about different concepts. For example, 'My child cries around strangers to embarrass me' asks about intentions of child's behaviour, whereas 'I find it hard to actively participate in make believe play with my child' asks about parental ability to join in. Our investigations indicate that further examination into the validity of the PRFQ is needed, in particular for the pre-mentalising subscale.

The sample was made up of participants who self-selected, due to the nature of the questions around parental reflective functioning, it may be that fathers who participated, felt more satisfied with their parenting ability than individuals who did not participate. In addition, the sample had a higher percentage of participants who reported four or more ACEs when compared with the original CDC-Kaiser Permanente ACE study (12.5%; Felitti et al., 1998). Thus, self-selection could also have also attracted fathers with a particular interest in the variables. Moreover, as previously mentioned, a large percentage of participants were in a relationship with their infant's mother, highly educated, affluent, and White. It is possible that fathers from different family structures, socioeconomic and ethnic backgrounds may have contrasting experiences/resources and therefore could provide a different pattern of responses. Subsequently, the sample is not representative of the general population of fathers.

Multiple factors can influence how participants self-report parenting related abilities (Morsbach & Prinz, 2006). The PRFQ contains items that can be interpreted as negative, for example, "I believe there is no point in trying to guess what my child feels". If fathers have internalised societal pressures about how they should understand and think about their child, this may have led to more socially desirable answers about coming across as interested and curious. This may be more prevalent for fathers with difficulties in emotion regulation and/or childhood adversity who worry about the impact of this on their parenting. It has been

suggested that PRF and emotion dysregulation may occur at a more implicit or automatic level (Fonagy & Target, 2002; Beauchaine, 2015) and therefore can be difficult to measure via self-report questionnaires.

Future Research

No relationship was found between ACEs and the domains of PRF that could be included in analyses (PRFQ-CM and PRFQ-IC). In order to investigate this further, future research with fathers would benefit from exploring this relationship. Due to the difficulties outlined in the current study, utilising a different measure of PRF may be valuable for a more in-depth exploration, for example, the Parent Development Interview (Slade et al., 2004).

The mediation models appeared to show that there was a relationship between ACEs and certainty about mental states through emotion dysregulation. However, given the lack of direct association between ACEs and certainty, it is likely that other mechanisms may be working simultaneously in the opposite direction. Therefore, future research investigating other psychological and environmental mechanisms that may be involved is needed. It may be interesting to look at positive variables that might protect against the negative effects of childhood adversity, such as earned- security. In any future research it is important that a more diverse and representative sample is used than the current study.

Clinical implications

Contrary to expectations, a key finding was that there was no association between ACEs and the PRF domains certainty and interest and curiosity. This indicates that it is not inevitable that childhood adversity leads to maladaptive parenting outcomes. One way this could be interpreted is that other protective mechanisms that were not measured are involved. Attachment theory emphasises a continuity over the generations; how we parent our children is shaped in turn by how we were parented (Fraiberg et al., 1975). It is important to recognise

this cascade across the generations, but also that there are possibilities for change. Byng-Hall (1998) proposed that parents will develop intentions about what they wish to repeat or change from their own experiences of being parented. Given that no relationship was found between childhood adversity and the two PRF domains in this study, it might be helpful for professionals to consider how access to education and resources (such as within the current sample) may provide opportunities for parents to reflect on their own childhood and provide different parenting experiences for their children.

The identification of emotion dysregulation as a mechanism influencing the relationship between ACEs and certainty in fathers, suggests this could be a key area to target in interventions. The Circle of Security intervention aims to help parents provide a secure base for their child by developing a sensitivity to their child's needs and communications (Hoffman et al., 2006). Parents are also encouraged to understand their own reactions and responses to their child. Approaches such as these may be a form of intervening effectively to help parents regulate their emotions and mentalise about their child. As literature suggests, if parents are more able to understand and reflect about childhood adversity, this can be beneficial in helping them to think about the impact of their own parenting on their infant (Ensink et al., 2014).

Most parenting research has focussed on mothers alone, and fathers' experiences are frequently underrepresented (Davison et al., 2017; Phares et al., 2005). However, it is becoming ever more apparent that children's attachment to their father is just as important as with their mother for future wellbeing and peer relationships (Davison et al., 2017; Palm, 2014). Our findings suggest that fathers who have ACEs may struggle with emotion dysregulation which could impact upon parenting. It is suggested that emotion dysregulation is a hallmark of mental health difficulties (Hofmann et al., 2012) and there is a high prevalence of mental health problems experienced by fathers being reported in the transition

to parenthood (Bradley & Slade, 2011). Taken with the current findings, it is important that fathers should be included in perinatal assessments early on in the transition to parenthood and have accessible interventions available to them. Services that focus on supporting the whole family across a range of needs are required. The recent framework for the Family Hub Model (Department for Education, 2021) acknowledges the importance of family-facing pathways, however, fathers still feel undervalued and unsupported (Kowlessar et al., 2015), so may need different approaches to access support. There are an increasing number of organisations offering peer support models (such as, MFF: music, football and fatherhood and Dad Matters) which are succeeding effectively in engaging and supporting fathers.

Conclusion

The findings suggest that ACEs are not associated with father's certainty or interest and curiosity about their child. Increased emotion dysregulation was associated with lower certainty about mental states, however there was no association between fathers' emotion dysregulation and their interest and curiosity in their child's mental states. It is suggested that ACEs may diminish father's ability to regulate their emotions which in turn can lead to less certainty about their infant's mental states. However, this effect is relatively weak and other factors are likely to be involved. Additional studies are needed to investigate other factors involved in these relationships such as, psychological mechanisms and environmental factors.

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Table 2.1: Sample demographics

***n* = 140**		**Mean (Min – Max)**	**SD**
Parent Age		33.87 years (21-48)	4.87
Child Age		11.19 months (0-23)	7.69
		N	**%**
Parent Gender	Male	138	98.6%
	Non-Binary	1	.7%
	No gender identity	1	.7%
Child Gender	Male	63	45%
	Female	77	55%
Location	Europe	85	60.7%
	North America	49	35%
	Australia	4	2.9%
	Asia	2	1.4%
Ethnicity	White	130	92.9%
	Asian	3	2.1%
	Arab	1	.7%
	Mixed Race	3	2.1%
	Latino	2	1.4%
Household Annual Income	£13,000 to < £19,000 or equivalent	1	.7%

	£19,000 to < £26,000 or equivalent	6	4.3%
	£26,000 to < £32,000 or equivalent	4	2.9%
	£32,000 to < £48,000 or equivalent	15	10.7%
	£48,000 to < £64,000 or equivalent	24	17.1%
	£64,000 or more or equivalent	84	60%
	Prefer not to say	6	4.3%
Education	Apprenticeship or equivalent	1	.7%
	GCSE or equivalent school examination	10	7.1%
	A Level or equivalent	16	11.4%
	Degree or equivalent	66	47.1%
	Master's degree or equivalent	29	20.7%
	Doctorate	13	9.3%
	Other	5	3.6%
Employment Status	In full-time education	7	5%
	In part-time education	1	.7%
	Employed (full time)	113	80.7%
	Employed (part time)	3	2.1%
	Self-employed	11	7.9%
	Unemployed	4	2.9%
	Retired	1	.7%
Living Situation	Child lives with me all of the time	136	97.1%
	Child live with me part of the time	2	1.4%

	Child does not live with me	2	1.4%
Other Children	Yes	44 (0-21 years)	31.4%
	No	93	66.4%
	Other	3	2.1%
Single Parent	Yes	1	.7%
	No	138	98.6%
	Prefer not to say	1	.7%
Partnership Status	Partner who I live with	135	96.4%
	Partner who I sometimes live with	1	.7%
	Does not have a partner	4	2.9%
Parent Additional Needs	Yes	7	5%
	No	130	92.9%
	Other	3	2.1%
Child Additional Needs	Yes	1	.7%
	No	138	98.6%
	Not sure	1	.7%

Table 2.2: Descriptive Statistics

	Mean (SD)	**Range**	**n (%)**	α
Adverse Childhood Experiences Questionnaire				
ACE Total	1.65 (2.06)	0-10		.775
0 ACEs			51 (36.4)	
1 ACE			36 (25.7)	
2 ACEs			22 (15.7)	
3 ACEs			11 (7.9)	
4 ACEs			4 (2.9)	
5 ACEs			7 (5.0)	
6 ACEs			2 (1.4)	
7 ACEs			3 (2.1)	
8 ACEs			3 (2.1)	
9 ACEs			0	
10 ACEs			1 (.7)	
Difficulties in Emotion Regulation Scale				
Total	85.40 (25.19)	36-180		.947
Parental Reflective Functioning Questionnaire				
Certainty about mental states (PRFQ-CM)	3.51 (1.10)	1-7		.799
Interest and curiosity (PRFQ-IC)	5.68 (.95)	1-7		.750

Table 2.3: Spearman's rho correlation coefficients among variables

	1	2	3	4
1. ACE-T	-	**.243****	.059	.111
2. DERS	-	-	**- .243****	- .073
3. PRFQ-CM	-	-	-	.094
4. PRFQ-IC	-	-	-	-

*p < .05, ** p < .01, ***p < .001

ACE-T = Adverse childhood experiences total; DERS = Difficulty in emotion regulation scale; PRFQ-CM = Parental Reflective Functioning Questionnaire - Certainty about mental states; PRFQ-IC = Parental Reflective Functioning Questionnaire - Interest and curiosity in mental states

Table 2.4: Summary of mediation analyses of adverse childhood experiences on parental reflective functioning through emotion dysregulation (unstandardised coefficients except where indicated)

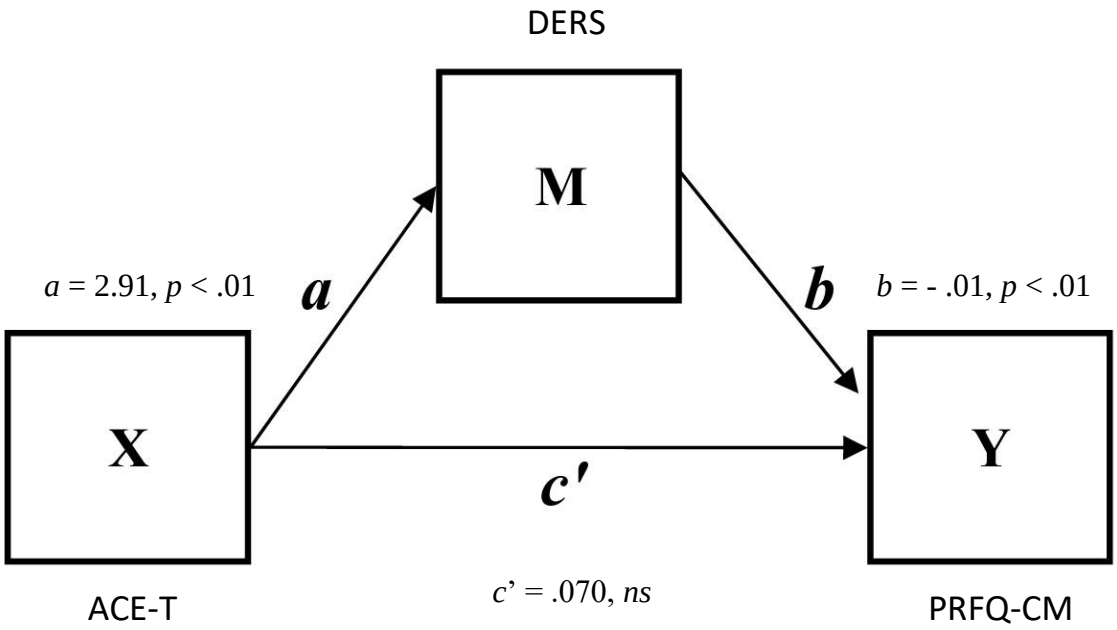
Model (mediator)	X	**Effects of X on M (path a)**	**Effects of M on Y (path b)**	**Direct effects (path c')**	**Indirect effects (path ab)**	**Indirect effects (path ab) BCa 95% CI**		**Total effect (path c)**	**Completely standardised indirect effect**	**Completely standardised indirect effect BCa 95% CI**	
Total						Lower	Upper			Lower	Upper
Model 1 (PRFQ-CM)	ACE-T	**2.91****	**- .012****	.070	**-.034^**	-.070	-.005	.036	**-.063^**	-.133	-.009
Model 2 (PRFQ-IC)	ACE-T	**2.91****	-.004	.076	-.013	-.039	.004	.06	- .028	-.086	.009

