ISOBEL K. E. GAMMER, BA Hons, MSc

SELF-COMPASSION AND WELL-BEING IN PARENTHOOD

Section A: Self-compassion and well-being in parenthood: A narrative review and meta-analysis

Word Count: 7983

Section B: A randomised controlled trial of an online, compassion-based intervention for maternal psychological well-being in the first year post-partum

Word Count: 7979

Overall Word Count:
15, 962

A thesis submitted in partial fulfilment of the requirements of
Canterbury Christ Church University for the degree of
Doctor of Clinical Psychology

May 2017

SALOMONS
CANTERBURY CHRIST CHURCH UNIVERSITY

Acknowledgements

Thank you to every busy new mum who gave her time to take part, to Dr Fergal Jones for such supportive and committed supervision, to other Salomons staff, especially the wonderful librarians, and to my patient partner, parents and friends for all the help, encouragement and coffee. Special thanks also go to Dr Charlotte Hartley-Jones for thoughtful supervision and for permitting use of her book for the project, and to Mark Meredith for his incredible generosity in building the website; 'I couldn't have done it without you' is often said with some poetic licence but here none whatsoever is employed.

Summary of MRP

SECTION A

Theorists have suggested that self-compassion may be linked to psychological well-being in parents. This paper reviewed empirical studies to establish the strength of evidence for this proposed association. A systematic search yielded 11 papers that met inclusion criteria. The review found strong evidence of an association between self-compassion and parental psychological well-being, supported by a meta-analysis. The quality of the studies was generally high but due to designs, evidence of a causal relationship was weak. Controlled trials of compassion-based interventions for parents are needed to better assess the role of self-compassion in psychological well-being in this group.

SECTION B

New self-help interventions have been called for to promote psychological well-being amongst mothers in the post-partum, with self-compassion being identified as a promising target. This study developed and evaluated a low-intensity, online, compassion-based intervention for this population based on Hartley-Jones (2016). Mothers of infants under one year (N = 206) participated in a randomised controlled trial. The intervention group showed significantly greater increases in self-compassion and in psychological well-being compared to controls. Improvement in self-compassion statistically mediated the change in well-being. However, treatment gains wellbeing were not maintained at 6-week follow-up. Findings are discussed and recommendations for future research are made.

List of Contents

Section A: Literature Review	**Page**
Abstract	**8**
1. Introduction	**9**
1.1 Definitions and theoretical background	9
1.2 Self-compassion and psychological well-being in adult populations	11
1.3 Theoretical links between self-compassion and well-being in parenthood	12
1.4 Aims of the review	13
2. Methodology	**13**
2.1 Literature search strategy	13
2.2 Inclusion and exclusion criteria	14
2.3 Quality assessment	15
2.4 Meta-analysis plan	16
3. Results	**17**
3.1 Description of included studies	19
3.2 Evidence of associations between self-compassion and parental well-being	29
3.3 Strength of evidence of a causal relationship	36
4. Discussion	**39**
4.1 Overview	39
4.2 Specific findings	41
4.3 Limitations	42
5. Implications for Future Research and Practice	**43**
5.1 Research implications	43
5.2 Practice implications	45
6. Conclusion	**45**
References	**47**

Section B: Empirical Research Paper	**Page**
Abstract	**64**
Introduction	**65**
Method	**69**
Design	69
Participants	71
Measures	73
Procedure and intervention	76
Ethical considerations	81
Analysis plan	81
Results	**83**
Accessibility and acceptability	83
Baseline data	84
Attrition	84
Intervention effects	86
Mediation analysis	87
Engagement	90
Discussion	**91**
Overview	91
Impact on self-compassion	91
Impact on psychological well-being	92
Theoretical implications	94
Attrition, adherence and engagement	94
Limitations	96
Conclusion	**98**
References	**99**

List of Tables and Figures

Section A: Literature Review	**Page**
Table 1: Summary of included studies	21
Table 2: Summary of interventions	26
Table 3: Scores for included papers on the Standard Quality Assessment Criteria for Primary Research	27
Table 4: Measures, *N*s and effect sizes (Pearson's *r*) used to calculate fixed effects model of estimated population means for each aspect of well-being in parents	35
Figure 1: PRISMA flow diagram showing process of screening and exclusion of records retrieved in systematic search	18
Figure 2: Graphical stem-and-leaf plots showing frequency of studies reporting each effect size for correlations between self-compassion and that aspect of well-being with meta-analytic estimates	34

Section B: Empirical Research Paper	**Page**
Table 1: Demographic characteristics of RCT participants	72
Table 2: Summary of sessions and exercises in the *Kindness for Mums Online* (KFMO) intervention	79
Table 3: Descriptive statistics for intention-to-treat-analysis at each time point	85
Figure 1: CONSORT diagram showing participant flow through the trial	70
Figure 2: Graphs showing mean total scores on the WEMWBS and SCS-SF by group for each time point	88
Figure 3: The mediation model and associated 95% confidence intervals (CIs).	89

List of Appendices

Section A: Literature Review	**Page**
Appendix A: Full search terms for systematic literature search	113
Appendix B: Standard quality assessment criteria for evaluating primary research papers	114
Section B: Empirical Research Paper	
Appendix C: Study information sheets, screening and consent forms	120
Appendix D: Recruitment materials	132
Appendix E: Questionnaires	133
Appendix F: *Kindness for Mums Online* guest logon and sample pages	142
Appendix G: Ethics Committee approval letter	151
Appendix H: Registered trial protocol	152
Appendix I: Data exportation	154
Appendix J: Baseline comparisons	162
Appendix K: Graphs for secondary outcome measures	167
Appendix L: Per protocol analysis	170
Appendix M: Mindfulness guidance for authors	171
Appendix N: Update to ethics committee	180
Appendix O: Note regarding feedback to participants	181

Major Research Project (MRP) Section A: Literature Review Paper

Self-compassion and well-being in parenthood: A narrative review and meta-analysis

Word Count: 7983

Abstract

Theorists have suggested that self-compassion may be linked to psychological well-being in parents but evidence in relation to this proposal has not been reviewed. The aim of this paper was to review empirical studies and conduct a meta-analysis to establish the strength of evidence for an association between self-compassion and well-being in parents. Additional aims were to clarify gaps in our understanding and make recommendations regarding future research and practice. A systematic search of seven research databases yielded 11 papers that met criteria for inclusion. The majority were cross-sectional studies (n=6), one was a longitudinal study and the remaining papers evaluated mindfulness-based interventions: three conducted randomised controlled trials (RCTs) and one employed an uncontrolled pre-post design. The review found strong evidence of an association between self-compassion and parental psychological well-being. This association was supported by the meta-analysis. Due to study designs, however, evidence of a causal relationship was weak. RCTs of self-compassion interventions with parents are needed to robustly assess the role of self-compassion in psychological well-being in this group. The quality of the studies was generally high but with some variability. Some groups of parents were underrepresented, limiting generalisability.

Keywords:

Self-compassion, Self-kindness, Parent, Mother, Father, Well-being.

1. Introduction

In recent years, the body of research into self-compassion has grown considerably (Kirby, 2016a). Several authors have proposed that self-compassion may be of particular relevance to well-being among parents (Bogels, Lehtonen & Restifo, 2010; Felder Lemon, Shea, Kripke, & Dimidjian, 2016; Neff, 2011). This is an important area of study because in some circumstances parents are at increased risk of mental health problems (O'Hara & Swain, 1996; Olsson, & Hwang, 2001), which can in turn have a negative impact on child well-being (e.g. Stein et al., 2014). In light of the proposed link with well-being, self-compassion has been suggested as target for interventions with parents (e.g. Cree, 2010; Kirby, 2016a). Whilst recent reviews have found emerging empirical support for a causal link between self-compassion and psychological well-being in adults generally (Barnard & Curry, 2011; MacBeth & Gumley, 2012), the literature relating specifically to parents has not been reviewed. This paper seeks to establish the status of the empirical evidence in relation to self-compassion and well-being in parents by means of a narrative review and meta-analysis of empirical studies, based on a systematic literature search.

1.1 Definitions and theoretical background

1.1.1 Self-compassion

Self-compassion has been understood and defined within a variety of theoretical frameworks (Kirby, 2016b). However, self-compassion might be broadly understood as a form of self-to-self relating characterised by an awareness of, and wish to alleviate, one's own suffering and a non-judgemental attitude towards one's own faults and failures (e.g. Gilbert & Procter, 2006; Neff, 2003a).

Gilbert and his colleagues (e.g. Gilbert, 2010) argue that the capacity for compassion evolved with the attachment system in the context of caregiving to offspring (Gilbert & Procter, 2006). *Self*-compassion is the turning of a caring social stance towards oneself, which entails concern for one's own well-being, the capacity to tolerate and be sympathetic towards one's own distress, and an ability to have a warm, non-judgemental, response (Gilbert & Procter, 2006; Gilbert, 2009). It is proposed that self-compassion can activate a 'soothing' emotional system (Gilbert, 2010, p. 139), associated with feelings of safety and contentment.

Moving away from this evolutionary perspective, Neff and colleagues (e.g. Neff, 2003a; Neff, Kirkpatrick & Rude, 2007) draw more on Buddhist teaching in their conception of self-compassion. Neff (2003a) operationalised the construct of self-compassion in terms of three bi-polar dimensions: being kind and understanding towards oneself vs being harshly self-critical, perceiving one's experiences as part of wider human experience vs viewing them as isolating, and holding painful thoughts and emotions in mindful awareness vs over-identifying with them.

1.1.2 Psychological well-being

Psychological well-being is a complex construct (Tennant et al, 2007). Huppert (2009) defined it as 'the combination of feeling good and functioning effectively' (p. 137). This definition highlights a widely accepted view that subjective well-being includes two distinct aspects. The first – a subjective or hedonic aspect (Waterman, 1993) – is usually thought to comprise an affective component (presence of positive and absence of negative emotions) and a cognitive component (subjective satisfaction with life; Ryff & Keyes, 1995; Tennant et al, 2007). The second is a functional or eudaemonic aspect, which includes good psychological functioning (e.g. ability to make decisions; Ryan & Deci, 2001; Tennant et al, 2007), good interpersonal functioning (e.g. maintaining positive and satisfying relationships; Ryan & Deci, 2001; Ryff &

Keyes, 1995) and self-realisation (e.g. having a sense of purpose; Ryan & Deci, 2001; Ryff & Keyes, 1995).

Psychological well-being is distinct from, but highly correlated with, the absence of psychological distress or disorder (e.g. Winefield, Gill, Taylor & Pilkington, 2012; Wood & Joseph, 2010) although the terms are often used interchangeably (e.g. Neff, Kirkpatrick & Rude, 2007). For the purposes of this review, psychological well-being was broadly construed to include absence of mental health problems as well as the presence of positive hedonic or eudaemonic mental well-being to ensure relevant findings were not overlooked.

1.2 Self-compassion and psychological well-being in adult populations

Self-reported self-compassion has been found to correlate positively with life satisfaction, happiness, positive affect (e.g. Breines & Chen, 2012; Hollis-Walker & Colosimo, 2011; Leary, Tate, Adams, Batts Allen, & Hancock, 2007; Neff, Pisitsungkagarn & Hseih, 2008) and positive interpersonal functioning (e.g. Neff & Beretvas, 2012; Neff, 2013; Yarnell & Neff 2013) in adults. It has also been found to correlate negatively with symptoms of depression, anxiety and stress (e.g. Neff, Kirkpatrick, & Rude, 2007). Furthermore, there is emerging evidence that self-compassion is associated with positive coping in the face of life stressors such as physical disability and illness (Batts Allen, Goldwasser & Learey, 2012; Kemppainen et al. 2013), infertility (Li, Liu, He, & Li, 2016), academic failure (Neff, Hsieh & Dejitterat, 2005) and marriage breakdown (Sbarra, Smith, & Mehl, 2012).

Recent reviews have provided further evidence for the association of self-compassion and psychological well-being in adults, including clinical and non-clinical samples (e.g. Barnard and Curry, 2007; Kirby, 2016a). In a meta-analysis, MacBeth and Gumley (2012) report a large effect

size for the negative association between self-compassion and mental health problems (depression, anxiety and stress). However, correlations alone do not imply a causal relationship.

Several compassion-based psychological interventions have emerged in recent decades (see Kirby, 2016a for an overview). Although research in this area is still in its infancy, early reviews have found support for the efficacy of compassion-based interventions (Kirby, 2016b; Kirby, Tellegen, & Steindl, 2017; Leaviss & Uttley, 2014). These findings offer emerging evidence of a causal link between self-compassion and well-being in adults, in line with theoretical models (e.g. Gilbert, 2010; Neff, 2003a).

1.3 Theoretical links between self-compassion and well-being in parenthood

Several theorists have proposed that self-compassion may be of particular importance in the context of becoming and being a parent (Bogels et al., 2010; Cree, 2010, 2015; Kirby, 2016b; Neff, 2011). Whilst parenting is often fulfilling and joyful, having and raising children involves challenges, losses and negative emotions (Cree, 2010; Hall & Wittkowski, 2006; Harwood & McLean, 2007; Leigh & Milgrom, 2008; Moreira, Carona, Gouveia, Silva & Canavarro, 2014). It has been proposed that self-compassion may offer an adaptive way of responding to the challenges of parenthood (Cree, 2010, Felder et al., 2016; Neff, 2011; Moreira, et al., 2014). For example, responding to parenting setbacks and imperfections with kindness, seeing them as universal aspects of the parenting experience, may protect against shame, guilt and self-criticism (Cree, 2010; Moreira, et al., 2014; Neff, 2011), factors which have been linked to poor mental health in parents (Cappe et al, 2011; Hall, 2006; Hall & Wittkowski, 2006; Robertson, Grace, Wallington & Stewart, 2004).

For these reasons, there have recently been calls for parenting programmes and parent-focused interventions to integrate self-compassion exercises (e.g. Kirby, 2016b; Cree, 2010; Felder et al., 2016). However, the status of the empirical evidence in relation to self-compassion and well-being in parents is unknown.

1.4 Aims of the review

The aim of this paper is to conduct a review and meta-analysis of empirical studies investigating self-compassion and parental well-being, based on a systematic search. Specifically, the review sought to address the following questions:

1. Is there evidence of an association between self-compassion and well-being in parents?

2. If so, how strong is the evidence that self-compassion plays a causal role in this relationship?

The review also sought to clarify any gaps in our understanding in this area and make recommendations regarding future research and practice.

2. Methodology

2.1 Literature search strategy

Following exploratory searches, three broad search terms were developed using the Boolean operator 'OR' to combine terms (truncated where appropriate with * to ensure variant spellings

or word endings were captured). For example, the broad search term 'self-compassion' comprised: compassion* OR self-compassion* OR compassion-focu* OR CFT OR self-kind* OR self-critic*. The three broad search terms were then combined as follows: (parent OR perinatal) AND self-compassion. The 'perinatal' term was included as a lot of theoretical literature regarding self-compassion and well-being in parents relates to the perinatal period. For a full list of exploded terms, see Appendix A.

A systematic literature search was conducted based on these terms using the Psychinfo, Medline, Web of Science, Cochrane library, Applied Social Sciences Index and Abstracts (ASSIA), and Cumulative Index to Nursing and Allied Health Literature (CINAHL) on 18 November 2016. Databases were searched from their inception to that date.

2.2 Inclusion and exclusion criteria

In order to meet the aims of the review, papers were included only if the following criteria were met:

1. The sample included parents (biological or adoptive) or full-time carers (foster carers or kinship carers) of children (hereafter, 'parents').
2. Where parents and non-parents took part in the study, data for the parent-only subgroup was reported and analysed separately from other data.
3. The study employed a validated measure of self-compassion (i.e. psychometric properties evidenced in a published study). Where self-compassion was measured using sub-test(s) of a broader measure, the self-compassion subtest data were reported and analysed separately from other data.
4. The study employed a psychometrically validated assessment that was deemed to measure parental psychological well-being (broadly construed, including any measures of

positive well-being, such as life satisfaction or positive emotions, and measures of distress or mental health difficulties).

5. The study was published in English in a peer-reviewed publication.

In addition, the following exclusion criteria were applied:

1. It was specified that the cared-for child or children were over 18 years or, if the young people had Special Educational Needs or Disabilities, were over 25 years. This was stipulated in view of likely ongoing parental care, as recognised by the Children and Families Act (2014).
2. The reported data could in no way inform the review question (for example, a mean value for self-compassion in a group of parents was reported without any further within-group analysis).
3. The paper did not include any original empirical data (for example, review articles or study protocols).

The original search yielded 2,503 references. Forty-one references were added following a hand search of reference lists of full-text papers, plus relevant review articles and journal special editions. Figure 1 shows details of the screening process. Eleven papers met criteria for inclusion in the review.

2.3 Quality assessment

The quality of included papers was assessed against the Standard Quality Assessment Criteria for Primary Research (Kmet, Lee & Cook, 2004; see Appendix B for full criteria). This tool was selected because it allows for comparative quality appraisal across research designs, including

cross-sectional studies and controlled and uncontrolled trials. The tool has been validated (Kmet, Lee & Cook, 2004) and widely used in published systematic reviews (e.g. Ashford et al., 2016).

2.4 Meta-analysis plan

2.4.1 Data extraction

Where correlational analyses were reported between measures of self-compassion and measures of psychological well-being, the Pearson's correlation coefficient (*r*) and relevant sample size (*N*) were extracted for inclusion in a meta-analysis.

A variety of measures were used across included studies. The potential downside of collapsing different instruments together in a meta-analysis is that they may be measuring different things, reducing the validity of an overall estimate. However, statistical techniques can be used to estimate the extent to which different underlying constructs appear to be being measured, and the advantage of collapsing measures is that a more precise estimate of relationships between the constructs of interest can be obtained. To balance these considerations, separate meta-analyses were conducted for four aspects of well-being: depression, anxiety, stress and positive psychological well-being. These were considered to represent more theoretically unitary constructs than overall 'psychological well-being'. Where several measures of one aspect of well-being were employed in a single study, the broader measure of the construct of interest was selected for inclusion in the meta-analysis. For example, where positive psychological well-being was measured by the Adult Hope Scale (AHS; Snyder et al., 1991) and the Satisfaction with Life Scale (SWLS; Diener et al., 1985), the SWLS was selected, as life satisfaction is a broader construct than hope.

2.4.2 Analysis

A meta-analysis was conducted using SPSS version 22 following methods described in Field and Gillett (2010) and was run using the SPSS syntax that is appended to that paper. The Hedges-Vevea fixed-effects model (Hedges & Vevea, 1998) was used to calculate effect size estimates for the correlation between each aspect of well-being and self-compassion and to compute confidence intervals for this effect. Heterogeneity of effect sizes was measured using the Q statistic for goodness of fit. This gives an indication of whether included measures appear to assess the same or different relationships, with non-significant results indicating low heterogeneity (Field & Gillett, 2010).

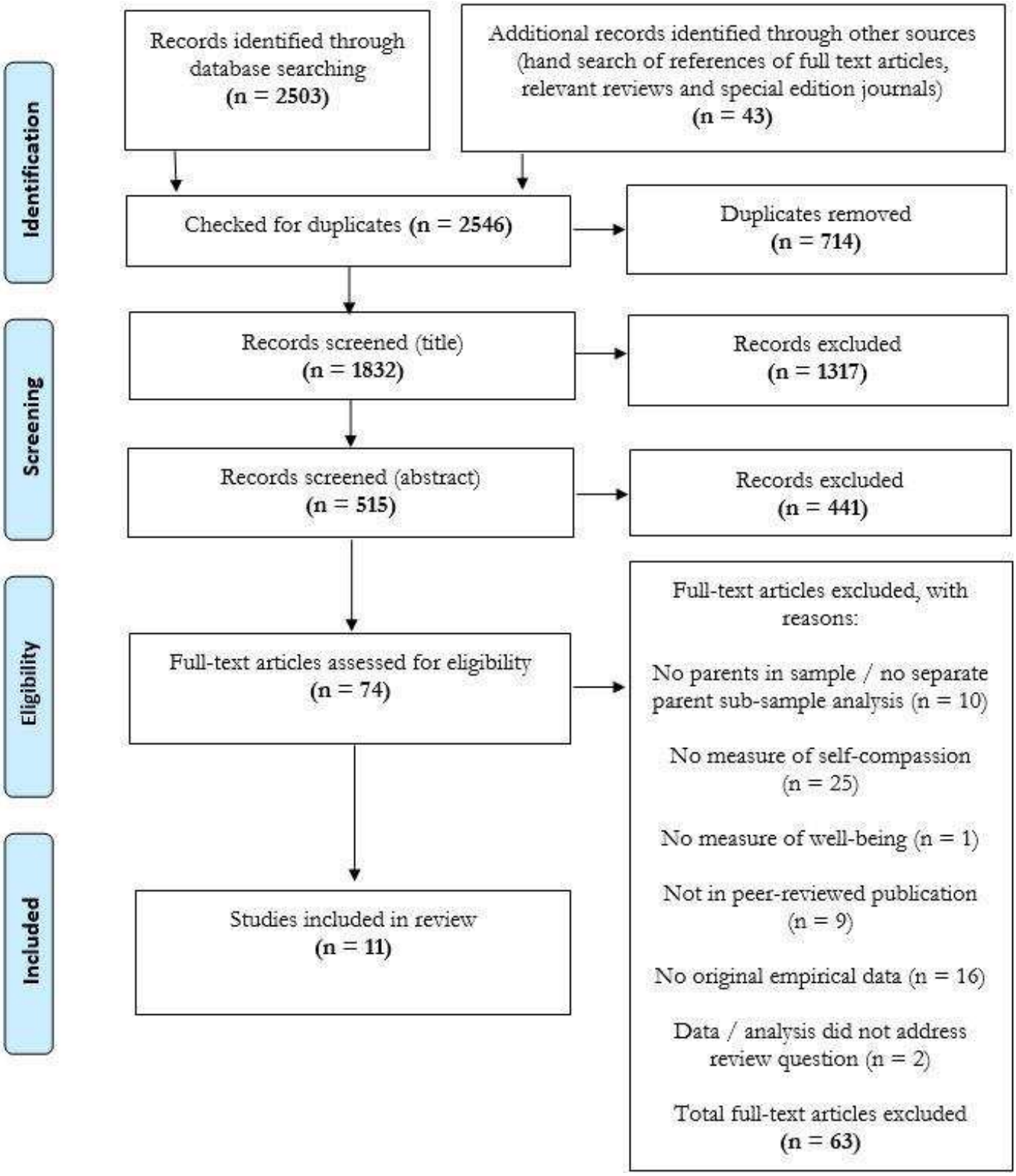
2.4.3 Risk of publication bias

The risk of publication bias was assessed using Rosenthal's (1979) fail-safe *N*. This represents the number of additional studies (i.e. unpublished or not found in the literature search) with non-significant results that would be needed to produce a non-significant overall effect in the meta-analysis. Tang, Eslick, Nowson, Smith & Bensoussan (2007) suggest that if the fail-safe $N > (5k+10)$, where k is the number of studies included in the meta-analysis, then the risk of publication bias is low enough for the meta-analysis to be considered stable.

3. Results

Following guidelines produced by the PRISMA group (Preferred Reporting Items for Systematic reviews and Meta-Analyses; Liberati et al., 2009), this section begins with a descriptive overview of included studies before considering study findings in relation to each review question in turn.

Figure 1: PRISMA flow diagram (Moher, Liberati, Tetzlaff, Altman & The PRISMA Group, 2009) showing process of screening and exclusion of records retrieved in systematic search



3.1 Description of included studies

Table 1 summarises the included studies. The body of research studied a wide variety of parent and child samples and a broad range of variables. Only measures relevant to the review questions are considered here.

3.1.1 Designs

As outlined in Table 1, six of the 11 included studies employed cross-sectional designs (Beer, Ward & Moar, 2013; Galhardo, Pinto-Gouveia, Cunha & Matos, 2011; Gouveia, Carona Canavarro & Moreira, 2016; Moreira, et al., 2014; Neff & Faso, 2014; Raque-Bogdan & Hoffman, 2015) and one study employed a longitudinal design (Psychogiou et al., 2016, Study 2). One paper reported a feasibility study employing an uncontrolled, pre-post design to obtain an initial assessment of the effectiveness of a mindfulness intervention for parents (Bazzano et al., 2013). The remaining three studies used randomised controlled trials (RCTs), again assessing the effectiveness of mindfulness interventions; two were written up as pilot RCTs (Mann et al., 2016; Perez-Blasco, Viguer & Rodrigo, 2013) and one was reported as a full RCT (Coatsworth et al., 2014). A summary of intervention characteristics is given in Table 2.

The fact that designs were primarily correlational means that the body of research is apt to inform questions regarding associations but the extent to which findings can support causal conclusions is limited. The four intervention studies have greater potential in this regard, although, as discussed in subsequent sections, this was limited by the analyses performed.

3.1.2 Measures

The majority of the included studies (9/11) measured self-compassion using the 26-item Self-Compassion Scale (Neff, 2003b). This is a widely used measure of self-compassion that has well-

validated psychometric properties (Neff, 2016). Citations for validation studies of translated versions were consistently provided.

Two studies (Beer et al., 2013, and Coatsworth et al., 2014) measured self-compassion using items from the Interpersonal Mindfulness in Parenting Scale (IM-P; Duncan, 2007). The original IM-P contains a subscale (7 items) measuring 'Compassion for Self and Child'. However, Beer et al. (2013) and Coatsworth et al. (2014) split the 'Compassion for Self and Child' subscale into two further subscales in their analyses, one of which assessed 'compassion for self'. This is in line with findings regarding the factor structure of a Dutch translation of the scale (de Bruin et al., 2014) and Beer et al. (2013) report good internal consistency (alpha = .80) for the new subscale. However, given this adaptation of the published English version of the scale, the reliability and validity of this measure of self-compassion are less clear than for the SCS.

A wide range of self-report questionnaires were used to assess well-being across the included studies. These were generally well-validated measures with citations provided for published papers reporting on psychometric properties.

3.1.3 Analyses

For the variables of interest (i.e. self-compassion and parental well-being measures), of the six cross-sectional studies, three reported simple correlations only (Beer et al., 2013; Galhardo et al., 2011; Psychogiou et al., 2016), one used regression analyses (Neff & Faso, 2014), and the other three employed mediational modelling techniques (Gouveia et al., 2016; Moreira et al., 2014; Raque-Bogdan & Hoffman, 2015). An advantage of multivariate analyses (regressions or statistical modelling) over simple correlations is that they enable researchers to control for potential confounds or compare the relative effects of other (theoretically or empirically) related variables.

.

Table 1
Summary of included studies

First author (year)	Design	Sample	Relevant measures	Main relevant findings
1. Beer (2013)	Cross-sectional – correlational	**Parents** Parents or primary carers (*N*=28; 4 male) **Children** Children with Autism Spectrum Disorder (ASD) diagnosis, 3–20 years **Recruitment** Via paediatric assessment team who diagnosed ASD. Eligible families were posted a package with info sheet, consent form & questionnaires. Response rate = 19%. **Country of residence** Australia	**Self-compassion** IM-P, self-compassion questions analysed as separate subscale **Well-being** HADS Family Problems subscale of the QRS-F (15-item version) **Other** Open-ended questions about mindful parenting based on IM-P	**Correlations** Strong negative association of S-C with depression. Weak negative association of S-C with anxiety S-C only dimension of mindful parenting significantly related to anxiety. Moderate negative association of S-C with parenting stress. **Thematic analysis** Analysed data from open-ended questions. Within the theme 'parenting approach' a minority of parents mentioned S-C, acceptance of self and realistic expectations. Within the theme 'difficulties in, or absence of, mindful parenting' some responses suggested that self-compassion was difficult.
2. Galhardo (2011)	Cross-sectional – correlational	**Parents** Heterosexual couples of 'fertile age' with ≥1 child and no known fertility problems (*N*=200; 100 male) **Children** Not specified **Recruitment** Convenience sample NOS **Country of residence** Portugal	**Self-compassion** SCS (26 item) Self-Judgement Subscale Score (N.B. measures lack of self-compassion) **Well-being** BDI (Portuguese version) STAI-Y (Portuguese Version)	**Correlations** Strong positive association of self-judgement with depression. Weak positive association of self-judgement with anxiety.

3. Neff (2014)	Cross-sectional – multivariate analysis	**Parents** Biological parents (*N*=51; 11 male) **Children** Children with Autism Spectrum Disorder (ASD) diagnosis, 4–12 years **Recruitment** Parents already involved in wider study (University of Texas Autism Project) invited by email. **Country of residence** United States	**Self-compassion** SCS (26 item) Total Score **Well-being** CES-D PSI-SF (Distress, Relationship Difficulty and Perceived Child Difficulty subscales) AHS SWLS Goal Disengagement and Reengagement Scale (Reengagement subscale) **Other** Gilliam Autism Rating Scale, 2nd Edition	**Correlations** Strong negative association of S-C with depression. Strong negative association of S-C with parental distress and weak associations with the other two dimensions of parenting stress. Moderate positive correlation of S-C with hope and weak positive association with life satisfaction and goal re-engagement. **Regression analysis** Stepwise regression: child autism symptom severity, entered at step 1, predicted depression, parental distress and relationship difficulty but not positive psychological measures. S-C was added at step 2 and all variables were significantly predicted with greater variance accounted for; child symptom severity ceased to predict depression.
4. Gouveia (2016)	Cross-sectional – multivariate analysis	**Parents** Biological parents (*N*=333; 87 Male) **Children** Typically developing, 8–18 years **Recruitment** Talks and recruitment packs given to children in two state schools. **Country of residence** Portugal	**Self-compassion** SCS (26 item, Portuguese version) Total Score **Well-being** PSI-SF (Portuguese version) **Other** MAAS (Portuguese version) IM-P (Portuguese version) Total Score	**Correlations** Moderate–strong negative association of S-C with parenting stress. **Mediational model** Total, direct and indirect (through mindful parenting) effects of S-C on parenting stress were significant. S-C stronger predictor of parenting stress than mindfulness though both explained significant variance in the final model.
5. Moreira (2014)	Cross-sectional – multivariate analysis	**Parents** Biological mothers (*N*=171) **Children** Typically developing, 8–18 years **Recruitment** Recruitment packs given to children in five state schools.	**Self-compassion** SCS (26 item, Portuguese version) Total Score **Well-being** Parental Distress Subscale of the PSI-SF (Portuguese version)	**Correlations** Strong negative association S-C with parenting stress. **Mediational model** Strong direct effect of S-C on parenting stress. Together with significant (direct and indirect via S-C) effects of maternal insecure attachment, the model accounted for 43.6% of variance in parenting stress.

(Moreira, 2014, cont.)		**Country of residence** Portugal	**Other** ECR-RS (Portuguese version)	
6. Raque-Bogdan (2015)	Cross-sectional – multivariate analysis	**Parents** Biological mothers with secondary infertility (*N*=53) **Children** Not specified **Recruitment** Adverts with link to study website posted on online support groups for infertility. **Country of residence** 83% from United States, other 17% from Canada, United Kingdom, Australia, South Africa, France, Romania, New Zealand or India.	**Self-compassion** SCS (26 item, Portuguese version) Total Score **Well-being** FPI Subjective well-being score (derived from PANAS and SWLS)	**Correlations** Within the secondary infertility group: S-C moderate–strong positive correlation with subjective well-being. S-C moderate–strong negative correlation with global infertility-related stress (FPI Total Score) and weak-moderate negative correlations with the five individual FPI subscales). **Mediation model** Within the secondary infertility group: S-C was a significant mediator of the relationship between social concern (about infertility) and subjective well-being. The reverse causal model was *ns*.
7. Psychogiou (2016) Study 2	Longitudinal – prospective Two time points: Time 1 (T1) and time 2 (T2) 16 months apart	**Parents** **T1:** Biological fathers (*N*=160; of those *n*=40 with current depression). Biological mothers of same child (*N*=146; *n*=50 of those with current depression. **T2**: fathers *N*=106; mothers *N*=98 **Children** Typically developing, 3–5 years **Recruitment** Fathers via health records & adverts in community. Mothers recruited via fathers. **Country of residence** United Kingdom	**Self-compassion** SCS (26 item) Total Score **Well-being** PHQ-9	**Correlations** For both mothers and fathers, S-C at T1 moderately negatively correlated with depression measured at T1 and at T2.

8. Bazzano (2013)	Intervention feasibility study of group MBSR with pre-post evaluation Three time points: Baseline (B), immediately post-intervention (PI) and follow-up two months post-intervention (FU)	**Parents** Parents or primary caregivers (*N*=76; gender ratio not specified). **Children** Children with developmental disabilities (ASD, Cerebral Palsy, Down's Syndrome, LD, other), age not specified **Recruitment** Via one community disabilities organisation, including its support group leaders and newsletter. **Country of residence** United States	**Self-compassion** SCS (26 item) Total Score (mean) **Well-being** PSS-10 ParentSS PWB Qualitative feedback (responses to question: *Do you feel you got something of lasting value or importance from taking the MBSR program?)* **Other** MAAS	**Intervention effects** *Self-compassion* Significant pre-post increases in S-C maintained at FU. *Well-being* Significant pre-post improvements in general stress and parenting stress, maintained at FU. Significant pre-post improvements in reported psychological well-being, maintained at FU. **Mediation analysis** Multiple linear regression showed significant negative association change in mindfulness and change in stress; no analysis of S-C as potential mediator. **Qualitative analysis** One of the 15 selected comments mentioned self-kindness as being valuable.
9. Mann (2016)	Manual development and pilot RCT of group MBCT Three time points: Baseline (B), four months post-randomisation (PI) and follow-up nine months post-randomisation (FU)	**Parents** Parents (*N*=38; 2 male) with history of recurrent depression (3+ episodes) in full or partial remission at time of participation. **Children** 2–6 years (NOS). **Recruitment** Via GPs, local health visiting teams, mental health services and advertisements in community settings. **Country of residence** United Kingdom	**Self-compassion** SCS (26 item) Total Score **Well-being** BDI-II PSI-SF **Other** FFMQ Semi-structured qualitative interview	**Intervention effects** *Self-compassion* At PI, no significant differences between Tx and Cx groups on S-C or mindfulness. At FU, the Tx group reported significantly higher S-C and mindfulness compares to Cx group. *Well-being* At PI, no significant differences between Tx and Cx groups on well-being measures. At FU, depressive symptoms were significantly lower in the Tx group compared to Cx group and 11 participants (58%) in the Tx group remained well compared to 6 (32%) in the Cx arm, which was significant. **Mediation analysis** No analysis of S-C or other potential mediator

10. Perez-Blasco (2013)	Pilot RCT of a mindfulness-based intervention Two time points: baseline (B) and 3 weeks post-intervention (PI)	**Parents** Breastfeeding mothers (*N*=26) **Children** Breastfeeding infants, mean age 11m **Recruitment** Presentation given to mothers at a breastfeeding support organisation **Country of residence** Spain	**Self-compassion** SCS (26 item) Total Score **Well-being** PES, Maternal Self- Efficacy Subscale DASS-21 SWLS SHS	**Intervention effects** *Self-compassion* SCS Total Score significantly increased in Tx group compared to Cx group. SCS Subscales significant increases on Self-kindness and Mindfulness subscales and significant decreases on Over-identification subscale in Tx group compared to Cx group. *Ns* differences on Self-judgement, Isolation or Common Humanity subscales (but moderate–large effect sizes for all). *Well-being* Self-efficacy significantly increased in Tx group compared to Cx group. DASS significant decrease in scores in Tx group compared to Cx group on Overall Score, Anxiety, Stress and Psychological Distress subscales. *Ns* changes Depression subscale. Satisfaction with Life Scale, *ns* changes Subjective Happiness Scale, *ns* changes **Mediation analysis** No analysis of S-C as potential mediator.
11. Coatsworth (2014)	RCT of mindfulness-enhanced strengthening families programme (MSFP) compared to ordinary SFP and attention control. Three time points: B, PI and 1-year FU.	**Parents** Parents (*N*=432 families, Mothers *n*=432, fathers [of same children] *n*=257) . **Children** Grades 6–7 (11–13y), NOS **Recruitment** Recruitment packs distributed among pupils in four school districts plus presentations at school & community events. **Country of residence** United States	**Self-compassion** IM-P, self-compassion questions analysed as separate subscale **Well-being** PSCS Parent Daily Hassles questions Anger Management questions **Other** Other IM-P subscales	**Intervention effects** **S***elf-compassion* For mothers, *ns* differences between groups at PI or FU. For fathers, *ns* differences between groups at PI. At FU, significantly higher S-C reported for MSFP compared to TAU. *Well-being* For mothers, *ns* difference between groups at PI or FU. For fathers, *ns* differences between groups at PI. At FU significantly greater Satisfaction and Efficacy for both intervention groups vs TAU. Sig higher scores in MSFP vs TAU on Anger Management and for MSFP vs SFP on Parent Daily Hassles.