*p < .05, ** p < .01, ***p < .001

^Significant indirect effect with BCa 95% CI; 5000 bootstrap samples: lower and upper BCa intervals containing zero indicate non-significant effect

Note: X = predictor, M = mediator and Y = outcome; c' = direct effect of X on Y, controlling for M; ab = mediated effect; BCa = bias corrected and accelerated bootstrap; CI = confidence interval; c = total effect of X on Y

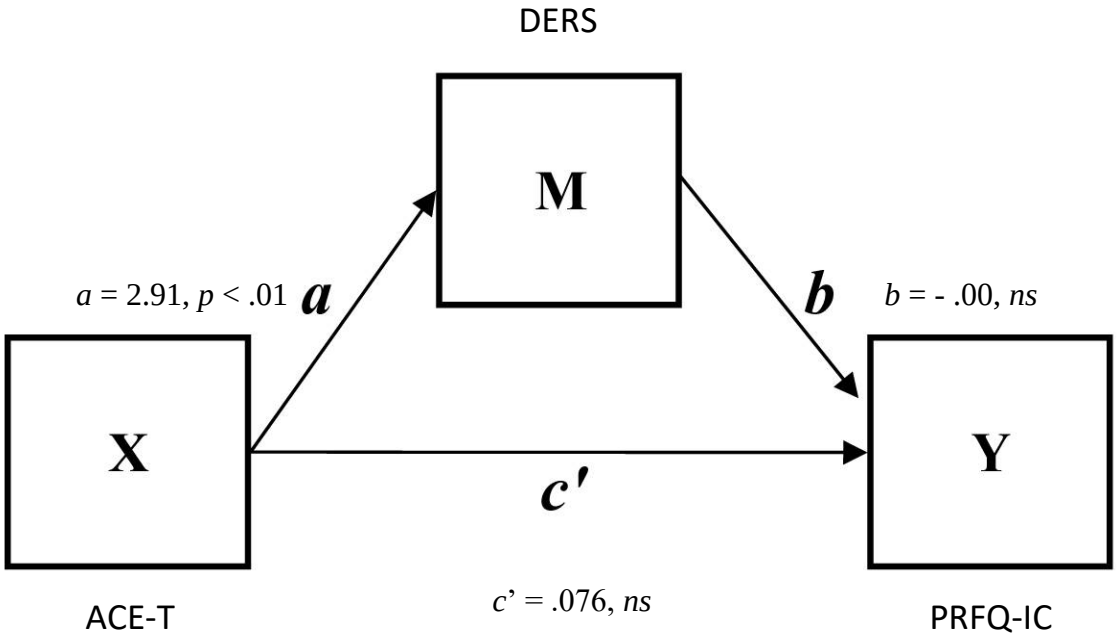
Figure 2.1: Mediation model 1 (unstandardised coefficients)



ab = - .034, 95% CI (-.070 to - .005)

Note: X = predictor; M = mediator; Y = outcome; c' = direct effect of X on Y, controlling for M; ab = mediated effect; CI = confidence interval

Figure 2.2: Mediation model 2 (unstandardised coefficients)



ab = - .013, 95% CI (-.039 to .004)

Note: X = predictor; M = mediator; Y = outcome; c' = direct effect of X on Y, controlling for M; ab = mediated effect; CI = confidence interval

Appendix 2.1

Author guidelines for Infant Mental Health Journal

1. Article Types

Original Papers are reports of new research, empirical findings or conceptual analyses that make a significant contribution to knowledge, to the extant literature, and to the science of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. Abstracts are unstructured and no more than 225 words. All manuscripts must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health.

Brief Reports are no more than 5,000 words and are appropriate for preliminary findings of cutting-edge pilot studies. Case reports reflecting novel or highly significant clinical approaches may be considered as well. Abstracts are unstructured and no more than 225 words. All brief reports must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health.

Review Articles reflect critical, thorough literature reviews or theoretical/conceptual articles that synthesize and critique the research literature to date or offer new theoretical and conceptual frameworks that are highly relevant to the field of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. All manuscripts must include a data availability statement (if applicable), an ethics statement (if applicable), key findings, and statement of relevance of the work for infant and early childhood mental health.

Special Collections/Special Sections are collections of three to five manuscripts on a topic highly relevant to the field of infant and early childhood mental health. Authors interested in

submitting special sections should contact the editor. The editor will require a brief proposal include the proposed focus of the collection/section, working titles/foci of the manuscripts, rationale for the collection/special section. If the collection/special section is approved by the editor, each manuscript will go through the standard review process.

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Updated 02-05-2022

Chapter Three: Critical Appraisal

Word count: 3995 (excluding references)

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Critical Appraisal

The aim of this paper is to address the opportunities and challenges that the process of this thesis posed. Firstly, an overview of the main findings from the literature review and research paper is provided. Secondly, reflections around key decisions that were made throughout the process will be discussed. Lastly, the thesis journey and how this has influenced my professional development throughout clinical psychology training will be described.

Overview of the findings

Systematic Literature Review

The postpartum period is a challenging time for parents, physically and emotionally. Parents can be at risk of experiencing psychological distress when adapting to these new demands. Emotion regulation seems to be a critical feature for sensitive and responsive parent-infant relationships during this time and it may play a key role in perinatal psychological distress. The systematic literature review explored the associations between emotion regulation and psychological distress in parents of infants under two. Lower emotion regulation was associated with higher levels of psychological distress, defined as depression, anxiety, and stress. This was relatively consistent across reports and various samples. The way emotion regulation was measured appeared to influence how strong the relationships were. It seems that the relationship between strategies for managing emotions and distress was weaker than the relationship between difficulties with regulating emotions and psychological distress. This suggests, to support parents to manage psychological distress during this period, helping reduce emotion dysregulation could be more beneficial than teaching emotion regulation strategies. In addition, the relationship between emotion regulation and psychological distress appeared to be bi-directional in nature, indicating that

both could be a mechanism for increasing or decreasing the other. It is important to recognise the challenges parents face and think about the language used to describe these difficulties.

Research Paper

The research paper aimed to examine the association between adverse childhood experiences and parental reflective functioning in fathers of infants under two, and whether emotion dysregulation had an influence on this relationship. This particular sample was chosen because the first two years are a crucial time for infants' development (Golding, 2008) and can be a challenging time for parents to adjust to and manage (Epifanio et al., 2015). Fathers have often been neglected within the parenting literature and were therefore selected as participants due to their shifting roles and increasing involvement in child rearing over recent decades (Panico et al., 2010). A quantitative design was implemented, and 140 fathers answered online self-report measures. The Adverse Childhood Experience (ACE) questionnaire (Felitti et al., 1998) was used to measure childhood experiences of abuse, neglect and household dysfunction. The Parental Reflective Functioning Questionnaire (PRFQ; Luyten et al., 2017) was used to measure fathers mentalising ability about their child and the Difficulties with Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) was used to assess fathers' emotion dysregulation. The results showed that ACE scores were not significantly associated with the two PRFQ domains certainty about mental states and curiosity and interest about mental states. The pre-mentalising domain of the PRFQ did not reach an acceptable level of internal consistency and therefore could not be included in analyses. ACEs did however show a positive correlation with DERS scores, and DERS scored were negatively correlated with the PRFQ domain certainty about mental states. Furthermore, DERS scores mediated the relationship between ACE scores and fathers' certainty about mental states.

A large percentage of participants were in a relationship with their infant's mother, highly educated, affluent, and White, therefore the sample was not representative of the general population of fathers. Nevertheless, the findings are important as they indicate that history does not necessarily predict destiny. There was no relationship between ACEs and two aspects of parental reflective functioning. This suggests that despite experiencing childhood adversity, the fathers in this sample were still able to think about their child's mind. However, despite no direct relationship, difficulty regulating emotions did mediate between ACEs and certainty about mental states, which suggests that emotion dysregulation may play a role in this relationship. It must be noted though, that the direct effect was zero, therefore other factors may also be present to counteract this effect. It is suggested that timely support which helps fathers to mentalise and regulate their emotions would be beneficial in the transition to parenthood.

Decision Making

Systematic Literature Review

Search Strategy

Deciding on the search strategy for the literature review was a long process. I wanted to investigate the relationship between emotion regulation and aspects of mental health in parents, but I wanted to use a term for mental health that was not diagnosis focussed. It seems understandable that much of the research uses diagnostic concepts as this can be a way to categorise complex human experiences and clinically is still required to access services and benefits. However, traditional models based on psychiatric diagnoses are not well suited to making sense of emotional distress (Johnstone & Boyle, 2018). Therefore, it felt important that research, especially quantitative research that is more typically diagnosis heavy, starts to acknowledge a psychological perspective for these experiences. By having these underlying

values, I sought to find a term that would describe a person's emotional experience without fitting into a discrete category, whilst also able to be defined and compared to. After reading many articles, previous theses, and discussions with supervisors, I arrived at the term psychological distress. I thought that this term would be appropriate and compassionate, particularly for parents where the stigma of experiencing mental health difficulties can be substantial.

I also found it interesting to define the search terms for emotion regulation. I battled with what aspects to include, and considered including terms such as, 'emotional control' or 'changing emotions'. I felt that the term emotion regulation could relate to many different aspects of the emotional experience, however, to include all of these would be unmanageable for the purpose of this review. Consequently, I was guided by how the literature has defined the term and I arrived at the current search string by referring to previous reviews in this area (Aldao et al., 2010; Hu et al., 2014; Malik et al., 2015).

Research Paper

Research Question

The initial process of creating a research question proved difficult and time consuming. I had a strong clinical interest in working with parents in the perinatal period after some challenging experiences whilst working in child mental health services. Services often felt critical and blaming towards individuals who were struggling with their parenting role. Parents often had a history of adversity in their own childhoods, and some had only just become adults themselves. Their needs felt ignored and there was a significant lack of support available for them, particularly with their role as a parent. Funding has significantly increased for perinatal services over recent years (NHS England, 2016), however support for fathers is still limited, as is the evidence base. It felt important to contribute towards this field

of research, but despite there being a small body of research, finding a topic that was relevant and fit within the boundaries of the thesis specification proved problematic.