Note: NOS = not otherwise specified; *ns* = not significant ($p > .05$); S-C = self-compassion; MBSR = mindfulness-based stress reduction; MBCT = mindfulness-based cognitive

therapy; LD = learning disabilities; RCT = randomised controlled trial; TAU = treatment as usual; Tx = treatment; Cx = control; IM-P = Interpersonal Mindfulness Scale-Parent version (Duncan, 2007; Portuguese version: Moreira & Canavarro, 2015); HADS = Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983); QRS-F = Questionnaire on Resources and Stress-Friedrich Short Form (Friedrich et al. 1983; 15-item version: Glidden & Floyd 1997); SCS = Self-Compassion Scale (Neff, 2003b; Portuguese version: Castilho & Pinto-Gouveia 2011); BDI = Beck Depression Inventory (Beck et al., 1961; Portuguese version: Vaz-Serra and Pio-Abreu, 1973); BDI-II = Beck Depression Inventory-II (Beck et al., 1996); STAI-Y = State-Trait Anxiety Inventory-Form Y (Spielberger, 1983; Portuguese Version: Daniel and Ponciano-Lopes, 1996); CES-D = Centre for Epidemiological Studies Depression Scale (Radloff, 1977); PSI-SF = Parenting Stress Index-Short Form (Abidin, 1995; Portuguese version: Santos, 1997); AHS = Adult Hope Scale (Snyder et al., 1991); Goal Disengagement and Reengagement Scale (Wrosch et al., 2003); SWLS = Satisfaction with Life Scale (Diener et al., 1985; Spanish version: Atienza et al., 2000); Gilliam Autism Rating Scale, Second Edition (Gilliam, 2006); MAAS = Mindful Attention and Awareness Scale (Brown & Ryan 2003; Portuguese version: Gregório & Pinto-Gouveia, 2013); ECR-RS = Experiences in Close Relationships-Relationship Structures questionnaire (Fraley et al. 2011; Portuguese version: Moreira et al. 2014); FPI = Fertility Problem Inventory (Newton et al., 1999); PANAS = Positive and Negative Affect Schedule (Watson et al., 1988); PHQ-9 = Patient Health Questionnaire-9 item version (Spitzer et al., 1999); PSS-10 = Perceived Stress Scale 10-item version (Cohen et al. 1983); ParentSS = Parental Stress Scale (Berry & Jones 1995); PWB = Psychological Well-being Scale (Ryff & Keyes, 1995); FFMQ = Five Facet Mindfulness Questionnaire (Baer et al. 2006); PES = Parental Evaluation Scale (Farkas-Klein, 2008); DASS-21 = Depression, Anxiety and Stress Scale-21-item version (Lovibond & Lovibond, 1995); SHS = Subjective Happiness Scale (Lyubomirsky & Lepper, 1999); PSCS = Parenting Sense of Competency Scale (Gibaud-Wallston & Wandersman, 1978); Parent Daily Hassles: based on Crnic & Greenberg, 1990; Anger Management: based on Spoth et al. (1998).

Table 2

Summary of interventions

First author (year)	Therapeutic approach	Comparison group(s)	Format of intervention	Contact time / duration	Attrition
Bazzano (2013)	MBSR (Kabat-Zinn et al. 1992) adapted for parents of children with disabilities	None	Group	8 weekly 2h sessions + 4h silent retreat + audio-guided home practice	PI = 13% FU = 49%
Mann (2016)	MBCT (Segal et al. 2002a) adapted for parents.	Treatment as Usual (TAU)	Group	8 weekly sessions (length not specified) plus home practice.	Both groups: PI =15%, FU = 13% Tx group: PI = 6%, FU = 11 % Cx group: PI = 27% FU = 16%
Perez-Blasco (2013)	MBSR, MBCT & Mindful Self-Compassion (Neff, 2011) adapted for breastfeeding mothers.	No treatment	Group	8 weekly 2h sessions plus home practice	Tx group = 0% Cx = 38%
Coatsworth (2014)	Strengthening Families Programme (SFP) 10–14) plus mindfulness training based on model of mindful parenting (Duncan et al., 2009a).	1. Standard Strengthening Families programme (SFP, 10-14). 2. Control group: information only home study.	Multi-family group	7 weekly 2h sessions plus home practice	All groups: PI = 13%, FU = 21% MSFP: PI = 10%, FU = 19% SFP: FU = 13%, PI = 18% Control: PI = 15%, FU = 28%

Note: MBSR = Mindfulness-Based Stress Reduction; MBCT = Mindfulness-Based Cognitive Therapy; PI = post-intervention; FU = follow-up; Tx = treatment group Cx = control group.

Table 3
Scores for included papers on the Standard Quality Assessment Criteria for Primary Research (Kmet et al., 2008)

Study → Criterion ↓	**Beer (2013)**	**Galhardo (2011)**	**Neff (2014)**	**Gouveia (2016)**	**Moriera (2014)**	**Raque-Bogdan (2015)**	**Psychogiou (2016)**	**Bazzano (2013)**	**Mann (2016)**	**Perez-Blasco (2013)**	**Coatsworth (2014)**
1. Aims	2	2	2	2	2	2	1	2	2	2	2
2. Design	2	2	2	2	2	2	1	2	2	2	2
3. Recruitment & selection	2	1	1	2	2	1	1	1	2	1	2
4. Sample description	2	1	2	2	2	2	1	2	2	2	2
5. Randomisation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	1	1
6. Blinding of researchers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	0	0
7. Blinding of participants	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8. Measures	2	2	2	2	2	2	2	2	2	2	1
9. Number	N/A	2	N/A	2	2	2	1	2	1	0	2
10. Analysis	1	1	1	1	1	1	2	2	2	2	2
11. Variance	1	1	1	2	2	1	1	1	2	2	1
12. Confounders	N/A	N/A	N/A	N/A	N/A	2	1	2	2	2	2
13. Results	2	2	2	2	2	2	2	2	2	2	2
14. Conclusions	2	2	1	2	1	1	1	1	2	2	2
Summary Score	16/18 = **0.89**	16/21 = **0.76**	14/18 = **0.77**	19/20 = **0.95**	18/20 = **0.90**	18/22 = **0.81**	14/22 = **0.63**	19/22 = **0.86**	25/26 = **0.96**	20/26 = **0.77**	20/26 = **0.77**

The uncontrolled trial (Bazzano et al., 2013) used tests of difference to compare pre-intervention and post-intervention scores on well-being measures, with self-compassion included as an outcome measure. Similarly, the three RCTs tested for differences in well-being between intervention and control groups and included self-compassion as an outcome (Coatsworth et al., 2014; Mann et al., 2016; Perez-Blasco et al., 2013). None of the intervention trials assessed self-compassion as a predictor or mediator of changes in well-being. In the absence of these analyses, conclusions regarding the causal role of self-compassion, as it represents just one of a number of variables that may be altered by the intervention.

In addition to quantitative analyses, one study (Beer et al., 2013) used a thematic approach to qualitatively analyse written responses from their intervention group about when and how they employed practices they had learned. Two studies (Bazzano et al., 2016, Mann et al., 2016) summarised qualitative feedback from participants without formal analysis.

3.1.4 Sample characteristics

Table 1 summarises the available sample characteristics for both parents and children in the included studies. A total of N=1961 parents contributed data on self-compassion and well-being across the 11 studies; n = 1274 were female, n = 621 were male, for n = 66 gender was not specified. Sample sizes varied from 26 individuals (Perez-Blasco et al., 2013) to 432 families (including 1 mother and 1 child as minimum per family; Coatsworth et al., 2016). The research was primarily conducted with participants from developed, Western societies. Most authors described an under-representation of BME and low-income families, with the exception of Bazzano et al. (2016), whose sample was majority Hispanic in origin and appeared to represent the local community well. Parent samples were almost exclusively heterosexual.

Several of the included papers sought to explore self-compassion and well-being in specific groups of parents, for example, those with a history of depression (Mann et al., 2016; Psychogiou et al., 2016) or those facing infertility (Raque-Bogdan & Hoffman, 2015).

Children ranged in age from the first year of life (Perez-Blasco et al., 2013) up to 20 years (Beer et al., 2013). Three papers studied parents of children with developmental disabilities (Autism Spectrum Disorder; Bazzano et al., 2013; Beer et al., 2013; Neff & Faso, 2014).

3.1.6 Methodological quality

All included studies were assessed against the 14 quality criteria proposed by Kmet et al. (2004) and an overall quality rating was derived (possible range 0–1, with 1 being a perfect score). Table 3 shows the scores for each study. Within the constraints of the designs, studies were generally of a high quality, scoring above the most stringent cut-off proposed by Kmet et al. (2004) of 0.75. However, the correlational design of most the studies cannot be overlooked in terms of the limits this imposes in terms of drawing causal conclusions. Moreover, there was some variation, with summary scores ranging from 0.63 (Psychogiou et al., 2016) to 0.96 (Mann, 2016). Limitations are discussed in relation to the review questions in the sections that follow.

3.2 Evidence of associations between self-compassion and parental well-being

3.2.1 Correlations

The six cross-sectional studies (Beer et al., 2013; Galhardo et al., 2011; Gouveia et al., 2016; Moreira et al., 2014; Neff & Faso, 2014; Raque-Bogdan & Hoffman, 2015) and the longitudinal study (Psychogiou et al., 2016) reported simple linear correlations between self-compassion and

at least one well-being variable. Without exception, higher levels of self-compassion were significantly positively associated with positive aspects of psychological well-being (such as satisfaction with life and subjective well-being) and significantly negatively associated with indicators of poor psychological health, including symptoms of depression, anxiety and stress. These associations held irrespective of variations in child and parent sample characteristics. For example, Neff and Faso (2014) found a medium to strong negative association between self-compassion and parenting stress in parents of primary age children with ASD in the US, and, similarly, Moreira et al. (2014) found a strong negative correlation between these variables in parents of typically developing adolescents in Portugal. Furthermore, Psychogiou et al. (2016) reported a moderate to strong negative association between self-compassion and depression symptoms when these were measured 16 months later. This was the case for both mothers and fathers.

This convergence of findings from correlational analyses offers good preliminary evidence of an association between self-compassion and well-being in parents. However, sample sizes were relatively small in some cases (e.g. Beer et al., 2013) and there was some variation in methodological quality across these studies. Common issues included a failure to address the issue of multiple comparisons. While there is debate in the literature regarding whether and when it is appropriate to use a corrected alpha (as multiple comparisons increase the risk of Type I error; Streiner & Norman, 2011), this issue should be considered, and yet only one study (Psychogiou et al., 2016) out of the seven that reported multiple bivariate comparisons did so. Statistical significance may not therefore be a very reliable indicator of true associations in these studies and effect sizes may offer a better guide.

In order to obtain a more precise estimate of effect size for the association between self-compassion and well-being, a meta-analysis was conducted. Extracted data are presented in Table 4 and results are shown in Figure 2. Non-significant tests of homogeneity (*depression* χ^2 (4)

= 3.39, p = .495; *anxiety* χ^2 (1) = 0.49, p = .486; s*tress* χ^2 (4) = 4.93, p = .294; *positive psychological well-being* χ^2 (1) = 1.95, p = .163) suggested that, statistically, heterogeneity was low, despite variation in the measures. This offers some reassurance that the measures for each aspect appear to assess reasonably unitary constructs.

According to Cohen's (1992) descriptive categories for Pearson's *r*, the meta-analytic estimates presented in Figure 2 suggest that both *depression* and *stress* are strongly negatively correlated with self-compassion in the parent samples studied. Probability values for these estimates were less than .001 and confidence intervals excluded zero, suggesting these associations are highly unlikely to be due to chance. Rosenthal's (1979) fail-safe N was 256 for the *depression* analysis and 366 for the *stress* analysis. As these both exceed 35 (5 x 5 + 10; the number of included studies was five for both analyses), both these meta-analyses can be considered stable (Tang et al., 2007).

The meta-analytic estimate for *positive psychological well-being* suggested a moderate to strong positive correlation with self-compassion. *Anxiety* was estimated to be weakly negatively correlated with self-compassion. This was a significantly weaker relationship than the ones between self-compassion and *stress* and *depression* (based on non-overlapping confidence intervals for the estimates; Knezevic, 2008). While confidence intervals and *p*-values suggest the meta-analytic findings for *positive psychological well-being* and *anxiety* were significant, it should be noted that only two studies contributed to each of these estimates. Moreover, the fail-safe N was 5 for *anxiety* and 17 for *positive psychological well-being*, which are both below 20 (5 x 2 + 10; the number of included studies was two for both analyses), meaning these meta-analyses cannot be considered stable (Tang et al., 2007) in terms of risk of publication bias.

A further important limitation of these findings arises from a methodological issue common to all the correlational studies included in this review. This is that the variables of interest were assessed using self-report questionnaires only, which may have introduced shared method

variance that can artificially inflate the magnitude of the associations observed (Podsakoff, MacKenzie, Lee & Podsakoff, 2003).

3.2.2 Multivariate models

Four of the included studies (Gouveia et al, 2016, Moreira et al., 2014, Neff & Faso, 2014; Raque-Bogdan & Hoffman, 2015) used multivariate analyses (regressions or statistical modelling techniques), enabling them to control for or compare the relative effects of other variables. Socio-demographic factors, which have been associated with self-compassion or well-being, controlled for in these studies included parent age and gender (Neff & Faso, 2014), parental education and number of children (Gouevia, 2016), marital status (Moreira, 2014) and relationship length (Raque-Bogden & Hoffman, 2015).

Using these multivariate methods, self-compassion continued to emerge as a significant predictor of parental well-being in all studies and was consistently among the strongest predictor variables of those included. For example, Gouevia et al. (2016) present evidence that self-compassion was a stronger predictor of parenting stress than mindfulness, though both explained significant variance. Moreira et al. (2014) demonstrated that self-compassion was a stronger predictor of parenting stress than maternal insecure attachment styles. Neff and Faso (2014) found that self-compassion predicted variance in parents' well-being over and above that predicted by their child's autism symptom severity, and was a stronger predictor of distress and depression. Raque-Bogden and Hoffman (2015) found that self-compassion was a significant mediator in the relationship between social concern about infertility and well-being in parents. They tested the reverse causal model (i.e. they assessed whether self-compassion predicted variation in social concern, which in turn is what predicted variation well-being) and this was not significant, increasing confidence in the findings.

These findings, using more complex multivariate models, provide more robust evidence of an association between self-compassion and well-being in parents than simple correlations alone. However, it is always possible that there are extraneous variables that have not been measured that may account for the observed relationships. Furthermore, the issue of shared method variance continues to threaten the validity of these analyses.

3.2.3 Intervention studies

The findings of the four intervention studies (Bazzano et al., 2013; Coatsworth, 2014; Mann et al., 2016; Perez-Blasco et al., 2013; see Table 2 for summary of interventions) can only offer weak evidence regarding the association between self-compassion and psychological well-being in parents on account of the analyses performed. None of the intervention studies directly analysed the association between self-compassion and measures of well-being, nor did any assess self-compassion as a mediator or moderator of changes in parental well-being. However, following intervention all four intervention studies reported coinciding improvements in self-compassion and in scores on at least some parental well-being measures (though in the studies by Coatsworth et al., 2014, and Mann et al., 2016, these were not observed until the follow-up time point). Moreover, where no increases in self-compassion were reported, no improvements in well-being were reported either (for example, in the sample of mothers studied in Coatsworth et al., 2014). An exception to this was that Perez-Blasco et al. (2013) reported a significant increase in self-compassion in their treatment group compared to controls following intervention, but no significant differences between groups on measures of depression, satisfaction with life or subjective happiness. However, this study found large effect sizes for these comparisons, leading the authors to suggest that small sample sizes may have meant the study was underpowered to detect significant changes in these variables.

Figure 2
Graphical stem-and-leaf plots showing frequency of studies reporting each effect size for correlations between self-compassion and that aspect of well-being with meta-analytic estimates

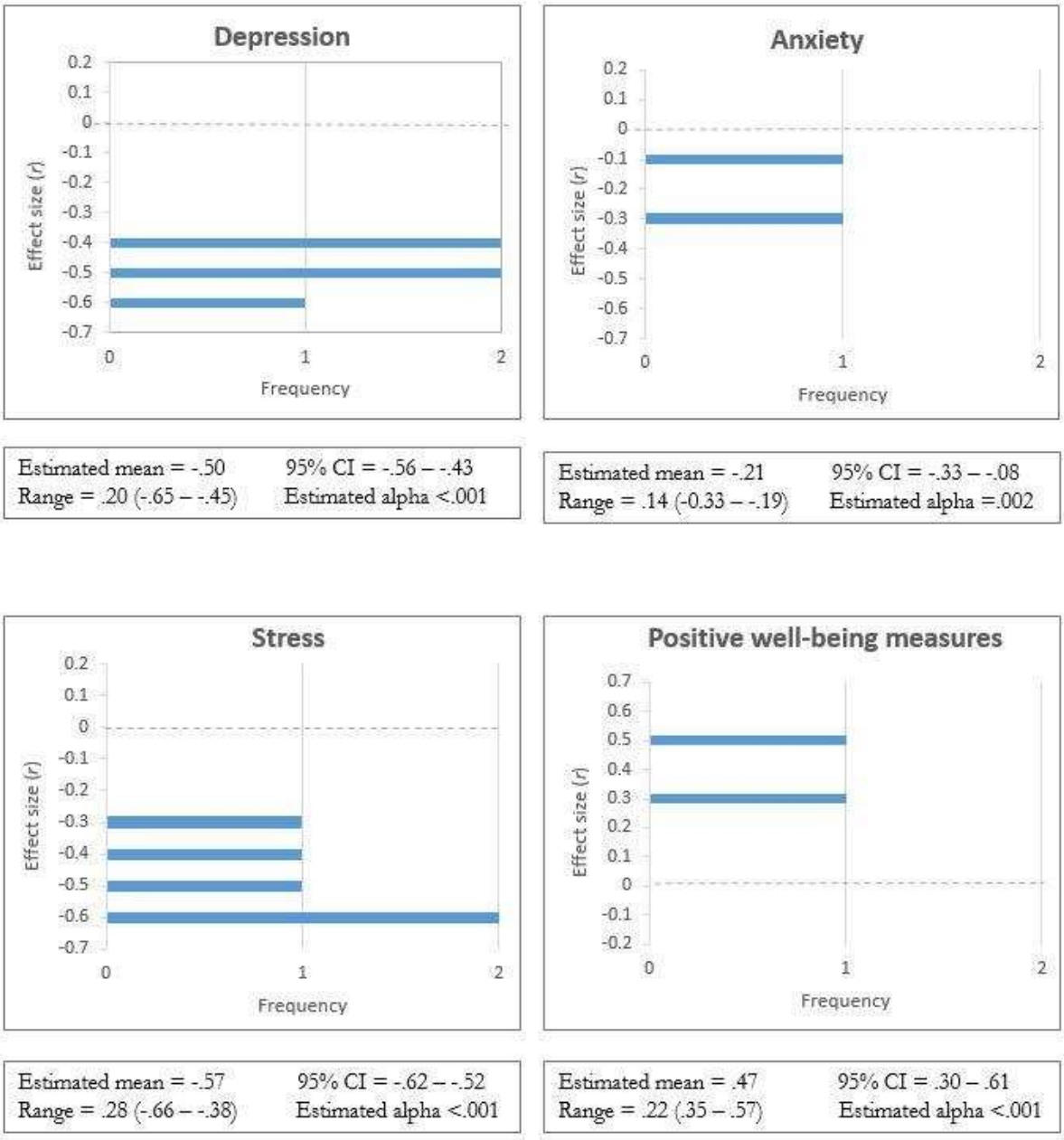


Table 4
Measures, Ns and effect sizes (Pearson's r) used to calculate fixed effects model of estimated population means for each aspect of well-being in parents

	Depression			**Anxiety**			**Stress**			**Positive psychological well-being**		
Study / sample	**Measure**	***N***	***r***	**Measure**	***N***	***r***	**Measure**	***N***	***r***	**Measure**	***N***	***r***
Psychogiou (2016) mothers	PHQ-9	120	-.50	-	-	-	-	-	-	-	-	-
Psychogiou (2016) fathers	PHQ-9	133	-.45	-	-	-	-	-	-	-	-	-
Neff (2014)	CES-D	51	-.65	-	-	-	PSI-SF – distress	51	-.66	SWLS	51	.35
Beer (2013)	HADS depression	27	-.55	HADS anxiety	27	-.33	QRS-F – Family Problems[a]	28	-.38	-	-	-
Galherado (2011)	BDI	200	-.47	STAI	200	-.19	-	-	-	-	-	-
Gouveia (2016)	-	-	-	-	-	-	PSI-SF	333	-.57	-	-	-
Raque-Bogdan (2015)	-	-	-	-	-	-	FPI	53	-.43	Subjective well-being Score[b]	53	.57
Moreira (2014)	-	-	-	-	-	-	PSI-SF – distress	171	-.61	-	-	-
Total		531			227			636			104	

[a]5/20 items deemed to measure depression were omitted from the Parent and Family Problems subscale

[b]Subjective well-being scores were calculated by adding the total score from the SWLS and adding this to the Positive Affect score from the PANAS and subtracting the Negative Affect score from the PANAS.

3.2.4 Summary

Taken together, this body of cross-sectional, longitudinal and intervention research offers substantial evidence of an association between self-compassion and well-being in parents. Associations were consistently observed across different methodologies, with very few exceptions, and were supported by the meta-analysis. Some methodological limitations warrant caution in interpreting the findings, however. As highlighted, self-reports from single participants raise concerns regarding shared method variance and risk of inflated correlations. Another common methodological issue was the use of recruitment strategies that introduced risk of bias. For example, several studies recruited only through support groups (Bazzano et al., 2013; Perez-Blasco et al., 2013; Psychogiou et al., 2016). Those parents who already access support may differ systematically from those who do not (Perez-Blasco et al., 2013). Other studies used clinician-referred samples but response rates were low (e.g. Beer et al., 2013). Finally, the sample of parents assessed were in some respects homogenous, which limits the extent to which findings can be generalised to all parents. In particular, gay and lesbian parents were not represented and far fewer fathers were studied than mothers.

3.3 Strength of evidence of a causal relationship

Establishing causality in the social sciences is a challenge given the complexity of the intra- and inter-personal and societal factors affecting human behaviour and experience. However, some forms of evidence are considered stronger than others. The Bradford-Hill criteria (Hill, 1965) offer guidelines regarding strength of evidence for causality and these were referred to in considering this second review question.

3.3.1 Cross-sectional associations

Cross-sectional associations generally offer weak evidence for causality (Hill, 1965), so the contemporaneous simple correlations reported in Beer et al. (2013), Galhardo et al. (2011), Gouveia et al. (2016), Moreira et al. (2014), Neff and Faso (2014) and Raque-Bogdan and Hoffman (2015) offer poor evidence of a causal link between self-compassion and well-being in parents. The fact that depression and stress were both strongly and consistently associated with self-compassion across a number of studies (a finding supported by the meta-analyses) somewhat strengthens the evidence of a causal link in these cases (Hill, 1965). However, alternative explanations abound. For example, both self-compassion and the absence of stress and depression may be caused by other variables. For this reason, the multivariate analyses conducted by Gouveia et al. (2016), Moreira et al. (2014), Neff and Faso (2014) and Raque-Bogdan and Hoffman (2015) offer slightly stronger evidence of causality than the simple bivariate correlations. While other extraneous variables may still account for the relationships observed (meaning causality still cannot be inferred with any certainty), some of the plausible potential confounding variables have been ruled out in these studies (outlined in section 3.2.2 above). Nonetheless, the lack of temporal precedence of the proposed cause to the proposed effect in these cross-sectional designs limits the extent to which they can be taken as providing evidence of causality (Hill 1965).

3.3.2 Longitudinal associations

Psychogiou et al. (2016) found that self-compassion at initial assessment was negatively associated with scores on a measure of depression administered 16 months later in relatively large samples of mothers (N=98) and fathers (N=106). Effect sizes for these longitudinal associations were moderate for both groups. This offers stronger evidence than the cross-sectional studies of a causal relationship because the proposed cause (self-compassion) temporally preceded the proposed effect (depression; Hill, 1965). However, these simple

correlations did not account for depression scores at initial assessment or any other potential confounds. Furthermore, as the authors note, this was a correlational study and, without manipulating self-compassion in an intervention study, causal inferences are not fully warranted (Hill, 1965). It should also be noted that this study received a low overall quality rating. Issues mainly arose due to deficiencies in the write-up making it difficult to be confident about the methodological quality. Recruitment was also an issue, in that mothers were recruited via fathers, and it is possible that this introduced bias. As the authors recognised, the findings may therefore not be representative of the wider population of mothers.

3.3.3 Intervention studies

Intervention studies typically offer the strongest level of evidence of causal relationships (Hill, 1965). The four included intervention studies consistently found that, for groups and time points where self-compassion significantly increased, scores on at least some measures of well-being also significantly increased. However, as discussed, these studies included a measure of self-compassion as a dependant variable and did not assess this as a potential mediator. Three of the interventions targeted mindfulness only (or mindful parenting; Bazzano et al., 2013, Coatsworth et al., 2014; Mann et al., 2016). Mindfulness and self-compassion are overlapping but distinct constructs; definitions of mindfulness include (but are not limited to) a compassionate attitude to the self (Kabat-Zinn, 1990) just as definitions of self-compassion include (but are not limited to) taking a mindful stance towards one's thoughts and feelings (Gilbert, 2010; Neff, 2003a). Therefore, if an effective intervention targets mindfulness, it may be aspects of mindfulness *other* than the self-compassion aspect that lead to changes on outcomes, even if self-compassion is also found to change. Given this, the findings of Bazzano et al. (2013), Mann et al. (2016) and Coatsworth et al. (2014) can only be said to be consistent with the possibility that changes in self-compassion caused changes in well-being, but in the absence of mediation analyses, the empirical support for this is limited.

The study reported by Perez-Blasco et al. (2013) employed an intervention for breast-feeding mothers that was described as targeting both mindfulness and self-compassion. Therefore, this study offers somewhat more powerful evidence that self-compassion may have played a causal role in the significant post-intervention improvements in self-efficacy, stress and anxiety. However, this evidence is by no means conclusive as, again, self-compassion may not have been a mechanism of change, even if this was among the explicit aims of the intervention. Furthermore, the small sample size in this study (n=13 in each group, with 38% attrition among controls) represents a serious methodological weakness. A further quality concern in this study, as well as in the Coatsworoth et al. (2014) study, was the failure to report the method of randomisation, which leaves open the possibility of allocation bias.

While offering only limited evidence in relation to the proposed causal links between self-compassion and psychological well-being in parents, the findings from the four intervention studies do offer evidence that self-compassion is a modifiable trait in parents. This appears to be the case following relatively low-intensity group interventions and even where there was little focus on self-compassion *per se*.

4. Discussion

4.1 Overview

Research into self-compassion in the context of parenthood is a nascent area of study, not previously reviewed. This review of empirical literature, based on a systematic search, found strong evidence of an association between self-compassion and psychological well-being in parents, reflecting findings from the wider literature (e.g. MacBeth and Gumley, 2012, for a review). The inclusion of a meta-analysis allows for increased confidence in this association and a

more precise estimate of effect sizes across multiple studies. Pooled effect sizes varied between strong, for the association of self-compassion with depression and stress, and weak, for the association with anxiety in parents. However, only two studies contributed to each of these latter two estimates and risk of publication bias could not be ruled out.

Regarding the second review question, evidence of causality in the relationship between self-compassion and well-being in parents was found to be limited in the current literature base. Most studies were cross-sectional, meaning that, by reason of design, evidence of causality was weak (Hill, 1965). The findings from four intervention studies also offered only limited evidence of a causal relationship as they did not analyse self-compassion as a possible mediator of changes in well-being and, for the most part, did not target self-compassion directly in the intervention. The strongest evidence of a causal relationship came from a longitudinal study that linked self-compassion to lower levels of depression 16 months later in mothers and fathers of typically developing 2–5 year olds. However, this finding requires replication, preferably in multivariate studies controlling for potential confounds.

Notwithstanding the limitations of the included studies in relation to the question of causality in parents, emerging evidence regarding the efficacy of compassion-based interventions in the wider adult population (Barnard & Curry, 2011; Kirby, 2016a; Leaviss & Uttley, 2014) has begun to provide support for theories emphasising the role of self-compassion in psychological well-being more generally (e.g. Gilbert, 2010; Neff, 2003a). Bringing this together with the substantial evidence from the current review of an association in parents does to some extent strengthen support for the causal hypotheses regarding self-compassion in parenthood put forward by Bogels et al. (2010), Cree (2010), Felder et al. (2016), Neff (2011), Moreira et al. (2014) and others.

4.2 Specific findings

The review found evidence of an association of self-compassion and well-being across a range of parenting contexts. Children in the samples ranged from infancy to late adolescence and included typically developing children and those with disabilities. Absence of statistical heterogeneity in the meta-analyses suggests that these factors are unlikely to moderate the associations found. The findings were also consistent with specific theoretical conjectures, for example, that self-compassion may be of benefit to parents during the perinatal period (Cree, 2010, 2016; Felder et al., 2016), where parents are experiencing mental health problems (Bogels et al., 2010) or in the context of caring for a child with a disability (Bogels et al., 2010; Neff & Faso, 2014). However, this support comes from a small number of studies and, as emphasised, causal claims remain largely unsupported.

The findings in relation to associations between self-compassion and specific aspects of well-being merit some consideration. The meta-analytic estimates suggest that self-compassion is strongly negatively associated with stress and depression in parents, but has a significantly weaker relationship with anxiety symptoms in parent samples. This is in contrast with findings from other adult populations, where no evidence of differential relationships between self-compassion and different aspects of well-being has been found (Bernard & Curry, 2011; MacBeth & Gumley, 2012). As these reviewers note, undergraduate student populations were over-represented in included studies. Whilst students' anxieties are likely to focus on personal performance (see e.g. Neff, Hsieh & Dejitterat, 2005), parents' anxieties may focus more on factors where personal control is limited, such as their children's physical well-being and future (Fisak, Holderfield, Douglas-Osborn, & Cartwright-Hatton, 2012). So whereas in other adult populations self-compassion may help to reduce anxiety about potential personal failures (for example, by seeing failures as part of the human experience rather than shameful and isolating), for parents, self-to-self-relating may have less impact on anxiety because of the less personal content of their

worries. However, this suggestion is highly speculative as the meta-analytic findings for anxiety were based on just two studies and were not considered stable.

4.3 Limitations

The findings of this review are based on a fairly small number of papers and should be interpreted with some caution. The included studies were generally of a high methodological quality, although several common shortcomings were highlighted by the quality appraisal. The potential risk of bias introduced by relying on parent support groups and self-referrals to recruit participants should not be overlooked. Furthermore, the studies reviewed relied entirely on subjective self-report measures, which can lead to shared method variance (Podsakoff et al., 2003) and therefore reduce the validity of findings.

Potential issues with generalisability of findings should also be highlighted. Whilst the included papers studied parents from a range of countries, these were generally relatively affluent, Western societies, and samples tended to be well-educated and low in ethnic and cultural diversity. Neff et al. (2008) found that levels of self-compassion vary significantly across different cultures. In addition, only six parents across all included studies identified as non-heterosexual. The experiences of non-heterosexual parents seem likely to be different from those of parents raising children in heterosexual families, not least because these parents are likely to encounter significant stigma and discrimination (van Dam, 2004; Goldberg & Smith, 2011). Fathers were also under-represented in the included studies, which is a common issue in parent-focused research (Phares, Lopez, Fields, Kamboukos, & Duhig, 2005). A recent meta-analysis found evidence of gender differences in self-compassion, with women tending to report somewhat lower levels than men (Yarnell, Stafford, Neff, Reilly, Knox, & Mullarkey (2015). Whether this has any implication for associations with well-being in parents is unclear; in the included studies,

Psychogiou and colleagues (2016) found similar patterns of findings for mothers and fathers, whereas Coatsworth et al. (2015) found some differences. However, it can be said that, overall, the somewhat homogenous and predominantly female samples in the reviewed literature limit the generalisability of findings to some extent.

Risk of publication bias was assessed for those studies included in the meta-analysis only. This was found to be low for studies examining the association of depression and stress with self-compassion in parents. However, fewer studies explored associations with positive psychological well-being and anxiety and there was evidence of significant risk that these meta-analytic results were affected by publication bias. Larger meta-analytic reviews have not found evidence of a publication bias in the self-compassion literature, however (MacBeth & Gumley, 2012).

5. Implications for Future Research and Practice

5.1 Research implications

Whilst direct empirical support for causal claims was found to be lacking, the findings of the review suggest that self-compassion has potential as a target for psychological interventions with parents. RCTs where self-compassion is the primary target of a parent-focused intervention and is assessed as a mediator of change would not only be the most robust way to explore this promising avenue, but would also help to determine whether self-compassion is causally linked to parental psychological well-being. Based on this review, it may be valuable for such trials to explore whether anxiety appears to be less responsive to compassion-based interventions compared to other aspects of well-being. If so, recommendations should be tailored accordingly

or modifications considered. Multivariate longitudinal studies with parent samples would also be of value to assess the association of self-compassion and well-being over time whilst controlling for the potential impact of other variables.

Use of qualitative data was minimal in the reviewed literature. Qualitative research will be important in future studies to inform our understanding of the mechanisms and moderators of change in compassion-based interventions for parents, if these prove effective. It would also be valuable to investigate what individual changes in self-compassion and well-being scores reflect in such studies. Some researchers have noted anecdotal reports that, following mindfulness or self-compassion interventions, some participants' scores may decrease as they become more able to notice or admit difficulties in these respects (Coatsworth et al., 2015; Cree, 2015, personal communication).

In order to address the main methodological limitations highlighted by this review, future studies in this area should seek to recruit more diverse parent samples, in particular in terms of cultural background, sexuality and gender (i.e. more fathers), to improve generalisability. Attention should also be paid to recruitment methods, seeking to avoid pure self-referral methods where possible. While researchers understandably wish to gain as much knowledge as possible from their data sets, more attention to the risks posed by multiple comparisons is needed. Parsimony or controls in the analysis are recommended to guard against Type I error in this field of research, particularly in more exploratory studies.

Future studies should give further consideration to data collection methods, and the introduction of clinician-rated or observational measures to complement self-report measures is recommended where possible. Recent work by Sbarra et al. (2012) suggests that systematic observer ratings of self-compassion in speech samples hold promise as a reliable measure.

5.2 Practice implications

Practitioners working with parents should be aware of the association between self-compassion and well-being in this group. Those working clinically with parents may wish to explore (using existing self-report measures or general discussion) whether lack of self-compassion appears to be a factor in their clients' presentation and potentially use this to guide the focus of existing evidence-based interventions (for example, addressing self-critical thinking using techniques from other therapies). More research is needed before expressly compassion-based interventions can be considered evidence-based for parents, although evidence is emerging for adults more generally and use in parents is not contradicted by the findings of this review.

Compassion-based interventions have emerged from transdiagnostic frameworks for understanding human distress and flourishing (Gilbert, 2009; Neff, 2003) and there is evidence from some of the studies included in this review that self-compassion is modifiable in parents via fairly low-intensity interventions. For these reasons, if future studies find more robust evidence of the proposed links between self-compassion and well-being in parents, compassion-based approaches appear to have potential for widespread application in this group. For example, compassion-based thinking and exercises could be incorporated into parenting classes, parent support groups or health visitor-led support. However, substantial further research would be required for this to be warranted.

6. Conclusions

This is the first review of empirical literature regarding self-compassion and well-being in parenthood. Based on the 11 studies that met inclusion criteria, the review found substantial evidence of an association between self-compassion and well-being in parents, in line with

findings for other adult groups. However, evidence of causality in this association was weak, and further longitudinal and experimental study, including RCTs of compassion-based interventions for parents, is required. Within the constraints of the study designs, which were for the most part limited to correlational studies, the methodological quality of the empirical research in this field was relatively high. However, more diverse samples are needed to improve generalisability and less reliance on self-report measures is recommended.

References

Abidin, R. R. (1990). *Parenting stress index-short form.* Charlottesville, VA: Pediatric Psychology Press.

Allen, A. B., Goldwasser, E. R., & Leary, M. R. (2012). Self-compassion and well-being among older adults. *Self and Identity, 11*(4), 428-453. Doi: 10.1080/15298868.2011.595082

Allen, A. B., & Leary, M. R. (2010). Self-Compassion, stress, and coping. *Social and Personality Psychology Compass, 4*(2), 107-118. Doi: 10.1111/j.1751-9004.2009.00246.x

Ashford, M. T., Olander, E. K., & Ayers, S. (2016). Computer-or web-based interventions for perinatal mental health: A systematic review. *Journal of Affective Disorders, 197*, 134-146. Doi: 10.1016/j.jad.2016.02.057

Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., . . . Williams, J. M. G. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. *Assessment, 15*(3), 329-342. Doi: 10.1177/1073191107313003

Barnard, L. K., & Curry, J. F. (2011). Self-compassion: Conceptualizations, correlates, & interventions. Review of General Psychology, 15(4), 289. Doi: 10.1037/a0025754

Allen, A. B., Goldwasser, E. R., & Leary, M. R. (2012). Self-compassion and well-being among older adults. *Self and Identity, 11*(4), 428-453. Doi: 10.1080/15298868.2011.595082

Bazzano, A., Wolfe, C., Zylowska, L., Wang, S., Schuster, E., Barrett, C., & Lehrer, D. (2015). Mindfulness based stress reduction (MBSR) for parents and caregivers of individuals with developmental disabilities: A community-based approach. *Journal of Child and Family Studies, 24*(2), 298-308. Doi: 10.1007/s10826-013-9836-9

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). Beck depression inventory-II. *San Antonio, 78*(2), 490-498.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & ERBAUGH, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*(6), 561-571.