Investigating parents' experiences of adversity led me towards papers which focussed on the intergenerational cycle of childhood trauma. This topic area however, seemed to be centred around deficits and again felt quite blaming at times towards parents. Therefore, I began to focus on factors that might help to support people who had experienced adversity in childhood. Parental reflective functioning appeared frequently in the literature as an aspect of sensitive and responsive parenting and whilst reading around this topic, emotion regulation also appeared to be closely related, especially within attachment theories. Consequently, after looking at similar research with mothers (Rojas, 2021; Schultheis et al., 2019), the final research question around the relationship between ACE, parental reflective functioning and emotion regulation was formed.

Measures

The decision to use the Adverse Childhood Experiences questionnaire (Felitti et al., 1998) was made due to multiple factors. A measure was sought that was free to use and would indicate risk rather than provide specific details of traumatic experiences. It was hoped that by simply answering yes or no to questions it would feel easier for participants to complete, without having to provide details and write about difficult experiences. The ACE questionnaire had also been used in many other studies, therefore comparisons with previous literature could be made. The ACE questionnaire was consequently utilised for the study, however the questionnaire and the ACE model itself have several limitations that should be noted. The original ACE questionnaire is extremely simplistic and disregards many forms of adversity in childhood, including social inequality, bullying and discrimination. Several fathers who participated commented about the ACE question regarding domestic violence

towards mothers “I'm shocked and surprised that there is a question specifically about physically abusive behaviour towards my mother or stepmother but not an equivalent question about physically abusive behaviour towards my father or step-father. This anomaly prevents me from giving a fair assessment of the behaviours between significant adults in my household that I experienced as a child”. Furthermore, 13 fathers provided additional information about their childhood experiences, for example. "Swear at you, insult you, put you down, or humiliate you? wasn't *often*. But it wasn't *none* either, so I put yes”. Despite thinking that participants would find the ‘yes’ or ‘no’ nature of the questionnaire easier to answer and less distressing, the comments signify that participants did not feel the ACE questionnaire asked enough about the nuances of childhood experiences. A frequent critique of the ACE model is that socioeconomic environmental factors are entirely ignored (Kelly-Irving & Delpierre, 2019). Future research would benefit from measures which embed power and social justice into their understanding of childhood adversity. In addition, previous studies have found a different effect for the type of adversity experienced. For example, Mohaupt and Duckert (2016) found that parental reflective functioning did not correlate with overall trauma history in fathers who were seeking treatment for their use of interpersonal partner violence. Instead, they found that poor parental reflective functioning was associated with high relational trauma in childhood, indicating that the type of adversity experienced had a differing impact on parental reflective functioning. As the current research study did not separate out the type of adversity parents had experienced, future research doing so would be of interest.

In the process of deciding how to measure parental reflective functioning, multiple options were considered. The idea of reflective functioning initially emerged in the context of understanding attachment and the interaction between parents and infants (Fonagy, 1989). The ability for a parent to attempt to see the world through the eyes of their child allows

understanding of their needs to develop and helps the parent to provide attuned responses (Fonagy et al., 1991). Given that this ability is a complex human skill, it makes sense that it would be challenging to measure. The literature suggests that the ideal measurement of reflective functioning is the interview based Reflective Functioning Scale (RFS; Fonagy et al., 1998) which is applied to the Parent Development Interview (Slade et al., 2004) or Adult Attachment Interview (George et al., 1996). Whilst the RFS is well validated (Anis et al., 2020), it requires standardised training to administer and score which is costly and time intensive (De Roo et al., 2019) and was deemed unsuitable for this study. The PRFQ was developed as a brief screening tool which can be easily used to assess parental reflective functioning within research with large sample sizes (Luyten et al., 2017). The measure results in scores across three domains or parental reflective functioning; pre-mentalising modes (PRFQ-PM), certainty about mental states (PRFQ-CM) and interest and curiosity about mental states (PRFQ-IC). The PRFQ has previously demonstrated good internal consistency with all domains (Luyten et al., 2017) and has established convergent validity with the RFS (Anis et al., 2020). Given the support for its reliability and validity, it was decided that the PRFQ would be used in the current study.

Several limitations with the measures were identified. The PRFQ-PM domain did not reach an acceptable level of internal consistency. With further analyses it seemed that the items in the PRFQ-PM domain did not correlate significantly with each other and multiple factors appeared to be measured by the one domain. Furthermore, although increased PRFQ-CM and PRFQ-IC have been associated with positive child and parent outcomes (De Roo et al., 2019; Luyten et al., 2017; Pazzagli et al., 2018), interpreting the scores on these domains can be complex. The authors who developed the PRFQ (Luyten et al., 2017) suggest that parents should be able to ‘know’ and be interested in their child’s minds to some extent, however, very high levels of certainty or interest about mental states could actually be

comparable to very low levels, in that both are problematic. Indeed, recognising the opacity of mental states is more indicative of adaptive parental reflective functioning. Likewise, extreme parental interest and curiosity in their baby (for example, through excessive worry) could become problematic. In line with previous studies (e.g., Moreira & Fonseca, 2021; Rutherford et al., 2013, 2015; Schultheis et al., 2019), the current study treated the scale in a linear way, so that higher scores were adaptive. However, it has been proposed that average scores in these domains or at least scores nearer the centre of the scale may indicate more adaptive parental reflective functioning (Anis et al., 2020). Although a standardised approach for calculating adaptive scores has not been established, the possibility that very high scores may indicate less adaptive behaviour must be held in mind. Further guidance on how to score and interpret the PRFQ for research purposes and additional investigation into the construct validity of the domains is needed. Alternatively, future research may benefit from utilising different measurements of parental reflective functioning. Semi-structured interviews, such as the RFS (Fonagy et al., 1998) allow for a more in-depth evaluation of complex parental reflective functioning processes.

The Difficulty in Emotion Regulation Scale (Gratz & Roemer, 2004) was chosen due to its comprehensive measurement of emotion dysregulation. Alternative measures were considered that assess specific strategies for regulating emotions, such as the Emotion Regulation Scale (Gross & John, 2003) or the Negative Mood Regulation Scale (NMR; Catanzaro & Mearns, 1990). However, these measures do not account for how different contexts may change the adaptiveness of strategies. The DERS, instead aims to assess the subjective appraisal of effectiveness in managing emotions (Gratz & Roemer, 2004). Measuring emotion regulation in this way, accounts for a person's awareness, understanding and acceptance of their emotion and their reaction. However, despite the strengths of the DERS and its appropriateness for the current study, some limitations must be acknowledged.

The DERS consists of 36 items which can prove time consuming. A proportion of the participants in the current study dropped out at this point and did not complete this questionnaire. Furthermore, although emotion dysregulation can be more easily quantified by self-report methods than emotion regulation (Cole et al., 2004), alternative methods of measures could also be considered. Participants can complete experimental tasks which aim to elicit an emotional reaction. Emotion regulation can then be measured through behavioural observation (Northrup et al., 2020) or using methods of physiological function such as pupillary dilation (Ginton et al., 2021). These methods of measurement may result in less reporting bias; however, the internal subjective experience of participants might be missed. Future research could consider combining multiple methods of measurement to collect richer data.

Recruitment

Throughout the process of recruiting, some strengths and challenges arose. Recruiting through social media was slower than I had initially anticipated. Due to financial impacts of Covid-19 there was no budget from the university to offer an incentive to participants, and initially, many participants were beginning the survey and only completing the demographics and the first questionnaire (the PRFQ). As a research team we discussed how to encourage fathers to complete the survey, and made various changes, such as statements encouraging participants to continue at the end of each questionnaire (see Chapter Four) and adding more information about the benefit of research with fathers on social media posts. Posting in international parenting forums resulted in an efficient increase in participants. Many members commented about how pleased they were to see research being done with fathers and how they had never been asked before about how they were feeling. However, the anonymous comments from members on forums brought with it an additional challenge. Some comments referred to parents with infants not having time to complete surveys. Others pointed out the

problem with the ACE questionnaire which asks about domestic violence towards 'mother or stepmother', but not towards fathers. A statement had been added to acknowledge that the questions did not capture the broad range of individual experiences and we gave participants the opportunity to provide more detail if they would like to. Perhaps this was not explicit enough or an alternative measure should have been considered. I found it difficult to decide whether to reply to comments, as I wanted to acknowledge that they were valid and that we had given it consideration. However, I was also aware that a lot more information would need to be provided and I was conscious of the possibility that confrontation may occur, which I did not want affiliated with the study. Therefore, I decided to provide a one-off statement that thanked users for their feedback, acknowledged that there were lots of limitations and posted links directed to additional resources.

The Impact of Covid-19

The Covid-19 pandemic began part way through designing the current research study. Reports have since outlined the findings that new parents have missed out on crucial support they would usually have received during an important period. Furthermore, numerous studies have described the adverse effect Covid-19 related stress has had on parent and child outcomes (Brown et al., 2020; Griffith, 2020; Lawson et al., 2020; Taubman–Ben-Ari et al., 2021). Alongside the previously mentioned stressors that parents have to manage during the perinatal period, Covid-19 raised anxieties and isolated families away from support. Interestingly, Taubman–Ben-Ari et al. (2021) found that fathers reported significantly greater stress during the Covid-19 pandemic than before and more so than mothers. Fathers in general, may have been spending more time at home during lockdown than they would have usually, which may lead to higher levels of stress than mothers. More positively, it was found that parents experienced an increase in marital satisfaction during the pandemic (Taubman–Ben-Ari et al., 2021). It is suggested that challenges during a crisis such as Covid-19 may

have activated parents using their relationship as a personal resource. Consequently, it must be noted that the fathers who participated in the current study were also experiencing a global pandemic. The contextual changes related to this period, may have had an impact on how effectively fathers felt that they could regulate their emotions or understand their child's mind. It would have been interesting to ask about the impact of Covid-19 on the participants in this study.

Analysis and Write-Up

When the data were initially analysed, the Cronbach's alpha was unacceptable for the pre-mentalising PRFQ domain. We felt that it was important for the study that this domain was included in order to give a more complete picture of parental reflective functioning. Our sample was extremely affluent and highly educated, and we hypothesised that this may have affected the results, including the Cronbach's alpha, as only a small number of participants had scored highly on the pre-mentalising domain (indicating difficulties). We opted to reopen recruitment to try to obtain a more diverse sample and reach participants from different demographics. The parent network that helped with designing the study, suggested that paid adverts through Facebook could also be effective. Thus, an ethics amendment was sought to enable this method of recruitment (see Chapter Four). Nevertheless, despite further recruitment, the Cronbach's alpha remained low. Consequently, it was decided to end recruitment and omit the PM domain.

We considered that fathers who felt that they were struggling with their parenting role would not be motivated to complete the survey and that fathers who were affluent and educated may have had more opportunity to access support to be reflective about their parenting role. From discussions with the parent network, accessing a diverse population for research seems to be a frequent challenge. In hindsight I would have liked to have thought

more carefully about this in the research design and in future I would hope to offer something that would benefit participants for taking part.

The Thesis Journey

The multiple aspects that have gone into this thesis has shown me a lot about the research process that I did not fully appreciated beforehand. Reviewing the literature, designing an empirical study, analysing, and interpreting findings has allowed for the development of critical thinking and new perspectives which will help to shape my professional identity. I now have a greater understanding of how I want to interpret, apply, and develop research in my future career as a clinical psychologist.