Beer, M., Ward, L., & Moar, K. (2013). The relationship between mindful parenting and distress in parents of children with an autism spectrum disorder. *Mindfulness, 4*(2), 102-112.

Bennett, S. S., & Indman, P. (2003). *Beyond the blues: A guide to understanding and treating prenatal and postpartum depression.* CA: Mood Swings Press.

Berry, J. O., & Jones, W. H. (1995). The parental stress scale: Initial psychometric evidence. *Journal of Social and Personal Relationships, 12*(3), 463-472. Doi: 10.1177/0265407595123009

Bögels, S. M., Lehtonen, A., & Restifo, K. (2010). Mindful parenting in mental health care. *Mindfulness, 1*(2), 107-120. Doi: 0.1007/s12671-010-0014-5

Breines, J. G., & Chen, S. (2012). Self-compassion increases self-improvement motivation. *Personality and Social Psychology Bulletin, 38*(9), 1133-1143. Doi: 10.1177/0146167212445599

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822. Doi: 10.1037/0022-3514.84.4.822

Cappe, E., Wolff, M., Bobet, R., & Adrien, J. (2011). Quality of life: A key variable to consider in the evaluation of adjustment in parents of children with autism spectrum disorders and in the development of relevant support and assistance programmes. Quality of Life Research, 20(8), 1279-1294. Doi: 10.1007/s11136-011-9861-3

Castilho, P., & Gouveia, J. P. (2011). Auto-compaixão: Estudo da validação da versão portuguesa da escala da auto-compaixão e da sua relação com as experiências adversas na infância, a comparação social e a psicopatologia. *Psychologica,* (54), 203-230.

Coatsworth, J. D., Duncan, L. G., Nix, R. L., Greenberg, M. T., Gayles, J. G., Bamberger, K. T., ... & Demi, M. A. (2015). Integrating mindfulness with parent training: Effects of the mindfulness-enhanced strengthening families program. *Developmental psychology*, *51*, 26-35. Doi: 10.1037/a0038212

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155. Doi: 10.1037/0033-2909.112.1.155

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior,* , 385-396. Doi: 10.2307/2136404

Condon, J. T., Boyce, P., & Corkindale, C. J. (2004). The first-time fathers study: A prospective study of the mental health and wellbeing of men during the transition to parenthood. *Australian and New Zealand Journal of Psychiatry, 38*(1-2), 56-64.

Cornish, A. M., McMahon, C. A., Ungerer, J. A., Barnett, B., Kowalenko, N., & Tennant, C. (2005). Postnatal depression and infant cognitive and motor development in the second postnatal year: The impact of depression chronicity and infant gender. *Infant Behavior and Development, 28*(4), 407-417. Doi: 10.1016/j.infbeh.2005.03.004

Corno, G., Molinari, G., Espinoza, M., Herrero, R., Etchemendy, E., Carrillo Vega, A., & Banos, R. M. (2016). An innovative online positive psychology training addressed to pregnant youth. *Pervasive Computing Paradigms for Mental Health (Mindcare 2015), 604*, 240-246. doi:10.1007/978-3-319-32270-4_24

Cree, M. (2010). Compassion focused therapy with perinatal and mother-infant distress. *International Journal of Cognitive Therapy, 3*, 159-171. Doi:10.1521/ijct.2010.3.2.159

Cree, M. (2015). *Postnatal depression: Using compassion focused therapy to enhance mood, confidence and bonding*. London: Robinson.

Daniel, F. (1996). Teoria e prática psicométrica: Contribuição para a validação do STAI–Y de spielberger em estudantes do ensino superior. (Unpublished doctoral dissertation, Badajoz: Universidade da Extremadura).

de Bruin, E. I., Zijlstra, B. J. H., Geurtzen, N., van Zundert, Rinka M. P, van de WeijerBergsma, E., Hartman, E. E., . . . Bogels, S. M. (2014). Mindful parenting assessed further: Psychometric properties of the Dutch version of the interpersonal mindfulness in parenting scale (IM-P). *Mindfulness, 5*(2), 200-212. Doi: 10.1007/s12671-012-0168-4

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75. Doi: 10.1207/s15327752jpa4901_13

Duncan, L. G. (2007). *Assessment of Mindful Parenting among Parents of Early Adolescents: Development and Validation of the Interpersonal Mindfulness in Parenting Scale.* (Unpublished doctoral dissertation, The Pennsylvania State University).

Duncan, L. G., Coatsworth, J. D., & Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clinical Child and Family Psychology Review, 12*(3), 255-270. Doi: 10.1007/s10567-009-0046-3

Farkas-Klein, C. (2008). Parental evaluation scale (EEP): Development, psychometric properties and applications. *Universitas Psychologica, 7*(2), 457-467.

Felder, J. N., Lemon, E., Shea, K., Kripke, K., & Dimidjian, S. (2016). Role of self-compassion in psychological well-being among perinatal women. *Archives of Women's Mental Health, 19*(4), Doi: 687-690. 10.1007/s00737-016-0628-2

Field, A. P., & Gillett, R. (2010). How to do a meta-analysis. *British Journal of Mathematical and Statistical Psychology, 63*(3), 665-694. Doi: 10.1348/000711010X502733

Field, T. (2010). Postpartum depression effects on early interactions, parenting, and safety practices: A review. *Infant Behavior and Development, 33*, 1-6. Doi: 10.1016/j.infbeh.2009.10.005

Fisak, B., Holderfield, K. G., Douglas-Osborn, E., & Cartwright-Hatton, S. (2012). What do parents worry about? Examination of the construct of parent worry and the relation to parent and child anxiety. *Behavioural and Cognitive Psychotherapy, 40*(05), 542-557. Doi: 10.1017/S1352465812000410

Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships—Relationship structures questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment, 23*(3), 615-627. Doi: 10.1037/a0022898

Friedrich, W. N., Greenberg, M. T., & Crnic, K. (1983). A short-form of the questionnaire on resources and stress. *American Journal of Mental Deficiency*, 88(1), 41-48.

Galhardo, A., Pinto-Gouveia, J., Cunha, M., & Matos, M. (2011). The impact of shame and self-judgment on psychopathology in infertile patients. *Human Reproduction, 26*(9), 2408-2414. doi:10.1093/humrep/der209

Germer, C. K. (2009). *The mindful path to self-compassion: Freeing yourself from destructive thoughts and emotions*. CA:Guilford Press.

Gibaud-Wallston, J., & Wandersmann, L. P. (1978). *Development and utility of the parenting sense of competence scale.* USA: John F. Kennedy center for research on education and human development.

Gilbert, P. (2005). *Compassion: Conceptualisations, research and use in psychotherapy*. London: Routledge.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment, 15*(3), 199-208. Doi: 10.1192/apt.bp.107.005264

Gilbert, P. (2010). *The compassionate mind: A new approach to life's challenges*. London: Constable.

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy, 13*(6), 353-379. Doi: 10.1002/cpp.507

Gilliam, J. E. (1995). *Gilliam autism rating scale: Examiner's manual.* Pro-ed.

Glidden, L. M., & Floyd, F. J. (1997). Disaggregating parental depression and family stress in assessing families of children with developmental disabilities: A multisample analysis. *American Journal on Mental Retardation, 102*(3), 250-266. Doi: 10.1352/0895-8017

Goldberg, A. E., & Smith, J. Z. (2011). Stigma, social context, and mental health: Lesbian and gay couples across the transition to adoptive parenthood. *Journal of Counseling Psychology, 58*(1), 139. Doi: 10.1037/a0021684

Gregório, S., & Pinto-Gouveia, J. (2013). Mindful attention and awareness: Relationships with psychopathology and emotion regulation. *The Spanish Journal of Psychology, 16*, E79.

Hall, P. (2006). Mothers' experiences of postnatal depression: An interpretative phenomenological analysis. *Community Practitioner, 79*(8), 256-269.

Hall, P. L., & Wittkowski, A. (2006). An exploration of negative thoughts as a normal phenomenon after childbirth. *Journal of Midwifery & Women's Health, 51*(5), 321-330. Doi: 10.1016/j.jmwh.2006.03.007

Harwood, K., McLean, N., & Durkin, K. (2007). First-time mothers' expectations of parenthood: What happens when optimistic expectations are not matched by later experiences? *Developmental Psychology, 43*(1), 1-18. Doi: 10.1037/0012-1649.43.1.1

Hedges, L. V., & Vevea, J. L. (1998). Fixed-and random-effects models in meta-analysis. *Psychological Methods, 3*(4), 486-490.

Hill, A. B. (1965). The environment and disease: Association or causation? *Medicine, 58*(5): 295–300.

Hollis-Walker, L., & Colosimo, K. (2011). Mindfulness, self-compassion, and happiness in non-meditators: A theoretical and empirical examination. *Personality and Individual Differences, 50*(2), 222-227. Doi: 10.1016/j.paid.2010.09.033

Huppert, F. A. (2009). Psychological well-being: Evidence regarding its causes and consequences. *Applied Psychology: Health and Well-Being, 1*(2), 137-164. Doi: 10.1111/j.1758-0854.2009.01008.x

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., & Pbert, L. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *Am J Psychiatry, 149*(7), 936-943.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. NY: Delacorte Press.

Kemppainen, J., Johnson, M., Phillips, J., Sullivan, K., Corless, I., Reid, P., . . . Chen, W. (2013). A multinational study of self-compassion and human immunodeficiency virus-related anxiety. *International Nursing Review, 60*(4), 477-486.

Kirby, J. N. (2016a). The role of mindfulness and compassion in enhancing nurturing family environments. *Clinical Psychology: Science and Practice, 23*(2), 142-157. Doi: 10.1111/cpsp.12149

Kirby, J. N. (2016b). Compassion interventions: The programmes, the evidence, and implications for research and practice. *Psychology and Psychotherapy: Theory, Research and Practice, 2016*. Doi: 10.1111/papt.12104

Kirby, J. N., Tellegen, C. L., & Steindl, S. R. (2017). A meta-analysis of compassion-based interventions: current state of knowledge and future directions. *Behaviour Therapy* (in press).

Kmet, L. M., Lee, R. C., & Cook, L. S. (2004). *Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields*; *HTA Initiative# 13*. Edmonton: Alberta Heritage Foundation for Medical Research (AHFMR).

Knezevic, A. (2008). Overlapping Confidence Intervals and Statistical Significance. *StatNews, #73, Cornell Statistical Consulting Unit*. Retrieved from: https://www.cscu.cornell.edu/news/statnews/stnews73.pdf

Leary, M. R., Tate, E. B., Adams, C. E., Batts Allen, A., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92*(5), 887. Doi: 10.1037/0022-3514.92.5.887

Leaviss, J., & Uttley, L. (2015). Psychotherapeutic benefits of compassion-focused therapy: An early systematic review. *Psychological Medicine, 45*(05), 927-945. Doi: 10.1017/S0033291714002141

Leigh, B., & Milgrom, J. (2008). Risk factors for antenatal depression, postnatal depression and parenting stress. *BMC Psychiatry, 8*, 24. Doi: 10.1186/1471-244X-8-24

Li, J., Long, L., Liu, Y., He, W., & Li, M. (2016). Effects of a mindfulness-based intervention on fertility quality of life and pregnancy rates among women subjected to first in vitro fertilization treatment. *Behaviour Research and Therapy, 77*, 96-104. Doi: 10.1016/j.brat.2015.12.010

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., . . . Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Med, 6*(7), e1000100.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. *Behaviour Research and Therapy, 33*(3), 335-343.

Lyubomirsky, S., & Tucker, K. L. (1999). Implications of individual differences in subjective happiness for perceiving, interpreting, and thinking about life events. *Motivation and Emotion, 22*(2), 155-186.

MacBeth, A., & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review, 32*(6), 545-552. Doi: 10.1016/j.cpr.2012.06.003

Mann, J., Kuyken, W., O'Mahen, H., Ukoumunne, O. C., Evans, A., & Ford, T. (2016). Manual development and pilot randomised controlled trial of mindfulness-based cognitive therapy versus usual care for parents with a history of depression. *Mindfulness, 7,* 1024–1033. Doi: 10.1007/s12671-016-0543-7

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine, 151*(4), 264-269. Doi: 10.7326/0003-4819-151-4-200908180-00135

Moreira, H., & Canavarro, M. C. (2015). The Portuguese version of the Interpersonal Mindfulness in Parenting Scale: A study with mothers and fathers from the general community. Unpublished manuscript.

Moreira, H., Gouveia, M. J., Carona, C., Silva, N., & Canavarro, M. C. (2014). Maternal attachment and children's quality of life: The mediating role of self-compassion and parenting stress. *Journal of Child and Family Studies, 24*(8), 2332-2344. Doi: 10.1007/s10826-014-0036-z

Moreira, H., Martins, T., Gouveia, M. J., & Canavarro, M. C. (2015). Assessing adult attachment across different contexts: Validation of the Portuguese version of the experiences in close relationships–relationship structures questionnaire. *Journal of Personality Assessment, 97*(1), 22-30. Doi: 10.1080/00223891.2014.950377

Neff, K. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85-101. Doi: 10.1080/15298860309032

Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250. Doi:10.1080/15298860309027

Neff, K. (2011). *Self compassion.* UK: Hachette

Neff, K. D. (2016). The self-compassion scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness, 7*(1), 264-274. Doi: 10.1007/s12671-015-0479-3

Neff, K. D., & Beretvas, S. N. (2013). The role of self-compassion in romantic relationships. *Self and Identity, 12*(1), 78-98. Doi: 10.1080/15298868.2011.639548

Neff, K. D., & Faso, D. J. (2014). Self-compassion and well-being in parents of children with autism. *Mindfulness, 6*(4), 938-947. Doi: 10.1007/s12671-014-0359-2

Neff, K. D., Hsieh, Y., & Dejitterat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity, 4*(3), 263-287. Doi: 10.1080/13576500444000317

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41*, 139-154. Doi:10.1016/j.jrp.2006.03.004

Neff, K. D., Pisitsungkagarn, K., & Hsieh, Y. (2008). Self-compassion and self-construal in the United States, Thailand, and Taiwan. *Journal of Cross-Cultural Psychology, 39*(3), 267-285. Doi: 10.1177/0022022108314544

Newton, C. R., Sherrard, W., & Glavac, I. (1999). The fertility problem inventory: Measuring perceived infertility-related stress. *Fertility and Sterility, 72*(1), 54-62. Doi: 10.1016/S0015-0282(99)00164-8

O'Hara, M. W., & Swain, A. M. (1996). Rates and risk of postpartum depression—a meta-analysis. *International Review of Psychiatry, 8*, 37-54. Doi:10.3109/09540269609037816

Olsson, M. B., & Hwang, C. (2001). Depression in mothers and fathers of children with intellectual disability. *Journal of Intellectual Disability Research, 45*(6), 535-543. Doi: 10.1046/j.1365-2788.2001.00372.x

Perez-Blasco, J., Viguer, P., & Rodrigo, M. F. (2013). Effects of a mindfulness-based intervention on psychological distress, well-being, and maternal self-efficacy in breast-feeding mothers: Results of a pilot study. *Archives of Women's Mental Health, 16*(3), 227-236. Doi: 10.1007/s00737-013-0337-z

Phares, V., Lopez, E., Fields, S., Kamboukos, D., & Duhig, A. M. (2005). Are fathers involved in pediatric psychology research and treatment? *Journal of Pediatric Psychology, 30*(8), 631-643. Doi: jsi050 [pii]

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879. Doi: 10.1037/0021-9010.88.5.879

Psychogiou, L., Legge, K., Parry, E., Mann, J., Nath, S., Ford, T., & Kuyken, W. (2016). Self-compassion and parenting in mothers and fathers with depression. *Mindfulness, 7*(4), 896-908. Doi: 10.1007/s12671-016-0528-6

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385-401.

Raque-Bogdan, T. L., & Hoffman, M. A. (2015). The relationship among infertility, self-compassion, and well-being for women with primary or secondary infertility. *Psychology of Women Quarterly, 39*(4), 484-496. Doi: 10.1177/0361684315576208

Robertson, E., Grace, S., Wallington, T., & Stewart, D. E. (2004). Antenatal risk factors for postpartum depression: A synthesis of recent literature. *General Hospital Psychiatry, 26*(4), 289-295. Doi: 10.1016/j.genhosppsych.2004.02.006

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin, 86*(3), 638.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*(1), 141-166. Doi: 10.1146/annurev.psych.52.1.141

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*(4), 719. Doi: 10.1037/0022-3514.69.4.719

Santos, S., Gonçalves, M., Ribeiro, I., Araújo, S., Machado, C., Almeida, L., & Simões, M. (1997). Versão portuguesa do parenting stress index (PSI): Validação preliminar. *Avaliação Psicológica: Formas e Contextos, 5*, 139-149.

Sbarra, D. A., Smith, H. L., & Mehl, M. R. (2012). When leaving your ex, love yourself: Observational ratings of self-compassion predict the course of emotional recovery following marital separation. *Psychological Science, 23*(3), 261-269. Doi:10.1177/0956797611429466

Segal, Z. V., Teasdale, J. D., Williams, J. M., & Gemar, M. C. (2002). The mindfulness-based cognitive therapy adherence scale: Inter-rater reliability, adherence to protocol and treatment distinctiveness. *Clinical Psychology & Psychotherapy, 9*(2), 131-138. Doi: 10.1002/cpp.320

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., . . . Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology, 60*(4), 570.

Spielberger, C. D., Gorsuch, R., Lushene, R., Vagg, P., & Jacobs, G. (1983). State-trait anxiety inventory (form Y). Redwood City. *CA: Mind Garden, 77*

Spitzer, R. L., Kroenke, K., Williams, J. B., & Patient Health Questionnaire Primary Care Study Group. (1999). Validation and utility of a self-report version of PRIME-MD: The PHQ primary care study. *Jama, 282*(18), 1737-1744. Doi: 10.1001/jama.282.18.1737

Spoth, R., Redmond, C., & Shin, C. (1998). Direct and indirect latent-variable parenting outcomes of two universal family-focused preventive interventions: Extending a public health-oriented research base. *Journal of Consulting and Clinical Psychology, 66*(2), 385.

Stein, A., Pearson, R. M., Goodman, S. H., Rapa, E., Rahman, A., McCallum, M., . . . Pariante, C. M. (2014). Effects of perinatal mental disorders on the fetus and child. *The Lancet, 384*(9956), 1800-1819. Doi: 10.1016/S0140-6736(14)61277-0

Streiner, D. L., & Norman, G. R. (2011). Correction for multiple testing: Is there a resolution? *CHEST Journal, 140*(1), 16-18. Doi: 10.1378/chest.11-0523

Tang, B. M., Eslick, G. D., Nowson, C., Smith, C., & Bensoussan, A. (2007). Use of calcium or calcium in combination with vitamin D supplementation to prevent fractures and bone loss in people aged 50 years and older: A meta-analysis. *The Lancet, 370*(9588), 657-666. Doi: 10.1016/S0140-6736(07)61342-7

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., . . . Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes, 5*, 63-73. Doi:1477-7525-5-63

van Dam, Mary Ann A. (2004). Mothers in two types of lesbian families: Stigma experiences, supports, and burdens. *Journal of Family Nursing, 10*(4), 450-484. Doi: 10.1177/1074840704270120

Vaz-Serra A., Pio-Abreu, J.L. (1973). Afericcao dos quadros clınicos depressives I—estudo de aplicacao do 'Inventario Depressivo de Beck' a uma amostra portuguesa de doentes deprimidos. *Coimbra Medica 20,* 623–644.

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64*(4), 678.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063.

Winefield, H. R., Gill, T. K., Taylor, A. W., & Pilkington, R. M. (2012). Psychological well-being and psychological distress: Is it necessary to measure both? *Psychology of Well-being: Theory, Research and Practice, 2*, 3. Doi: 10.1186/2211-1522-2-3

Wood, A. M., & Joseph, S. (2010). The absence of positive psychological (eudemonic) well-being as a risk factor for depression: A ten year cohort study. *Journal of Affective Disorders, 122*(3), 213-217. Doi: 10.1016/j.jad.2009.06.032

Yarnell, L. M., & Neff, K. D. (2013). Self-compassion, interpersonal conflict resolutions, and well-being. *Self and Identity, 12*(2), 146-159. Doi: 10.1080/15298868.2011.649545

Yarnell, L. M., Stafford, R. E., Neff, K. D., Reilly, E. D., Knox, M. C., & Mullarkey, M. (2015). Meta-analysis of gender differences in self-compassion. Self and Identity, 14(5), 499-520. Doi: 10.1080/15298868.2015.1029966

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica, 67*(6), 361-370. Doi: 10.1111/j.1600-0447.1983.tb09716.x

Major Research Project (MRP) Section B: Empirical Research Paper

A randomised controlled trial of an online, compassion-based intervention for maternal psychological well-being in the first year post-partum

Word count: 7979

For submission to *Mindfulness*

Abstract

New self-help interventions have been called for to promote psychological well-being amongst mothers in the first year post-partum, with self-compassion being identified as a promising intervention target. The present study developed and evaluated a low-intensity, online, compassion-based intervention for this population. The Kindness for Mums Online (KFMO) programme was based on Hartley-Jones (2016), and was developed in consultation with six mothers. Mothers of infants under one year (N = 206) participated in a randomised controlled trial, comparing KFMO with a waitlist control. The KFMO group (N = 104) showed significantly greater increases in self-compassion and in psychological well-being compared to controls (N = 101), with small to medium effect sizes. Improvement in self-compassion statistically mediated the improvement in well-being observed immediately post-intervention. Treatment gains in self-compassion, but not well-being, were maintained at 6-week follow-up. The findings suggest that self-compassion can be increased in post-natal women via an accessible, low-intensity, web-based self-help programme. Study limitations include high attrition rates and poor generalisability to more diverse samples.

Keywords:

Self-compassion, Self-kindness, Mother, Postnatal, Perinatal, Well-being.

Introduction

Despite a widespread cultural portrayal of new motherhood as a time of joy and satisfaction, this period also involves challenges, negative experiences and losses for the mother (Cree, 2010; Hall & Wittkowski, 2006; Harwood, McLean & Durkin, 2007; Leigh & Milgrom, 2008). A dip in maternal psychological well-being in the year following birth is common, with up to 80% of women experiencing some depressive symptoms (Bennett & Indman, 2003). Elevated risk of onset of major depressive episodes during the post-natal period is well documented (Gaynes et al., 2005; O'Hara & Swain, 1996), and poor post-natal mental health has potentially negative consequences for the mother–infant relationship, parenting interactions and outcomes for the child (Cornish et al., 2005; Field, 2010; Moehler, Brunner, Wiebel, Reck & Resch, 2006; Ryan, Milis & Misri, 2005).

Preventative interventions are therefore recommended in the UK, but evidence-based non-pharmacological interventions are scarce (NICE, 2014). Intensive, professional-led, one-to-one interventions with at-risk women have shown the most promise for preventing depression (Dennis & Doswell, 2013; Sockol, 2015; Werner, Miller & Osbourne, 2015). However, identifying those at risk presents challenges (Gjerdingen & Yawn, 2007) and such intensive programmes are costly and hence difficult to make universally available. There have therefore been calls for the development and evaluation of new theoretically-grounded self-help interventions for the prevention of perinatal metal health problems (NICE, 2014, full guideline; Mallikarjun & Oyebode, 2005). One such grounding is provided by the literature on self-compassion.

Self-compassion is an adaptive form of self-relating (Neff, 2003a; Gilbert, 2010), defined by Neff (2003a) as the tendency to respond to difficulties with self-kindness (rather than self-judgement), mindful awareness of suffering (rather than over-identification with negative thoughts and feelings), and an understanding that imperfection and failure are common to the human experience (rather than shameful or isolating). Self-compassion is associated with psychological well-being in adults; it is positively correlated with positive measures of well-being (e.g. happiness, optimism, life satisfaction and motivation; Breins & Chen, 2012; Hollis-Walker & Colosimo, 2011; Neff, Pisitsungkagarn & Hseih, 2008; Yarnell & Neff, 2013), and negatively correlated with measures of distress and mental health problems (e.g. depression, anxiety and stress; Neff, Kirkpatrick & Rude, 2007; Neff et al., 2008; see MacBeth & Gumley, 2012, for a review).

Recently it has been proposed that self-compassion may be of specific benefit to parents (Kirby, 2016a; Moreira, Carona, Gouveia, Silva & Canavarro, 2014; Neff, 2011; Neff & Faso, 2014), particularly in relation to post-natal psychological well-being (Cree, 2010; Felder, Lemon, Shea, Kripke, & Dimidjian, 2016a). Transitioning to parenthood usually means coping with periods of exhaustion, perceived inadequacies in parenting, changes to lifestyle and, for biological mothers, hormonal and physical changes (Cree, 2010, 2015). Negative thoughts and experiences, such as ambivalence about the baby or about motherhood, are common during the first year post-partum (Hall & Wittkowski, 2006) and self-critical responses to these have been associated with increased risk of post-natal depression (Hall & Wittkowski, 2006; Robertson, Grace, Wallington & Stewart, 2004). It is proposed that self-compassion may help mothers avoid distress by helping them to cope with new challenges, be understanding towards their mistakes and limitations as parents and see their struggles and ambivalence as part of the wider experience of parenting rather than shameful or isolating (Kirby, 2016a; Moreira, Carona, Gouveia, Silva & Canavarro, 2014; Neff, 2011; Neff & Faso, 2014). Furthermore, Gilbert (e.g. 2009) proposes that turning to

oneself with self-compassion can activate a 'soothing' emotion regulation system (p. 202) that he argues is physiologically underpinned by an opiate-oxytocin system (Depue & Morrone-Strupinsky, 2005). This system is proposed to have evolved with the capacity to form attachment relationships and to be associated with feelings of safeness and contentment. Since perinatal maternal oxytocin levels have been positively associated with mother–child bonding and attachment (Feldman, Weller, Zagoory-Sharon & Levine, 2007; Carter, 1998), this model predicts that increasing self-compassion may assist mother–infant bonding (Cree, 2010), as well as assisting self-soothing in the context of perceived threats or challenges (Cree, 2010, 2015).

These theoretical links have to some extent been borne out by the evidence. A recent review and meta-analysis (Gammer, 2017) offered strong evidence of an association between psychological well-being and self-compassion in parents, and there is also evidence of this correlation in the perinatal period (Felder et al., 2016a; Sawyer Cohen, 2011). However, a lack of intervention studies targeting self-compassion or examining this as the mediator of change means that evidence of a causal link in parent samples is weak (Gammer, 2017). Findings from the mindful parenting literature do however suggest that self-compassion is a modifiable trait in perinatal women (see e.g. Dunn, 2012; Goodman & Chenausky, 2014; Perez-Blasco, Viguer & Rodrigo, 2013; Potharst, Aktar, Rexwinkel, Rigterink & Bögels, 2017).

Taken together with theory, this evidence suggests self-compassion represents a promising target for interventions to promote and protect mental health in mothers (Felder et al., 2016a). Whilst still an emerging area, early reviews have found compassion-based interventions to show promise in both clinical and non-clinical adult populations (Leaviss & Uttley, 2014; Kirby, 2016b). However, 'lighter touch' compassion-based interventions for non-clinical groups have been called for (Kirby, 2016b). This fits well with the call for self-directed interventions for perinatal well-being (NICE, 2014) and self-help books for mothers drawing on compassion-

based approaches have emerged in recent years (Cree, 2015; Hartley-Jones, 2016). However, the efficacy of self-directed compassion-based interventions has not yet been tested.

Online self-help is a method of delivery that has the potential to be cost-effective and enable widespread access to supportive interventions (Mitchell et al., 2009), and flexible web-based formats may have particular appeal to mothers of young children (Corno, 2016; Ashford, Olander and Ayers, 2016; Felder et al., 2016b). Recent reviews have concluded that online interventions hold promise for treating common psychological difficulties (Richards & Richardson, 2010), including perinatal mental health problems (Ashford et al., 2016). However, online interventions focused on well-being and prevention in perinatal women are lacking (Ashford et al., 2016).

Therefore, the present study aimed to develop an online compassion-based intervention targeting maternal psychological well-being in the first year post-partum, and to complete an initial evaluation of its efficacy in a randomised controlled trial (RCT) comparing it to a waitlist control condition. Psychological well-being is distinct from, but predictive of, absence of depression and other forms of psychological distress (Wood & Joseph, 2010; Keyes, 2005a). Therefore, developing accessible and effective self-directed well-being interventions for perinatal women may not only support the flourishing of mothers in this time of new challenges, but also be an important step towards the development of effective preventative interventions.

If the new intervention was found to be effective for increasing well-being, the study also aimed to determine whether self-compassion was a mediator of those changes, as would be predicted by the theory within which the intervention is grounded.

Based on the above-outlined literature, it was hypothesised that:

1. Mothers allocated to receive the online intervention would show greater increases in well-being compared to controls following intervention.

2. Mothers allocated to receive the online intervention would show greater increases in self-compassion and self-reassurance compared to controls following intervention.

3. Mothers allocated to receive the online intervention would show greater reductions in secondary outcomes of depression, anxiety, stress and self-criticism compared to controls.

4. Changes in self-compassion and well-being would be maintained at six-seek follow-up.

5. Changes in self-compassion would mediate changes in well-being.

The study also sought to assess the accessibility and acceptability of the new programme.

Method

Design

The study had two phases. The first was a consultation phase, used to develop the online intervention programme and study procedures with input from mothers of young infants. The second phase used an RCT to evaluate the efficacy of the intervention for increasing self-compassion and well-being, comparing this with a waitlist control condition. Self-report measures were collected online at baseline, immediately post-intervention and at a six-week follow-up. Both intervention and control participants were free to access care from standard care providers during participation; this was independent of the trial. After the end of the trial, participants in the control group were given access to the online intervention.

The RCT was registered with clinicaltrials.gov (an independent international register of clinical trials maintained by the United States National Library of Medicine) prior to the start of recruitment to this phase (registration number: NCT02778815).

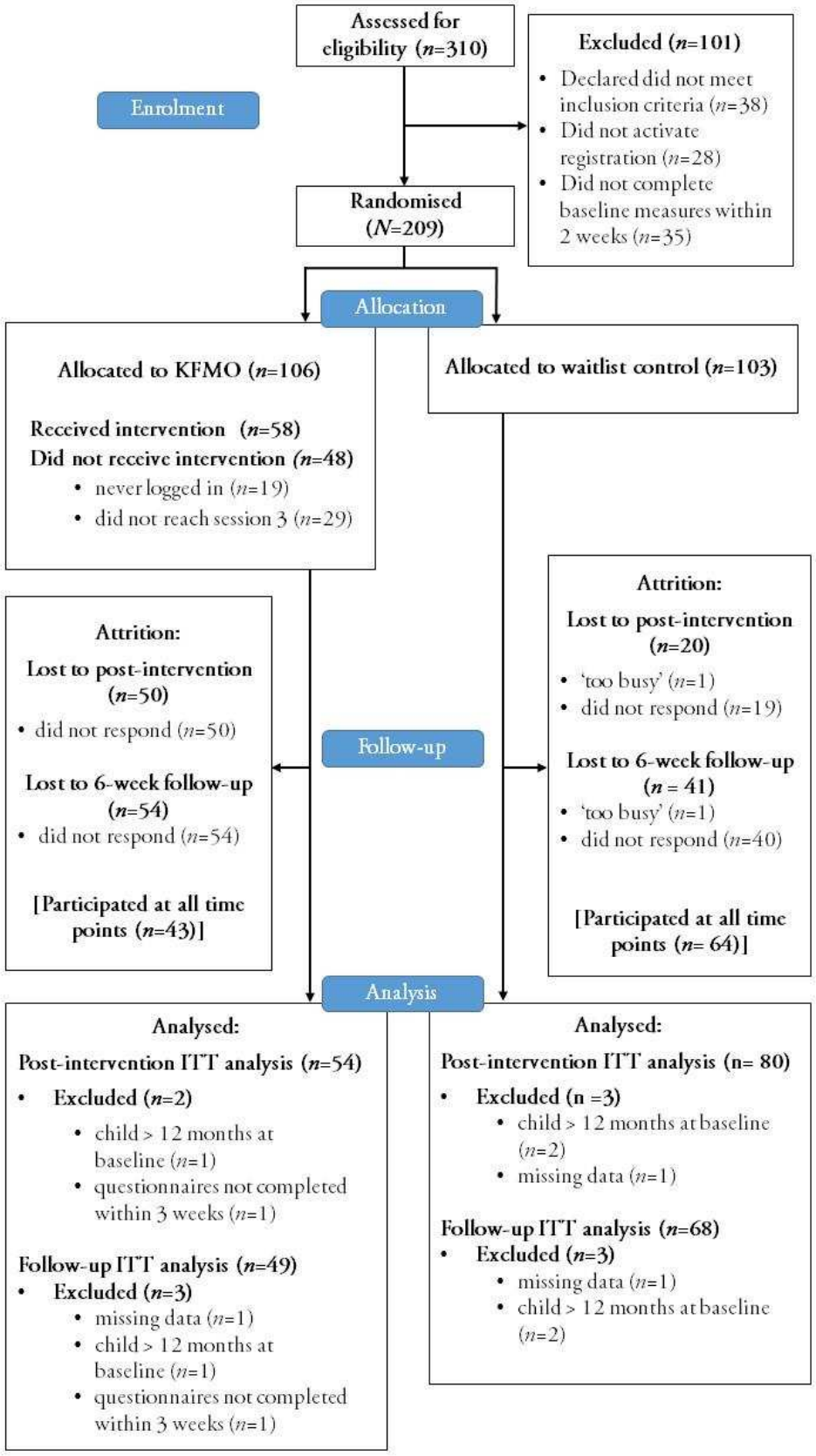


Fig. 1
CONSORT diagram showing participant flow through the trial

Note: follow-up data from 10 participants was outstanding at the time of submission as they had not reached that time point.

Participants

Six mothers gave informed consent and took part in the consultation phase (see Appendix C for all study information sheets and consent forms). They were a convenience sample of women caring for infants under one year, the majority of whom attended a mother-and-baby group facilitated by the project's external supervisor.

Participants for the RCT were recruited through a variety of means, including placing posters and flyers (see Appendix D) in community locations such as council-run children's centres, libraries and cafes; advertising on social media, including Twitter and Facebook; and recruitment talks at relevant community groups or organisations, including National Childbirth Trust (NCT) classes and women's centres. Participants were also recruited through snowball sampling.

Mothers were eligible for participation in the RCT if they were aged 18 years or over, identified as the mother (biological, adoptive or full-time foster carer) of a child under one year, lived in the UK and were comfortable reading in English. For ethical reasons, mothers were not eligible to take part if they reported thoughts about self-harm or suicide in the two weeks preceding enrolment and were redirected to information about perinatal distress and support if this was the case (see Appendix C).

A power calculation using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) based on a medium effect size for a power of .80 and an alpha of $p = .05$ suggested a minimum of 128 participants was required. The study aimed for a larger sample of $N = 200$, however, to allow for the possibility of small effect sizes and attrition, given that drop-out rates in previous online perinatal intervention studies have been high (Ashford et al., 2016).

Figure 1 shows the flow of participants through the RCT. Three hundred and five women expressed interest in taking part and 209 mothers were enrolled and completed baseline measures. Four participants were later excluded from the analysis, one because questionnaires

Table 1
Demographic characteristics of RCT participants

	Intervention group *N* = 104	**Control group** *N* =101	**Both conditions** *N* = 205	**Between group comparison**	***p*-value**
	Mean (SD)	**Mean (SD)**	**Mean (SD)**		
Mothers age (years)	35.42 (3.98)	34.81 (3.89)	35.12 (3.94)	U = 4805.50, Z = -1.05	p = .293
Child's age (months)	5.26 (3.30)	5.12 (3.18)	5.19 (3.23)	U = 5139.50, Z = -0.266	p = .790
	N (%)	***N* (%)**	***N* (%)**		
Child gender					
female	50 (48%)	58 (57%)	108 (52.7%)	χ^2 = 1.796	p = .209
Family structure					
Single parent	3 (2.9%)	2 (2%)	5 (2.4%)	χ^2 = 0.176	p = .675
Older siblings	40 (38.5%)	39 (39.6%)	79 (39.0%)	χ^2 = 0.001	p = .982
Ethnic origin					
White	98 (94.2%)	94 (93.1%)	192 (94.1%)	χ^2 = 0.130	p = .937
Non-white	5 (4.8%)	6 (6%)	11 (5.9%)		
Missing	1 (1%)	0 (0%)	1 (0.5%)		
Heterosexual	96 (92.3%)	99 (98%)	195 (95.1%)	χ^2 = 3.603	p = .058
Degree-level education	95 (91.4%)	92 (92.1%)	188 (91.7%)	χ^2 = 0.004	p = .948
Occupation					
Professional/managerial	81 (78.0%)	77 (76.2%)	158 (77.1%)	χ^2 = 2.1962	p = .533
Intermediate occupations	14 (13.4%)	15 (14.9%)	29 (14.1%)		
Technical, semi-routine & routine occupations	5 (4.8%)	2 (2.0%)	7 (3.4%)		
Missing	4 (3.8 %)	7 (6.9%)	11 (5.4%)		
Household income					
Below £25,000	7 (6.7%)	5 (5%)	12 (5.9%)	χ^2 = 2.313	p = .509
£25–35,000	11 (10.6%)	6 (5.9%)	17 (8.3%)		
Above £35,000	79 (76.0%)	85 (84.2%)	164 (80.1%)		
Missing	7 (6.7%)	5 (5%)	12 (5.9%)		
Current mental health treatment	10 (9.6%)	8 (7.9%)	18 (8.8%)	χ^2 = 0.184	p = .668
Psychotropic medication	3 (2.9%)	1 (2%)	4 (2.0%)	χ^2 = 2.033	p = .566
Talking therapy	3 (2.9%)	5 (5%)	8 (3.9%)		
Both meds & therapy	2 (1.9%)	1 (1.0%)	3 (1.5%)		
Missing	2 (1.9%)	3 (3.0%)	5 (2.4%)		
Previous experience of self-compassion or mindfulness	22 (21.2%)	22 (21.8%)	44 (21.52%)	χ^2 = 0.012	p=.913

were not completed within three weeks of request and three because, despite having indicated at screening that they were the mother of a child under one year, the date of birth they reported for their youngest child indicated that the infant was over 12 months at baseline.

Demographic data for the remaining 206 participants are presented in Table 1. Mothers ranged in age from 22–48 years (mean = 35.2 years) and their infants ranged from 0–11 months at baseline (mean = 5.2 months). Despite efforts to recruit a broad sample of UK mothers, the majority were white, highly educated and reported high household incomes. There were no significant differences between participants allocated to the intervention and control conditions on any demographic variable ($p > .05$ for all variables, see Table 1 for test statistics).

In recognition of the time involved for participants and to aid retention rates (Perez-Blasco et al., 2013), RCT participants were invited to be entered into a prize draw to win £50 in shopping vouchers if they completed all three sets of measures and regardless of how much of the intervention they completed.

Measures

For full questionnaires or question sets, see Appendix E.

Well-being

Change in the primary trial outcome, maternal psychological well-being, was assessed using the Warwick-Edinburgh Mental Well-being Scale WEMWBS (Tennant et al., 2007). This scale measures psychological well-being over the preceding two weeks, including affective and cognitive aspects and functioning. It has 14 items (e.g. 'I have been feeling useful', 'I have been feeling content'), each scored on a scale from 1 (some of the time) to 5 (all of the time). Item scores are summed to derive a total score ranging from 14–70, with higher scores indicating greater well-being. The WEMWBS has demonstrated good internal consistency, test-retest

reliability and good convergent and discriminant validity within a large general population sample (N = 2075; Tennant et al., 2007). In the present study, internal consistency for the total score was good (α = 0.90).

Self-compassion

The Self-Compassion Scale (Short Form; SCS-SF; Raes, Pommier, Neff & Van Gucht, 2011) was used to assess change in self-compassion. This widely used self-report measure is the short-form version of the established 26-item Self-Compassion Scale (SCS; Neff, 2003b). The SCS-SF has 12 items that measure how often people respond to feelings of inadequacy or suffering with self-compassion (e.g. 'I try to be understanding and patient towards those aspects of my personality I don't like', 'When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people'). Items are rated on a scale from 1 (almost never) to 5 (almost always). The mean of the summed scores offers a global measure of self-compassion ranging from 1–5, with higher scores indicating higher levels of self-compassion. The original 26-item instrument (Neff, 2003b) has shown good internal consistency (α = 0.92), test-retest reliability (r = 0.93 over three weeks), and good convergent and discriminant validity (e.g. Neff, Kirkpatrick & Rude, 2007; Neff, Rude & Kirkpatrick, 2007). Recently, some researchers have queried the scale's proposed factor structure (e.g. Muris & Petrocchi, 2016). Nonetheless, it is still considered to be the best available measure of self-compassion (Williams et al., 2014). The Short-Form version demonstrated near-perfect correlation (r >0.97) with the original instrument and demonstrated good internal consistency for the total score (α = 0.86) in a large US student sample (N = 415). In the current sample, internal consistency for the total score was also good (α= 0.86).

Self-criticism and self-reassurance

Given queries regarding the psychometric properties of the SCS, a second widely used measure of self-relating was included: the Forms of Self-criticising/Attacking and Self-reassurance Scale (FSCRS; Gilbert, Clark, Hempel, Miles & Irons, 2004), a 22-item self-report scale that assesses participants' typical self-attitudes in relation to perceived failure. It includes two scales measuring self-criticism: the Hated Self Scale (5 items, e.g. 'I have a sense of disgust with myself') and the Inadequate Self Scale (9 items, e.g. 'There is a part of me that feels I am not good enough'). A third, the Reassured Self Scale, measures tendencies to self-reassure (8 items, e.g. 'I still like being me'). Items are rated on a scale from 0 (not at all like me) to 4 (extremely like me). Item scores are summed to give a total score for each scale, with higher scores representing a greater tendency towards that self-attitude. The FSCRS scales have shown good internal consistency (Hated Self, $\alpha = 0.86$; Inadequate Self, $\alpha = 0.90$; Reassured Self, $\alpha = 0.86$). In the current sample, internal consistency of the FSCRS was good for the Inadequate Self and Reassured Self scales ($\alpha = 0.90$ and 0.88, respectively) and acceptable for the Hated Self scale ($\alpha = 0.77$).

Depression, anxiety and stress

To examine whether there was change in more distal intervention targets, such as common mental health problems, the Depression, Anxiety and Stress Scales (Short Form; DASS-21; Lovibond & Lovibond, 1995; Henry & Crawford, 2005) were included. The DASS-21 has 21 items (seven items per scale) that measure how often respondents have experienced symptoms of depression (e.g. 'I couldn't seem to experience any positive feeling at all'), anxiety (e.g. 'I was aware of dryness of my mouth') and stress (e.g. 'I found it hard to wind down') over the preceding week. Items are rated on a scale from 0 (never) to 3 (almost always) and summed to derive a total score for each scale, with higher scores indicating greater distress. High internal consistency has been demonstrated for the depression ($\alpha = 0.88$), anxiety ($\alpha = 0.82$), and stress ($\alpha = 0.90$) scales, and they have been found to show good discriminant and convergent validity

(Henry & Crawford, 2005). In this study, the DASS-21 scales demonstrated acceptable internal consistency for the anxiety scale ($\alpha = 0.72$) and good internal consistency for the remaining scales (depression $\alpha = 0.89$, stress $\alpha = 0.84$).

Demographics questions

At the baseline, assessment participants answered 17 questions concerning their characteristics and those of their child or children.

Engagement and feedback questions

At the post-intervention assessment, participants in the intervention group were asked to rate how frequently they logged in to the programme, read some session text and practised an exercise on a scale from 0 (never) to 4 (most days). They were also asked to rate the programme in terms of ease of use, using a scale from 1 (not at all easy) to 10 (extremely easy) and satisfaction on a scale from 1 (not at all satisfied) to 10 (extremely satisfied).

Procedure and intervention

Given that the procedure for intervention development and the nature of the intervention are closely related, these are described together in this section.

Phase 1: Consultation and online programme development

Four mothers took part in a three-hour focus group. Participants were asked to give feedback on proposed website appearance, recruitment materials, recruitment strategies and outcome measures, as well as options for the online intervention programme (content, exercises, structure and length). In consultation with the authors, options for proposed programme content were based on two compassion-based self-help books for mothers by Cree (2015) and Hartley-Jones

(2016), and focus group participants were consulted about which should serve as the primary basis for the intervention. Cree's (2015) book is based on Compassion-Focused Therapy (CFT, Gilbert, 2009, 2014) applied in the context of post-natal depression, and focus group participants felt that the level of theoretical explanation and formal meditation practices involved in the CFT approach were not always relevant to mothers who were not experiencing clinical levels of distress. The Hartley-Jones (2016) book, in contrast, draws on a range of compassion-based approaches (including the Mindful Self-Compassion Programme; Germer, 2009; Neff, 2011; the Compassionate Mind approach; Gilbert, 2010; and Mindfulness-Based Cognitive Therapy; MBCT; Segal et al., 2002), does not have a clinical focus and aims to be widely accessible. Focus group participants favoured this less intensive approach, and therefore it was decided that the intervention would be primarily based on this book.

Feedback from the focus group also contributed to a decision to refer to the intervention approach as 'self-kindness' rather than 'self-compassion', ensuring that the focus was clearly expressed in everyday language, although content drew on self-compassion literature and research.

Programme content was tailored to mothers of young infants by applying the theory, examples and techniques to common tasks, experiences and difficulties that mothers are likely to encounter. It targeted all three elements of Neff's (2003a) concept of self-compassion by aiming to increase self-kindness, mindful awareness of thoughts and emotions and sense of common humanity in the context of motherhood by increasing awareness of the struggles and experiences of other mothers. To this end, quotes from other mothers formed a substantial part of the content. Exercises were designed to be brief and fit in with common daily parenting tasks and activities. In line with recent recommendations for preventative interventions (Dennis & Doswell, 2013; Sockol, 2015), the programme targeted mothers in the post-partum year only, not during pregnancy.

Following development of the study website and online programme, two further mothers of infants under one year consented to pilot the intervention. Both reported that this was acceptable and only minor changes (for example, typographical and technical errors) were made in response.

The final intervention, called Kindness for Mums Online (KFMO), was designed to be followed over five–six weeks. One session became available each week covering two topics and two exercises, which came with a written description and an audio guide for participants. Table 2 offers an outline of the topics and exercises and a guest logon and sample pages can be found in Appendix F. The time requirement was estimated at 10–15 minutes per week for reading plus a few minutes per day to try an exercise.

Phase 2: Randomised controlled trial

Participation in the RCT was entirely online. Questionnaire responses were collected via the Qualtrics secure online data collection platform, and the intervention was delivered via a secure website developed for the study (www.kindnessformums.org). Interested participants were invited to visit the study website, and eligibility was assessed via an online screening questionnaire that converted the eligibility criteria detailed earlier into yes/no questions (see Appendix C). Those who did not meet criteria were redirected to an explanation of why they were not being invited to take part. Those who met all criteria were invited to provide informed consent online and to complete the baseline measures. Those who did so were randomised at a ratio of 1:1 to either the KFMO intervention arm or waitlist control arm. Randomisation was carried out using a computerised random number generator programmed to perform a block

Table 2
Summary of sessions and exercises in the Kindness for Mums Online (KFMO) intervention

Session	Focus of session	Description of exercises
Session one	**Part 1: What is self-kindness?** This introduced the idea of self-kindness and explored a range of reactions to this idea.	**Choosing a nurturing activity.** Participants were invited to choose one activity (e.g. having a cup of tea) to do with an intention of self-kindness and notice reactions.
	Part 2: Shaking hands with the 'inner critic'. Introduction to the idea of self-judgement and self-critical thinking and how these might manifest in the context of caring for an infant.	**What might you say to a friend?** Participants were invited to notice the next time they were 'harsh on themselves' and to imagine what they would say to a friend in the same situation and say this to themselves instead.
Session two	**Part 1: Birth.** This explored a range of birth experiences and reactions mothers may have to these, including kind versus self-critical reactions and the impact of these.	**Choosing a kindness object.** Participants were invited to choose a small object (e.g. a brooch or stone) that they could keep with them to remind them of their intention to be kinder to themselves, especially when intense feelings arise.
	Part 2: Feeding, sleeping and the first few days. This discussed how difficult these aspects of the postnatal experience can be and highlighted the potential for unhelpful self-judgemental reactions. Alternative self-compassionate ways of thinking were considered.	**Breathe it in.** Participants were invited to take a deep breath of fresh air, paying attention to this experience.
Session three	**Part 1: The emotional roller coaster.** This sought to normalise the experience of having a wide range of emotions in response to motherhood and introduce the idea of mindful acceptance of negative emotion.	**Nature time.** Participants were invited to find a natural object (e.g. a leaf or flower) and pay mindful attention to this, including shifting attention between the senses, and attend to their own feelings before and after.
	Part 2: Ambivalence. This examined the common experience of ambivalence about one's baby and about motherhood.	**Post-it note kindness.** Participants were invited to write themselves at least three messages to remind themselves of specific self-compassionate ideas or intentions (e.g. 'we're all in this together' or 'you don't have to be perfect').

Session four	**Part 1: Other people's opinions.** This focused on how parenting advice from various sources has the potential to fuel guilt and self-doubt as well as at times being helpful. It aimed to help mothers be gentle with themselves in moments of confusion and doubt.	**Bubbles of self-kindness.** Over the coming week, every time participants saw bubbles (e.g. when washing up, in coffee, in the bath), it was suggested they could pause, pay mindful attention to the bubbles and then ask themselves '*Am I looking after myself?*' and '*What do I need right now?*'
	Part 2: Relationships. This aimed to help participants reflect on changes to relationships after having a baby and normalise a range of experiences in this domain. It explored social comparison as a natural human tendency, but one that has the potential to lead to feelings of shame and inferiority, or conversely a sense of closeness and common humanity.	**Kindness for others.** Participants were invited to pick someone (e.g. their partner, a parent-in-law, the postman, a friend) and do something for them (e.g. give a small gift, make them a cup of tea), with the intention of expanding their focus of kindness.
Session five	**Part 1: Expectations versus reality.** This explored the potential for differences between expectations and reality in terms of one's baby and experience of motherhood, reviewing how mothers can sometimes feel disappointment and shame for feeling this way. It encouraged viewing these feelings as part of the human condition.	**What used to make you smile?** Participants were encouraged to reconnect with something that used to help them laugh or smile before they were caring for their infant (e.g. watch a funny film, a clip of a favourite comedian, speak to a certain friend, or play a board game).
	Part 2: New mum identity. This emphasised that there can be a range of reactions to the role of 'mum' and to societal ideas about this role. It encouraged mothers to be accepting of their own reactions.	**Mum milestones.** Participants were encouraged to add something about themselves to their baby book, if they kept one, or elsewhere if not, to remind themselves that they are individuals as much as their baby and they matter too.
Ending and going forward	A final section invited participants to think about ways to continue practicing self-kindness in the future and offered two additional exercises to support this.	**A pat on the shoulder.** Participants were invited to give themselves a gentle pat on the shoulder at any time and especially when they notice difficult thoughts or emotions or need encouragement.
		Sending kindness to your hands. Participants were invited to hold one hand in the other, noticing the sensations of this, and then say something warm to their hands, as a way of remembering they are worthy of self-kindness too.

randomisation procedure to ensure equal group sizes. Participants were notified of their group allocation via automated email. Those allocated to the intervention arm had their KFMO logon activated immediately and were sent automated weekly reminders when the next session became available. Post-intervention and follow-up measures were requested from all participants via automated emails six and twelve weeks post-randomisation. The collection of outcome data was blinded to group allocation, since all measures were self-report questionnaires that were collected online with no involvement from the researchers. Following completion of the trial, control participants had their KFMO logon activated.

Ethical considerations

Ethical approval for the study was granted by the Salomons Ethics Panel, Canterbury Christ Church University (see Appendix G). The project followed the British Psychological Society's (2014) Code of Human Research Ethics. Given the elevated risk of depression and other mental health difficulties in the post-natal year, a section of the website was dedicated to 'finding more support', which contained a link to NHS information about post-natal depression and detailed support and crisis numbers. This page was accessible from all website pages, and a link to it was included in the footer of every email to participants, urging them to discontinue the programme and seek alternative support if they were experiencing distressing symptoms.

Analysis plan

Intervention effects

As per the registered trial protocol (see Appendix H), the primary outcome measure was change in self-reported well-being between baseline and post-intervention, as measured by scores on the

WEMWBS. Change in WEMWBS scores between baseline and follow-up was a secondary outcome. Other secondary outcomes were change in self-compassion (SCS-SF Total Score), self-criticism (FSCRS Hated Self and Inadequate Self scales), and self-reassurance (FSCRS Reassured Self Scale), and change in self-reported depression, anxiety and stress (DASS-21 subscale scores). Change scores were computed for all measures for post-intervention and follow-up by subtracting each participant's baseline score from their score for that time point. Change scores were compared between the trial arms using an intention-to-treat analysis, with participants analysed according to the trial arm to which they were allocated, regardless of the extent to which they accessed the KFMO intervention. No data were imputed. Therefore, change scores inherently led to a complete case analysis, whereby only those participants who provided outcome data for that time point were included.

Exploratory data analysis revealed deviations from normality for multiple measures at all time points (see Appendix I). Given this, and given the differing group sizes at post-intervention time points, non-parametric (Mann-Whitney U) tests were used to compare change scores between trial arms, ensuring a robust assessment of effectiveness. Following Field and Hole (2003), effect sizes were estimated using Rosenthal's (1991) *r* statistic. The analysis was conducted using SPSS version 22.

One participant at post-intervention and two at follow-up had missing data for the SCS-SF, meaning that change scores could not be calculated. These participants were excluded from the analysis for that time point. One further participant had missing data on the FSCRS at post-intervention; their scores on other measures were included.

There is ongoing debate in the literature regarding whether to correct significance levels for multiple comparisons, for example, by applying the Bonferroni correction (Feise, 2002, Rothman, 1990; Streiner & Norman, 2011). While use of such corrections reduces risk of Type I error, risk of Type II error is considerably increased and some consider them to be overly

conservative (Rothman, 1990). In line with the recommendations of Streiner and Norman (2011), it was decided not to apply a corrected alpha in the present study, given that the analysis was hypothesis driven, testing for differences that were predicted on the basis of existing evidence (as opposed to conducting exploratory analyses) and the use of nonparametric statistics, which are already conservative relative to parametric alternatives (Field, 2009).

Mediation analysis

To test the hypothesis that increases in self-compassion would mediate any effect of KFMO on well-being, Hayes's (2013) bootstrapping procedure was implemented using the PROCESS macro for SPSS (Hayes, 2012). Bootstrapping procedures use a non-parametric approach that does not assume normality in the data and derive greater statistical power compared to alternative methods by employing random re-sampling techniques (Hayes, 2013). Following Preacher and Kelly (2011), an effect size for the mediation effect was calculated using κ^2.

Results

Accessibility and acceptability

Forty-seven participants from the KFMO intervention arm gave feedback on the programme using ratings on a 10-point scale from 1 (not at all easy/satisfied) to 10 (extremely easy/satisfied). Ease of use ratings ranged from 6–10 (mdn = 9, IQR = 2.00). Satisfaction ratings ranged from 2–10 (mdn = 8, IQR = 2.00).

Baseline data

Baseline data for all outcome measures are presented in Table 3. There were no significant differences between participants allocated to the KFMO intervention compared to the waitlist control condition on any outcome measure at baseline ($p > .05$ for all measures; see Appendix J for comparisons), suggesting that randomisation was effective.

Attrition

Seventy of the 209 randomised participants failed to complete any measures at post-intervention (33.5%). This figure was 85 (40.7%) at six-week follow-up. To examine whether attrition may have had introduced a bias into the findings, the baseline characteristics of participants who remained in the trial were compared with those who dropped out. There were no significant differences in scores on baseline measures between those participants who completed post-intervention measures and those who did not (all p-values > .05, see appendix J for comparisons). However, DASS Depression scores were significantly lower at baseline for participants who completed measures at the six-week follow-up (mdn = 3.00) than for those who did not (mdn = 4.00, $U = 4298.5$, $Z = -1.97$, $p = .049$). Given the large number of statistical comparisons, combined with the fact that this only just achieved significance, this could well be a Type I error. All other comparisons were non-significant (p-values > .05, see appendix J for comparisons). Finally, no significant differences in baseline scores were found between those participants who completed measures at both post-intervention time points and those who did not complete them at both (all p-values > .05, see Appendix J for comparisons).

Attrition was higher among participants randomised to the intervention group compared to controls, with 50 (47.2%) of the intervention group failing to complete any measures post-intervention, compared to 20 (19.4%) of the controls ($\chi^2(1) = 18.22$, $p = <.001$). At follow-up, 54 (51.9%) of the intervention group failed to compete any measures, compared to 31 (30.1%) of

Table 3
Descriptive statistics for intention-to-treat analysis at each time point

	Baseline				Post-intervention				Six-week follow-up			
	KFMO		Usual Care		KFMO		Usual Care		KFMO		Usual Care	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)
N	104		101		54[a]		80		49		68	
WEMWBS Total (/70)	44.37 (8.27)	44.00 (12.75)	44.43 (6.92)	45.00 (10.50)	49.30 (6.48)	49.50 (10.00)	46.35 (7.45)	48.00 (11.75)	49.24 (8.18)	49.00 (10.00)	47.76 (7.57)	47.50 (11.5)
SCS Total Score (/5)	2.55 (0.70)	2.42 (0.92)	2.66 (0.58)	2.58 (0.79)	2.94 (0.63)	2.92 (0.96)	2.74 (0.67)	2.67 (0.92)	3.01 (0.68)	2.92 (0.88)	2.82 (0.73)	2.71 (0.98)
FSCRS Hated Self (/20)	3.66 (4.02)	2.00 (4.00)	3.54 (3.23)	2.00 (4.00)	2.98 (2.75)	2.00 (3.50)	3.36 (3.45)	2.00 (4.00)	2.73 (3.07)	2.00 (04.50)	3.31 (3.91)	2.00 (4.75)
FSCR Inadequate Self (/36)	20.28 (8.76)	20.00 (11.75)	20.06 (7.75)	21.00 (11.00)	16.77 (7.99)	17.00 (11.50)	18.37 (8.39)	19.00 (13.00)	17.33 (8.42)	15.00 (13.50)	17.85 (8.45)	17.50 (13.75)
FSCRS Reassured Self (/32)	16.32 (6.20)	16.00 (7.00)	17.05 (5.92)	17.00 (7.00)	18.09 (6.03)	17.00 (9.50)	17.51 (5.92)	18.00 (9.00)	18.45 (6.31)	19.00 (8.50)	17.94 (5.89)	18.50 (8.00)
DASS Depression (/21)	4.82 (4.66)	3.00 (6.50)	4.55 (3.46)	4.00 (4.00)	3.11 (2.81)	2.00 (3.25)	4.09 (3.70)	3.00 (4.00)	3.08 (3.13)	2.00 (4.00)	3.47 (3.73)	2.50 (3.75)
DASS Anxiety (/21)	3.29 (3.35)	2.00 (4.00)	3.20 (2.74)	3.00 (3.00)	2.28 (2.91)	1.00 (4.00)	2.60 (2.74)	1.50 (3.00)	2.18 (3.07)	1.00 (3.00)	2.43 (2.30)	2.00 (2.00)
DASS Stress (/21)	9.70 (4.19)	9.00 (7.00)	9.53 (4.29)	9.00 (6.00)	7.50 (3.97)	6.50 (5.00)	8.55 (4.46)	8.00 (5.00)	8.08 (4.12)	8.00 (5.50)	8.06 (4.12)	7.00 (6.00)

Note: [a] $N = 53$ for the FSCRS Scales due to missing data.

controls ($\chi^2(1) = 9.52$, $p = 0.002$). In order to assess whether this pattern of attrition introduced any bias, baseline scores on all outcome measures were compared between groups for those participants who took part at each time point. No significant differences were found ($p > .05$ for all comparisons; see appendix J).

In summary, there was no good evidence that participants who dropped out had different baseline characteristics from those who remained in the trial.

Intervention effects

Descriptive statistics for all outcome measures for all time points are presented for both trial arms in Table 3. Mean scores for each time point for well-being and self-compassion for each group are represented in Figure 2 (see Appendix K for graphs for other secondary outcome measures).

For the primary trial outcome of maternal well-being, in line with predictions, there was a significantly greater increase in self-reported well-being between baseline and post-intervention in the KFMO intervention group compared to controls (WEMWBS: $U = 1637.50$, $Z = -2.37$, $p = .017$, $r = -.21$). The effect size for this difference was in the small range (Rosenthal, 1991). Also in line with predictions, significantly greater increases in self-compassion were reported between baseline and post-intervention in the KFMO intervention group compared to controls (SCS-SF: $U = 1443.0$, $Z = 3.259$, $p = .001$, $r = -.28$). The effect size for this difference was in the small to medium range (Rosenthal, 1991). Contrary to hypotheses, change between baseline and post-intervention did not differ significantly between the KFMO intervention group and controls on any other secondary outcome measure (FSCRS Hated Self: $U = 1898.0$, $Z = -0.81$, $p = .420$, $r = -.07$; FSCRS Inadequate Self: $U = 1708.00$, $Z = -1.69$, $p = .092$, $r = -.15$; FSCRS Reassured Self: $U = 1836.00$, $Z = -1.089$, $p = 0.278$, $r = .10$; DASS Depression: $U = 2088.50$, Z

= -0.327, p = .745, r = .03; DASS Anxiety: U = 2154.50, Z = -0.025, p = 0.98, r < 01; DASS Stress: U = 1804.00, Z = -1.623, p = 0.105, r = .14).

Analysis of change scores from baseline to six-week follow-up again revealed a significantly greater increase in self-compassion in the KFMO group compared to controls (U = 1060.50, Z = -3.350, p = .001, r = -0.31), suggesting that intervention effects on self-compassion were maintained over this period. The effect size was in the medium range (Rosenthal, 1991).. However, change in WEMWBS scores from baseline to six-week follow-up did not significantly differ between groups (U = 1448.50, Z = -1.203, p = .230, r = -0.11), suggesting the impact the intervention had on well-being was not maintained to follow-up.

As was the case at the post-intervention time-point, change on the other secondary outcome measure between baseline and follow-up did not differ significantly between the KFMO and control groups (FSCRS Hated Self: U = 1437.00, Z = -1.292, p = .200, r = -.12; FSCRS Inadequate Self: U = 1465.00, Z = -1.113, p = .267, r = -.10; FSCRS Reassured Self: U = 1463.50, Z = -1.124, p = .263, r = -.10; DASS Depression: U = 1558.50, Z = -0.599, p = .551, r = -.03; DASS Anxiety: U = 1544.50, Z = -0.682, p = .498, r = -.06; DASS Stress: U = 1583.00, Z = -0.460, p =.647, r = -.04.).

A per-protocol analysis was also conducted that included only those participants in the KFMO group who had reached at least session three of the KFMO programme. The pattern of findings for this analysis was the same as for the intention-to-treat analysis and is therefore not reported in detail here (but see Appendix L).

Mediation analysis

A mediation analysis was conducted to determine whether changes in self-compassion statistically mediated the effect of KFMO on well-being. Given that an effect on well-being was

Fig. 2
Graphs showing mean total scores on the WEMWBS and SCS-SF by group for each time point (baseline data points represent means for those who participated in post-intervention assessment)

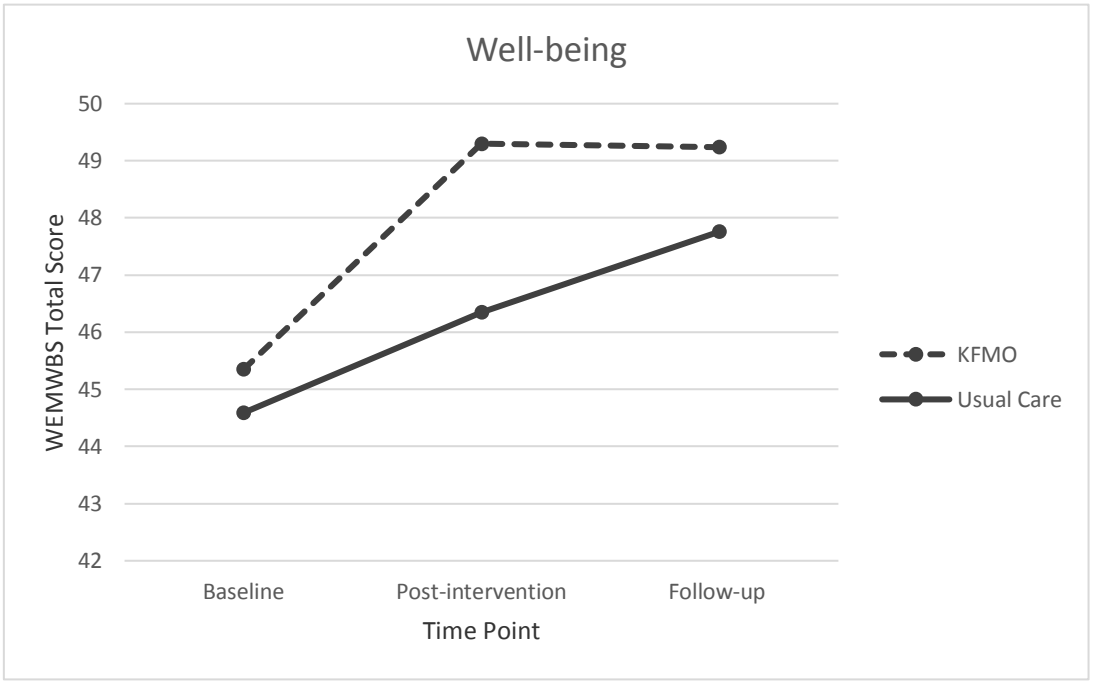


Fig. 3

The mediation model and associated 95% confidence intervals (CIs). Top panel: the total effect when no mediator is included. Bottom panel: the indirect and direct effects when self-compassion is included as a mediator. *p<.05, **p<.01, ***p<.0001

found in the post-intervention but not the follow-up data, the WEMWBS and SCS-SF change scores used in this analysis were for change to the former time point. Results of the mediation analysis are presented in Figure 3. As expected, there was a significant total effect of intervention allocation (i.e. having access to the KFMO intervention) on well-being with a confidence interval of (.091, 4.273), indicating the KFMO intervention significantly predicted well-being before any mediator variable was included in the model. After self-compassion was introduced as the proposed mediator, a significant indirect effect was found (i.e. the estimated effect of KFMO on well-being via its effect on self-compassion) with a confidence interval of (.375, 2.325) and an effect size of $\varkappa^2$ = .0911 *CI*=(.033, .173). Thus, as hypothesized, change in self-compassion statistically mediated the effect of KMFO on well-being at post-intervention, with a small to medium effect size. The direct effect of KFMO in the final model (i.e. the estimated effect of

group allocation on well-being that is not through the mediator) was not significant, indicating that, statistically, changes in well-being at post-intervention were fully mediated by changes in self-compassion.

Engagement

Data collected from the website indicated that, of the 106 mothers allocated to receive the KFMO intervention, 58 (55%) were classed as receiving the allocated intervention, operationalised as accessing at least half of the sessions. Of the 48 participants (45% of the intervention group) who were classed as not receiving the intervention, 19 participants never logged on to the KFMO and 29 logged on but did not access sessions beyond session two. Of those intervention group participants who completed post-intervention and follow-up measures (n = 54 and n = 49, respectively), the majority (n = 48 at post-intervention and n = 44 at follow-up) had received the allocated intervention (i.e. reached at least session three). This overlap is likely to underlie the similarity of findings between the intention-to-treat analysis and the per-protocol analysis, as samples were largely overlapping.

Forty-eight of the KFMO intervention group gave feedback on intervention usage. There was a significant moderate association between change in well-being from baseline to post-intervention and self-reported frequency of reading session text (r (48) = 0.31, p = .034) and frequency of exercise practice (r (48) = 0.34, p = .019). These relationships were non-significant for self-compassion (frequency reading session text: r (48) = 0.28 p = .054; frequency of practising exercises: r (48) = 0.23 p = .117), perhaps suggesting that any use of the programme (even infrequent) positively impacted self-compassion. Alternatively, given the medium effect sizes and p-values approaching significance, it is possible this null finding represents a Type II error.

Discussion

Overview

The Kindness for Mums Online (KFMO) programme was developed as a low-intensity, online, self-compassion intervention that targeted maternal well-being in the first year post-partum. To the author's knowledge, this is the first trial of an online compassion-based intervention for this group. In line with study hypotheses, results indicated that mothers who had access to the KFMO intervention reported significantly greater increases in psychological well-being and in self-compassion following the intervention compared to a waitlist control group. Contrary to hypotheses, only changes in self-compassion, and not well-being, continued to show significantly greater improvements at a follow-up assessment, six weeks post-intervention. Also contrary to hypotheses, there were no significant differences between the intervention group and controls in change scores for secondary outcome measures of self-criticism, self-reassurance, depression, anxiety and stress at any time point.

Impact on self-compassion

The findings support those of previous studies suggesting that self-compassion is a modifiable trait in perinatal women (e.g. Dunn, 2012; Goodman & Chenausky, 2014; Perez-Blasco et al., 2013; Potharst et al., 2017). They suggest that the KFMO intervention is effective at bringing about increases in women's self-compassion that are sustained at least in the medium term. This is the first study to demonstrate that significant changes in self-compassion can be achieved in the post-partum year through a low-intensity, online-only intervention, with time requirements of just 10–15 minutes per week plus a few minutes each day for exercises.

Effect size estimates for change in self-compassion were in the small to medium range, and are therefore comparable to those found for face-to-face compassion-based interventions in a recent

meta-analysis (Kirby, Tellegen & Steindl, 2017). Whilst this comparison should be treated with some caution given differences between samples (for example, the meta-analysis includes clinical samples and groups with elevated symptoms), it is nevertheless promising. However, there was no evidence of a significant impact of the intervention on the related constructs of self-criticism and self-reassurance. Whilst this was contrary to hypotheses, it is perhaps unsurprising that self-compassion was the variable that showed the strongest effect, given that this was the main target of the intervention.

Impact on psychological well-being

The findings suggest that the KFMO programme holds promise as a well-being intervention for the post-partum year, although results were somewhat mixed. There was evidence that the KFMO programme was able to boost maternal well-being in the short term, with small effect size estimates for between-group comparisons at post-intervention. However, contrary to study hypotheses, the available data for the current trial did not offer evidence of any sustained impact of the KFMO programme on maternal psychological well-being, with no significant differences between groups found when change to six-week follow-up was examined. The available systematic reviews of compassion-based interventions (Kirby et al., 2017; Leaviss & Uttley, 2014) do not explore follow-up data, but a review and meta-analysis of well-being interventions by Bolier, Haverman, Westerhof, Riper, Smit and Bohlmeijer (2013) found at follow-up 3–6 months post-intervention effects on well-being were small but continued to be significant. It is possible that the KFMO programme was not intensive enough to have a sustained impact on well-being. However, it is worth noting that the data set for the follow-up assessment was not complete at the time of writing, which, together with attrition, may have meant the study was underpowered to detect small intervention effects on well-being at this assessment point.

The non-significant findings relating to secondary outcome measures of depression, anxiety and stress symptoms were unexpected given that moderate–strong associations have been found between self-compassion and these common mental health difficulties in parents (Gammer, 2017) and that many face-to-face compassion-based interventions have been found to have a significant impact on these outcomes, with moderate to large pooled effect sizes (Leaviss & Uttley, 2014; Kirby et al., 2017). These findings also contrast with those from other online intervention studies (using different modalities) in the perinatal period, which for the most part report a significant impact on mental health symptoms (Ashford et al., 2016). However, the studies in these reviews differ from the present trial in that they largely targeted clinical or at-risk samples or participants with elevated symptoms. Many of the online studies included in the Ashford et al. (2016) review also trialled longer and more intensive interventions and/or offered 1:1 support (such as weekly coaching telephone calls). The low-intensity KFMO programme was designed to render the intervention accessible to a wide range of mothers, including those experiencing little distress. It is possible that more intensive online programmes than that offered in KFMO are required to generate change in the more distal targets of depression, anxiety and stress. Alternatively, in the current non-clinical sample levels of distress at baseline may have been relatively low, meaning there was less room for improvement on these outcomes than in other studies.

Despite non-significant findings for secondary outcome measures, the promising findings on the primary well-being measure warrant further investigation of the KFMO programme (or a modified version of this) as a well-being intervention, given its potential for widespread, low-cost availability. Future development and evaluation studies may wish to explore the balance between accessibility and intensity. If uptake and adherence remain good, then a more involved or slightly longer programme may have potential for more widespread or longer-term impacts on well-being.