Throughout the thesis journey I have come across various ethical questions and considerations. Comments and posts from participants and forum members prompted thoughts about the process of participating. Although as a researcher I had adhered to a strict ethical code, queries arose for me around how it would feel for fathers to be asked about how they thought about their child and then about adverse experiences in their own childhood. I thought that questions could easily be misinterpreted and leave participants asking themselves “do my traumatic experiences make me a bad parent?” I think this worry stems from working clinically with parents. Stepping into the role of a quantitative researcher and not being able to explore fathers’ emotions and perspectives felt different and uncomfortable. To overcome this challenge, I thought carefully about how to phrase the participant information in a non-blaming style and took guidance from the local father network to ensure this came across in the right way. In addition, I made sure thorough resources were provided for further support if required.

Another ethical consideration I struggled with, was whether we could really measure what we were aiming to measure. The more I read about and understood the complex human

skills of emotion regulation and parental reflective functioning, the more that I questioned how we could hope to capture these multifaceted features within our survey and analyses. I also wondered about how these abilities were measured at one time point and the presumptions made about how they could be generalised or predict other human experiences. I realised the positivist epistemological position I had taken in regard to research had potentially evolved throughout the process and didn't necessarily fit with the constructionist position I hold for clinical work. Much of the 'evidence' that we are taught and use within clinical work has come from literature focussed on experimental and quasi-experimental methods (Breen & Darlaston-Jones, 2010) that fail to capture the complexity of human experiences. It is suggested that unpublished results may make up around 40% of the published trials, indicating a high level of publication bias (Norcross et al., 2006). After experiencing a crisis about the purpose of research and the foundations that psychology is built upon, I think I have settled for seeing the value in multiple approaches. Evidence-based therapies have their place and are aimed to provide the best quality of care for the clients that we work with. By conducting quantitative research, I attempted to help further understanding in order to provide evidence towards improved care for fathers in the perinatal period. I can also see how complementary qualitative work can be to the quantitative approach, allowing for a greater exploration of individual experience and nuance.

This piece of work has made me more acutely aware of how psychological processes are dynamic and changeable in response to the social world. Going forward, I will take my learning from the thesis journey into my future career, holding the literature with a healthy level of scepticism and continue to question my underlying assumptions.

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Chapter Four: Ethics

Ethics application for research paper:

History not destiny: the role of emotion regulation in the relationship between childhood adversity and parental reflective functioning in fathers

Word count: 2941

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Faculty of Health and Medicine Research Ethics Committee (FHMREC)

Lancaster University

Application for Ethical Approval for Research

Title of Project: The ability to regulate emotions: does this affect how dads think about their children's minds and is it affected by the experiences they had themselves as children?

Name of applicant/researcher: Gina Bannister

ACP ID number (if applicable)*: **Funding source (if applicable)**

Grant code (if applicable):

***If your project has *not* been costed on ACP, you will also need to complete the Governance Checklist [link].**

Type of study

☐ Involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants. **Complete sections one, *two* and four of this form**

☒ Includes *direct* involvement by human subjects. **Complete sections one, *three* and four of this form**

SECTION ONE

1. Appointment/position held by applicant and Division within FHM Trainee Clinical Psychologist, Division of Health and Medicine

2. Contact information for applicant:

E-mail: g.bannister2@lancaster.ac.uk **Telephone**: 07813448543

Address: Division of Health Research, Faculty of Health and Medicine, Health Innovation One, Sir John Fisher Drive, Lancaster University, Lancaster, LA1 4YG, UK

3. **Names and appointments of all members of the research team (including degree where applicable)**

Gina Bannister – Trainee Clinical Psychologist

Dr Fiona Eccles – Lecturer in health research

Dr Jen Davies – Clinical Psychologist and Clinical Tutor

Dr Ruth O'Shaughnessy – Consultant Clinical Psychologist

3. If this is a student project, please indicate what type of project by marking the relevant box/deleting as appropriate: (please note that UG and taught masters projects should complete **FHMREC form UG-tPG**, following the procedures set out on the FHMREC website

PG Diploma ☐ Masters by research ☐ PhD Thesis ☐ PhD Pall. Care ☐

PhD Pub. Health ☐ PhD Org. Health & Well Being ☐ PhD Mental Health ☐ MD ☐

DClinPsy SRP ☐ [if SRP Service Evaluation, please also indicate here: ☐]

DClinPsy Thesis ☒

4. Project supervisor(s), if different from applicant:

Dr Fiona Eccles

Dr Jen Davies

Dr Ruth O'Shaughnessy

5. **Appointment held by supervisor(s) and institution(s) where based (if applicable)**:

Lecturer in Research Methods: Health Innovation Campus, Health Innovation Campus, Lancaster University, Lancaster, LA1 4YG

Clinical Psychologist & Tutor: Health Innovation Campus, Health Innovation Campus, Lancaster University, Lancaster, LA1 4YG

Consultant Clinical Psychologist: Cheshire and Mersey Specialist, Perinatal Service, Hollins Park Hospital, Warrington, WA2 8WA

SECTION TWO

Complete this section if your project involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants

1. Anticipated project dates (month and year)

Start date: End date:

2. Please state the aims and objectives of the project (no more than 150 words, in lay-person's language):

Data Management

For additional guidance on data management, please go to Research Data Management *webpage, or email the RDM support email:* rdm@lancaster.ac.uk

3. Please describe briefly the data or records to be studied, or the evaluation to be undertaken.

4a. How will any data or records be obtained?

4b. Will you be gathering data from websites, discussion forums and on-line 'chat-rooms' ☐

4c. If yes, where relevant has permission / agreement been secured from the website moderator? ☐

4d. If you are only using those sites that are open access and do not require registration, have you made your intentions clear to other site users? ☐

4e. If no, please give your reasons

5. What plans are in place for the storage, back-up, security and documentation of data (electronic, digital, paper, etc)? Note who will be responsible for deleting the data at the end of the storage period. Please ensure that your plans comply with General Data Protection Regulation (GDPR) and the (UK) Data Protection Act 2018.

6a. Is the secondary data you will be using in the public domain? ☐

6b. If NO, please indicate the original purpose for which the data was collected, and comment on whether consent was gathered for additional later use of the data.

Please answer the following question *only* if you have not completed a Data Management Plan for an external funder

7a. How will you share and preserve the data underpinning your publications for at least 10 years e.g. PURE?

7b. Are there any restrictions on sharing your data?

8. Confidentiality and Anonymity

a. Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications? ☐

b. How will the confidentiality and anonymity of participants who provided the original data be maintained?

9. What are the plans for dissemination of findings from the research?

10. What other ethical considerations (if any), not previously noted on this application, do you think there are in the proposed study? How will these issues be addressed?

SECTION THREE

Complete this section if your project includes *direct* involvement by human subjects

1. Summary of research protocol in lay terms (indicative maximum length 150 words):

Research suggests that caring for an infant can be challenging and consequently a vulnerable time for parental mental health and sensitive caregiving. The aim of this study will be to investigate the relationship between managing emotions in fathers and their ability to

understand thoughts, feelings and behaviours in themselves and in their infant. This ability can be described as parental reflective functioning.

We also know that adverse childhood experiences (e.g. abuse) can have an impact on parental reflective functioning and their ability to manage emotions. Therefore, we are interested in whether management of emotions helps to explain the impact of adverse childhood experiences on parenting.

Fathers will be recruited from social media, parent networks and forums which offer advice and peer support to parents. They will be asked to complete online questionnaires related to parental reflective functioning, managing emotions and adverse childhood experiences. The data will be analysed to look at relationships between these variables.

2. **Anticipated project dates (month and year only**)

Start date: March 2021 End date: March 2022

Data Collection and Management

For additional guidance on data management, please go to Research Data Management *webpage, or email the RDM support email:* rdm@lancaster.ac.uk

3. Please describe the sample of participants to be studied (including maximum & minimum number, age, gender):

Participants will be adults (aged 18 or over) in a fathering role, who have at least one child aged 0-24 months. All genders can participate if the person views themselves as in a fathering role. No upper age limit will be set. The questionnaires will be written in English, so individuals will need to have sufficient understanding of written English to take part.

A-priori power calculations indicate that a sample of at least 100 participants will be required in order to achieve sufficient statistical power for the intended statistical analyses (mediation

analysis and correlation). Modelling by Fritz and McKinnon (2007) suggests for a medium effect size in each arm ($\alpha = 0.39$; $\beta=0.39$) a sample size of 71 participants is required for a mediation model using a bias-corrected bootstrap method. In order to detect medium effect size in a multiple regression with eight predictors (subscales of the DERS plus relevant demographics) at a probability of $p=0.05$ and with a power of 0.80, a minimum of 97 participants is required. A maximum of approximately 300 participants will be recruited.

4. How will participants be recruited and from where? Be as specific as possible. Ensure that you provide the *full versions* of all recruitment materials you intend to use with this application (eg adverts, flyers, posters).

The study will be advertised through online parent forums and parent networks such as; mumsnet https://www.mumsnet.com/, netmums https://www.netmums.com/ and Dad Matters https://dadmatters.org.uk/, via any channels available to them (e.g. website, social media, newsletter, groups, posters) using an advert (appendix 1). Social media platform Twitter will also be used to advertise, via Gina Bannister's academic Twitter account for this study. Snowball sampling will be implemented as participants will be able to forward the link to others who may be interested. The study will also be promoted on Facebook through paid adverts on a page that will be created for this study. To set up Facebook page it needs to be linked to a personal account, however, publicly this link is not recognisable, and no personal data can be viewed.

5. Briefly describe your data collection and analysis methods, and the rationale for their use.

The data will be collected via online survey tool, Qualtrics. 16 questions will be asked to collect demographic information:

1) Gender (to describe the sample)

2) Age (parental reflective functioning [PRF] may change with age)

3) Living location (to describe the sample)

4) Ethnicity (to describe the sample)

5) Relationship to child (to describe the sample)

6) Age of child (PRF may change across age group)

7) Gender of child (PRF may change across gender)

8) Living situation (PRF may differ with amount of time spent with child)

9) First time parent (PRF may differ)

10) Single parent (PRF may differ if parenting alone)

11) Partnership status (to describe the sample)

12) Additional needs (may impact on PRF and emotion regulation)

13) Additional needs for child (may impact on PRF and emotion regulation)

14) Household income (income has been shown to impact on PRF, ACEs and emotion regulation)

15) Education (PRF, ACEs and emotion regulation may differ with education)

16) Employment status (to describe the sample)

The following validated measures will be administered:

The Parental Reflective Functioning Questionnaire (PRFW-18; Luyten et al., 2017) consists of 18-items designed to measure parental ability to mentalise across three domains with six items each:

- Pre-mentalising modes (PM): inability to hold the child's mental state in mind.

- Certainty about mental states (CMS): measuring a parent's acknowledgment that their thoughts about their child's mental states are accurate

- Interest and curiosity in mental states (IC): the level of interest in parents thinking about their child's mental states

There is evidence supporting the construct validity of the PRFQ-18 (De Roo et al., 2019) and internal consistency (Cronbach's alpha = .70, .82 and .75 for PM, CMS and IC respectively) (Luyten et al., 2017).

The Difficulties with Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36 item self-report measure that can be administered online. It is designed to evaluate difficulties in emotion regulation across six subscales which contribute to a total score:

- NONACCEPTANCE: Non-acceptance of emotional responses

- GOALS: Difficulties engaging in goal-directed behaviour

- IMPULSE: Impulsive control difficulties

- AWARENESS: Lack of emotional awareness

- STRATEGIES: Limited access to emotion regulation strategies

- CLARITY: Lack of emotional clarity

The DERS has demonstrated good internal consistency (Cronbach's alpha = .85, .89, .86, .80, .88 and .84 for NONACCEPTANCE, GOALS, IMPULSE, AWARENESS, STRATEGIES and CLARITY respectively) and adequate test-retest reliability (.69, .69, .57, .68, .89 and .80 for NONACCEPTANCE, GOALS, IMPULSE, AWARENESS, STRATEGIES and CLARITY respectively) (Gratz & Roemer, 2004).

The Adverse Childhood Experience questionnaire (Fellitti et al., 1998) was developed to identify childhood experiences of abuse and household dysfunction in a large-scale study. The ACE questionnaire consists of 10 items that assess for various types of experiences that are traumatic and occur before the age of 18. Scores range from 0-10 and the questionnaire results in a cumulative ACE score. The questionnaire has good internal consistency (Cronbach's alpha= .88) (Murphy et al., 2014).

The data for each analysis will be transferred from Qualtrics to SPSS data files. A correlation analysis will be performed between subscales of emotion dysregulation, domains of parental reflective functioning, ACEs and demographic variables. A hierarchical multiple regression will then be conducted. The regression model will use demographics and the DERS subscales as predictors and the outcome measures will be the PRFQ-18 subscales. Predictors will only be entered in the model if they have significant correlation with the outcome variables in univariate analyses. The Hayes PROCESS tool (Hayes,2018) in SPSS will be utilised to examine whether emotion dysregulation mediates the relationship between ACEs and parental reflective functioning.

6. What plan is in place for the storage, back-up, security and documentation of data (electronic, digital, paper, etc.)? Note who will be responsible for deleting the data at the end of the storage period. Please ensure that your plans comply with General Data Protection Regulation (GDPR) and the (UK) Data Protection Act 2018.

Due to the challenges of Covid-19 it was decided to only offer the option of completing the questionnaires online. Data will be submitted anonymously and stored securely on password protected software (Qualtrics) and university approved secure cloud storage (e.g. OneDrive). Once the project has been examined the electronic data will be securely transferred and stored securely in a password protected file by the Doctorate in Clinical Psychology (DClinPsy)

Course at Lancaster University for 10 years. These will be accessible by the DClinPsy research coordinator and Fiona Eccles (research supervisor) who will be the data custodian. After 10 years the research coordinator will destroy the data under instruction from the research supervisor.

Any contact details provided by participants who contact the researcher will be stored in a password protected and encrypted file in the principal investigator's University's H drive until the project is complete and the report has been sent out. At this point this file will be securely destroyed.

7. Will audio or video recording take place? ☒ no ☐ audio ☐ video

a. Please confirm that portable devices (laptop, USB drive etc) will be encrypted where they are used for identifiable data. If it is not possible to encrypt your portable devices, please comment on the steps you will take to protect the data.

b What arrangements have been made for audio/video data storage? At what point in the research will tapes/digital recordings/files be destroyed?

Please answer the following questions *only* if you have not completed a Data Management Plan for an external funder

8a. How will you share and preserve the data underpinning your publications for at least 10 years e.g. PURE?

The data will be sent to the research coordinator of the DClinPsy course and securely stored for 10 years. It will be made publicly available.

8b. Are there any restrictions on sharing your data?

No, the raw data will be made publicly available as it is anonymous data and participants cannot be identified.

9. Consent

a. Will you take all necessary steps to obtain the voluntary and informed consent of the prospective participant(s) or, in the case of individual(s) not capable of giving informed consent, the permission of a legally authorised representative in accordance with applicable law? yes

b. Detail the procedure you will use for obtaining consent?

A link from the advert will direct participant to the "Participant Information Sheet" to read. This will be followed by forced choice questions checking eligibility and asking participants to confirm that they have read and agreed to the information and that they give their consent to participate. The consent process will not require participants to give their name, or any other identifying information, as this would compromise anonymity.

10. What discomfort (including psychological eg distressing or sensitive topics), inconvenience or danger could be caused by participation in the project? Please indicate plans to address these potential risks. State the timescales within which participants may withdraw from the study, noting your reasons.

Participating in this study may elicit some discomfort as sensitive topics are being discussed. Reflecting on the issues raised within the research may be difficult for some people, therefore, an example question, debrief information and contact details will be provided of places that can provide support should any issues arise.

It will be made clear prior to starting the study that participants can stop at any time during the survey although, due to the anonymity of participation, data cannot be removed after they have agreed to take part and started the survey.

11. What potential risks may exist for the researcher(s)? Please indicate plans to address such risks (for example, noting the support available to you; counselling considerations arising from the sensitive or distressing nature of the research/topic; details of the lone worker plan you will follow, and the steps you will take).

No risks identified.

12. Whilst we do not generally expect direct benefits to participants as a result of this research, please state here any that result from completion of the study.

No direct benefits are expected from participating in this research; however, individuals may find it interesting to participate and reflect on their caregiving, their own childhood experiences and how they manage emotions.

13. Details of any incentives/payments (including out-of-pocket expenses) made to participants:

No incentives or payments.

14. Confidentiality and Anonymity

a. Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications? yes

b. Please include details of how the confidentiality and anonymity of participants will be ensured, and the limits to confidentiality.

Online questionnaires will be completed anonymously, and participants will be unable to be identified. Identifiable information, such as, names and addresses will not be collected. If any participants have unique demographics that could make someone potentially identifiable, then demographics will be given in a pooled format e.g. pooled ages.

15. If relevant, describe the involvement of your target participant group in the *design and conduct* of your research.

A representative from Dad Matters a parent network for fathers was consulted on the design of the project and reviewed participant materials (information sheet, demographic questionnaire, standardised questionnaires and debrief) which were amended in line with the feedback provided.

16. What are the plans for dissemination of findings from the research? If you are a student, include here your thesis.

It is anticipated that the findings of this study will be submitted as part of the principal investigator's thesis for her Doctorate in Clinical Psychology (DClinPsy) and presented to Trainee Clinical Psychologists, service users and course staff at the DClinPsy thesis presentation day at Lancaster University. The findings may also be submitted for publication in a peer-reviewed journal and summarised and/or presented for appropriate service involvement groups, conferences and interested parent networks involved in recruitment and design planning. Participants will also be able to request a copy of the summary report.

17. What particular ethical considerations, not previously noted on this application, do you think there are in the proposed study? Are there any matters about which you wish to seek guidance from the FHMREC?

SECTION FOUR: signature

Applicant electronic signature: Gina Bannister Date 13.01.21

Student applicants: please tick to confirm that your supervisor has reviewed your application, and that they are happy for the application to proceed to ethical review ☒

Project Supervisor name (if applicable):Fiona Eccles

Date application discussed 25.01.21

Submission Guidance

1. Submit your FHMREC application by email to Becky Case (fhmresearchsupport@lancaster.ac.uk) as two separate documents:

    1. **FHMREC application form.**

        Before submitting, ensure all guidance comments are hidden by going into 'Review' in the menu above then choosing *show markup>balloons>show all revisions in line.*

    2. **Supporting materials.**

        Collate the following materials for your study, if relevant, into a single word document:

        1. Your full research proposal (background, literature review, methodology/methods, ethical considerations).
        2. Advertising materials (posters, e-mails)
        3. Letters/emails of invitation to participate
        4. Participant information sheets
        5. Consent forms
        6. Questionnaires, surveys, demographic sheets

7. Interview schedules, interview question guides, focus group scripts
8. Debriefing sheets, resource lists

Please note that you DO NOT need to submit pre-existing measures or handbooks which support your work, but which cannot be amended following ethical review. These should simply be referred to in your application form.

1. Submission deadlines:

    1. Projects including direct involvement of human subjects **[section 3 of the form was completed]**. The *electronic* version of your application should be submitted to Becky Case **by the committee deadline date.** Committee meeting dates and application submission dates are listed on the FHMREC website. Prior to the FHMREC meeting you may be contacted by the lead reviewer for further clarification of your application. Please ensure you are available to attend the committee meeting (either in person or via telephone) on the day that your application is considered, if required to do so.

    2. The following projects will normally be dealt with via chair's action, and may be submitted at any time. **[Section 3 of the form has *not* been completed, and is not required].** Those involving:

        1. existing documents/data only;
        2. the evaluation of an existing project with no direct contact with human participants;
        3. service evaluations

Research Protocol

The ability to regulate emotions: does this affect how dads think about their children's minds and is it affected by the experiences they had themselves as children?

Applicants

Principal Investigator

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Introduction

The transition to becoming a parent brings with it lots of changes for both men and women, such as hormonal, psychological and physical differences, new identities and adjustments to social relationships (Cowan & Cowan, 1995). Navigating these changes may lead to an increased vulnerability for psychological distress (Epifanio et al., 2015) and can leave parents at risk of struggling with their mental health (Wisner et al., 2006). Furthermore, parents who have experienced adverse childhood experience (ACEs) such as, abuse or neglect can be more at risk of experiencing psychological distress during this vulnerable period (Moog et al., 2018) and may struggle to regulate their emotions (Poole et al., 2018). The first 2 years of a child's life is a time when the brain develops at its fastest rate, and is a key determinant of the intellectual, social and emotional health of the child. External influences can have a significant effect physically and mentally, therefore sensitive and appropriate caregiving is crucial during this time (Evans, 2019). Understanding the nuances and risk factors of parenting and child development is vital for providing effective interventions and prevention.

Emotion regulation refers to the ability to recognise, regulate, interpret, and respond to emotions in an adaptive way (Gratz & Roemer, 2004). The absence of these abilities would indicate emotion dysregulation; a crucial feature associated with psychological distress (Linehan, 1993; Briere & Gil, 1998; Jakupcak et al., 2002). Difficulties navigating an ongoing emotional experience may also be significant in early parent-child relationships. It is proposed that ruminating and trying to avoid or suppress difficult emotions are features of emotion dysregulation. These features can make it hard to manage and navigate environmental stressors (D'Agostino et al., 2017). Furthermore, if parents respond negatively to a child's display of emotion or frequently model negative emotion, it can teach the child to avoid or become overwhelmed by emotions, rather than understand and express them appropriately (Eisenburg et al, 1998; Eisenburg et al., 2001). Due to the impact of emotion dysregulation on parental

psychological distress and child outcomes it seems crucial to gain a better understanding of these processes.

Parental mentalisation (operationalized as reflective functioning) is associated with positive outcomes for child development. Parental reflective functioning refers to a parent's ability to understand mental states, such as thoughts and feelings in themselves and their child and recognise how mental states may influence behaviour (Fonagy et al., 1991a). It is thought that parents help infants develop an internal understanding of their emotions by mirroring and reflecting back their emotion through facial expressions and vocalisations. In doing so, the parent demonstrates that the emotion can be managed in a non-overwhelming way (Fonagy et al., 2006). The repetition of this process helps the development of emotion regulation skills and helps to influence how the child understands thoughts and feelings in their own mind.