Theoretical implications

In line with the aims of the programme and with predictions, the mediation analysis suggested that changes in self-compassion fully mediated the impact of the KFMO intervention on well-being. Whilst it is not certain that self-compassion caused the observed changes (as the intervention potentially affected other psychological variables that were not assessed), the absence of a significant direct effect in the mediation model suggests that self-compassion is likely to have been an important mechanism. This is in line with predictions from those theories suggesting that self-compassion is causally linked to well-being in parents (e.g. Neff, 2011; Neff & Faso, 2014; Kirby, 2016a), including in the post-natal period (e.g. Cree, 2010; Felder, 2016a). However, increases in self-compassion endured to follow-up whereas this was not the case for effects on well-being. This suggests that increases in self-compassion were sufficient to boost well-being but they were not sufficient to sustain it, and other factors are likely to have impacted on well-being for parents over time.

Attrition, adherence and engagement

Web-based intervention studies are prone to high attrition rates (Richardson & Richardson, 2012), as are studies with non-clinical populations (Leaviss & Uttley, 2014). The overall attrition rates in the present study of 34% at post-intervention and 41% at six-week follow-up are in line with those reported for the online perinatal interventions reviewed by Ashford et al. (2016), which ranged from 12% to 61%. One factor that may have contributed to attrition in this study was a known problem with automated email requests to complete questionnaires being filtered into participants' junk mail folders. Attempts were made to resend requests manually in the case of a non-response, but limited resources and technical issues meant this was not always possible.

It is not clear why the intervention group had higher attrition compared to controls, although this has been observed in other online interventions with non-clinical populations (e.g. Drozd, Mork, Nielsen, Raeder & Bjørkli, 2014). It is possible that some drop-out from the intervention group was due to not finding the intervention acceptable or useful. However, it may also have been influenced by the fact that control participants had an added incentive of gaining access to the intervention if they stayed involved.

The adherence rate (classed as completing at least half the KFMO sessions) of 55% in the present study is comparable to other web-based interventions in perinatal samples (e.g. 57.76% in Felder et al., 2016b). Adherence tends to be particularly poor in web-based studies where, like the current one, no regular supportive contact is offered with participants (such as telephone calls; Felder et al., 2016b; Ashford et al., 2016). The fact that the adherence rate in the present study is higher than many unsupported web-based interventions in non-clinical samples (for example 30.2% in Mitchell et al., 2009 and 44% in Drozd et al, 2014) suggests a fairly high level of acceptability of the KFMO programme to mothers in the post-natal period. This was also suggested by high average feedback ratings for ease of use and satisfaction with the programme.

Engagement, as measured by self-reported frequency of programme use and exercise practice, was significantly positively associated with change in well-being to post-intervention. This suggests that maximising adherence and engagement may be important in increasing and extending the impact of KFMO if modified versions are taken forward. Evidence from recent reviews (Richards & Richardson, 2012; Ashford et al., 2016) suggests that attrition, adherence and engagement might all be helped by therapist support (e.g. regular coaching telephone calls) but also by purely administrative support (e.g. calls or emails to check in on access and any barriers to this). Reminder text messages were an idea suggested by focus group participants but were not feasible in the current study given funding limitations. It is unclear from existing

research whether this alone would boost retention or engagement, but it may be worth exploring as an inexpensive potential improvement to the programme.

Limitations

Several important limitations to the study should be noted. This was a pragmatic trial comparing KFMO to a waitlist control condition. Given that there was no active control group, it is not possible to say whether KFMO offers benefits that are greater than placebo (for example, an attention control condition) or other online interventions for this group. In their review of compassion-focused intervention, Leaviss and Uttley (2014) found it was common for improvements on target outcomes to be observed in both the self-compassion condition and in active control conditions. Comparing online compassion-based perinatal interventions to active controls will be important in future research.

Despite efforts to recruit mothers from a variety of backgrounds, the final sample was comparably well-off, highly educated, and was not representative of the ethnic and social backgrounds of mothers in the UK. The generalisability of current findings is therefore somewhat limited. Studies investigating barriers to wider participation in internet research would be valuable to help future studies address this issue.

Whilst retention rates were in line with other internet studies of non-clinical populations, differences in attrition rates between intervention and control groups can introduce risk of bias (Cochrane Collaboration, 2017). However, careful analysis of baseline characteristics found no strong evidence of differences between participants who dropped out and those who remained involved. Furthermore, an intention-to-treat analysis was employed, which seeks to minimise risk

of this type of bias as far as is possible. Nonetheless, more qualitative feedback, such as exit interviews (e.g. see Mann et al., 2016), would be valuable to clarify the reasons for drop-out from online perinatal studies and inform ways to reduce attrition in future trials.

Study outcome measures were selected as they have shown good psychometric properties and have been used to evaluate the effectiveness of compassion-focused interventions in other published studies (e.g. Neff & Germer, 2013; Lucre & Corten, 2013). However, all were self-report questionnaires and collecting multiple self-reports from a single respondent can lead to common method variance (Mann, 2016), which may inflate inter-correlations between measures (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). This is not problematic for between-group comparisons but had potential to introduce bias in the mediation analysis. Innovative observational measures of self-compassion are also being developed (Sbarra., Smith & Mehl, 2012), which could potentially be incorporated in future studies, along with interview measures of some aspects of mental health and well-being, to reduce this risk in future trials.

A further limitation relating to the mediation analysis is that this was based on data from a single time point. This was done because there were significant changes in the primary outcome of well-being at post-intervention only. However, ideally mediator variables should temporally precede the dependent variable (Kraemer, Stice, Kazdin, Offord & Kupfer, 2001). Therefore, the present mediation analysis should be interpreted with caution, and it would be useful to assess mediation over three time points in future studies (i.e. entering group allocation at baseline, self-compassion at post-intervention as the proposed mediator and well-being outcomes at follow-up) to offer a stronger test of this proposed mechanism of change.

Conclusions

This is the first RCT of an online compassion-based intervention developed for the post-natal period. Adherence rates and feedback suggested that KFMO was an accessible and acceptable intervention for women in the first year post-partum. The programme showed promise as a well-being intervention, with participants allocated to KFMO showing greater increases in self-compassion and well-being compared to controls. Changes in well-being were statistically mediated by changes in self-compassion, in line with theories linking self-compassion to perinatal well-being (e.g. Cree, 2010; Felder et al., 2016a). However, contrary to hypotheses, the available data did not evidence any difference between groups in changes in well-being to a six-week follow-up, and differences were not detected at any point on secondary outcome measures such as anxiety and depression. However, the online, self-help format of KFMO means it has the potential for widespread access, required for well-being interventions. If a modified version of the KFMO programme can deliver a more sustained impact on well-being, the programme also warrants investigation as a potential preventative intervention for perinatal mental health. The findings should be interpreted in the context of study limitations including high attrition rates and some limitations to generalisability.

References

Ashford, M. T., Olander, E. K., & Ayers, S. (2016). Computer-or web-based interventions for perinatal mental health: A systematic review. *Journal of Affective Disorders, 197*, 134-146. Doi: 10.1016/j.jad.2016.02.057

Bennett, S. S., & Indman, P. (2003). *Beyond the blues: A guide to understanding and treating prenatal and postpartum depression*. CA: Mood Swings Press.

Bögels, S. M., Lehtonen, A., & Restifo, K. (2010). Mindful parenting in mental health care. *Mindfulness, 1*(2), 107-120. Doi: 0.1007/s12671-010-0014-5

Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: A meta-analysis of randomized controlled studies. *BMC Public Health, 13*(1), 119. Doi: 10.1186/1471-2458-13-119

Breines, J. G., & Chen, S. (2012). Self-compassion increases self-improvement motivation. *Personality and Social Psychology Bulletin, 38*(9), 1133-1143. Doi: 10.1177/0146167212445599

British Psychological Society (BPS) (2014*) Code of Human Research Ethics*. Leicester, UK: British Psychological Society.

Cappe, E., Wolff, M., Bobet, R., & Adrien, J. (2011). Quality of life: A key variable to consider in the evaluation of adjustment in parents of children with autism spectrum disorders and in the development of relevant support and assistance programmes. *Quality of Life Research, 20*(8), 1279-1294. Doi: 10.1007/s11136-011-9861-3

Carter, C. S. (1998). Neuroendocrine perspectives on social attachment and love. *Psychoneuroendocrinology, 23*(8), 779-818. Doi: 10.1016/S0306-4530(98)00055-9

Cochrane Collaboration. (2017). *Cochrane Collaboration Risk of Bias Tool (CCRBT).* Downloaded from:
http://handbook.cochrane.org/chapter_8/8_assessing_risk_of_bias_in_included_studies.htm

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159. Doi: 10.1037/0033-2909.112.1.155

Condon, J. T., Boyce, P., & Corkindale, C. J. (2004). The first-time fathers study: A prospective study of the mental health and wellbeing of men during the transition to parenthood. *Australian and New Zealand Journal of Psychiatry, 38*(1-2), 56-64.

Cornish, A. M., McMahon, C. A., Ungerer, J. A., Barnett, B., Kowalenko, N., & Tennant, C. (2005). Postnatal depression and infant cognitive and motor development in the second postnatal year: The impact of depression chronicity and infant gender. *Infant Behavior and Development, 28*(4), 407-417. Doi: 10.1016/j.infbeh.2005.03.004

Corno, G., Molinari, G., Espinoza, M., Herrero, R., Etchemendy, E., Carrillo Vega, A., & Banos, R. M. (2016). An innovative online positive psychology training addressed to pregnant youth. *Pervasive Computing Paradigms for Mental Health, 604*, 240-246. Doi:10.1007/978-3-319-32270-4_24

Cree, M. (2010). Compassion focused therapy with perinatal and mother-infant distress. *International Journal of Cognitive Therapy, 3*(2), 159-171. Doi:10.1521/ijct.2010.3.2.159

Cree, M. (2015). *Postnatal depression: Using compassion focused therapy to enhance mood, confidence and bonding.* London: Robinson.

Dennis, C., & Creedy, D. (2004). Psychosocial and psychological interventions for preventing postpartum depression (review). *Cochrane Database of Systematic Review, 18*(4) Doi: 10.1002/14651858.CD001134.pub2

Dennis, C. L., & Dowswell, T. (2013). Psychosocial and psychological interventions for preventing postpartum depression. *Cochrane Database of Systematic Reviews*. Doi: 10.1002/14651858.CD001134.pub3

Depue, R. A., & Morrone-Strupinsky, J. V. (2005). A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation. *Behavioral and Brain Sciences, 28*(3), 313-349. Doi: 10.1017/S0140525X05000063

Drozd, F., Mork, L., Nielsen, B., Raeder, S., & Bjørkli, C. A. (2014). Better Days–A randomized controlled trial of an internet-based positive psychology intervention. *The Journal of Positive Psychology, 9*(5), 377-388. Doi: 10.1080/17439760.2014.910822

Dunn, C., Hanieh, E., Roberts, R., & Powrie, R. (2012). Mindful pregnancy and childbirth: Effects of a mindfulness-based intervention on women's psychological distress and well-being in the perinatal period. *Archives of Women's Mental Health, 15*(2), 139-143. Doi: 10.1007/s00737-012-0264-4

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). G* power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175-191. Doi: 10.3758/BF03193146

Feise, R. J. (2002). Do multiple outcome measures require p-value adjustment? *BMC Medical Research Methodology, 2*(1), 8. Doi: 10.1186/1471-2288-2-8

Felder, J. N., Lemon, E., Shea, K., Kripke, K., & Dimidjian, S. (2016). Role of self-compassion in psychological well-being among perinatal women. *Archives of Women's Mental Health, 19*(4), 687-690. Doi: 687-690. 10.1007/s00737-016-0628-2

Felder, J. N., Segal, Z., Beck, A., Sherwood, N. E., Goodman, S. H., Boggs, J., . . . Dimidjian, S. (2017). An open trial of web-based mindfulness-based cognitive therapy for perinatal

women at risk for depressive relapse. *Cognitive and Behavioral Practice, 24*(1), 26-37. Doi: 10.1016/j.cbpra.2016.02.002

Feldman, R., Weller, A., Zagoory-Sharon, O., & Levine, A. (2007). Evidence for a neuroendocrinological foundation of human affiliation: Plasma oxytocin levels across pregnancy and the postpartum period predict mother-infant bonding. *Psychological Science, 18*(11), 965-970. Doi: 10.1111/j.1467-9280.2007.02010.x

Field, A. (2009). *Discovering statistics using SPSS*. London: Sage.

Field, A. P., & Gillett, R. (2010). How to do a meta-analysis. *British Journal of Mathematical and Statistical Psychology, 63*(3), 665-694. Doi: 10.1348/000711010X502733

Field, A., & Hole, G. (2003). *How to design and report experiments*. London: Sage.

Field, T. (2010). Postpartum depression effects on early interactions, parenting, and safety practices: A review. *Infant Behavior and Development, 33*(1), 1-6.

Gammer, I. (2017). *Self-compassion and well-being in parenthood: a narrative review and meta-analysis* (Unpublished doctoral dissertation). Canterbury Christ Church University, UK.

Gaynes, B. N., Gavin, N., Meltzer-Brody, S., Lohr, K. N., Swinson, T., Gartlehner, G., . . . Miller, W. C. (2005). Perinatal depression: Prevalence, screening accuracy, and screening outcomes: *Evid. Rep./Technol. Assess. (Summ.) 119*, 1–8.

Germer, C. K. (2009). *The mindful path to self-compassion: Freeing yourself from destructive thoughts and emotions*. USA: Guilford Press.

Gilbert, P. (2005). *Compassion: Conceptualisations, research and use in psychotherapy*. London: Routledge.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment, 15*(3), 199-208. Doi: 10.1192/apt.bp.107.005264

Gilbert, P. (2010). *The compassionate mind: A new approach to life's challenges*. London: New Harbinger Publications.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*(1), 6-41. Doi: 10.1111/bjc.12043

Gilbert, P., Clarke, M., Hempel, S., Miles, J. N., & Irons, C. (2004). Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology, 43*(1), 31-50. Doi: 10.1348/014466504772812959

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy, 13*(6), 353-379. Doi: 10.1002/cpp.507

Gjerdingen, D. K., & Yawn, B. P. (2007). Postpartum depression screening: Importance, methods, barriers, and recommendations for practice. *Journal of the American Board of Family Medicine : JABFM, 20*(3), 280-288. doi:20/3/280

Goodman, J. H., Guarino, A., Chenausky, K., Klein, L., Prager, J., Petersen, R., . . . Freeman, M. (2014). CALM pregnancy: Results of a pilot study of mindfulness-based cognitive therapy for perinatal anxiety. *Archives of Women's Mental Health, 17*(5), 373-387. Doi: 10.1007/s00737-013-0402-7

Hall, P. (2006). Mothers' experiences of postnatal depression: An interpretative phenomenological analysis. *Community Practitioner, 79*(8), 256.

Hall, P. L., & Wittkowski, A. (2006). An exploration of negative thoughts as a normal phenomenon after childbirth. *Journal of Midwifery & Women's Health, 51*(5), 321-330. Doi: 10.1016/j.jmwh.2006.03.007

Hartley-Jones, C. (2016). *Self-Kindness for Mums.* Publisher: Author (self-published, UK)

Harwood, K., McLean, N., & Durkin, K. (2007). First-time mothers' expectations of parenthood: What happens when optimistic expectations are not matched by later experiences? *Developmental Psychology, 43*(1), 1. Doi: 10.1037/0012-1649.43.1.1

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [White paper].* Retrieved from http://www.afhayes.com/public/process2012.pdf

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* Guilford Press.

Henry, J. D., & Crawford, J. R. (2005). The short-form version of the depression anxiety stress scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 44*(2), 227-239. Doi: 10.1348/014466505X29657

Hollis-Walker, L., & Colosimo, K. (2011). Mindfulness, self-compassion, and happiness in non-meditators: A theoretical and empirical examination. *Personality and Individual Differences, 50*(2), 222-227. Doi: 10.1016/j.paid.2010.09.033

Keyes, C. L. (2006). Subjective well-being in mental health and human development research worldwide: An introduction. *Social Indicators Research, 77*(1), 1-10. Doi: 10.1007/s11205-005-5550-3

Keyes, C. L. (2005) Mental illness and/or mental health? Investigating axioms of the complete health model. *Journal of Consulting and Clinical Psychology 73*, 539–548. Doi: 10.1037/0022-006X.73.3.539

Kirby, J. N. (2016a). The role of mindfulness and compassion in enhancing nurturing family environments. *Clinical Psychology: Science and Practice, 23*(2), 142-157. Doi: 10.1111/cpsp.12149

Kirby, J. N. (2016b). Compassion interventions: The programmes, the evidence, and implications for research and practice. *Psychology and Psychotherapy: Theory, Research and Practice, 2016*. Doi: 10.1111/papt.12104

Kirby, J. N., Tellegen, C. L., & Steindl, S. R. (2017). A meta-analysis of compassion-based interventions: current state of knowledge and future directions. *Behaviour Therapy* (in press).

Kraemer, H. C., Stice, E., Kazdin, A., Offord, D., & Kupfer, D. (2001). How do risk factors work together? mediators, moderators, and independent, overlapping, and proxy risk factors. *American Journal of Psychiatry, 158*(6), 848-856. Doi: 10.1176/appi.ajp.158.6.848

Kupeli, N., Chilcot, J., Schmidt, U. H., Campbell, I. C., & Troop, N. A. (2013). A confirmatory factor analysis and validation of the forms of self-criticism/reassurance scale. *British Journal of Clinical Psychology, 52*(1), 12-25. Doi: 10.1111/j.2044-8260.2012.02042.x

Leaviss, J., & Uttley, L. (2015). Psychotherapeutic benefits of compassion-focused therapy: An early systematic review. *Psychological Medicine, 45*(05), 927-945. Doi: 10.1017/S0033291714002141

Leigh, B., & Milgrom, J. (2008). Risk factors for antenatal depression, postnatal depression and parenting stress. *BMC Psychiatry, 8*(1), 24. Doi: 10.1186/1471-244X-8-24

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. *Behaviour Research and Therapy, 33*(3), 335-343.

Lucre, K. M., & Corten, N. (2013). An exploration of group compassion-focused therapy for personality disorder. *Psychology and Psychotherapy: Theory, Research and Practice, 86*(4), 387-400. Doi: 10.1111/j.2044-8341.2012.02068.x

MacBeth, A., & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review, 32*(6), 545-552. Doi: 10.1016/j.cpr.2012.06.003

Mallikarjun, P. K., & Oyebode, F. (2005). Prevention of postnatal depression. *The Journal of the Royal Society for the Promotion of Health, 125*(5), 221-226. Doi: 10.1177/146642400512500514

Mann, J., Kuyken, W., O'Mahen, H., Ukoumunne, O. C., Evans, A., & Ford, T. (2016). Manual development and pilot randomised controlled trial of mindfulness-based cognitive therapy versus usual care for parents with a history of depression. *Mindfulness, 7*, 1024–1033. Doi: 10.1007/s12671-016-0543-7

Mitchell, J., Stanimirovic, R., Klein, B., & Vella-Brodrick, D. (2009). A randomised controlled trial of a self-guided internet intervention promoting well-being. *Computers in Human Behavior, 25*(3), 749-760. Doi: 10.1016/j.chb.2009.02.003

Moehler, E., Brunner, R., Wiebel, A., Reck, C., & Resch, F. (2006). Maternal depressive symptoms in the postnatal period are associated with long-term impairment of mother–child bonding. *Archives of Women's Mental Health, 9*(5), 273-278. Doi: 10.1007/s00737-006-0149-5

Moreira, H., Gouveia, M. J., Carona, C., Silva, N., & Canavarro, M. C. (2014). Maternal attachment and children's quality of life: The mediating role of self-compassion and parenting stress. *Journal of Child and Family Studies, 24*, 1-13. doi:10.1007/s10826-014-0036-z

Muris, P., & Petrocchi, N. (2016). Protection or vulnerability? A meta-analysis of the relations between the positive and negative components of self-compassion and psychopathology. *Clinical Psychology & Psychotherapy,* Advance online publication. http://dx.doi.org/10.1002/cpp.2005

National Institute for Health and Care Excellence (NICE) (2014). *Antenatal and postnatal mental health: The nice guideline on clinical management and service guidance (updated edition). Guideline Number 192.* London: British Psychological Society and The Royal College of Psychiatrists. Retrieved from: https://www.nice.org.uk/guidance/cg192

Neff, K. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85-101. Doi: 10.1080/15298860309032

Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250. doi:10.1080/15298860309027

Neff, K. (2011). *Self compassion*. UK: Hachette.

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250. doi:10.1080/15298860309027

Neff, K. D., & Beretvas, S. N. (2013). The role of self-compassion in romantic relationships. *Self and Identity, 12*(1), 78-98. Doi: 10.1080/15298868.2011.639548

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of Clinical Psychology, 69*(1), 28-44. Doi: 10.1002/jclp.21923

Neff, K. D., Hsieh, Y., & Dejitterat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity, 4*(3), 263-287. Doi: 10.1080/13576500444000317

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41*(1), 139-154. Doi:10.1016/j.jrp.2006.03.004

Neff, K. D., Pisitsungkagarn, K., & Hsieh, Y. (2008). Self-compassion and self-construal in the united states, thailand, and taiwan. *Journal of Cross-Cultural Psychology, 39*(3), 267-285. Doi: 10.1177/0022022108314544

Neff, K. D., Rude, S. S., & Kirkpatrick, K. L. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality, 41*(4), 908-916. Doi: 10.1016/j.jrp.2006.08.002

Neff, K. D., & Faso, D. J. (2014). Self-compassion and well-being in parents of children with autism. *Mindfulness, 6*(4), 938-947. doi:10.1007/s12671-014-0359-2

O'Hara, M. W., & Swain, A. M. (1996). Rates and risk of postpartum depression-a meta-analysis. *International Review of Psychiatry, 8*, 37-54. Doi:10.3109/09540269609037816

Olsson, M. B., & Hwang, C. (2001). Depression in mothers and fathers of children with intellectual disability. *Journal of Intellectual Disability Research, 45*(6), 535-543. Doi: 10.1046/j.1365-2788.2001.00372.x

Perez-Blasco, J., Viguer, P., & Rodrigo, M. F. (2013). Effects of a mindfulness-based intervention on psychological distress, well-being, and maternal self-efficacy in breast-feeding mothers: Results of a pilot study. *Archives of Women's Mental Health, 16*(3), 227-236. Doi: 10.1007/s00737-013-0337-z

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879. Doi: 10.1037/0021-9010.88.5.879

Potharst, E.S., Aktar, E., Rexwinkel, M., Rigterink, M., & Bögels, S.M. (2017). Mindful with Your Baby: Feasibility, Acceptability, and Effects of a Mindful Parenting Group Training for

Mothers and Their Babies in a Mental Health Context. *Mindfulness,* Online publication ahead of print, doi: 10.1007/s12671-017-0699-9

Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods, 16*(2), 93. Doi: 10.1037/a0022658

Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology & Psychotherapy, 18*(3), 250-255. Doi: 10.1002/cpp.702

Richards, D., & Richardson, T. (2012). Computer-based psychological treatments for depression: A systematic review and meta-analysis. *Clinical Psychology Review, 32*(4), 329-342. Doi: 10.1016/j.cpr.2012.02.004

Robertson, E., Grace, S., Wallington, T., & Stewart, D. E. (2004). Antenatal risk factors for postpartum depression: A synthesis of recent literature. *General Hospital Psychiatry, 26*(4), 289-295. Doi: 10.1016/j.genhosppsych.2004.02.006

Rosenthal, R. (1991). *Meta-analytic procedures for social research.* London: Sage.

Rothman, K. J. (1990). No adjustments are needed for multiple comparisons. *Epidemiology, 1*(1), 43-46. Doi: 10.1097/00001648-199001000-00010

Ryan, D., Milis, L., & Misri, N. (2005). Depression during pregnancy. *Canadian Family Physician Medecin De Famille Canadien, 51*, 1087-1093.

Ryff, C. D. (1989). Happiness is everything, or is it? explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069. Doi: 10.1037/0022-3514.57.6.1069

Sawyer Cohen, J. (2011). Mindfulness and self-compassion in the transition to motherhood: A prospective study of postnatal mood and attachment. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 72*(5-B), 3105.

Sbarra, D. A., Smith, H. L., & Mehl, M. R. (2012). When leaving your ex, love yourself: Observational ratings of self-compassion predict the course of emotional recovery following marital separation. *Psychological Science, 23*(3), 261-269. Doi:10.1177/0956797611429466

Segal, Z. V., Teasdale, J. D., Williams, J. M., & Gemar, M. C. (2002). The mindfulness-based cognitive therapy adherence scale: Inter-rater reliability, adherence to protocol and treatment distinctiveness. *Clinical Psychology & Psychotherapy, 9*(2), 131-138. Doi: 10.1002/cpp.320

Shapira, L. B., & Mongrain, M. (2010). The benefits of self-compassion and optimism exercises for individuals vulnerable to depression. *The Journal of Positive Psychology, 5*(5), 377-389. Doi: 10.1080/17439760.2010.516763

Sockol, L. E. (2015). A systematic review of the efficacy of cognitive behavioral therapy for treating and preventing perinatal depression. *Journal of Affective Disorders, 177*, 7-21. Doi: 10.1016/j.jad.2015.01.052

Stein, A., Pearson, R. M., Goodman, S. H., Rapa, E., Rahman, A., McCallum, M., . . . Pariante, C. M. (2014). Effects of perinatal mental disorders on the fetus and child. *The Lancet, 384*(9956), 1800-1819. Doi: 10.1016/S0140-6736(14)61277-0

Streiner, D. L., & Norman, G. R. (2011). Correction for multiple testing: Is there a resolution? *CHEST Journal, 140*(1), 16-18. Doi: 10.1378/chest.11-0523

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., . . . Stewart-Brown, S. (2007). The warwick-edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes, 5*, 63-73. Doi:1477-7525-5-63

Werner, E., Miller, M., Osborne, L. M., Kuzava, S., & Monk, C. (2015). Preventing postpartum depression: Review and recommendations. *Archives of Women's Mental Health, 18*(1), 41-60. Doi: 10.1007/s00737-014-0475-y

Williams, M. J., Dalgleish, T., Karl, A., & Kuyken, W. (2014). Examining the factor structures of the five facet mindfulness questionnaire and the self-compassion scale. *Psychological Assessment, 26*(2), 407. Doi: 10.1037/a0035566

Wood, A. M., & Joseph, S. (2010). The absence of positive psychological (eudemonic) well-being as a risk factor for depression: A ten year cohort study. *Journal of Affective Disorders, 122*(3), 213-217. Doi: 10.1016/j.jad.2009.06.032

Yarnell, L. M., & Neff, K. D. (2013). Self-compassion, interpersonal conflict resolutions, and well-being. *Self and Identity, 12*(2), 146-159. Doi: 10.1080/15298868.2011.649545

Major Research Project (MRP) Section C: Appendices of Supporting Material

Appendix A: Full search terms used for systematic literature search

[PARENT (Mother* OR Parent* OR Father* OR 'Primary Caregiver' OR 'foster carer' OR Maternal OR Paternal)]

OR

[PERINATAL (Post-natal OR Postnatal OR Post-partum OR Postpartum OR Puerper* OR PND OR PPD OR 'Baby Blues' OR perinatal)]

AND

[SELF-COMPASSION (Compassion* OR Self-compassion* OR Compassion-focu* OR CFT OR Self-kind* OR Self-critic*)]

Appendix B: Standard Quality Assessment Criteria for Primary Research (Kmet, Lee & Cook, 2004)

Quality Scoring of Quantitative Studies

To calculate summary score:
Total sum = (number of "yes" * 2) + (number of "partials" * 1)
Total possible sum = 28 – (number of "N/A" * 2)
Summary score: total sum / total possible sum

1. *Question or objective sufficiently described?*

Yes: Is easily identified in the introductory section (or first paragraph of methods section). Specifies (where applicable, depending on study design) *all* of the following: purpose, subjects/target population, and the *specific* intervention(s) /association(s)/descriptive parameter(s) under investigation. A study purpose that only becomes apparent after studying other parts of the paper is *not* considered sufficiently described.
Partial: Vaguely/incompletely reported (e.g. "describe the effect of" or "examine the role of" or "assess opinion on many issues" or "explore the general attitudes"...); *or* some information has to be gathered from parts of the paper other than the introduction/background/objective section.
No: Question or objective is not reported, or is incomprehensible.
N/A: Should not be checked for this question.

2. *Design evident and appropriate to answer study question?*
(If the study question is not given, infer from the conclusions).

Yes: Design is easily identified and is appropriate to address the study question / objective.
Partial: Design and /or study question not clearly identified, but gross inappropriateness is not evident; *or* design is easily identified but only partially addresses the study question.
No: Design used does not answer study question (e.g., a comparison group is required to answer the study question, but none was used); *or* design cannot be identified.
N/A: Should not be checked for this question.

Method of subject selection (and comparison group selection, if applicable) or source of information/input variables (e.g., for decision analysis) is described and appropriate?

Yes: Described and appropriate. Selection strategy *designed* (i.e., consider sampling frame and strategy) to obtain an unbiased sample of the relevant target population or the entire target population of interest (e.g., consecutive patients for clinical trials, population-based random sample for case-control studies

or surveys). Where applicable, inclusion/exclusion criteria are described and defined (e.g., "cancer" -- ICD code or equivalent should be provided). *Studies of volunteers:* methods and setting of recruitment reported. *Surveys:* sampling frame/ strategy clearly described and appropriate.
Partial: Selection methods (and inclusion/exclusion criteria, where applicable) are not completely described, but no obvious inappropriateness. Or selection strategy is not ideal (i.e., likely introduced bias) but did not likely seriously distort the results (e.g., telephone survey sampled from listed phone numbers only; hospital based case-control study identified all cases admitted during the study period, but recruited controls admitted during the day/evening only). Any study describing participants only as "volunteers" or "healthy volunteers". *Surveys:* target population mentioned but sampling strategy unclear.
No: No information provided. *Or* obviously inappropriate selection procedures (e.g., inappropriate comparison group if intervention in women is compared to intervention in men). *Or* presence of selection bias which likely seriously distorted the results (e.g., obvious selection on "exposure" in a case-control study).
N/A: Descriptive case series/reports.

4. *Subject (and comparison group, if applicable) characteristics or input variables/information (e.g., for decision analyses) sufficiently described?*

Yes: Sufficient relevant baseline/demographic information clearly characterizing the participants is provided (or reference to previously published baseline data is provided). Where applicable, reproducible criteria used to describe/categorize the participants are clearly defined (e.g., ever-smokers, depression scores, systolic blood pressure > 140). If "healthy volunteers" are used, age and sex must be reported (at minimum). *Decision analyses:* baseline estimates for input variables are clearly specified.
Partial: Poorly defined criteria (e.g. "hypertension", "healthy volunteers", "smoking"). *Or* incomplete relevant baseline / demographic information (e.g., information on likely confounders not reported). *Decision analyses:* incomplete reporting of baseline estimates for input variables.
No: No baseline / demographic information provided.
Decision analyses: baseline estimates of input variables not given.
N/A: Should not be checked for this question.

5. If random allocation to treatment group was possible, is it described?

Yes: True randomization done - requires a description of the method used (e.g., use of random numbers).
Partial: Randomization mentioned, but method is not (i.e. it may have been possible that randomization was not true).
No: Random allocation not mentioned although it would have been feasible and appropriate (and was possibly done).
N/A: Observational analytic studies. Uncontrolled experimental studies. Surveys. Descriptive case series / reports. Decision analyses.

6. ***If interventional and blinding of investigators to intervention was possible, is it reported?***

Yes: Blinding reported.
Partial: Blinding reported but it is not clear who was blinded.
No: Blinding would have been possible (and was possibly done) but is not reported.
N/A: Observational analytic studies. Uncontrolled experimental studies. Surveys. Descriptive case series / reports. Decision analyses.
7. *If interventional and blinding of subjects to intervention was possible, is it reported?*
Yes: Blinding reported.
Partial: Blinding reported but it is not clear who was blinded.
No: Blinding would have been possible (and was possibly done) but is not reported.
N/A: Observational studies. Uncontrolled experimental studies. Surveys. Descriptive case series / reports.

8. ***Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?***

Yes: Defined (or reference to complete definitions is provided) and measured according to reproducible, "objective" criteria (e.g., death, test completion – yes/no, clinical scores). Little or minimal potential for measurement / misclassification errors. *Surveys:* clear description (or reference to clear description) of questionnaire/interview content and response options. *Decision analyses:* sources of uncertainty are defined for all input variables.
Partial: Definition of measures leaves room for subjectivity, *or* not sure (i.e., not reported in detail, but probably acceptable). *Or* precise definition(s) are missing, but no evidence or problems in the paper that would lead one to assume major problems. *Or* instrument/mode of assessment(s) not reported. Or misclassification errors may have occurred, but they did not likely seriously distort the results (e.g., slight difficulty with recall of long-ago events; exposure is measured only at baseline in a long cohort study). *Surveys:* description of questionnaire/interview content incomplete; response options unclear. *Decision analyses:* sources of uncertainty are defined only for some input variables.
No: Measures not defined, or are inconsistent throughout the paper. *Or* measures employ only ill-defined, subjective assessments, e.g. "anxiety" or "pain." *Or* obvious misclassification errors/measurement bias likely seriously distorted the results (e.g., a prospective cohort relies on self-reported outcomes among the "unexposed" but requires clinical assessment of the "exposed"). *Surveys:* no description of questionnaire/interview content or response options. *Decision analyses:* sources of uncertainty are not defined for input variables.
N/A: Descriptive case series / reports.

9. ***Sample size appropriate?***

Yes: Seems reasonable with respect to the outcome under study and the study

design. When statistically significant results are achieved for major outcomes, appropriate sample size can usually be assumed, unless large standard errors (SE > 1⁄2 effect size) and/or problems with multiple testing are evident. *Decision analyses:* size of modeled cohort / number of iterations specified and justified.
Partial: Insufficient data to assess sample size (e.g., sample seems "small" and there is no mention of power/sample size/effect size of interest and/or variance estimates aren't provided). *Or* some statistically significant results with standard errors > 1⁄2 effect size (i.e., imprecise results). *Or* some statistically significant results in the absence of variance estimates. *Decision analyses:* incomplete description or justification of size of modeled cohort / number of iterations.
No: Obviously inadequate (e.g., statistically non-significant results and standard errors > 1⁄2 effect size; or standard deviations > _ of effect size; or statistically non-significant results with no variance estimates and obviously inadequate sample size). *Decision analyses:* size of modeled cohort / number of iterations not specified.
N/A: Most surveys (except surveys comparing responses between groups or change over time). Descriptive case series / reports.

10. *Analysis described and appropriate?*

Yes: Analytic methods are described (e.g. "chi square"/ "t-tests"/"Kaplan-Meier with log rank tests", etc.) and appropriate.
Partial: Analytic methods are not reported and have to be guessed at, but are probably appropriate. *Or* minor flaws or some tests appropriate, some not (e.g., parametric tests used, but unsure whether appropriate; control group exists but is not used for statistical analysis). *Or* multiple testing problems not addressed.
No: Analysis methods not described and cannot be determined. *Or* obviously inappropriate analysis methods (e.g., chi-square tests for continuous data, SE given where normality is highly unlikely, etc.). *Or* a study with a descriptive goal / objective is over-analyzed.
N/A: Descriptive case series / reports.

11. Some estimate of variance (e.g., confidence intervals, standard errors) is reported for the main results/outcomes (i.e., those directly addressing the study question/ objective upon which the conclusions are based)?

Yes: Appropriate variances estimate(s) is/are provided (e.g., range, distribution, confidence intervals, etc.). *Decision analyses:* sensitivity analysis includes all variables in the model.
Partial: Undefined "+/-" expressions. *Or* no specific data given, but insufficient power acknowledged as a problem. *Or* variance estimates not provided for all main results/outcomes. *Or* inappropriate variance estimates (e.g., a study examining change over time provides a variance around the parameter of interest at "time 1" or "time 2", but does not provide an estimate of the variance around the difference). *Decision analyses:* sensitivity analysis is limited, including only some variables in the model.
No: No information regarding uncertainty of the estimates. *Decision analyses:* No

sensitivity analysis.
N/A: Descriptive case series / reports. Descriptive surveys collecting information using open-ended questions.

12. *Controlled for confounding?*

Yes: Randomized study, with comparability of baseline characteristics reported (or non-comparability controlled for in the analysis). *Or* appropriate control at the design or analysis stage (e.g., matching, subgroup analysis, multivariate models, etc). *Decision analyses:* dependencies between variables fully accounted for (e.g., joint variables are considered).
Partial: Incomplete control of confounding. *Or* control of confounding reportedly done but not completely described. *Or* randomized study without report of comparability of baseline characteristics. *Or* confounding not considered, but not likely to have seriously distorted the results. *Decision analyses:* incomplete consideration of dependencies between variables.
No: Confounding not considered, and may have seriously distorted the results. *Decision analyses:* dependencies between variables not considered.
N/A: Cross-sectional surveys of a single group (i.e., surveys examining change over time or surveys comparing different groups should address the potential for confounding). Descriptive studies. Studies explicitly stating the analysis is strictly descriptive/exploratory in nature.