Currently, few studies have examined parental mentalization and emotion regulation. Previous research has evidenced that mothers with higher levels of interest and curiosity in their infant's mental states, were found to persist for longer in soothing a crying infant manikin (Rutherford et al.,2013; Rutherford et al., 2015), indicating a relationship between parental reflective functioning and distress tolerance, a construct related to emotion regulation. Schultheis et al., (2019) investigated the relationship between emotion regulation, emotion dysregulation and parental reflective functioning in mothers. Responses from self-report measures indicated that mothers who were more likely to suppress their emotion and who had more difficulties with emotion regulation scored greater in the pre-mentalising mode subscale, which is indicative of non-mentalising. In addition, mothers with lower emotional awareness had less interest and curiosity in their child's mental states. These findings support the relationship between aspects of emotion regulation and maternal reflective functioning, suggesting that emotion regulation should be integrated into interventions which target maternal reflective functioning. However, this relationship has not been investigated for fathers.

Research has often positioned fathers in a secondary role to mothers in caregiving and there is little evidence exploring the interactions between father's parenting and children's development outcomes (Buttitta et al., 2019). Available evidence suggests that the father-infant relationship plays a unique role in child development compared to mothers, specifically in children's emotion regulation (Cabera et al., 2007). In regard to parental reflective function, some studies have found there to be no difference between fathers and mothers (Borelli et al., 2017; Borelli et al., 2016), whilst others have reported father's reflective functioning to be lower than mothers (Esbjorn et al., 2013). Overall, there are mixed findings; however, there is some evidence of a difference between fathers' and mothers' emotion regulation and parental reflective functioning. Therefore, the proposed study aims to explore whether aspects of emotion dysregulation are predictors of parental mentalisation in fathers during the first two years after birth. It is hypothesized that fathers with less emotion dysregulation will have a greater ability to mentalise.

In addition, the importance of emotion dysregulation as a mediator between adverse childhood experiences (ACEs) and paternal reflective functioning will also be examined. ACEs can have a significant impact on a parent's physical and emotional wellbeing (Felitti et al., 1998). Understandably, the effects of ACEs can be a risk factor for emotion dysregulation and parenting difficulties (Poole et al., 2018). Hakansson et al., (2018) found that mothers with lower parental reflective functioning had significantly more experiences of adversity in childhood and less adaptive experiences compared to mothers with higher parental reflective functioning. To date, one study has investigated the interaction of these three variables together and it was found that the relationship between ACEs and parental reflective functioning was mediated by emotion dysregulation in mothers (Rojas, 2019). Consequently, this will be investigated in fathers and it is hypothesized that emotion dysregulation will mediate the relationship between ACEs and parental reflective functioning in fathers.

Method

Participants

Participants will be adults in a fathering role (aged 18 or over) with at least one child aged 0-24 months whom they see some of the time. No upper age limit will be set. The questionnaire will be written in English, so individuals will need to have sufficient understanding of written English to take part.

A-priori power calculations indicate that a sample of at least 100 participants will be required in order to achieve sufficient statistical power for the intended statistical analyses (hierarchical regression, mediation analysis and correlation). Modelling by Fritz and McKinnon (2007) suggests for a medium effect size in each arm ($\alpha = 0.39$; $\beta=0.39$) a sample size of 71 participants is required for a mediation model using a bias-corrected bootstrap method. In order to detect medium effect size in a multiple regression with eight predictors (subscales of the DERS plus relevant demographics) at a probability of $p=0.05$ and with a power of 0.80, a minimum of 97 participants is required. A maximum of approximately 300 participants will be recruited.

Design

This study will be a cross-sectional survey using quantitative measures. The data will be quantitatively examined, and a hierarchical multiple regression will be conducted to examine whether emotion dysregulation predicts parental reflective functioning.

Predictor Variables:

- Emotion dysregulation with six subscales which contribute to a total score;
  - NONACCEPTANCE: Non-acceptance of emotional responses
  - GOALS: Difficulties engaging in goal-directed behaviour
  - IMPULSE: Impulsive control difficulties

- AWARENESS: Lack of emotional awareness
- STRATEGIES: Limited access to emotion regulation strategies
- CLARITY: Lack of emotional clarity

Outcome Variables:

- Parental Reflective functioning across three subscales;
  - Pre-mentalising modes (PM): inability to hold the child's mental state in mind.
  - Certainty about mental states (CMS): measuring a parent's acknowledgment that their thoughts about their child's mental states are accurate
  - Interest and curiosity in mental states (IC): the level of interest in parents thinking about their child's mental states

Using a hierarchical regression, it is predicted that the subscales of emotional dysregulation will predict additional variance in each subscale of parental reflective functioning over and above demographic variables.

A mediation analysis will also be conducted using Hayes PROCESS tool (Hayes, 2013) within SPSS to examine whether emotion dysregulation mediates the relationship between ACEs and parental reflective functioning.

Predictor Variable:

- Adverse Childhood Experiences

Mediator Variables:

- Emotion dysregulation with six subscales which contribute to a total score;
  - NONACCEPTANCE: Non-acceptance of emotional responses
  - GOALS: Difficulties engaging in goal-directed behaviour
  - IMPULSE: Impulsive control difficulties

- AWARENESS: Lack of emotional awareness
- STRATEGIES: Limited access to emotion regulation strategies
- CLARITY: Lack of emotional clarity

Outcome Variables:

- Parental Reflective Functioning across three subscales;
  - Pre-mentalising modes (PM): inability to hold the child's mental state in mind.
  - Certainty about mental states (CMS): measuring a parent's acknowledgment that their thoughts about their child's mental states are accurate
  - Interest and curiosity in mental states (IC): the level of interest in parents thinking about their child's mental states

Using a mediation model, it is predicted that emotional dysregulation will mediate any relationship found between adverse childhood experiences and each subscale of parental reflective functioning.

Materials

Participant materials (see appendices) will only be available online (via Qualtrics https://lancasteruni.eu.qualtrics.com/jfe/form/SV_2fNrHKmy1rpc0Rw).

They have been reviewed by a representative from Dad Matters (a parent network for fathers) and amended in line with the feedback provided.

Participant materials will consist of:

1. Advertisement for Recruitment – this will briefly describe the research to participants and a link will direct them to the information sheet and the online survey.

2. Participant Information Sheet– this will outline the purpose of the research, how the data will be stored and used, how to contact the research team with any questions or

complaints, etc. In Qualtrics there will be an option to download a printable copy of this document.

3. Eligibility and consent questions – four questions to check that participants are eligible to participate, have read the participant information sheet and give consent for their data to be included in the study.
4. Demographics questionnaire – 17 questions to gather demographic information about participants
    1) Gender (to describe the sample)
    2) Age (parental reflective functioning [PRF] may change with age)
    3) Living location (to describe the sample)
    4) Ethnicity (to describe the sample)
    5) Relationship to child (to describe the sample)
    6) Age of child (PRF may change across age group)
    7) Gender of child (PRF may change across gender)
    8) Living situation (PRF may differ with amount of time spent with child)
    9) First time parent (PRF may differ)
    10) Age of other children (to describe the sample and PRF may differ)
    11) Single parent (PRF may differ if parenting alone)
    12) Partnership status (to describe the sample)
    13) Additional needs (may impact on PRF and emotion regulation)
    14) Additional needs for child (may impact on PRF and emotion regulation)
    15) Household income (income has been shown to impact on PRF, ACEs and emotion regulation)
    16) Education (PRF, ACEs and emotion regulation may differ with education)
    17) Employment status (to describe the sample)

5. The Parental Reflective Functioning Questionnaire (PRFQ-18; Luyten et al., 2017) consists of 18-items designed to measure parental ability to mentalise across three domains with six items each. There is evidence supporting the construct validity of the PRFQ-18 (De Roo et al., 2019) and internal consistency (Cronbach's alpha = .70, .82 and .75 for PM, CMS and IC respectively) (Luyten et al., 2017).
6. The Difficulties with Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36 item self-report measure that can be administered online. It is designed to evaluate difficulties in emotion regulation and has demonstrated good internal consistency (Cronbach's alpha = .85, .89, .86, .80, .88 and .84 for NONACCEPTANCE, GOALS, IMPULSE, AWARENESS, STRATEGIES and CLARITY respectively) and adequate test-retest reliability (.69, .69, .57, .68, .89 and .80 for NONACCEPTANCE, GOALS, IMPULSE, AWARENESS, STRATEGIES and CLARITY respectively) (Gratz & Roemer, 2004).
7. The Adverse Childhood Experience questionnaire (Fellitti et al., 1998) was developed to identify childhood experiences of abuse and household dysfunction in a large-scale study. The ACE questionnaire consists of 10 items that assess for various types of experiences that are traumatic and occur before the age of 18. Scores range from 0-10 and the questionnaire results in a cumulative ACE score. The questionnaire has good internal consistency (Cronbach's alpha= .88) (Murphy et al., 2014).
8. Debrief – additional information about the purpose of the research, contact details for queries or concerns and resources in the case that the research leads to any distress.

Additional materials required which are available through Lancaster University licence:

1. Qualtrics software
2. SPSS software including Hayes PROCESS tool

Procedure

The study will be advertised through online parent forums and parent networks such as; mumsnet https://www.mumsnet.com/, netmums https://www.netmums.com/ and Dad Matters https://dadmatters.org.uk/, via any channels available to them (e.g. website, social media, newsletter, groups, posters) using an advert (appendix 1). Social media platform Twitter will also be used to advertise, via Gina Bannister's academic Twitter account for this study. Snowball sampling will be implemented as participants will be able to forward the link to others who may be interested. The study will also be promoted on Facebook through paid adverts on a page that will be created for this study. To set up Facebook page it needs to be linked to a personal account, however, publicly this link is not recognisable, and no personal data can be viewed.

A link from the advert will direct participant to the "Participant Information Sheet" (appendix 2) to read. This will be followed by forced choice questions asking participants to confirm that they have read and agreed to the information and that they give their consent to participate (appendix 3). Participants will be led through the survey (appendices 4-7) and at the end of the study participants will be provided with a debrief and details of support resources (appendix 8). The survey should take approximately 30 minutes to complete. Data from the survey will be stored securely electronically.

Data Analysis

The data for each analysis will be transferred from Qualtrics to SPSS data files. A correlation analysis will be performed between subscales of emotion dysregulation, domains of parental reflective functioning, ACEs and demographic variables. A hierarchical multiple regression will then be conducted. The regression model will use demographics and the DERS subscales as predictors and the outcome measures will be the PRFQ-18 subscales. Predictors will only

be entered in the model if they have significant correlation with the outcome variables in univariate analyses.

Finally, Hayes PROCESS tool (Hayes,2018) in SPSS will be utilised to examine whether emotion dysregulation mediates the relationship between ACEs and parental reflective functioning.

Dissemination

It is anticipated that the findings of this study will be disseminated as follows:

1. Submitted as part of the principal investigator's thesis for her Doctorate in Clinical Psychology (DClinPsy)
2. Submitted for publication in a peer-reviewed journal
3. Presented to Trainee Clinical Psychologists, service users and course staff at the DClinPsy thesis presentation day at Lancaster University
4. Summarised and/or presented for appropriate service involvement groups, conferences and interested parent networks involved in recruitment and design planning
5. Participants will be able to request a copy of the summary report

Practical Issues

Due to the challenges of Covid-19 it was decided to only offer the option of completing the questionnaires online. Data will be submitted anonymously and stored securely on password protected software (Qualtrics) and university approved secure cloud storage (e.g. OneDrive). Data will be accessible only to Gina Bannister and the supervisors named above. Once the project has been examined the electronic data will be securely transferred and stored in a password protected file by the Doctorate in Clinical Psychology (DClinPsy) Course at Lancaster University for 10 years. These will be accessible by the DClinPsy research coordinator and Fiona Eccles (research supervisor) who will be the data custodian. After 10

years the research coordinator will destroy the data under instruction from the research supervisor. Thee data will also be made publicly available as it is anonymous data, and participants cannot be identified.

Any contact details provided by participants who wish to receive a copy of the final report will be stored in a password protected and encrypted file in the principal investigator's University's H drive until the project is complete and the report has been sent out. At this point this file will be securely destroyed.

Ethical Concerns

Participating in this study may elicit some discomfort as sensitive topics are being discussed. Reflecting on the issues raised within the research may be difficult for some people, therefore, example questions, debrief information and contact details will be provided of places that can provide support should any issues arise. Additionally, it will be made clear prior to starting the study that they can stop at any time during the survey although, due to the anonymity of participation, data cannot be removed after they have agreed to take part.

Timescale

February 2021: Submission of ethics application

April-July 2021: Data collection

August 2021: Data analysis

September 2021-February 2022: Write-up

March 2022: Submission of report as part of thesis

Summer 2022: Submission for publication; dissemination of findings by presentation (written and verbal).

References

Cabrera, N. J., Shannon, J. D., & Tamis-LeMonda, C. (2007). Fathers' influence on their children's cognitive and emotional development: from toddlers to pre-K. Applied Developmental Science, 11, 208–213.

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Appendices

Appendix 4.1: Ethics confirmation letter

Lancaster University

Applicant: Gina Bannister
Supervisor: Dr Fiona Eccles, Dr Jen Davies and Dr Ruth O'Shaughnessy
Department: Division of Health and Medicine
FHMREC Reference: FHMREC20095

23 March 2021

Re: FHMREC20095
The ability to regulate emotions: does this affect how dads think about their children's minds and is it affected by the experiences they had themselves as children?

Dear Gina,

Thank you for submitting your research ethics application for the above project for review by the **Faculty of Health and Medicine Research Ethics Committee (FHMREC)**. The application was recommended for approval by FHMREC, and on behalf of the Chair of the Committee, I can confirm that approval has been granted for this research project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress);
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact me if you have any queries or require further information.

Email: fhmresearchsupport@lancaster.ac.uk

Yours sincerely,

T. Morley

Tom Morley,
Research Ethics Officer, Secretary to FHMREC.

Appendix 4.2: Ethics amendment application

Faculty of Health and Medicine Research Ethics Committee (FHMREC)
Lancaster University Application for Amendment to Previously Approved Research

1. Name of applicant:

   Gina Bannister

2. E-mail address and phone number of applicant:

   g.bannister2@lancaster.ac.uk

3. Title of project:

   The ability to regulate emotions: does this affect how dads think about their children's minds and is it affected by the experiences they had themselves as children?

4. FHMREC project reference number:

   FHMREC20095

5. Date of original project approval as indicated on the official approval letter (month/year):

   23/03/2021

6. Please outline the requested amendment(s)

   Note that where the amendment relates to a change of researcher, and the new researcher is a student, a full application must be made to FHMREC

   Request to promote study on Facebook through paid adverts using a page that will be created for this study. To set up Facebook page it needs to be linked to a personal account, however, publicly this link is not recognisable, and no personal data can be viewed.

   Although we have already recruited the required sample size for this project, unfortunately the sample is not at all representative of the general population (it is very affluent and highly educated). This is causing a problem as the data do not have sufficient variability for analysis (e.g. correlations and regression). We have liaised with a manager from a fathers group who has struggled with the same issues and he suggested this would be a good avenue to try to reach a broader section of the population.

7. Please explain your reason(s) for requesting the above amendment(s):

Guidance:

a) Resubmit your research ethics documents (**the entire version which received final approval, including all participant materials, your application form and research protocol**), with all additions highlighted in yellow, and any deletions simply 'struck through', so that it is possible to see what was there previously.
b) This should be submitted as **a single PDF** to Becky Case There is no need to resubmit the Governance Checklist

Applicant electronic signature:	Date
GBannister	17/12/2021

Student applicants: please tick to confirm that you have discussed this amendment application with your supervisor, and that they are happy for the application to proceed to ethical review ☒

Project Supervisor name (if applicable):	Date application discussed
Fiona Eccles	17/12/2021

You must submit this application from your Lancaster University email address, and copy your supervisor in to the email in which you submit this application

Appendix 4.3: Amendment approval

Ethics Amendment Approval

FR

FHM Research Ethics
To Bannister, Gina (Postgraduate Researcher)
Cc FHM Research Ethics
24/01/2022

You forwarded this message on 24/01/2022 15:57.

Hi Gina,

Debbie has returned to her usual post as I am now back from maternity leave, so I'll pick up this application from here and will receive any further amendments or applications from you.

By sheer coincidence, I received your approval through this morning! Please see below for your official approval. Apologies for the delay in getting this to you.

Thanks,
Annie

Approval of an amended application
Subject: Ethics approval FHMREC ref: FHMREC21053 (amendment to FHMREC20095, 20184)

Dear Gina,

Thank you for submitting your research ethics amendment application for the above project for review by the Faculty of Health and Medicine Research Ethics Committee (FHMREC). The application was recommended for approval by FHMREC, and on behalf of the Chair of the Committee, I can confirm that approval has been granted for the amendment to this research project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress);
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact me if you have any queries or require further information.

Best wishes,
Annie

Annie Beauchamp | Research Ethics Officer (FST/FHM)
Research and Enterprise Services | Lancaster University
Contact me on Microsoft Teams (for enquiries not related to REC applications)

I work flexibly so may send or respond to emails outside of standard office hours. There is no

Appendix 4.4: Recruitment advert

Appendix 4.5: Participant information and online survey

Participant Information Sheet

The ability to regulate emotions: does this affect how dads think about their children's minds and is it affected by the experiences they had themselves as children?

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

Thank you for your interest in this research project. My name is Gina Bannister and I am conducting this research as a student on the Doctorate in Clinical Psychology programme at Lancaster University, UK.

What is the study about?

The purpose of this study is to look at dads' experiences in three areas:

- Parents' ability to think about their own mind and their child's mind (Parental Reflective Functioning)
- Difficulties in managing emotions (Emotion Dysregulation)
- Difficult and stressful experiences that people have in childhood (Adverse Childhood Experiences)

Previous research has suggested that, when people have difficult experiences in their childhood, it makes it harder to manage their emotions as parents. This, in turn, can make it difficult to think about and understand what is going on in their children's minds. We hope that a better understanding of how these experiences are connected may help services and professionals to support parents and carers who are experiencing distress or are struggling with their caring role.

Who can take part in this study?

To participate in this study, you need to be an adult aged 18 years or over in a fathering role to a child under two years old.

Do I have to take part?

No - It is completely up to you to decide whether or not you take part in this research. You can stop at any point during the survey. Your answers will be anonymous; therefore, you will be unable to withdraw any responses after you have started to answer questions in this survey, as we will not be able to identify your responses.

What will I be asked to do if I take part?

If you decide you would like to take part, you will be asked to complete an online survey. The survey should take around 30 minutes to complete and will ask questions about:

- You and your current circumstances
- How you think about your own and your child's mind
- How you manage your emotions
- Experiences from your own childhood

Some of the questions are sensitive in nature and may cause distress, therefore we have included an example below, so that you can decide if you would like to take part.

Did a parent or other adult in the household often push, grab, slap, or throw something at you? Yes No

The survey does not have to be completed in one sitting; you are able to save your progress. You have 2 weeks from when you start to complete the survey. After this time the responses you have made will automatically be submitted and you will not be able to return to the survey.

Will my data be identifiable?

The data you provide will be completely anonymous. You will not be required to provide any personal identification detail. The electronic data will be password protected and will be securely stored by Lancaster University for 10 years and then it will be securely destroyed. Your answers will be put into a table with other people's and the table will be made publicly available; you will not be able to be identified from this data.

What will happen to the results?

The results will be summarised and reported in a thesis and may also be submitted for publication in an academic or professional journal. In addition, the summarised results will be presented to interested parent networks and at relevant conferences or seminars.

If you would like a copy of the summary report for this study you can request this by email (g.bannister2@lancaster.ac.uk). Please note this will be a summary of all the data and we will be unable to provide reports based on individual responses to the survey.

Are there any risks?

Sometimes answering the questions in this survey can lead to feelings of distress. If you experience any distress following participation, resources to contact are provided at the end of this sheet. There is also the option to contact the researcher by email (g.bannister2@lancaster.ac.uk) if you would like to discuss further.

Are there any benefits to taking part?

Although you may find participating interesting, there are no direct benefits in taking part.

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University.

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact the main researcher Gina Bannister (Trainee Clinical Psychologist) by email at g.bannister2@lancaster.ac.uk. You can also contact the research supervisor, Fiona Eccles (Lecturer in Health Research) by email at f.eccles@lancaster.ac.uk or by phone on 01524592807.

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Dr Ian Smith
Research Director for Doctorate in Clinical Psychology Programme
Tel: 01524 592282
Email: i.smith@lancaster.ac.uk
Division of Health Research
Faculty of Health and Medicine
Lancaster University
Lancaster
LA1 4YG

If you wish to speak to someone outside of the Doctorate in Clinical Psychology Programme, you may also contact:

Dr Laura Machin

Chair of FHM REC

Tel: 01524 594973

Email: l.machin@lancaster.ac.uk

Faculty of Health and Medicine

Lancaster University

Lancaster

LA1 4YG

Thank you for taking the time to read this information sheet.

Resources in the event of distress

Should you feel distressed either as a result of taking part in this research, or at any time in the future, the following resources may be of help:

Samaritans

Website: https://www.samaritans.org/

Helpline: 116 123

Shout

https://giveusashout.org/

Text SHOUT to 85258

Dad Matters

https://dadmatters.org.uk/national/

Hub of Hope

https://hubofhope.co.uk/

Your own GP

If you experience distress as a result of taking part in this research, we recommend that you seek support from your GP.

The Researcher

Please contact the researcher Gina Bannister (g.bannister2@lancaster.ac.uk) if you would like to discuss this research, your responses or would like additional information on how to access support.

*If you are concerned about a risk to your life through mental or physical health, always speak to the emergency services or your GP

To download a copy of this information to keep please click on the link below:

Consent Form

Please confirm below that you meet the criteria to participate:

Are you aged 18 years or over?

- o Yes
- o No
  - Thank you for your interest in this study, unfortunately you are unable to participate as you are under 18.

Are you in a fathering role to a child under two?

- o Yes
- o No
  - Thank you for your interest in this study, unfortunately you are unable to participate as you are not in a fathering role to a child under two.

Have you read and understood the Participant Information Sheet?

- o Yes
- o No
  - Please click 'Back' to read the Participant Information Sheet

Do you give consent for your responses to this survey to be used for the trainee clinical psychologist's research study, as described in the Participant Information Sheet?

- o Yes
- o No
  - Thank you for your interest in this study, unfortunately you are unable to participate as you do not give consent for your responses to be used as part of this research study

Demographics

The following questions are to help us to understand more about the people who take this survey and to see whether the data we get is representative of fathers across the UK. We will not be able to identify you from this information.