13. *Results reported in sufficient detail?*

Yes: Results include major outcomes and all mentioned secondary outcomes.
Partial: Quantitative results reported only for some outcomes. *Or* difficult to assess as study question/objective not fully described (and is not made clear in the methods section), but results seem appropriate.
No: Quantitative results are reported for a subsample only, or "n" changes continually across the denominator (e.g., reported proportions do not account for the entire study sample, but are reported only for those with complete data -- i.e., the category of "unknown" is not used where needed). *Or* results for some major or mentioned secondary outcomes are only qualitatively reported when quantitative reporting would have been possible (e.g., results include vague comments such as "more likely" without quantitative report of actual numbers).
N/A: Should not be checked for this question.

14. *Do the results support the conclusions?*

Yes: All the conclusions are supported by the data (even if analysis was inappropriate). Conclusions are based on all results relevant to the study question, negative as well as positive ones (e.g., they aren't based on the sole significant finding while ignoring the negative results). Part of the conclusions may expand beyond the results, if made *in addition to* rather than instead of those strictly supported by data, and if including indicators of their interpretative

nature (e.g., “suggesting,” “possibly”).
Partial: Some of the major conclusions are supported by the data, some are not. *Or* speculative interpretations are not indicated as such. *Or* low (or unreported) response rates call into question the validity of generalizing the results to the target population of interest (i.e., the population defined by the sampling frame/strategy).
No: None or a very small minority of the major conclusions are supported by the data. *Or* negative findings clearly due to low power are reported as definitive evidence against the alternate hypothesis. *Or* conclusions are missing. *Or* extremely low response rates invalidate generalizing the results to the target population of interest (i.e., the population defined by the sampling frame/ strategy).
N/A: Should not be checked for this question.

Appendix C: Study information sheets, screening and consent forms

Focus group information sheet and consent form

Research study: The development and initial evaluation of a web-based, compassion-focussed programme for new mothers

Focus Group – Information Sheet and Consent Form

What is the purpose of the focus group?

Researchers at Canterbury Christ Church University a running a study to investigate whether compassionate ways of thinking and relating to oneself and others are related to the well-being of mothers in the first year after having a baby. The study is being run by Isobel Gammer (Trainee Clinical Psychologist) under the supervision of Dr Fergal Jones (Clinical Psychologist) and Dr Charlotte Hartley-Jones (Clinical Psychologist). It has been approved by the Canterbury Christ Church University Independent Research Review Panel and Ethics Committee. You are invited to participate in a focus group. The purpose of the group is to get your feedback about the questionnaires, information and exercises and recruitment strategies. Hearing about your ideas and experiences may help us to decide what to include and how the study should best be carried out.

What will taking part in the focus group involve?

If you choose to participate in this focus group, you will be given some questionnaires to complete and some draft adverts and outlines for a new web-based self-help programme for new mothers to look over. This will take about 45 minutes in total and you can do this at home. A week later, you will be asked to participate in a group discussion with approximately 4-8 other mothers focusing on your experience of completing the questionnaires and your thoughts and suggestions about the other materials. This will take approximately 1 hour. Isobel, who is running the study, will there to ask questions and facilitate the discussion. The group will recorded on a digital audio recorder and later may be transcribed (the conversation will be written out word-for word) and analysed (for example by looking for themes or patterns in what people said).

Do I have to take part?

No, it is up to you to decide to join the study. If you agree to take part, we will ask you to complete the consent part of this form. After this you can withdraw at any time and you do not have to give a reason for this.

What are the possible benefits and risks of taking part?

Your participation may benefit other mothers by helping to ensure the study is acceptable to them. It may also help produce higher quality research by letting the researchers know about any problems with the advert, questionnaires, information, exercises or ways to improve these.

We do not anticipate any significant risks of taking part. However, the questionnaires or information could draw your attention to some difficult thoughts or feelings you may be experiencing. We are unable to provide psychological support services and we will not be following up with you after the

group. However, if you feel distressed or have any concerns, we suggest seeking support from your doctor (GP).

Will my taking part in this study be kept confidential?

All information obtained by researchers in the focus group will be kept strictly confidential. No-one other than the researchers, and the others who take part in the focus group, will know you are taking part. The only exception to this is if you let us know something that suggests there is a risk of harm to you or someone else. In this case the researchers have a responsibility to tell other agencies what they need to in order to ensure everyone is as safe as possible. All participants will be asked not to disclose anything said within the context of the discussion, but it is important to understand that other people in the group with you may not keep all information private and confidential.

The digital audio recording of the group will be stored on encrypted devices (hard drives or USB sticks) only. Paper records, including this consent form and any notes taken in the group, will be stored in a locked cabinet. Any transcription will be anonymous and analysis of the focus group discussion will be done using an anonymised transcript. This means participants will be assigned a participant number and your name or any other identifying information (e.g. your children's names) will not appear in or on the transcript.

Audio recordings will be securely destroyed on completion if the study along with participant identifying information such as your consent form. Anonymous transcripts will be retained for up to five years with other anonymous study data, after which time they will be securely destroyed.

Where can I get more information?

If you have any questions or concerns about this focus group, please contact Isobel Gammer (Trainee Clinical Psychologist).

Address: Salomons Centre for applied Psychology, Canterbury Christ Church University, Runcie Court, David Salomons Estate, Broomhill Road, Southborough, Tunbridge Wells, Kent, TN3 0TF.

Email: i.k.gammer40@canterbury.ac.uk Telephone (study mobile) : 07873 864242

Consent

By signing this consent form, you are indicating that you fully understand the above information, you have had the chance to ask questions and you consent to participate in this focus group as part of the research study.

Participant's signature: _____

Printed name: _____ Date: _____

Web programme consultation information sheet and consent form

Research study: The development and initial evaluation of a web-based, compassion-focussed programme for new mothers

Web Programme Consultation – Information Sheet and Consent Form

What is the purpose of the web programme consultation?

Researchers at Canterbury Christ Church University a running a study to investigate whether compassionate ways of thinking and relating to oneself and others are related to the well-being of mothers in the first year after having a baby. The study is being run by Isobel Gammer (Trainee Clinical Psychologist) under the supervision of Dr Fergal Jones (Clinical Psychologist) and Dr Charlotte Hartley-Jones (Clinical Psychologist). It has been approved by the Canterbury Christ Church University Independent Research Review Panel and Ethics Committee. You are invited to participate in a consultation about the proposed online self-help programme. The purpose of the consultation is to get your feedback about the new programme. Hearing about your experiences and suggestions may help us to decide what to include, what not to and how to make the study most acceptable to participants who take part after you.

What will taking part in the web programme consultation involve?

If you choose to participate in this consultation, you will be emailed a link for the website and a log-on and password to access the self-help programme. You will have access for three weeks and will be invited to 'look around' the intervention, going to any parts of it and reading the information and trying the exercises. The email will also contain some questions to think about as you do this. You will receive email reminders about the programme once or twice a week.

After three weeks, you will receive an email asking for your feedback on the new web programme. We will ask about the design of the website, the content of the programme (e.g. whether the written information clear and relevant to you, whether the exercises are helpful), about how long you think you would need or be able to spend on the website and exercises. We would also like feedback about when we should ask participants to complete some questionnaires and whether email reminders are helpful or not. You will be able to choose if you would like to give feedback by email or over the phone.

Do I have to take part?

No, it is up to you to decide to join the study. If you agree to take part, we will ask you to complete the consent part of this form. After this you can withdraw at any time and you do not have to give a reason for this.

What are the possible benefits and risks of taking part?

Your participation may benefit other mothers by helping to ensure the study is acceptable to them. It may also help produce higher quality research by letting the researchers know about ways to improve the online self-help programme.

We do not anticipate any significant risks of taking part. However, the questionnaires or information could draw your attention to some difficult thoughts or feelings you may be experiencing. We are unable to provide psychological support services and we will not be following up with you after the consultation. However, if you feel distressed or have any concerns, we suggest seeking support from your doctor (GP).

Will my taking part in this study be kept confidential?

All information obtained by researchers in the consultation will be kept strictly confidential. No-one other than the researchers will be told you are taking part. The only exception to this is if you let us know something that suggests there is a risk of harm to you or someone else. In this case the researchers have a responsibility to tell other agencies what they need to in order to ensure everyone is as safe as possible.

Electronic notes from your feedback emails and/or telephone conversations group will be stored on encrypted devices (hard drives or USB sticks) only and the original emails will be deleted straight away. Participants will be assigned a participant number and your name or any other identifying information (e.g. your children's names) will not appear in the electronic notes on your feedback. Paper records, including this consent form will be stored in a locked cabinet, and all identifying information and contact details will be securely destroyed on completion if the study. Anonyised notes will be retained for up to five years with other anonymous study data, after which time they will be securely destroyed.

Where can I get more information?

If you have any questions or concerns about this focus group, please contact Isobel Gammer (Trainee Clinical Psychologist).

Address: Salomons Centre for applied Psychology, Canterbury Christ Church University, Runcie Court, David Salomons Estate, Broomhill Road, Southborough, Tunbridge Wells, Kent, TN3 0TF.

Email: i.k.gammer40@canterbury.ac.uk Study mobile number: 07873 864242

Consent

By signing this consent form, you are indicating that you fully understand the above information, you have had the chance to ask questions, you are happy to be contacted by email and you consent to participate in this web programme consultation as part of the research study.

Email address: _____

Telephone number: _____

Participant's signature: _____

Printed name: _____ Date: _____

Randomised Controlled Trial (RCT) information sheet

Research study: The development and initial evaluation of a web-based, compassion-focussed programme for new mothers

Randomised Controlled Trial – Information Sheet

What is the purpose of the research study?

Having a new baby can be a time when mothers have a range of emotions and experiences. Recent studies have shown that compassionate relating to oneself and others appears to be linked to well-being may be especially helpful at times when there are new challenges to face. We are conducting this study to investigate whether compassionate ways of thinking and relating to self and others is associated with well-being of mothers in the first year after having a baby. We also want to investigate whether a brief, online self-help programme has an effect on compassionate relating and well-being at this time.

Why have I been invited?

You have been invited because you have had or begin caring for a baby in the last year, and registered your interest in the study. Around 200 mothers will be invited to take part.

Do I have to take part?

No, it is up to you to decide to join the study. If you agree to take part, we will ask you to complete a consent declaration (a secure online form). After this you can withdraw at any time and you do not have to give a reason for this.

Who is running the study?

The study is being funded by Canterbury Christ Church University and run by Isobel Gammer (Trainee Clinical Psychologist) under the supervision of Dr Fergal Jones (Clinical Psychologist) and Dr Charlotte Hartley-Jones (Clinical Psychologist). It has been approved by the Canterbury Christ Church University research board and ethics committee.

What will taking part in the study involve?

If you wish to take part, your involvement will be entirely online (so can be done from your home computer, laptop or tablet) and will last for a maximum of 18 weeks.

If you decide you would like to take part, you will be asked to answer some questions. If at this point we do not think the programme is suitable for your needs, we will let you know that you are not being invited to take part at this point, and may suggest alternative sources of information or support. If you are invited to take part you will be asked to give some basic information about yourself and your family. You will then be invited to complete some online questionnaires when you are ready to begin the study and within one month. The questionnaires will ask about things like how you tend to respond when things go wrong, how often you experience certain positive feelings and states of mind and certain negative feelings or symptoms, and how you relate to others. They will take about half an hour to complete. You will be asked to complete the same online questionnaires again at two later points during the study, nine and 15 weeks later.

You will also be invited to complete an online self-help programme, either during the first six weeks or the last six weeks of your involvement in the study. We will let you know be email which grouo you are in and send you a log-on at the appropriate time. The online programme aims to help you develop compassionate thinking, imagery and actions, with a particular focus on being compassionate to yourself. This involves being aware of your own thoughts and experiences, especially difficult ones, and responding to them as best you can with understanding and gentle encouragement. The programme will suggest reading or listening to some information and trying out some simple exercises each week. You will be emailed reminders about the programme, unless you ask us not to send these. Each week's programme can be followed at your own pace – you can pause and return to it later or skip parts that do not seem helpful or you do not have time for.

Why are there two different groups?

We do not know yet whether this self-help programme changes how new mothers say they feel (well-being) or not. Offering the programme to two groups of mothers in turn lets us compare the level of well-being in a group of new mothers who have followed the programme with the level in a group who have not yet done so. To try to make sure the groups are the same to start with, each person taking part is put into one or other group by chance (randomly). You will have a 50% chance of being in the group invited to complete the programme first or second.

Expenses and payments

You will not have to spend any money to take part in the study. We are not able to pay you for your time but we will enter you into a prize draw if you complete the study, which means you have a chance of winning £50 of gift vouchers to spend as you wish.

What are the possible disadvantages and risks of taking part?

Having a new baby is a busy time for most new mothers. Agreeing to take part in the study and complete the self-help programme means there will be an extra thing to do some weeks. While we hope it will be helpful overall, this could be experienced as an added stress for some people. If you do experience additional stress related to taking part in the study, we suggest you consider withdrawing (stopping taking part in the online programme or in the study itself).

Most people find that developing compassion-focused thoughts and activities is a positive experience but a few people have said that starting to become more self-compassionate can make them feel sad or afraid. The programme or the questionnaires may also make you notice some of the more difficult thoughts or feelings you are experiencing. As researchers we are not able to provide psychological support services and we will not be following up with you after this study. If you feel distressed and have any concerns, we suggest seeking support from your doctor (GP).

What are the possible benefits of taking part?

Other programmes designed to help people develop self-compassion have been linked to increased well-being, reduced stress and reduced symptoms of depression and anxiety in people who are not new mothers. We cannot promise the study will help you but the information we get from this study will help improve recommendations we can make for new mothers seeking to improve their well-being and possibly the treatments we offer to prevent some mental health problems developing around this time.

What if there is a problem?

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. Details about this are given in the next section.

More Details

What will happen if I don't want to carry on with the study?

You have right to withdraw from the study at any time. If you let us know you no longer wish to take part, we will ask you if you wish to withdraw from the self-help programme only (in which case you would still be sent an email asking you to complete any remaining online questionnaires) or from the whole study (so you would not receive any further contact from us). If you withdraw from the study, we would like to use the data collected up to your withdrawal.

If you withdraw from the study, we will ask you what the reason is in case this can help us improve future studies of this kind, but you do not have to answer this question.

What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to Isobel Gammer, who is leading the research, and will do her best to answer your questions.

Contact details:

Isobel Gammer (Trainee Clinical Psychologist)

Address: Salomons Centre for applied Psychology, Canterbury Christ Church University, Runcie Court, David Salomons Estate, Broomhill Road, Southborough, Tunbridge Wells, Kent, TN3 0TF.

Email: i.k.gammer40@canterbury.ac.uk

Telephone: Telephone (study mobile) : 07873 864242

If you remain unhappy and wish to complain formally, you can do this by contacting the Research Director at the Salomons Centre.

Contact details:

Prof Paul Camic (Professor of Psychology & Public Health)

Address: Salomons Centre for Applied Psychology, Canterbury Christ Church University, Runcie Court, David Salomons Estate, Broomhill Road, Southborough, Tunbridge Wells, Kent TN3 0TF

Email: paul.camic@canterbury.ac.uk

Telephone: 03330 117114

Will my taking part in this study be kept confidential?

All information that is collected about you during the course of the research will be kept strictly confidential.

Your personal details and the answers to the questionnaires will be gathered using a secure online system called Qualtrics. Once we download these, they will be stored on a secure, encrypted USB stick or hard drive. Your questionnaire answers will be stored and analysed using a participant number (a random number assigned to you for the study) and so will not be linked to any personal

details that identify you. Your identifying information such as your name and email address will be stored separately from your questionnaire answers.

The only people who will have access to your identifying information and contact details are the researchers running the study (Isobel Gammer, Dr Fergal Jones, Dr Charlotte Hartley-Jones). The web developer will have access to your email address, and will have signed an agreement to treat this as confidential and store it on an encrypted device only.

Your anonymised answers to the questionnaires will be analysed for this study only. These may be shared using encrypted devices with other researcher for the purpose of assistance with the analysis. They will be kept for five years, after which time they will be securely destroyed.

No-one will be told that you are taking part in the study. The only exception to this is if you let us know something that suggests there is a risk of harm to you or someone else. In this case the researchers have a responsibility to tell other agencies what they need to in order to ensure everyone is as safe as possible. You are free to tell anyone you wish that you are taking part.

What will happen to the results of the research study?

A summary of the study's findings will be sent to everyone who took part after it is completed in 2017. A report about the study will be submitted to Canterbury Christ Church University as part of Isobel's training - this will be made publicly available. The study may also be published in a shorter form in a scientific journal. All reports will maintain anonymity, meaning that nothing that could identify you would be included.

Where can I get more information?

If you have any questions or want to talk to someone further about participation in the study please contact

Isobel Gammer (Trainee Clinical Psychologist)

Address: Salomons Centre for applied Psychology, Canterbury Christ Church University, Runcie Court, David Salomons Estate, Broomhill Road, Southborough, Tunbridge Wells, Kent, TN3 0TF.

Email: i.k.gammer40@canterbury.ac.uk Study mobile number: 07873 864242

Click here to download and save a copy of this information sheet for your records. A copy is also available here [link to information section of study website]

RCT online consent form and notification scripts

Consent page

Thank you for your interest in our research study.

This study is designed to investigate a new self-help programme. At the moment, the study and programme will not be suitable or helpful for everyone. To help us understand if it would be suitable for you at this time, please indicate 'yes' or 'no' for each of the following statements by checking the relevant box

1. I have read and understood the study information sheet (go back to this)

2. I am aged 18 years or over [yes / no]

3. I live in the UK [yes / no]

4. I am the mother (biological, adoptive or full-time foster carer) of a baby who is **under** one year of age [yes / no]

5. I am comfortable reading English [yes / no]

6. In the past two weeks, I have had thoughts about harming myself or taking my own life [yes / no]

Next >>>

Page 2.1: Shown if not confirming one of criteria 1--5

You have indicated that one or more of the criteria for taking part in the study does not apply to you at the present time. This research study aims to investigate a programme that is designed to meet the needs of those who meet these criteria. As one or more of these is not the case for you, we are not going to ask you to take part in the study at this time as it may not be suitable or helpful for you. We hope to be able to extend the programme to other carers in the future. If you would like more information about compassion-focussed approaches to parenting and other life experiences you could visit the following websites:

www.selfkindnessformums.com

www.compassionatemind.co.uk

www.self-compassion.org

Page 2.2: Shown if answering 'yes' to criterion 6

You have indicated that you have been having thoughts about suicide or self-harm in recent weeks. Having thoughts like this is not uncommon, but it can be a sign that someone is experiencing depression or a high level of distress. This research study aims to investigate a programme that is not designed as a treatment for depression. And because it is web-based study, we are unable to offer additional support to those who take part who are experiencing high levels of distress. For these reasons we are not going to ask you to take part in the study at this time as it may not be suitable or helpful for you.

We suggest you seek support from your general practitioner (GP) or mental health team if you have one.

If you would like to know more about signs and symptoms of post-natal depression, you can find more information here [link to study website page 'post-natal depression'].

If you feel at risk of harming yourself or you feel you are at risk of harming others then you should:

- Telephone or visit your GP as soon as possible and explain to him or her how you are feeling
- If your GP is closed, call NHS 111
- If it is an emergency or there is immediate risk of harm call 999 or go to your nearest Accident and Emergency (A&E) Department at a hospital
- For a 24 hour confidential listening service call the Samaritans 08457 909090

Page 2.3: Shown if meeting all inclusion criteria

Captured / assigned by online system:

- *Date*
- *Participant number*

Thank you. We would like to invite you to take part in the study.

Please enter your full name ☐

Please enter your date of birth ☐

	Yes	No
I consent to take part in this research study	☐	☐

Next >>>

Page 3: consent to participate in prize draw page

Would you like to be entered into the prize draw, to be in with the chance of winning Love2Shop Vouchers (value of £50)? By clicking yes, you will be agreeing to the researchers contacting you by email and/or post after completing the online programme and study questionnaires. This may be in several months' time, once all participants have completed the programme and questionnaires. You do not have to take part in the prize draw to take part in the study.

Yes	No
☐	☐

Next >>>

Page 4: consent to be sent summary of findings

Would you like to be sent a summary of the study's findings by email? This may be in several months' time, once all participants have completed the programme and questionnaires. By clicking yes, you will be agreeing to the researchers contacting you after completing the online programme and study questionnaires. You do not have to consent to being sent a summary of the findings to take part in the study.

Yes	**No**
☐	☐

Next >>>

[redirected to study website to create an account with username and password and then emailed request to complete baseline questionnaires]

Appendix D: Recruitment Materials

Full study advert

Online study advert

Appendix E: Questionnaires

The Warwick-Edinburgh Mental Well-being Scale

Primary reference: The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. Health Qual Life Outcomes 2007; **5**: 63. Tennant R, Hiller L, Fishwick R, Platt S, Joseph S, Weich S, Parkinson J, Secker S, and Stewart-Brown S (2007). *Health and Quality of life Outcomes*, *5*(1), 63.

[This has been removed from the electronic copy]

Self-Compassion Scale—Short Form (SCS-SF)

Primary reference: Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the Self-Compassion Scale. *Clinical Psychology & Psychotherapy. 18*, 250-255.

[This has been removed from the electronic copy]

The Forms of Self-Criticism and Self-Reassurance Scale (FSCSRS)

Primary reference: Gilbert, P., Clark, M., Hempel, S., Miles, J.N.V. & Irons, C. (2004) Criticising and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology*, 43, 31-50.

[This has been removed from the electronic copy]

Depression, Anxiety and Stress Scales – 21 item version (DASS-21)

Primary Reference: Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, *44*(2), 227-239.

[This has been removed from the electronic copy]

Demographics Questions

Information about your baby

What is the sex of your youngest child?

Female (0)
Male (1)
Prefer not to say (777)

Please enter your youngest child's date of birth (DD/MM/YYYY)

Is this your...

First baby (1)
Second baby (2)
Third baby (3)
Fourth or more (4)
Prefer not to say (777)

Is your baby one of multiple babies from the same birth?

YES (please state whether the baby is one of twins triplets etc. if you are happy to) (1)
_____
NO (0)

Information about you and your household

Which of the following best describes your highest level of qualification?

No formal qualifications (0)
GCSEs or equivalent (1)
A Levels or equivalent (2)
Undergraduate degree (3)
Post-graduate degree (4)
Prefer not to say (777)

Which of the following best describes your annual household income (before tax)?

Under £15,000 (0)
£15,001- £25,000 (1)
£25,001 - £35,000 (2)
£35,001 - £55,000 (3)
£55,001 - £75,000 (4)
Over £75,000 (5)
Prefer not to say (777)

What is your most recent occupation in addition to being a mother (if applicable)?

Which of the following best describes your family structure?

Single parent household (1)
Married / civil partnership / co-habiting (2)
Prefer not to say (777)

Which of the following best describes your ethnic origin? Please select below.

[Office for National Statistics standard options in dropdown menu]

If you have answered 'other' with respect to ethnic background, please describe below, or if you prefer not to say you can leave this box blank

How would you describe your religious background?

No religion (0)
Christian (1)
Jewish (2)
Muslim (3)
Sikh (4)
Buddhist (5)
Other (please describe below) (6)
Prefer not to say (777)

How do you describe your sexual orientation ?

heterosexual (1)
gay / lesbian (2)
bi-sexual (3)
prefer not to say (777)

Would you describe yourself as having a disability?

Yes (please give details if you are happy to) (1) _____
No (0)
Prefer not to say (777)

Would you describe any of the children in your household as having a disability?

Yes (please give details if you are happy to) (1) _____
No (0)
Prefer not to say (777)

Are you currently receiving any psychiatric or psychological treatment for a mental health issue?

Yes (1)
No (0)
Unsure (2)
Prefer not to say (777)

Please briefly describe the nature of the mental health difficulty you are experiencing and the treatment you are receiving, if you are happy to do so. If you prefer not to say you can leave this box blank.

Do you have any previous experience of compassion-focused or self-kindness approaches or interventions?

Yes (please describe if you are happy to) (1) _____
No (0)

Engagement and Feedback Questions

Please rate how often you did each of the following in relation to your use of the Kindness for Mums Online programme over the last six weeks:

	Never (0)	Less than once a week (1)	Around once a week (2)	More than once a week (3)	Most days (4)
Login to the website Read some of the session text Try out an exercise from the programme					

Did you receive weekly email reminders about the programme, letting you know the next session had become available?

Yes (1)
No (0)

Please add any comments you would like to make about the usefulness of weekly email reminders

Please rate how easy you found the programme to use, using the scale below:

1 2 3 4 5 6 7 8 9 10

Not at all easy Extremely easy

Please comment if you wish:

Please rate how satisfied you were with the programme overall, using the scale below:

1 2 3 4 5 6 7 8 9 10

Not at all satisfied Extremely satisfied

Please comment if you wish:

Thinking specifically about the exercises, of the 12 possible exercises, roughly how many did you listen to (or read)?

Did you find any of the exercises particularly helpful? If so, which ones and why?

Over the last six weeks did your use of the programme:

- Increase as time went on (1)
- Decrease as time went on (2)
- Stay about the same (3)

Was there anything that got in the way / was a barrier to your using the programme?

Was there anything that helped you continue using the programme?

Please add any further comments that may help us improve the programme in the future

Appendix F: *Kindness for Mums Online* guest logon and sample pages

The study website address is www.kindnessformums.org

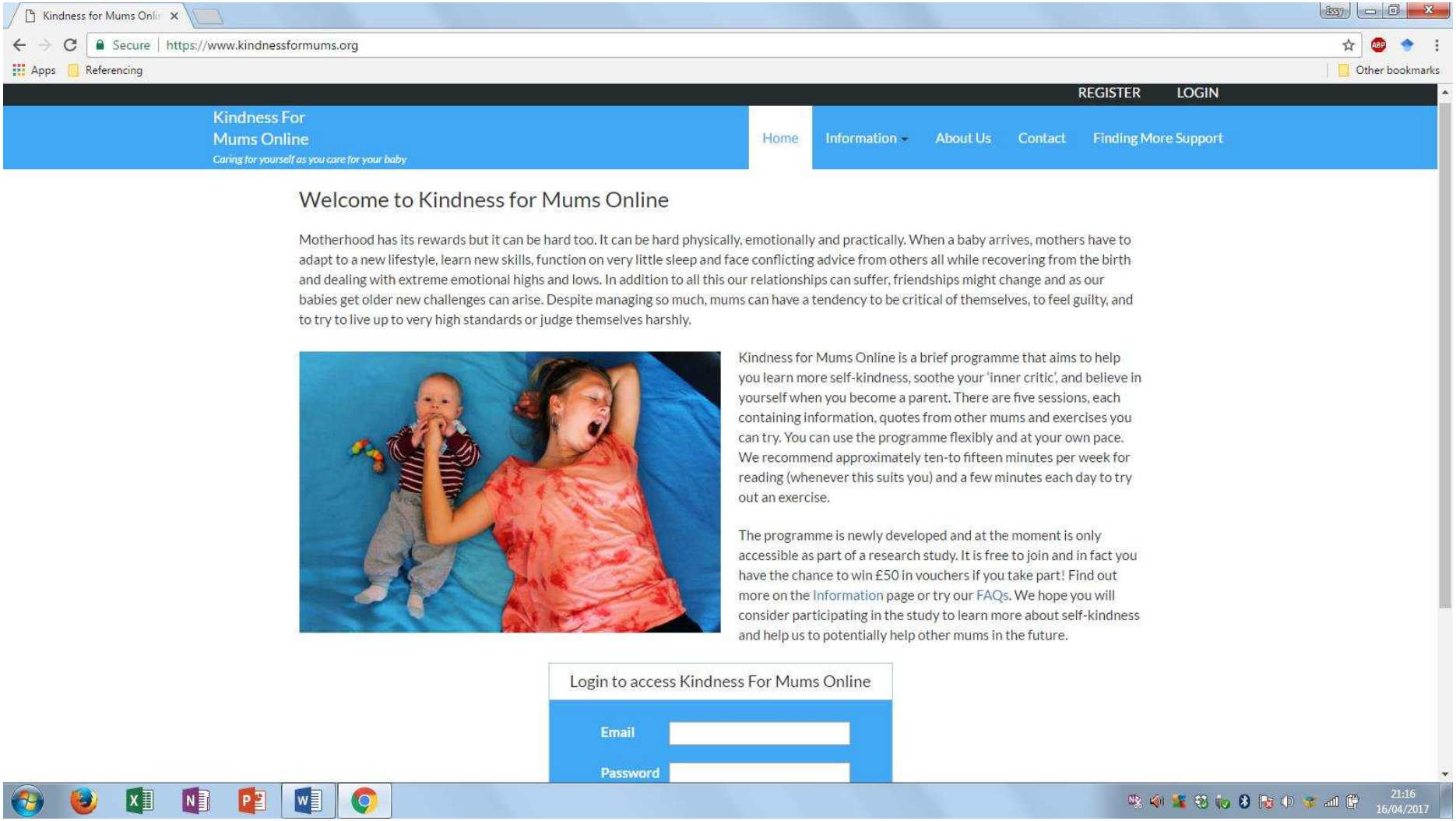
Please note the website may be archived following completion of the study

Guest logon details:

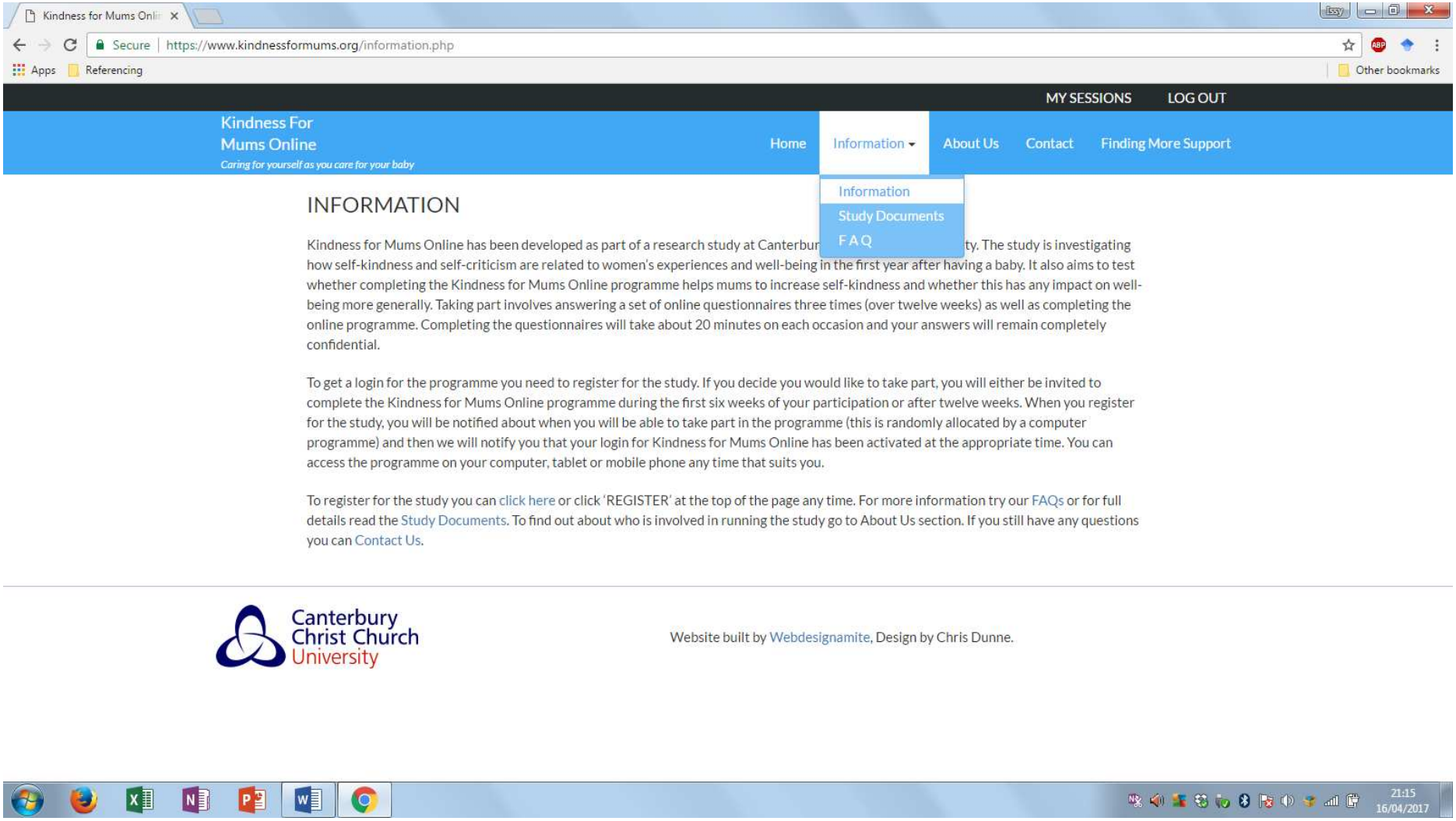
[This has been removed from the electronic copy]

Samples of the intervention pages are included on the following pages.

Home page (publicly available)

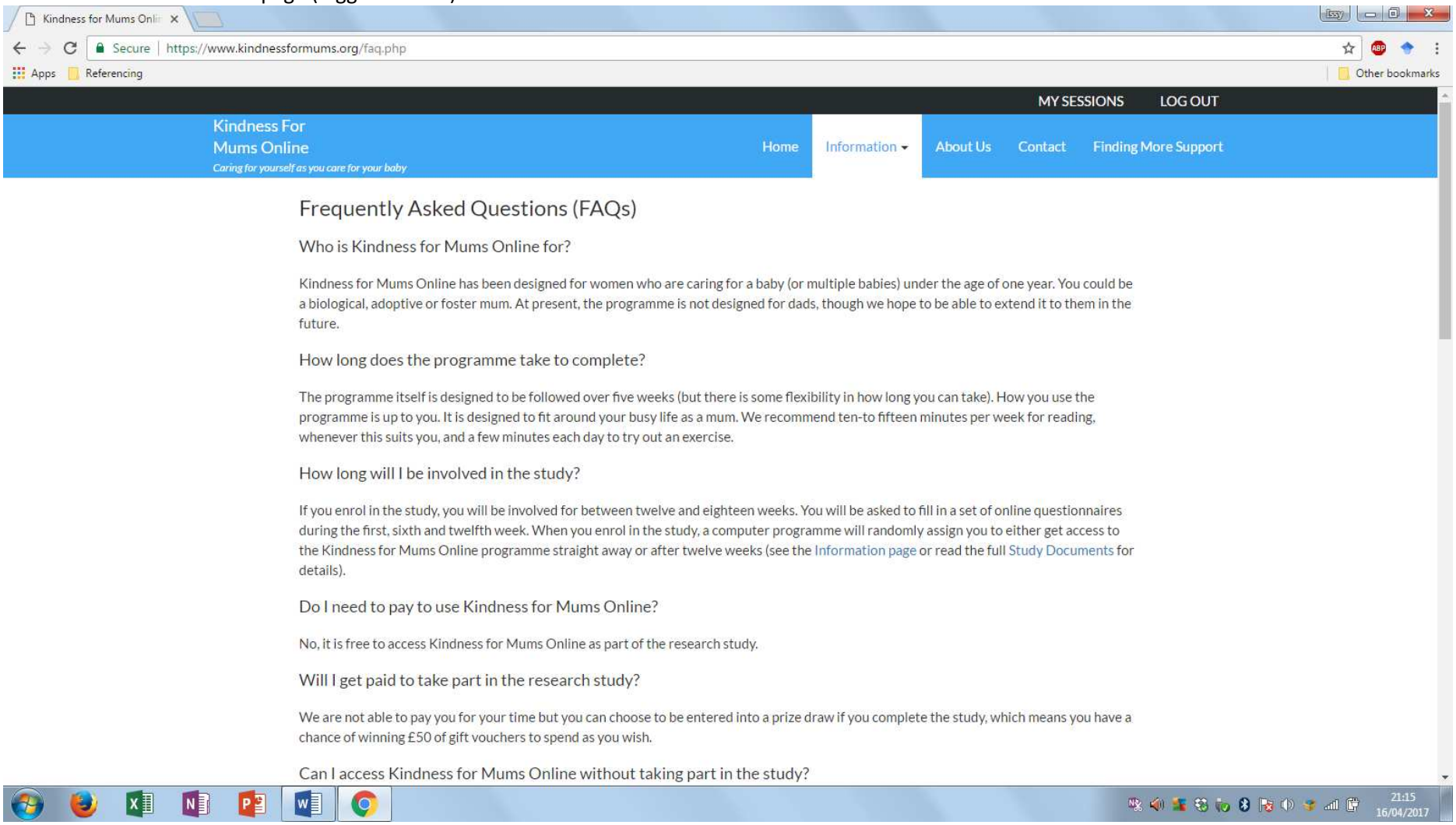


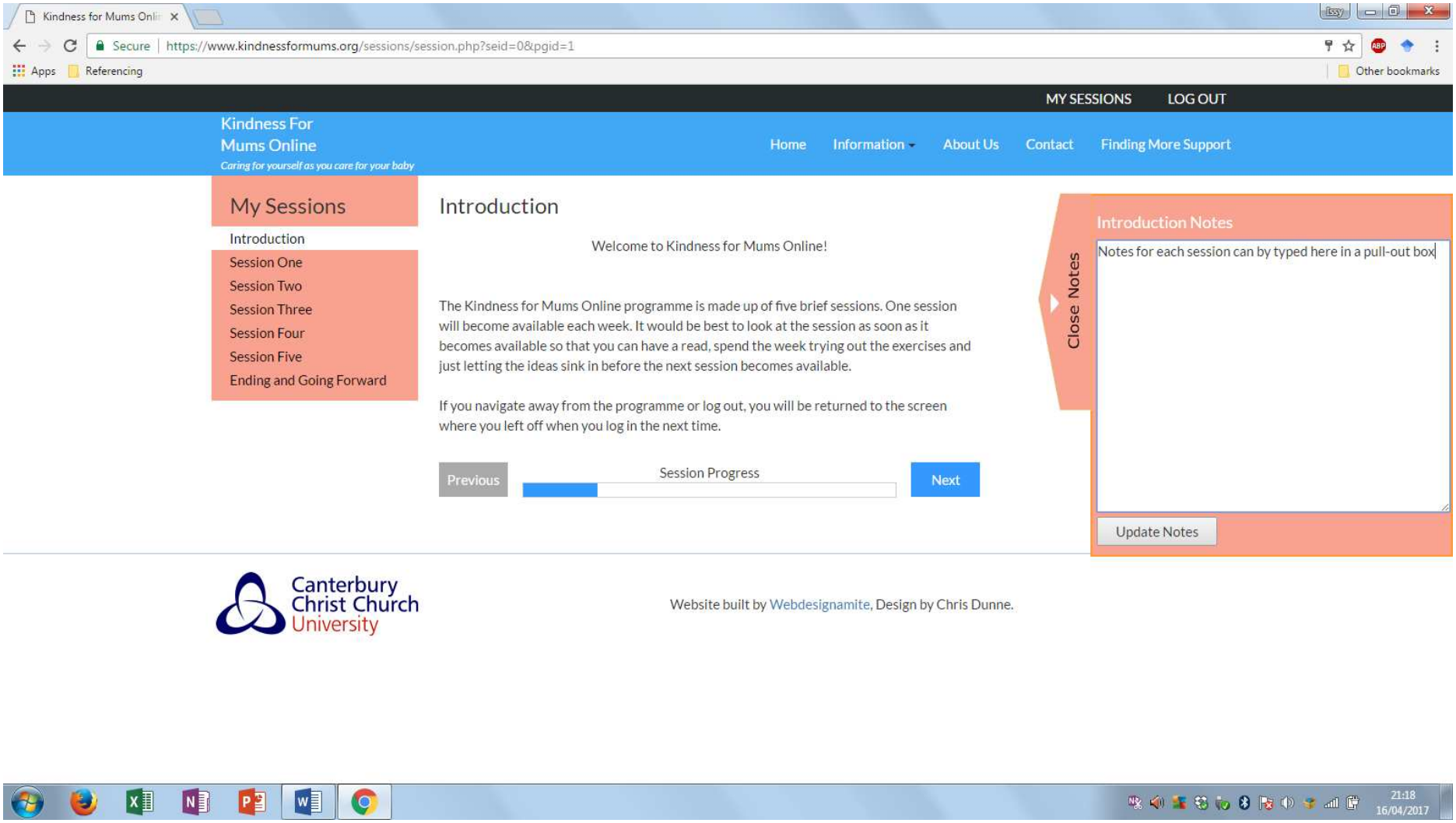
Information page (publicly available)



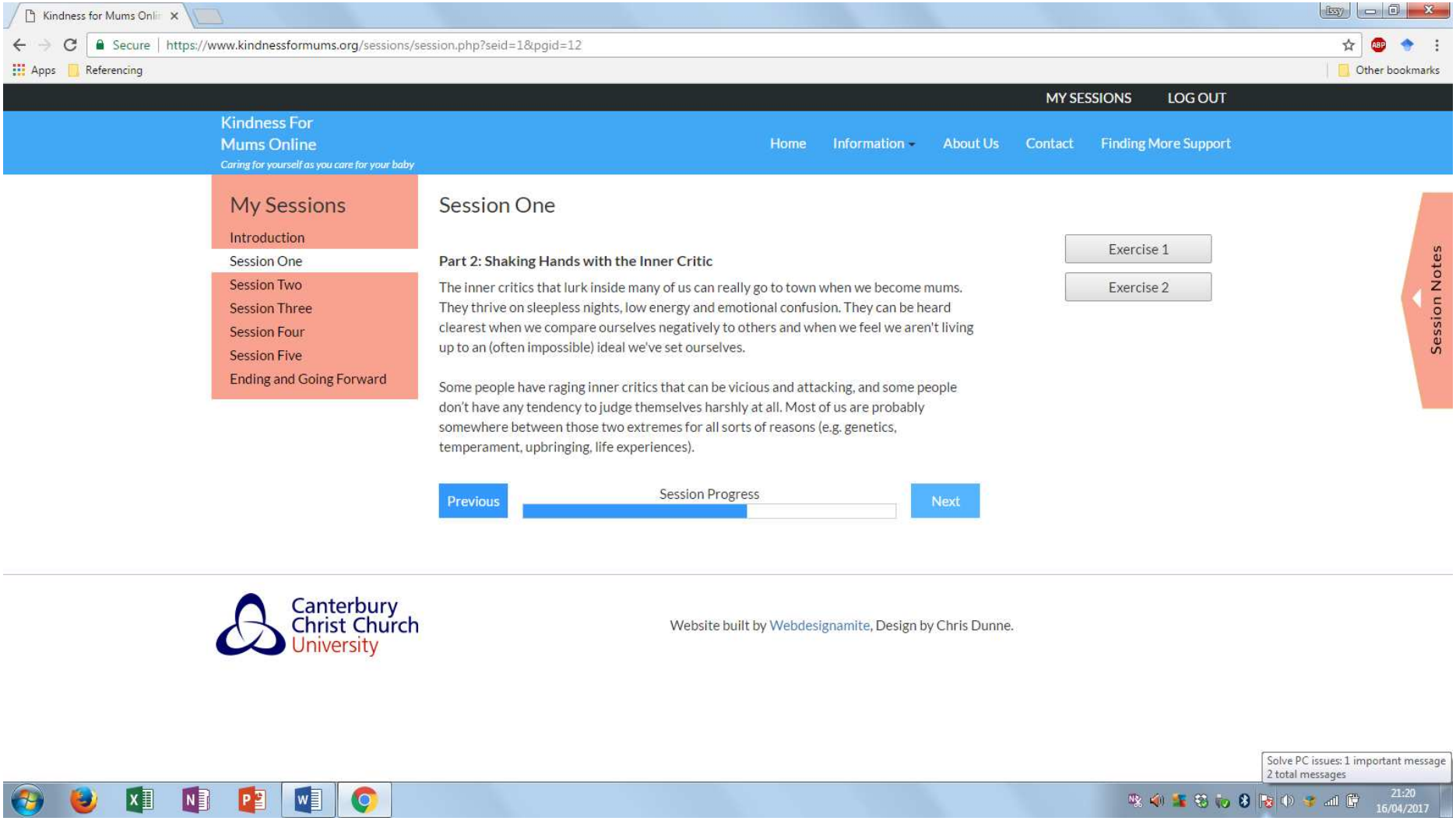
FAQs page (publicly available)

Intervention – Introduction page (logged in area)

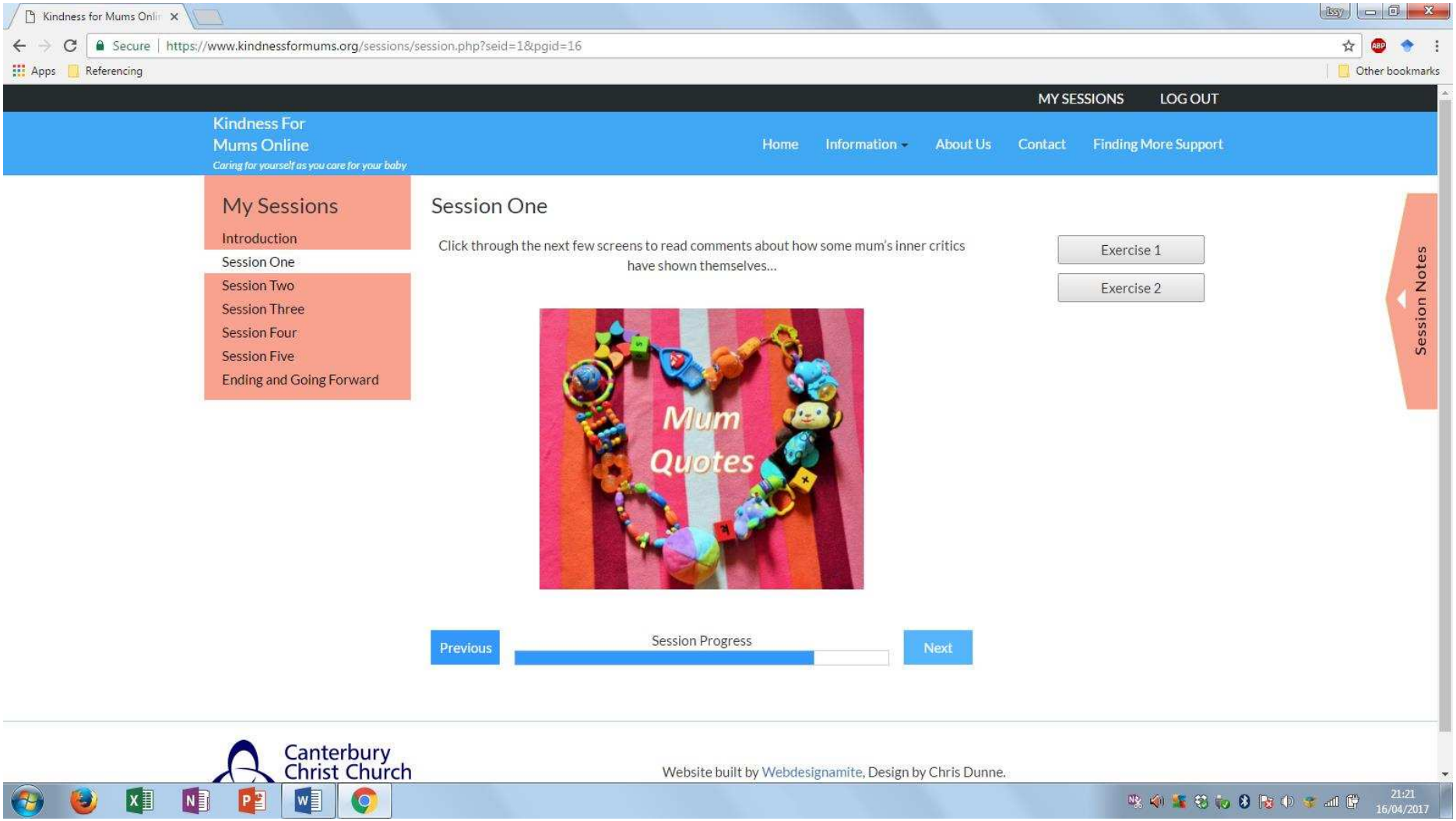



Kindness for Mums Onli
Secure | https://www.kindnessformums.org/sessions/session.php?seid=0&pgid=1
Apps
Referencing
Other bookmarks
MY SESSIONS
LOG OUT
Kindness For Mums Online
Caring for yourself as you care for your baby
Home
Information
About Us
Contact
Finding More Support
My Sessions
Introduction
Session One
Session Two
Session Three
Session Four
Session Five
Ending and Going Forward
Introduction
Welcome to Kindness for Mums Online!
The Kindness for Mums Online programme is made up of five brief sessions. One session will become available each week. It would be best to look at the session as soon as it becomes available so that you can have a read, spend the week trying out the exercises and just letting the ideas sink in before the next session becomes available.
If you navigate away from the programme or log out, you will be returned to the screen where you left off when you log in the next time.
Previous
Session Progress
Next
Close Notes
Introduction Notes
Notes for each session can by typed here in a pull-out box
Update Notes
Canterbury Christ Church University
Website built by Webdesignamite, Design by Chris Dunne.
21:18
16/04/2017

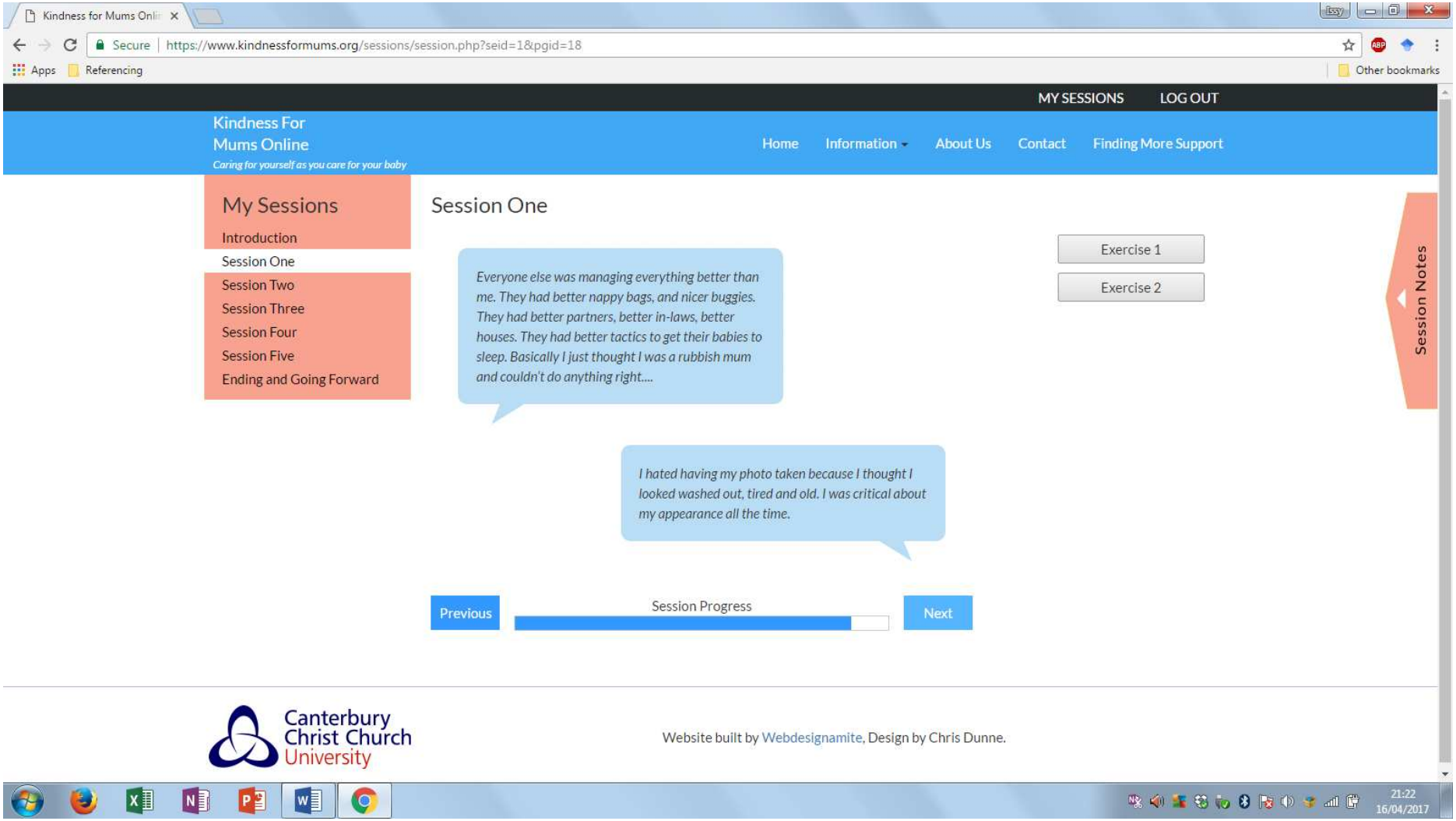
Intervention – Session one, part 2 (logged in area)



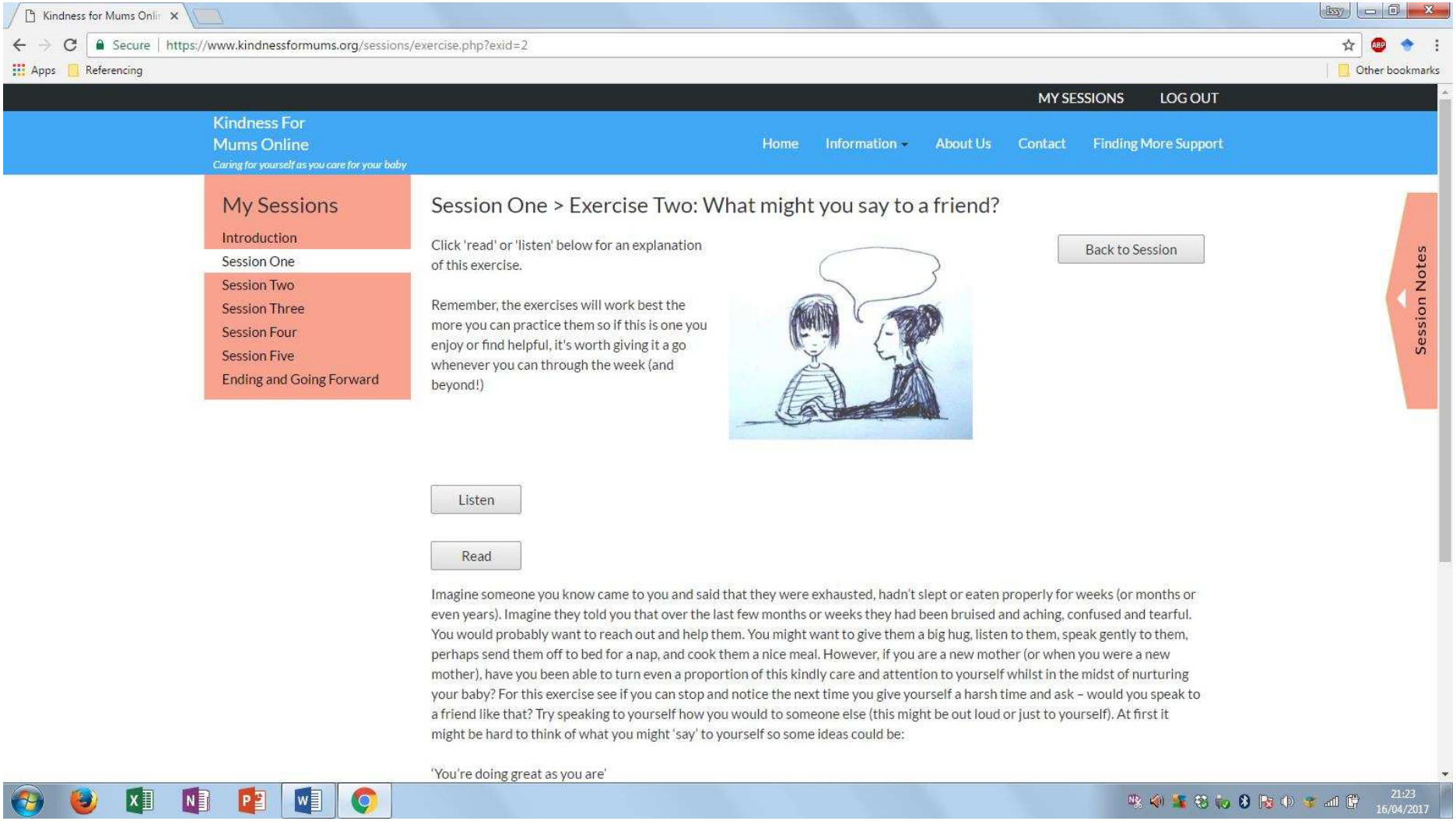
Intervention – Session one, part 2 (logged in area)



Intervention – Session one, part 2 (logged in area)



Intervention – Session one, exercise two (logged in area; 'read' option expanded)



Appendix G: Ethics committee approval letter

[This has been removed from the electronic copy]

Appendix H: Registered Trial Protocol

Website: https://clinicaltrials.gov/ct2/show/NCT02778815?term=gammer&rank=2

19/04/2017 The Development and Initial Evaluation of a Web-based, Compassion-focussed Course for New Mothers - Full Text View - ClinicalTrials.gov

ClinicalTrials.gov

Try our beta test site

IMPORTANT: Listing of a study on this site does not reflect endorsement by the National Institutes of Health. Talk with a trusted healthcare professional before volunteering for a study. Read more...

Trial record 2 of 2 for: gammer

Previous Study | Return to List | Next Study

The Development and Initial Evaluation of a Web-based, Compassion-focussed Course for New Mothers

This study is ongoing, but not recruiting participants.

Sponsor:
Canterbury Christ Church University

Information provided by (Rsponsible Party):
Canterbury Christ Church University

ClinicalTrials.gov identifier:
NCT02778815

First received: May 16, 2016
Last updated: February 6, 2017
Last verified: October 2016
History of Changes

Full Text View | Tabular View | No Study Results Posted | Disclaimer | How to Read a Study Record

Purpose

This study examines the relationship between self-compassion and wellbeing in new mothers and whether an online self-help course for new mothers can help to improve their wellbeing and self-compassion.

Condition	Intervention
New Mothers' Well-being	Other: Kindness for Mums

Study Type: Interventional
Study Design: Allocation: Randomized
Intervention Model: Parallel Assignment
Masking: Outcomes Assessor
Primary Purpose: Supportive Care

Official Title: The Development and Initial Evaluation of a Web-based, Compassion-focussed Course for New Mothers

Further study details as provided by Canterbury Christ Church University:

Primary Outcome Measures:

- Change from baseline at 6-weeks on the Warwick-Edinburgh Mental Well-Being Scale [Time Frame: Post-intervention (i.e. 6-weeks after baseline)]

Secondary Outcome Measures:

- Change from baseline at 6-weeks on the Self-Compassion Scale [Time Frame: Post-intervention (i.e. 6 weeks post baseline)]
- Change from baseline at 6-weeks on the Forms of Self-Criticising/Attacking and Self-Reassuring Scale [Time Frame: Post-intervention (i.e. 6 weeks post baseline)]
- Change from baseline at 6-weeks on the Depression, Anxiety and Stress Scale 21-item version [Time Frame: Post-intervention (i.e. 6 weeks post baseline)]
- Change from baseline at 12-weeks on the Warwick-Edinburgh Mental Well-Being Scale [Time Frame: 12-weeks after baseline]
- Change from baseline at 12-weeks on the Self-Compassion Scale [Time Frame: 12-weeks after baseline]
- Change from baseline at 12-weeks on the Forms of Self-Criticising/Attacking and Self-Reassuring Scale [Time Frame: 12-weeks after baseline]
- Change from baseline at 12-weeks on the Depression, Anxiety and Stress Scale 21-item version [Time Frame: 12-weeks after baseline]

Enrollment: 272
Study Start Date: September 2016
Estimated Study Completion Date: March 2017
Estimated Primary Completion Date: March 2017 (Final data collection date for primary outcome measure)

Arms	Assigned Interventions

Experimental: Kindness for Mums An online self-help course designed to promote self-kindness and self-compassion in new mothers	Other: Kindness for Mums
No intervention: Wait list control A waiting list control group, who will receive access to the online self-help intervention once the RCT is complete.	

Detailed Description:
This study is a randomised controlled trial (RCT) comparing an online self-help course ('Kindness for Mums') with a wait-list control. A battery of self-report measures will be administered online at baseline (week 0), post-intervention (week 6) and at follow-up (week 12). Baseline data will also be used to examine the relationship between self-compassion and wellbeing.

Eligibility

Ages Eligible for Study: 18 Years and older (Adult, Senior)
Sexes Eligible for Study: Female
Accepts Healthy Volunteers: Yes

Criteria

Inclusion Criteria:

- New mothers (can be biological, adoptive or full-time foster mother)
- Able to complete baseline measures when infant aged 0-12 months
- Fluent in English
- Live in the United Kingdom
- Able to access the internet

Exclusion Criteria:

- Experiencing suicidal ideation at the time of enrolment

Contacts and Locations

Choosing to participate in a study is an important personal decision. Talk with your doctor and family members or friends about deciding to join a study. To learn more about this study, you or your doctor may contact the study research staff using the Contacts provided below. For general information, see Learn About Clinical Studies.

Please refer to this study by its ClinicalTrials.gov identifier: NCT02778815

Sponsors and Collaborators

Canterbury Christ Church University

Investigators

Principal Investigator: Isobel Gammer, BA, MSc Canterbury Christ Church University

More Information

Responsible Party: Canterbury Christ Church University
ClinicalTrials.gov Identifier: NCT02778815 History of Changes
Other Study ID Numbers: IsobelGammerMRP2015
Study First Received: May 16, 2016
Last Updated: February 6, 2017
Individual Participant Data Plan to Share IPD: No

ClinicalTrials.gov processed this record on April 19, 2017

Appendix I: Data exploration

Baseline statistics (intervention group)

Statistics

Group			Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale
Intervention Group	N	Valid	104	104	104	104	104	104	104	104
		Missing	0	0	0	0	0	0	0	0
	Mean		44.37	2.5489	4.82	3.29	9.70	3.66	16.32	20.28
	Std. Error of Mean		.811	.06832	.456	.329	.411	.394	.608	.859
	Median		44.00	2.4167	3.00	2.00	9.00	2.00	16.00	20.00
	Std. Deviation		8.270	.69670	4.655	3.352	4.187	4.016	6.201	8.762
	Skewness		.012	.343	1.264	1.395	.401	1.585	.019	-.174
	Std. Error of Skewness		.237	.237	.237	.237	.237	.237	.237	.237
	Kurtosis		-.546	-.418	.957	1.578	-.345	2.397	-.205	-.750
	Std. Error of Kurtosis		.469	.469	.469	.469	.469	.469	.469	.469
	Range		37	3.08	19	15	20	18	29	35
	Percentiles	25	39.00	2.0833	1.25	1.00	6.00	1.00	13.00	15.00
		50	44.00	2.4167	3.00	2.00	9.00	2.00	16.00	20.00
		75	51.75	3.0000	7.75	5.00	13.00	5.00	20.00	26.75

Baseline statistics (control group)

Statistics

Group			Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale
Control Group	N	Valid	101	101	101	101	101	101	101	101
		Missing	0	0	0	0	0	0	0	0
	Mean		44.43	2.6559	4.55	3.20	9.53	3.54	17.05	20.06
	Std. Error of Mean		.688	.05740	.344	.272	.427	.321	.589	.771
	Median		45.00	2.5833	4.00	3.00	9.00	2.00	17.00	21.00
	Std. Deviation		6.916	.57683	3.457	2.735	4.289	3.230	5.920	7.750
	Skewness		-.110	-.087	1.044	1.170	.599	1.402	-.227	-.234
	Std. Error of Skewness		.240	.240	.240	.240	.240	.240	.240	.240
	Kurtosis		-.512	-.170	.524	1.182	-.224	2.324	-.501	-.673
	Std. Error of Kurtosis		.476	.476	.476	.476	.476	.476	.476	.476
	Range		30	2.75	15	12	20	16	25	33
	Percentiles	25	39.00	2.2500	2.00	1.00	6.00	1.00	14.00	15.00
		50	45.00	2.5833	4.00	3.00	9.00	2.00	17.00	21.00
		75	49.50	3.0417	6.00	4.00	12.00	5.00	21.00	26.00

Baseline normality tests

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Group	Statistic	df	Sig.	Statistic	df	Sig.
Q1 WEMWBS Total Score	Control Group	.065	101	.200*	.985	101	.323
	Intervention Group	.077	104	.138	.987	104	.399
Q1 SCS Total Score (mean)	Control Group	.071	101	.200*	.989	101	.558
	Intervention Group	.085	104	.062	.977	104	.068
Q1 DASS Depression Total Score	Control Group	.178	101	.000	.901	101	.000
	Intervention Group	.190	104	.000	.851	104	.000
Q1 DASS Anxiety Total Score	Control Group	.202	101	.000	.888	101	.000
	Intervention Group	.198	104	.000	.844	104	.000
Q1 DASS Stress Total Score	Control Group	.129	101	.000	.957	101	.002
	Intervention Group	.124	104	.000	.970	104	.017
Q1 FSCSRS Hated Self Subscale	Control Group	.189	101	.000	.865	101	.000
	Intervention Group	.199	104	.000	.820	104	.000
Q1 FSCSRS Reassured Self Subscale	Control Group	.071	101	.200*	.981	101	.147
	Intervention Group	.066	104	.200*	.987	104	.379
Q1 FSCSRS Inferior Self Subscale	Control Group	.075	101	.186	.980	101	.119
	Intervention Group	.061	104	.200*	.977	104	.062

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Post-intervention statistics (intervention group)

Group			Q2 WEMWB Total Score	Q2 SCS Total Score	Q2 DASS Depression Total Score	Q2 DASS Anxiety Total Score	Q2 DASS Stress Total Score	Q2 FSCSR Inferior Self	Q2 FSCSR Hated Self	Q2 FSCSR Reassured Self
Intervention Group	N	Valid	54	54	54	54	54	53	53	53
		Missing	50	50	50	50	50	51	51	51
	Mean		49.30	2.9444	3.11	2.28	7.50	16.77	2.98	18.09
	Std. Error of Mean		.881	.08546	.382	.396	.540	1.098	.378	.829
	Median		49.50	2.9167	2.00	1.00	6.50	17.00	2.00	17.00
	Std. Deviation		6.474	.62801	2.806	2.910	3.966	7.994	2.749	6.033
	Skewness		.316	-.097	1.260	1.817	.532	.394	1.123	-.115
	Std. Error of Skewness		.325	.325	.325	.325	.325	.327	.327	.327
	Kurtosis		-.323	-.609	1.103	4.126	-.207	-.535	.751	-.665
	Std. Error of Kurtosis		.639	.639	.639	.639	.639	.644	.644	.644
	Range		30	2.75	12	14	17	32	11	24
	Percentiles	25	44.00	2.4792	1.00	.00	5.00	11.00	1.00	13.50
		50	49.50	2.9167	2.00	1.00	6.50	17.00	2.00	17.00
		75	54.00	3.4375	4.25	4.00	10.00	22.50	4.50	23.00

Post-intervention statistics (control group)

Statistics

Group			Q2 WEMWB Total Score	Q2 SCS Total Score	Q2 DASS Depression Total Score	Q2 DASS Anxiety Total Score	Q2 DASS Stress Total Score	Q2 FSCSR Inferior Self	Q2 FSCSR Hated Self	Q2 FSCSR Reassured Self
Control Group	N	Valid	80	80	80	80	80	78	78	78
		Missing	20	20	20	20	20	22	22	22
	Mean		46.35	2.7437	4.09	2.60	8.55	18.37	3.36	17.51
	Std. Error of Mean		.833	.07463	.413	.306	.498	.950	.391	.670
	Median		48.00	2.6667	3.00	1.50	8.00	19.00	2.00	18.00
	Std. Deviation		7.450	.66754	3.698	2.736	4.455	8.392	3.449	5.919
	Skewness		-.716	.253	1.871	1.593	.726	-.099	1.925	-.555
	Std. Error of Skewness		.269	.269	.269	.269	.269	.272	.272	.272
	Kurtosis		.299	-.367	5.081	3.212	.597	-.735	4.891	.284
	Std. Error of Kurtosis		.532	.532	.532	.532	.532	.538	.538	.538
	Range		37	3.08	21	14	21	34	18	29
	Percentiles	25	40.25	2.2500	1.00	1.00	6.00	12.00	1.00	13.00
		50	48.00	2.6667	3.00	1.50	8.00	19.00	2.00	18.00
		75	52.00	3.1667	5.00	4.00	11.00	25.00	5.00	22.00

Post-intervention normality tests

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Group	Statistic	df	Sig.	Statistic	df	Sig.
Q2 WEMWB Total Score	Control Group	.123	78	.005	.946	78	.002
	Intervention Group	.105	53	.200*	.983	53	.643
Q2 SCS Total Score	Control Group	.084	78	.200*	.984	78	.435
	Intervention Group	.103	53	.200*	.984	53	.675
Q2 DASS Depression Total Score	Control Group	.183	78	.000	.831	78	.000
	Intervention Group	.219	53	.000	.863	53	.000
Q2 DASS Anxiety Total Score	Control Group	.222	78	.000	.834	78	.000
	Intervention Group	.222	53	.000	.773	53	.000
Q2 DASS Stress Total Score	Control Group	.132	78	.002	.956	78	.009
	Intervention Group	.147	53	.006	.955	53	.044
Q2 FSCSR Inferior Self	Control Group	.071	78	.200*	.980	78	.275
	Intervention Group	.089	53	.200*	.968	53	.168
Q2 FSCSR Hated Self	Control Group	.179	78	.000	.814	78	.000
	Intervention Group	.205	53	.000	.881	53	.000
Q2 FSCSR Reassured Self	Control Group	.091	78	.168	.971	78	.073
	Intervention Group	.100	53	.200*	.972	53	.244

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Follow-up statistics (intervention group)

Statistics

Group			Q3 WEMWBS Total Score (sum)	Q3 SCS Total Score (mean after reverse coding)	Q3 DASS Depression score	Q3 DASS Anxiety score	Q3 DASS Stress Score	Q3 FSCSRS Inferior Self	Q3 FSCRS Hated Self	Q3 FSCSRS Reassured Self
Intervention Group	N	Valid	49	49	49	49	49	49	49	49
		Missing	54	54	54	54	54	54	54	54
	Mean		49.24	3.01	3.08	2.18	8.08	17.43	2.73	18.45
	Std. Error of Mean		1.168	.098	.447	.438	.589	1.203	.438	.901
	Median		49.00	2.92	2.00	1.00	8.00	15.00	2.00	19.00
	Std. Deviation		8.179	.684	3.128	3.066	4.122	8.421	3.067	6.305
	Skewness		.075	.590	1.424	2.296	.343	.249	1.445	-.492
	Std. Error of Skewness		.340	.340	.340	.340	.340	.340	.340	.340
	Kurtosis		.286	.752	2.123	6.132	.166	-.782	1.867	.017
	Std. Error of Kurtosis		.668	.668	.668	.668	.668	.668	.668	.668
	Range		41	3	14	14	19	34	12	29
	Percentiles	25	44.00	2.58	1.00	.00	5.00	11.00	.00	15.00
		50	49.00	2.92	2.00	1.00	8.00	15.00	2.00	19.00
		75	54.00	3.46	5.00	3.00	10.50	24.50	4.50	23.50

Follow-up statistics (control group)

Statistics

Group			Q3 WEMWBS Total Score (sum)	Q3 SCS Total Score (mean after reverse coding)	Q3 DASS Depression score	Q3 DASS Anxiety score	Q3 DASS Stress Score	Q3 FSCSRS Inferior Self	Q3 FSCRS Hated Self	Q3 FSCSRS Reassured Self
Control Group	N	Valid	68	68	68	68	68	68	68	68
		Missing	32	32	32	32	32	32	32	32
	Mean		47.76	2.82	3.47	2.43	8.06	17.85	3.31	17.94
	Std. Error of Mean		.918	.089	.452	.279	.499	1.025	.474	.715
	Median		47.50	2.71	2.50	2.00	7.00	17.50	2.00	18.50
	Std. Deviation		7.571	.735	3.728	2.301	4.117	8.450	3.910	5.894
	Skewness		-.508	.233	1.677	1.283	.534	-.066	1.619	-.133
	Std. Error of Skewness		.291	.291	.291	.291	.291	.291	.291	.291
	Kurtosis		.496	-.154	3.204	1.872	.209	-1.006	2.304	-.345
	Std. Error of Kurtosis		.574	.574	.574	.574	.574	.574	.574	.574
	Range		37	4	18	11	21	35	17	26
	Percentiles	25	42.25	2.33	1.00	1.00	5.00	11.25	.25	14.00
		50	47.50	2.71	2.50	2.00	7.00	17.50	2.00	18.50
		75	53.75	3.31	4.75	3.00	11.00	25.00	5.00	22.00

Follow-up normality tests

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Group	Statistic	df	Sig.	Statistic	df	Sig.
Q3 WEMWBS Total Score (sum)	Control Group	.079	68	.200*	.967	68	.068
	Intervention Group	.096	49	.200*	.989	49	.919
Q3 SCS Total Score (mean after reverse coding)	Control Group	.081	68	.200*	.982	68	.441
	Intervention Group	.085	49	.200*	.972	49	.295
Q3 DASS Depression score	Control Group	.194	68	.000	.823	68	.000
	Intervention Group	.204	49	.000	.845	49	.000
Q3 DASS Anxiety score	Control Group	.191	68	.000	.870	68	.000
	Intervention Group	.242	49	.000	.713	49	.000
Q3 DASS Stress Score	Control Group	.116	68	.024	.963	68	.039
	Intervention Group	.100	49	.200*	.980	49	.578
Q3 FSCSRS Inferior Self	Control Group	.126	68	.009	.964	68	.049
	Intervention Group	.124	49	.059	.966	49	.164
Q3 FSCRS Hated Self	Control Group	.223	68	.000	.799	68	.000
	Intervention Group	.207	49	.000	.821	49	.000
Q3 FSCSRS Reassured Self	Control Group	.085	68	.200*	.985	68	.576
	Intervention Group	.097	49	.200*	.970	49	.247