Please note, we recognise that families and people come in all shapes and sizes, please use the "other" option to describe your family or yourself as you would like to. If you have more than one child under two, please pick one of these children to hold in mind when answering the questions in this survey

1. What is your gender identity? Please select all that apply:
   - Female
   - Male
   - Non-binary
   - Gender non-conforming
   - I'd prefer to self-describe _____
   - I'd prefer not to say

2. What is your age?
   - I am ____ years old
   - I'd prefer not to say

3. Where do you currently live?
   - England
   - Northern Ireland
   - Scotland
   - Wales
   - European country outside of the UK (please specify) _____
   - Country outside of Europe (please specify) _____
   - I'd prefer not to say

4. Please select the option which best describes your ethnic group or background.
   - British (English / Northern Irish / Scottish / Welsh)
   - Irish
   - Traveller
   - Any other White background, please describe _____
   - White and Asian
   - White and Black African
   - White and Black Caribbean
   - Any other Mixed / Multiple ethnic background, please describe _____
   - African
   - Caribbean
   - Any other Black background, please describe _____
   - Bangladeshi
   - Chinese

- Indian
- Pakistani
- Any other Asian background, please describe _____
- Arab
- Any other ethnic background, please describe _____
- I'd prefer not to say

5. What is your relationship to your child under two? Please select all that apply.
   - Father
   - Stepfather
   - Legal guardian
   - Other, please describe _____
   - I'd prefer not to say

6. How old is your child under two?
   - _____ months

7. What is your child's gender?
   - Female
   - Male
   - Other _____
   - I'd prefer not to say

8. Which option best describes your living situation with your child under two?
   - Lives with me all of the time
   - Lives with me part of the time
   - Does not live with me
   - Other _____
   - I'd prefer not to say

9. Do you have any other children?
   - Yes
   - No
   - Other _____
   - I'd prefer not to say

10. What are their ages?
    - Please write below _____
    - I do not have any other children
    - Other _____
    - Prefer not to say
11. Do you view yourself as a single parent?
    - Yes
    - No. Please describe who you share the parenting role with _____

- Other _____
- Prefer not to say

12. Which option best describes your current partnership status?
    - I have a spouse or partner, whom I live with
    - I have a spouse or partner, whom I sometimes live with
    - I have a spouse or partner, whom I do not live with
    - I do not have a spouse or partner
    - Other (please describe) _____
    - I'd prefer not to say

13. Do you consider yourself to have any additional needs (e.g. learning disability or autism)?
    - Yes (please describe) _____
    - No
    - Other (please describe) _____
    - I'd prefer not to say

14. Does your child have any additional needs that you know of (e.g. learning disability or autism)?
    - Yes (please describe) _____
    - No
    - Other (please describe) _____
    - I'd prefer not to say

15. Which option best describes the total annual income of your household (before tax and deductions but including benefits/allowances)
    - £6,000 to less than £13,000 GBP (or equivalent)
    - £13,000 to less than £19,000 GBP (or equivalent)
    - £19,000 to less than £26,000 GBP (or equivalent)
    - £26,000 to less than £32,000 GBP (or equivalent)
    - £32,000 to less than £48,000 GBP (or equivalent)
    - £48,000 to less than £64,000 GBP (or equivalent)
    - £64,000 or more GBP (or equivalent)
    - Other _____
    - I'd prefer not to say

16. Which option best describes the highest qualification that you currently have?
    - No standard education qualifications
    - Apprenticeship or equivalent
    - GCSE or equivalent school examination
    - A level or equivalent
    - Degree (BSc or equivalent)
    - Masters degree (MSc or equivalent)
    - Doctorate

- Other (please describe) _____
- I'd prefer not to say

17. Which option best describes your current employment status?
    - In full-time education
    - In part-time education
    - Employed (full-time)
    - Employed (part-time)
    - Self-employed
    - Unemployed
    - Retired
    - Unable to work
    - Other (please describe) _____
    - I'd prefer not to say

The Parental Reflective Functioning Questionnaire

Listed below are a number of statements concerning you and your child. Read each item and decide whether you agree or disagree and to what extent.

Use the following rating scale, with 7 if you strongly agree; and 1 if you strongly disagree. The midpoint, if you are neutral or undecided, is 4.

Strongly Disagree 1--2--3--4--5--6--7 Strongly Agree

	Strongly Disagree 1--2--3--4--5--6--7 Strongly Agree
1. The only time I'm certain my child loves me is when he or she is smiling at me.	
2. I always know what my child wants.	
3. I like to think about the reasons behind the way my child behaves and feels.	
4. My child cries around strangers to embarrass me.	
5. I can completely read my child's mind.	
6. I wonder a lot about what my child is thinking and feeling.	

	Strongly Disagree 1--2--3--4--5--6--7 Strongly Agree
7. I find it hard to actively participate in make believe play with my child.	
8. I can always predict what my child will do.	
9. I am often curious to find out how my child feels.	
10. My child sometimes gets sick to keep me from doing what I want to do.	
11. I can sometimes misunderstand the reactions of my child.	
12. I try to see situations through the eyes of my child.	

	Strongly Disagree 1--2--3--4--5--6--7 Strongly Agree
13. When my child is fussy he or she does that just to annoy me.	
14. I always know why I do what I do to my child.	
15. I try to understand the reasons why my child misbehaves.	
16. Often, my child's behavior is too confusing to bother figuring out.	
17. I always know why my child acts the way he or she does.	
18. I believe there is no point in trying to guess what my child feels.	

← Back → Next

Thanks for your responses so far. There are just 2 more short questionnaires, we really appreciate your time.

Difficulties in Emotion Regulation Scale

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item.

1	2	3	4	5
Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost always (91-100%)

Almost Never 1--2--3--4--5 Almost Always

1) I am clear about my feelings. ☐

2) I pay attention to how I feel. ☐

3) I experience my emotions as overwhelming and out of control. ☐

4) I have no idea how I am feeling. ☐

5) I have difficulty making sense out of my feelings. ☐

6) I am attentive to my feelings. ☐

7) I know exactly how I am feeling. ☐

8) I care about what I am feeling. ☐

Almost Never 1--2--3--4--5 Almost Always

9) I am confused about how I feel. ☐

10) When I'm upset, I acknowledge my emotions. ☐

11) When I'm upset, I become angry with myself for feeling that way. ☐

12) When I'm upset, I become embarrassed for feeling that way. ☐

13) When I'm upset, I have difficulty getting work done. ☐

14) When I'm upset, I become out of control. ☐

15) When I'm upset, I believe that I will remain that way for a long time. ☐

16) When I'm upset, I believe that I will end up feeling very depressed. ☐

Almost Never 1--2--3--4--5 Almost Always

17) When I'm upset, I believe that my feelings are valid and important. ☐

18) When I'm upset, I have difficulty focusing on other things.

19) When I'm upset, I feel out of control.

20) When I'm upset, I can still get things done.

21) When I'm upset, I feel ashamed at myself for feeling that way.

22) When I'm upset, I know that I can find a way to eventually feel better.

23) When I'm upset, I feel like I am weak.

24) When I'm upset, I feel like I can remain in control of my behaviors.

Almost Never 1--2--3--4--5 Almost Always

25) When I'm upset, I feel guilty for feeling that way.

26) When I'm upset, I have difficulty concentrating.

27) When I'm upset, I have difficulty controlling my behaviors.

28) When I'm upset, I believe there is nothing I can do to make myself feel better.

29) When I'm upset, I become irritated at myself for feeling that way.

30) When I'm upset, I start to feel very bad about myself.

31) When I'm upset, I believe that wallowing in it is all I can do.

32) When I'm upset, I lose control over my behavior.

Almost Never 1--2--3--4--5 Almost Always

33) When I'm upset, I have difficulty thinking about anything else.

34) When I'm upset I take time to figure out what I'm really feeling.

35) When I'm upset, it takes me a long time to feel better.

36) When I'm upset, my emotions feel overwhelming.

← Back → Next

You're nearly finished, thanks for continuing.

Adverse Childhood Experience Questionnaire

The following questions are about your own childhood experiences. They ask about difficult and stressful experiences, therefore you do not have to provide an answer if you choose not to. Please contact the resources provided if you experience any distress.

We understand the questions asked will not capture the broad range of individual experiences, therefore, there will be an opportunity at the end to provide more detail if you would like to.

Did a parent or other adult in the household **often...**

Swear at you, insult you, put you down, or humiliate you?

Or

Act in a way that made you afraid that you might be physically hurt?

Yes

No

Did a parent or other adult in the household **often...**

Push, grab, slap, or throw something at you?

Or

Ever hit you so hard that you had marks or were injured?

Yes

No

Did an adult or person at least 5 years older than you **ever...**

Touch or fondle you or have you touch their body in a sexual way?

Or

Try to or actually have oral, anal, or vaginal sex with you?

Yes

No

Did you **often** feel that...

No one in your family loved you or thought you were important or special?

Or

Your family didn't look out for each other, feel close to each other, or support each other?

Yes

No

Did you **often** feel that...

You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?

Or

Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Yes

No

Were your parents **ever** separated or divorced?

Yes

No

Was your mother or stepmother:

Often pushed, grabbed, slapped, or had something thrown at her?

Or

Sometimes or often kicked, bitten, hit with a fist, or hit with something hard?

Or

Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?

Yes

No

Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?

Yes

No

Was a household member depressed or mentally ill or did a household member attempt suicide?

Yes

No

Did a household member go to prison?

Yes

No

Is there anything additional you would like to add about how you have completed these questions?

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Participant Debrief

Thank you for taking the time to complete this survey.

The following paragraph provides some background information to help explain why we are undertaking this research.

The first two years of a child's life are an important time for their development. Their brains grow at a fast rate and it is important for them to have a parent or parents who understand what they need. However, this time can also be stressful for parents. This research is hoping to understand what makes this time more difficult for some parents so we can develop ways to help. We know that if parents are able to recognise and respond appropriately to their own emotions during stressful experiences, it can benefit their care-giving ability and help to strengthen the parent-child relationship

We hope that a better understanding of how these experiences are connected may help services and professionals to support parents who are experiencing distress or are struggling with their parenting role.

All the information collected from the surveys will be anonymous and there will be no way of identifying your responses in the data. If you have any questions about this study, please contact the student g.bannister2@lancaster.ac.uk or her supervisor f.eccles@lancaster.ac.uk.

If you would like a copy of the summary report for this study you can request this by email (g.bannister2@lancaster.ac.uk). Please note this will be a summary of all the data and we will be unable to provide reports based on individual responses to the survey.

Thank you for your time and for answering sensitive and personal questions. Should you feel distressed either as a result of taking part in this research, or at any time in the future, the following resources may be of helpful:

Samaritans

Website: https://www.samaritans.org/

Helpline: 116 123

Shout

https://giveusashout.org/

Text SHOUT to 85258

Dad Matters

https://dadmatters.org.uk/national/

Hub of Hope

https://hubofhope.co.uk/

Your own GP

If you experience distress as a result of taking part in this research, we recommend that you seek support from your GP.

The Researcher

Please contact the researcher Gina Bannister (g.bannister2@lancaster.ac.uk) if you would like to discuss this research, your responses or would like additional information on how to access support.

*If you are concerned about a risk to your life through mental or physical health, always speak to the emergency services or your GP

To download a copy of this information or the Participant Information Sheet to keep, please click on the link below:

Debrief

Participant Information Sheet