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendix J: Baseline comparisons

1. Comparison on baseline measures differences between participants allocated to the KFMO intervention compared to the waitlist control condition

Test Statistics[a]

	Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale	Self-reported group at Q2
Mann-Whitney U	5209.500	4576.000	4954.000	4993.500	5062.500	4972.000	4784.500	5177.000	431.000
Wilcoxon W	10669.500	10036.000	10414.000	10453.500	10213.500	10432.000	10244.500	10328.000	1862.000
Z	-.100	-1.594	-.707	-.615	-.448	-.665	-1.103	-.177	-8.872
Asymp. Sig. (2-tailed)	.920	.111	.480	.539	.654	.506	.270	.860	.000

a. Grouping Variable: Group

2. Comparison on bassline measures between those participants who completed post-intervention measures and those who did not

Test Statistics[a]

	Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale
Mann-Whitney U	4108.500	4542.500	4168.500	4396.000	4148.000	4479.500	4258.500	4693.500
Wilcoxon W	6593.500	7027.500	13348.500	13576.000	13328.000	6964.500	6743.500	7178.500
Z	-1.532	-.454	-1.391	-.825	-1.438	-.615	-1.160	-.078
Asymp. Sig. (2-tailed)	.126	.650	.164	.409	.150	.539	.246	.938

a. Grouping Variable: Was Q2 completed (Qual at least Q3_W_TOT)

3. Comparison on baseline measures between those participants who completed measures at the six-week follow-up and those who did not

Test Statistics[a]

	Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale	Self-reported group at Q2
Mann-Whitney U	4519.500	5042.500	4298.500	4570.000	4392.000	4799.500	4334.000	4986.500	1111.000
Wilcoxon W	8260.500	8783.500	11438.500	11710.000	11532.000	8540.500	8075.000	8727.500	1411.000
Z	-1.427	-.178	-1.966	-1.318	-1.736	-.764	-1.871	-.312	-1.124
Asymp. Sig. (2-tailed)	.154	.859	.049	.187	.083	.445	.061	.755	.261

a. Grouping Variable: Was Q3 completed (Qual at least Q3_W_TOT)

4. Comparison on baseline measures between those participants who completed measures both post-intervention time points and who did not complete both

Test Statistics[a]

	Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale	Self-reported group at Q2
Mann-Whitney U	4686.500	5238.500	4715.500	4844.000	4817.000	4786.500	4600.000	4985.000	1111.000
Wilcoxon W	9537.500	11016.500	10493.500	10622.000	10595.000	9637.500	9451.000	9836.000	1411.000
Z	-1.313	-.011	-1.252	-.950	-1.008	-1.086	-1.518	-.609	-1.124
Asymp. Sig. (2-tailed)	.189	.992	.211	.342	.314	.278	.129	.543	.261

a. Grouping Variable: Were Q2 and Q3 both completed (at least WEMWB)

5. Comparison on baseline measures differences between participants allocated to the KFMO intervention compared to the waitlist control condition only including participants who completed the post-intervention questionnaires (N = 54 intervention group, N = 81 control group)

Test Statistics[a]

	Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale
Mann-Whitney U	2085.500	1985.000	1936.000	1836.000	2135.000	2120.000	2088.000	2063.500
Wilcoxon W	5406.500	3470.000	3421.000	3321.000	3620.000	3605.000	3573.000	3548.500
Z	-.456	-.908	-1.137	-1.596	-.235	-.304	-.446	-.555
Asymp. Sig. (2-tailed)	.648	.364	.256	.110	.814	.761	.656	.579

a. Grouping Variable: Group

6. Comparison on baseline measures differences between participants allocated to the KFMO intervention compared to the waitlist control condition only including participants who completed the follow-up questionnaires (N = 50 intervention group, N = 69 control group)

Test Statistics[a]

	Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale
Mann-Whitney U	2085.500	1985.000	1936.000	1836.000	2135.000	2120.000	2088.000	2063.500
Wilcoxon W	5406.500	3470.000	3421.000	3321.000	3620.000	3605.000	3573.000	3548.500
Z	-.456	-.908	-1.137	-1.596	-.235	-.304	-.446	-.555
Asymp. Sig. (2-tailed)	.648	.364	.256	.110	.814	.761	.656	.579

a. Grouping Variable: Group

7.. Comparison on baseline measures differences between participants allocated to the KFMO intervention compared to the waitlist control condition only including participants who completed the both the post-intervention and follow-up questionnaires (*N* = 43 intervention group, *N* = 64 control group)

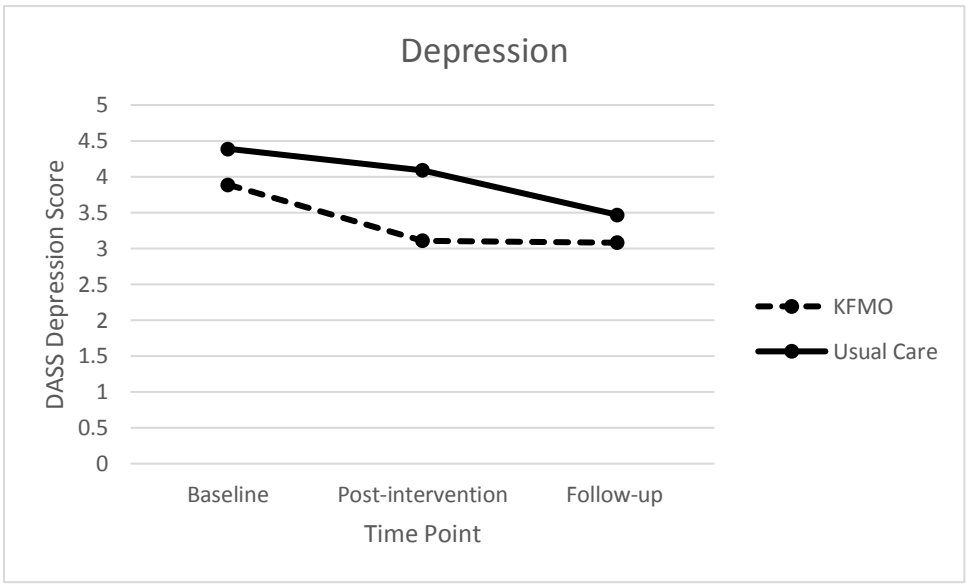
Test Statistics[a]

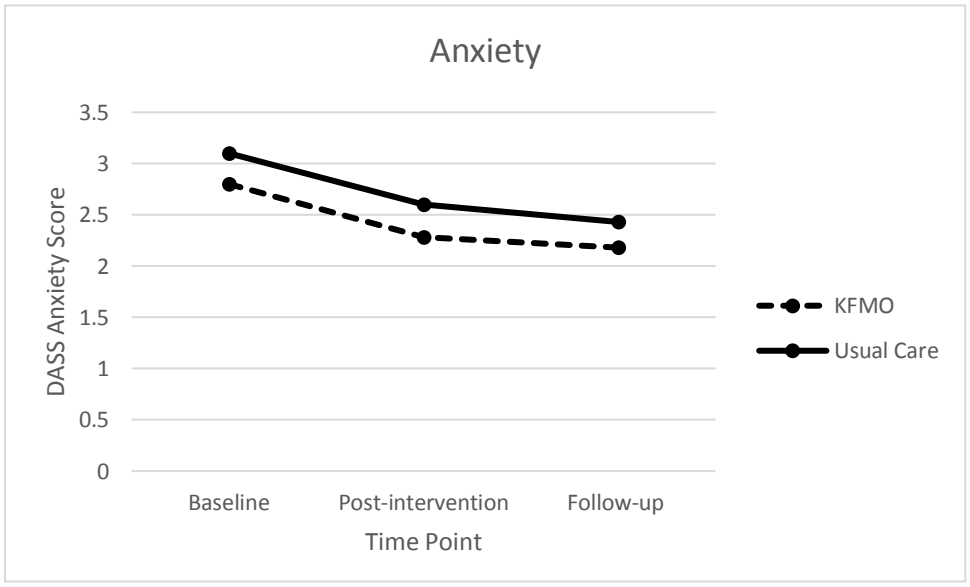
	Q1 WEMWBS Total Score	Q1 SCS Total Score (mean)	Q1 DASS Depression Total Score	Q1 DASS Anxiety Total Score	Q1 DASS Stress Total Score	Q1 FSCSRS Hated Self Subscale	Q1 FSCSRS Reassured Self Subscale	Q1 FSCSRS Inferior Self Subscale
Mann-Whitney U	2085.500	1985.000	1936.000	1836.000	2135.000	2120.000	2088.000	2063.500
Wilcoxon W	5406.500	3470.000	3421.000	3321.000	3620.000	3605.000	3573.000	3548.500
Z	-.456	-.908	-1.137	-1.596	-.235	-.304	-.446	-.555
Asymp. Sig. (2-tailed)	.648	.364	.256	.110	.814	.761	.656	.579

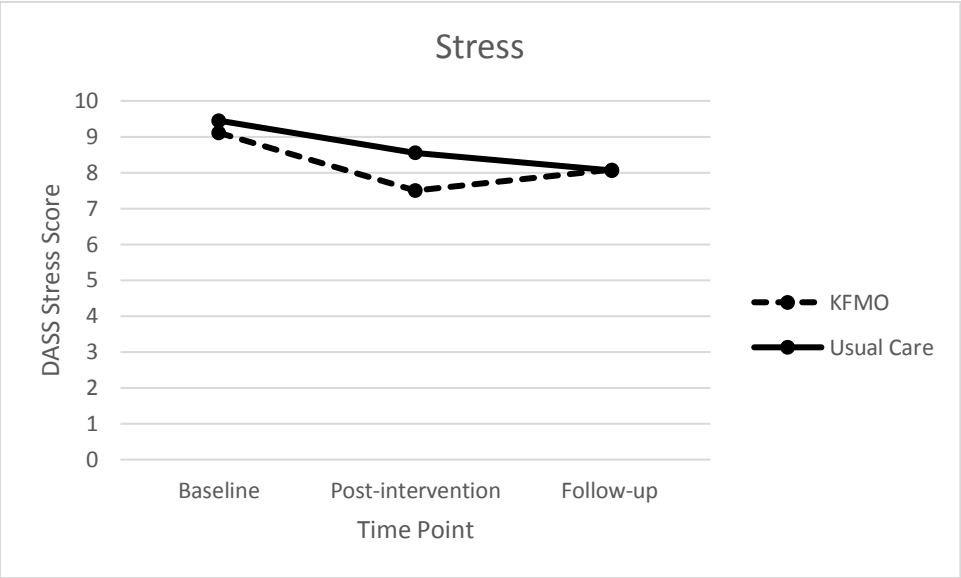
a. Grouping Variable: Group

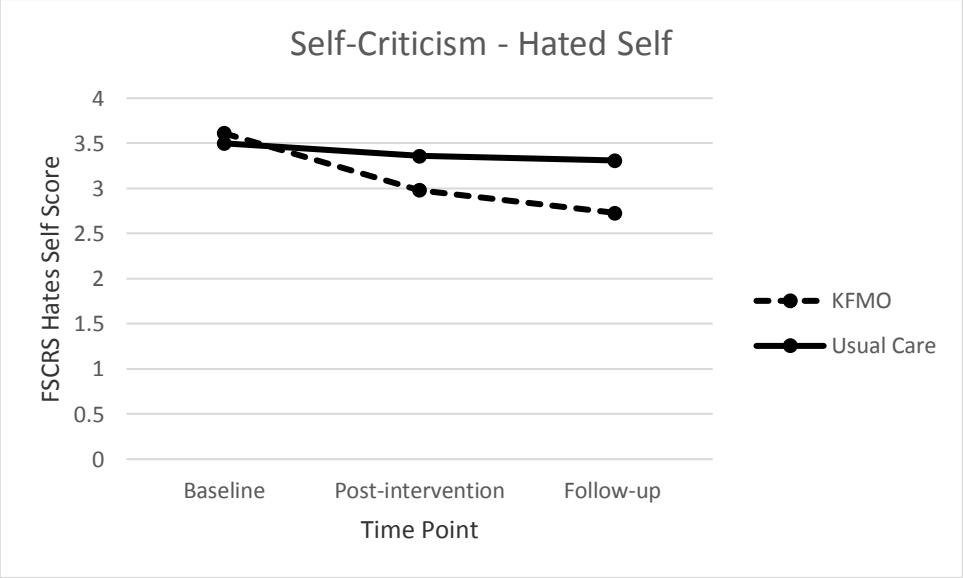
Appendix K: Graphs for secondary measures

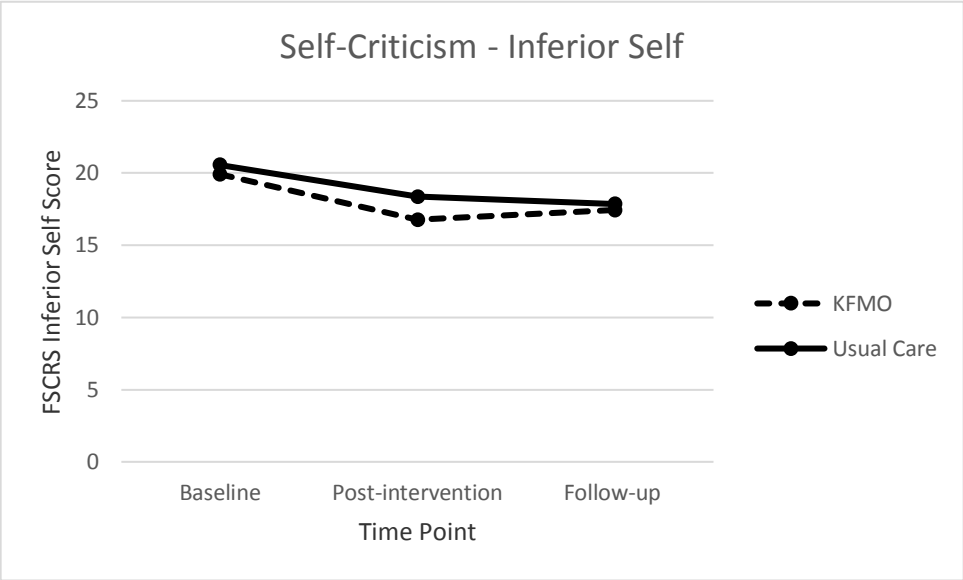
Graphs showing mean total scores on the three DASS scales and the three FSCRS by group for each time point (baseline data points represent means for those who participated in post-intervention assessment)






Stress
DASS Stress Score
10
9
8
7
6
5
4
3
2
1
0
Baseline
Post-intervention
Follow-up
Time Point
KFMO
Usual Care


Self-Criticism - Hated Self
FSCRS Hates Self Score
4
3.5
3
2.5
2
1.5
1
0.5
0
Baseline
Post-intervention
Follow-up
Time Point
KFMO
Usual Care


Self-Criticism - Inferior Self
FSCRS Inferior Self Score
25
20
15
10
5
0
Baseline
Post-intervention
Follow-up
Time Point
KFMO
Usual Care


Self-Reassurance
FSCRS Reassured Self Score
19
18.5
18
17.5
17
16.5
16
Baseline
Post-intervention
Follow-up
Time Point
KFMO
Usual Care

Appendix L: Per protocol analysis

Between-group comparisons on change scores from baseline to post-intervention

Test Statistics[a]

	Change score WEMWB	Change score SCS TOT	Change Score DASS Anxiety Q1-Q2	Change Score DASS Depression Q1-Q2	Change Score DASS Stress Q1-Q2	Change Score FSCSR Hated self Q1-Q2	Change Score FSCSR Inferior self Q1-Q2	Change Score FACSR Reassured self Q1-Q2
Mann-Whitney U	1455.500	1295.500	1897.000	1884.500	1580.000	1684.000	1587.000	1548.000
Wilcoxon W	4695.500	4535.500	5137.000	3060.500	2756.000	2812.000	2715.000	4629.000
Z	-2.291	-3.080	-.115	-.176	-1.682	-.775	-1.257	-1.459
Asymp. Sig. (2-tailed)	.022	.002	.909	.860	.093	.439	.209	.144

a. Grouping Variable: Group

Between-group comparisons on change scores from baseline to post-intervention

Test Statistics[a]

	FU Change Score WEMWBS Q1-Q3	FU Change Score SCS Q1-Q3	FU Change Score DASS Depression Score Q1-Q3	FU Change Score DASS Anxiety Score Q1-Q3	FU Change Score DASS Stress Score Q1-Q3	FU Change Score FSC Inferior Self Q1-Q3	FU Change Score FSC Hated Self Q1-Q3	FU Change Score FSC Reassured Self Q1-Q3
Mann-Whitney U	1248.000	950.000	1384.500	1390.000	1467.500	1322.000	1286.500	1221.000
Wilcoxon W	3594.000	3296.000	2374.500	2380.000	2457.500	2312.000	2276.500	3567.000
Z	-1.479	-3.258	-.670	-.641	-.171	-1.039	-1.276	-1.647
Asymp. Sig. (2-tailed)	.139	.001	.503	.521	.865	.299	.202	.100

a. Grouping Variable: Group

Appendix M: *Mindfulness* guidance for Authors

Instructions for Authors

EDITORIAL PROCEDURE

Double-blind peer review

This journal follows a double-blind reviewing procedure. Authors are therefore requested to submit:

- A blinded manuscript without any author names and affiliations in the text or on the title page. Self-identifying citations and references in the article text should be avoided.
- A separate title page, containing title, all author names, affiliations, and the contact information of the corresponding author. Any acknowledgements, disclosures, or funding information should also be included on this page.

MANUSCRIPT SUBMISSION

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

Permissions

Authors wishing to include figures, tables, or text passages that have already been published elsewhere are required to obtain permission from the copyright owner(s) for both the print and online format and to include evidence that such permission has been granted when submitting their papers. Any material received without such evidence will be assumed to originate from the authors.

Online Submission

Please follow the hyperlink "Submit online" on the right and upload all of your manuscript files following the instructions given on the screen.

SUGGESTED REVIEWERS

Authors of research and review papers, excluding editorial and book review submissions, are allowed to provide the names and contact information for, maximum, 4 to 6 possible reviewers of their paper. When uploading a paper to the Editorial Manager site, authors must provide complete contact information for each recommended reviewer, along with a specific reason for your suggestion in the comments box for each person. The journal will consider reviewers recommended by the authors only if the reviewers' institutional email is provided. A minimum of two suggested reviewers should be from a university or research institute in the United States. You may not suggest the Editor or Associate Editors of the journal as potential reviewers. Although there is no guarantee that the editorial office will use your suggested reviewers, your help is appreciated and may speed up the selection of appropriate reviewers.

Authors should note that it is inappropriate to list as preferred reviewers researchers from the same institution as any of the authors, collaborators and co-authors from the past five years as well as anyone whose relationship with one of the authors may present a conflict of interest. The journal will not tolerate this practice and reserves the right to reject submissions on this basis.

TITLE PAGE

Title Page

The title page should include:

- The name(s) of the author(s)
- A concise and informative title
- The affiliation(s) and address(es) of the author(s)
- The e-mail address, and telephone number(s) of the corresponding author
- If available, the 16-digit ORCID of the author(s)

Abstract

Please provide an abstract of 150 to 250 words. The abstract should not contain any undefined abbreviations or unspecified references.

Keywords

Please provide 4 to 6 keywords which can be used for indexing purposes.

TEXT

Text Formatting

Manuscripts should be submitted in Word.

- Use a normal, plain font (e.g., 10-point Times Roman) for text.
- Use italics for emphasis.
- Use the automatic page numbering function to number the pages.
- Do not use field functions.
- Use tab stops or other commands for indents, not the space bar.
- Use the table function, not spreadsheets, to make tables.
- Use the equation editor or MathType for equations.
- Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).

Manuscripts with mathematical content can also be submitted in LaTeX.

- LaTeX macro package (zip, 182 kB)

Headings

Please use no more than three levels of displayed headings.

Abbreviations

Abbreviations should be defined at first mention and used consistently thereafter.

Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.
Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.
Always use footnotes instead of endnotes.

Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

TERMINOLOGY

• Please always use internationally accepted signs and symbols for units (SI units).

SCIENTIFIC STYLE

- Generic names of drugs and pesticides are preferred; if trade names are used, the generic name should be given at first mention.
- Please use the standard mathematical notation for formulae, symbols etc.:

Italic for single letters that denote mathematical constants, variables, and unknown quantities
Roman/upright for numerals, operators, and punctuation, and commonly defined functions or abbreviations, e.g., cos, det, e or exp, lim, log, max, min, sin, tan, d (for derivative)
Bold for vectors, tensors, and matrices.

REFERENCES

Citation

Cite references in the text by name and year in parentheses. Some examples:

- Negotiation research spans many disciplines (Thompson 1990).
- This result was later contradicted by Becker and Seligman (1996).
- This effect has been widely studied (Abbott 1991; Barakat et al. 1995; Kelso and Smith 1998; Medvec et al. 1999).

Reference list

The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text. Do not use footnotes or endnotes as a substitute for a reference list.
Reference list entries should be alphabetized by the last names of the first author of each work.

- Journal article

  Harris, M., Karper, E., Stacks, G., Hoffman, D., DeNiro, R., Cruz, P., et al. (2001). Writing labs and the Hollywood connection. Journal of Film Writing, 44(3), 213–245.

- Article by DOI

  Slifka, M. K., & Whitton, J. L. (2000) Clinical implications of dysregulated cytokine production. Journal of Molecular Medicine, doi:10.1007/s001090000086

- Book

  Calfee, R. C., & Valencia, R. R. (1991). APA guide to preparing manuscripts for journal publication. Washington, DC: American Psychological Association.

- Book chapter

  O'Neil, J. M., & Egan, J. (1992). Men's and women's gender role journeys: Metaphor for healing, transition, and transformation. In B. R. Wainrib (Ed.), Gender issues across the life cycle (pp. 107–123). New York: Springer.

- Online document

  Abou-Allaban, Y., Dell, M. L., Greenberg, W., Lomax, J., Peteet, J., Torres, M., & Cowell, V. (2006). Religious/spiritual commitments and psychiatric practice. Resource document. American Psychiatric Association. http://www.psych.org/edu/other_res/lib_archives/archives/200604.pdf. Accessed 25 June 2007.

Journal names and book titles should be italicized.

For authors using EndNote, Springer provides an output style that supports the formatting of in-text citations and reference list.

- EndNote style (zip, 3 kB)

ARTICLE LENGTH

"The average article length is approximately 30 manuscript pages. For manuscripts exceeding the standard 30 pages, authors should contact the Editor in Chief, Nirbhay N. Singh directly at nirbsingh52@aol.com."

TABLES

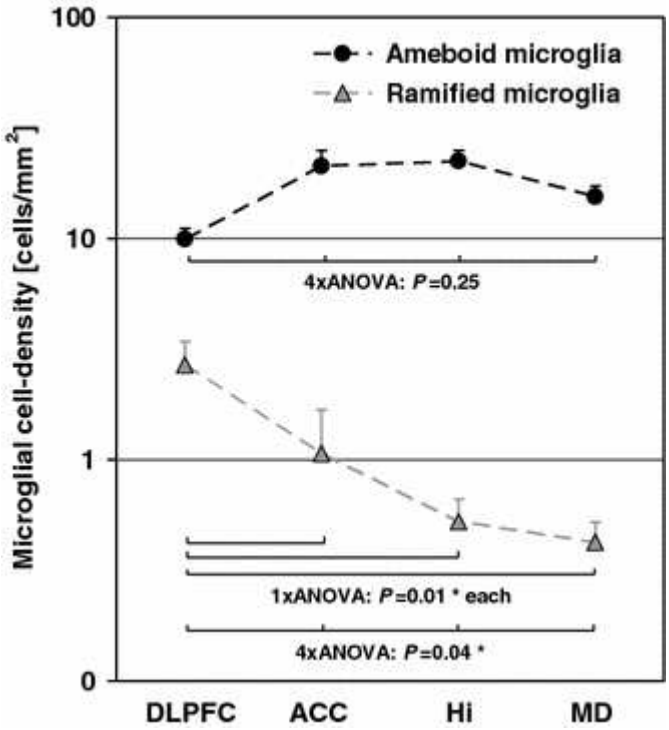
- All tables are to be numbered using Arabic numerals.
- Tables should always be cited in text in consecutive numerical order.
- For each table, please supply a table caption (title) explaining the components of the table.
- Identify any previously published material by giving the original source in the form of a reference at the end of the table caption.
- Footnotes to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data) and included beneath the table body.

ARTWORK AND ILLUSTRATIONS GUIDELINES

Electronic Figure Submission

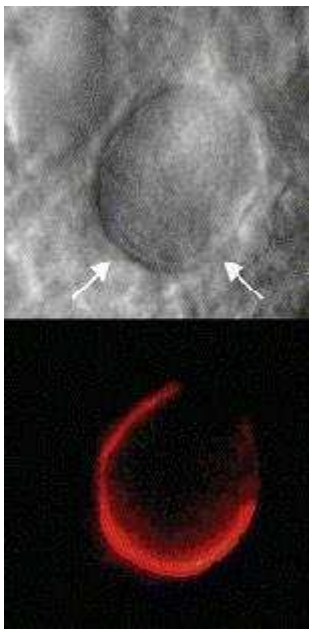
- Supply all figures electronically.
- Indicate what graphics program was used to create the artwork.
- For vector graphics, the preferred format is EPS; for halftones, please use TIFF format. MSOffice files are also acceptable.
- Vector graphics containing fonts must have the fonts embedded in the files.
- Name your figure files with "Fig" and the figure number, e.g., Fig1.eps.

Line Art



- Definition: Black and white graphic with no shading.
- Do not use faint lines and/or lettering and check that all lines and lettering within the figures are legible at final size.
- All lines should be at least 0.1 mm (0.3 pt) wide.
- Scanned line drawings and line drawings in bitmap format should have a minimum resolution of 1200 dpi.
- Vector graphics containing fonts must have the fonts embedded in the files.

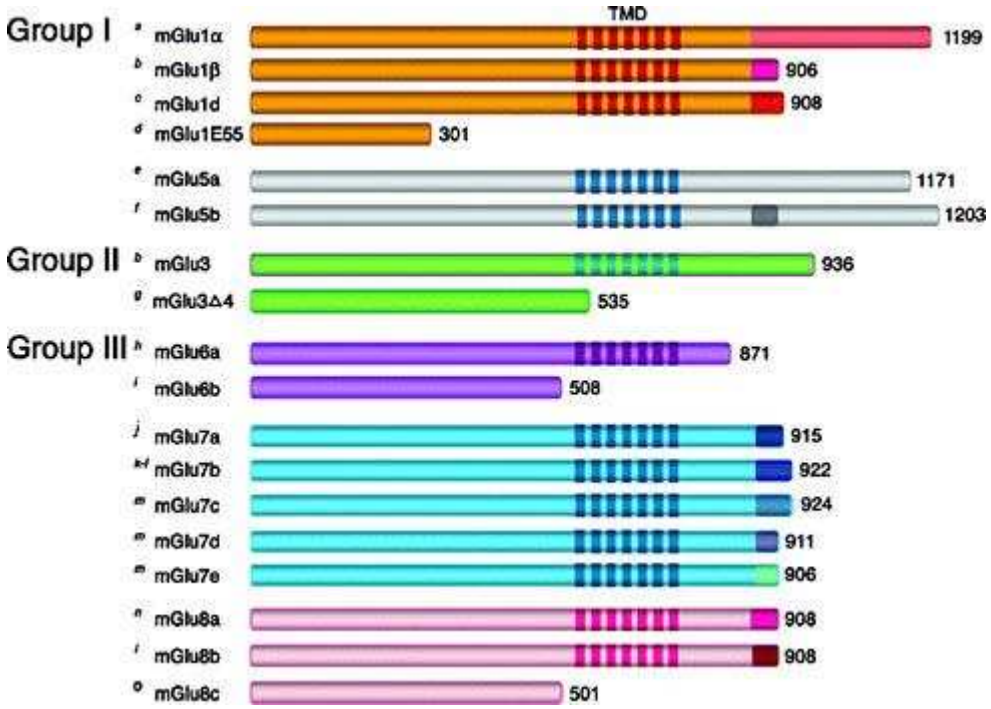
Halftone Art



- Definition: Photographs, drawings, or paintings with fine shading, etc.
- If any magnification is used in the photographs, indicate this by using scale bars within the figures themselves.

- Halftones should have a minimum resolution of 300 dpi.

Combination Art



- Definition: a combination of halftone and line art, e.g., halftones containing line drawing, extensive lettering, color diagrams, etc.
- Combination artwork should have a minimum resolution of 600 dpi.

Color Art

- Color art is free of charge for online publication.
- If black and white will be shown in the print version, make sure that the main information will still be visible. Many colors are not distinguishable from one another when converted to black and white. A simple way to check this is to make a xerographic copy to see if the necessary distinctions between the different colors are still apparent.
- If the figures will be printed in black and white, do not refer to color in the captions.
- Color illustrations should be submitted as RGB (8 bits per channel).

Figure Lettering

- To add lettering, it is best to use Helvetica or Arial (sans serif fonts).
- Keep lettering consistently sized throughout your final-sized artwork, usually about 2–3 mm (8–12 pt).
- Variance of type size within an illustration should be minimal, e.g., do not use 8-pt type on an axis and 20-pt type for the axis label.
- Avoid effects such as shading, outline letters, etc.
- Do not include titles or captions within your illustrations.

Figure Numbering

- All figures are to be numbered using Arabic numerals.

- Figures should always be cited in text in consecutive numerical order.
- Figure parts should be denoted by lowercase letters (a, b, c, etc.).
- If an appendix appears in your article and it contains one or more figures, continue the consecutive numbering of the main text. Do not number the appendix figures,

"A1, A2, A3, etc." Figures in online appendices (Electronic Supplementary Material) should, however, be numbered separately.

Figure Captions

- Each figure should have a concise caption describing accurately what the figure depicts. Include the captions in the text file of the manuscript, not in the figure file.
- Figure captions begin with the term Fig. in bold type, followed by the figure number, also in bold type.
- No punctuation is to be included after the number, nor is any punctuation to be placed at the end of the caption.
- Identify all elements found in the figure in the figure caption; and use boxes, circles, etc., as coordinate points in graphs.
- Identify previously published material by giving the original source in the form of a reference citation at the end of the figure caption.

Figure Placement and Size

- Figures should be submitted separately from the text, if possible.
- When preparing your figures, size figures to fit in the column width.
- For most journals the figures should be 39 mm, 84 mm, 129 mm, or 174 mm wide and not higher than 234 mm.
- For books and book-sized journals, the figures should be 80 mm or 122 mm wide and not higher than 198 mm.

Permissions

If you include figures that have already been published elsewhere, you must obtain permission from the copyright owner(s) for both the print and online format. Please be aware that some publishers do not grant electronic rights for free and that Springer will not be able to refund any costs that may have occurred to receive these permissions. In such cases, material from other sources should be used.

Accessibility

In order to give people of all abilities and disabilities access to the content of your figures, please make sure that

- All figures have descriptive captions (blind users could then use a text-to-speech software or a text-to-Braille hardware)
- Patterns are used instead of or in addition to colors for conveying information (colorblind users would then be able to distinguish the visual elements)
- Any figure lettering has a contrast ratio of at least 4.5:1

ELECTRONIC SUPPLEMENTARY MATERIAL

Springer accepts electronic multimedia files (animations, movies, audio, etc.) and other supplementary files to be published online along with an article or a book chapter. This feature can add dimension to the author's article, as certain information cannot be printed or is more convenient in electronic form.
Before submitting research datasets as electronic supplementary material, authors should read the journal's Research data policy. We encourage research data to be archived in data repositories wherever possible.

Submission

- Supply all supplementary material in standard file formats.
- Please include in each file the following information: article title, journal name, author names; affiliation and e-mail address of the corresponding author.
- To accommodate user downloads, please keep in mind that larger-sized files may require very long download times and that some users may experience other problems during downloading.

Audio, Video, and Animations

- Aspect ratio: 16:9 or 4:3
- Maximum file size: 25 GB
- Minimum video duration: 1 sec
- Supported file formats: avi, wmv, mp4, mov, m2p, mp2, mpg, mpeg, flv, mxf, mts, m4v, 3gp

Text and Presentations

- Submit your material in PDF format; .doc or .ppt files are not suitable for long-term viability.
- A collection of figures may also be combined in a PDF file.

Spreadsheets

- Spreadsheets should be submitted as .csv or .xls files (MS Excel).
- If the readers should be encouraged to make their own calculations, spreadsheets should be submitted as .xls files (MS Excel).

Specialized Formats

- Specialized format such as .pdb (chemical), .wrl (VRML), .nb (Mathematica notebook), and .tex can also be supplied.

Collecting Multiple Files

- It is possible to collect multiple files in a .zip or .gz file.

Numbering

- If supplying any supplementary material, the text must make specific mention of the material as a citation, similar to that of figures and tables.
- Refer to the supplementary files as "Online Resource", e.g., "... as shown in the animation (Online Resource 3)", "... additional data are given in Online Resource 4".
- Name the files consecutively, e.g. "ESM_3.mpg", "ESM_4.pdf".

Captions

- For each supplementary material, please supply a concise caption describing the content of the file.

Processing of supplementary files

- Electronic supplementary material will be published as received from the author without any conversion, editing, or reformatting.

Accessibility

In order to give people of all abilities and disabilities access to the content of your supplementary files, please make sure that

- The manuscript contains a descriptive caption for each supplementary material
- Video files do not contain anything that flashes more than three times per second (so that users prone to seizures caused by such effects are not put at risk)

INTEGRITY OF RESEARCH AND REPORTING

Ethical standards

Manuscripts submitted for publication must contain a statement to the effect that all human and animal studies have been approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments.
It should also be stated clearly in the text that all persons gave their informed consent prior to their inclusion in the study. Details that might disclose the identity of the subjects under study should be omitted.
These statements should be added in a separate section before the reference list. If these statements are not applicable, authors should state: The manuscript does not contain clinical studies or patient data.
The editors reserve the right to reject manuscripts that do not comply with the above-mentioned requirements. The author will be held responsible for false statements or failure to fulfill the above-mentioned requirements

Conflict of interest

Authors must indicate whether or not they have a financial relationship with the organization that sponsored the research. This note should be added in a separate section before the reference list.
If no conflict exists, authors should state: The authors declare that they have no conflict of interest.

Appendix N: Update to ethics committee

Isobel Gammer
Salomons Centre for Applied Psychology
CCCU
19th April 2017

Dear Margie,

Re: MRP Project – the development and initial evaluation of a compassion-focused intervention for new mothers

I am writing to update you regarding my MRP, for which you granted ethical approval in December 2015.

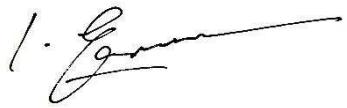
The project has run as planned with no unexpected events or ethical concerns raised. The abstract of part B is below for your information. Only one participant formally withdrew from the study, contacting me by email to say she had become too busy to continue her participation. Recruitment closed in early February 2017. The last participants will complete their final questionnaires in early May, 2017 online.

MRP section B abstract:

New self-help interventions have been called for to promote psychological well-being amongst mothers in the first year post-partum, with self-compassion being identified as a promising intervention target. The present study developed and evaluated a low-intensity, online, compassion-based intervention for this population. The Kindness for Mums Online (KFMO) programme was based on Hartley-Jones (2016), and was developed in consultation with six mothers. Mothers of infants under one year (N = 206) participated in a randomised controlled trial, comparing KFMO with a waitlist control. The KFMO group showed significantly greater increases in self-compassion and in psychological well-being compared to controls, with small to medium effect sizes. Improvement in self-compassion statistically mediated the improvement in well-being observed immediately post-intervention. Treatment gains in self-compassion, but not well-being, were maintained at 6-week follow-up. The findings suggest that self-compassion can be increased in post-natal women via an accessible, low-intensity, web-based self-help programme. Study limitations include high attrition rates and poor generalisability to more diverse samples.

Please do not hesitate to contact e if you require further information.

Yours sincerely,



Isobel Gammer

CC: supervisors Dr Fergal Jones and Dr Charlotte Hartley-Jones (by email)

Appendix O: Note regarding feedback to participants

Participants were asked when they enrolled whether they would like to be sent a summary of findings following study completion and consented to be contact by September 2017 by email if so. At the time of submission of this MRP in April 2017 the study was still running as some participants had not yet reached their final assessment time point. It was planned that once all data has been collected and a final analysis run, a single-page PDF would be created that summarises results in a succinct and accessible way and agreed with supervisors. This will be emailed to all participants who consented to receiving this. The prize draw will also be awarded following completion of the study and the winner contacted by email.