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

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

Section A: Literature Review

Table 1: Summary of included studies  
Table 2: Summary of interventions  
Table 3: Scores for included papers on the Standard Quality Assessment Criteria for Primary Research  
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  
Figure 1: PRISMA flow diagram showing process of screening and exclusion of records retrieved in systematic search  
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

Section B: Empirical Research Paper

Table 1: Demographic characteristics of RCT participants  
Table 2: Summary of sessions and exercises in the Kindness for Mums Online (KFMO) intervention  
Table 3: Descriptive statistics for intention-to-treat-analysis at each time point  
Figure 1: CONSORT diagram showing participant flow through the trial  
Figure 2: Graphs showing mean total scores on the WEMWBS and SCS-SF by group for each time point  
Figure 3: The mediation model and associated 95% confidence intervals (CIs).
# List of Appendices

## Section A: Literature Review

<table>
<thead>
<tr>
<th>Appendix A: Full search terms for systematic literature search</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix B: Standard quality assessment criteria for evaluating primary research papers</td>
<td>113</td>
</tr>
</tbody>
</table>

## 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  |
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 &
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, Psitsungkagarn & 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-focus* 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>
<thead>
<tr>
<th>First author (year)</th>
<th>Design</th>
<th>Sample</th>
<th>Relevant measures</th>
<th>Main relevant findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Children Children with Autism Spectrum Disorder (ASD) diagnosis, 3–20 years</td>
<td>Well-being HADS Family Problems subscale of the QRS-F (15-item version)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recruitment Via paediatric assessment team who diagnosed ASD. Eligible families were posted a package with info sheet, consent form &amp; questionnaires. Response rate = 19%</td>
<td>Other Open-ended questions about mindful parenting based on IM-P</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Country of residence Australia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Children Not specified</td>
<td>Well-being BDI (Portuguese version) STAI-Y (Portuguese Version)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recruitment Convenience sample NOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Country of residence Portugal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Neff (2014)</td>
<td>Cross-sectional – multivariate analysis</td>
<td>Parents</td>
<td>Biological parents <em>(N=51; 11 male)</em></td>
<td>Self-compassion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Children</td>
<td>Children with Autism Spectrum Disorder (ASD) diagnosis, 4–12 years</td>
<td>Well-being</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recruitment</td>
<td>Parents already involved in wider study (University of Texas Autism Project) invited by email.</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Country of residence</td>
<td>United States</td>
<td></td>
</tr>
</tbody>
</table>

| | | Children | Typically developing, 8–18 years | Well-being | PSI-SF (Portuguese version) | 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. |
| | | Recruitment | Talks and recruitment packs given to children in two state schools. | Other | MAAS (Portuguese version) IM-P (Portuguese version) Total Score | | |
| | | Country of residence | Portugal | | | |

| | | Children | Typically developing, 8–18 years | Well-being | Parental Distress Subscale of the PSI-SF (Portuguese version) | 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. |
| | | Recruitment | Recruitment packs given to children in five state schools. | | | | |

**Study**
- **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

**Study**
- **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.
<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention details</th>
<th>Parent and Child demographics</th>
<th>Outcome measures</th>
<th>Intervention effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8. Bazzano (2013)</strong></td>
<td>Intervention feasibility study of group MBSR with pre-post evaluation</td>
<td><strong>Parents</strong>&lt;br&gt;Parents or primary caregivers (N=76; gender ratio not specified).</td>
<td><strong>Self-compassion</strong>&lt;br&gt;SCS (26 item) Total Score (mean)</td>
<td><strong>Self-compassion</strong>&lt;br&gt;Significant pre-post increases in S-C maintained at FU.</td>
</tr>
<tr>
<td></td>
<td>Three time points: Baseline (B), immediately post-intervention (PI) and follow-up two months post-intervention (FU)</td>
<td><strong>Children</strong>&lt;br&gt;Children with developmental disabilities (ASD, Cerebral Palsy, Down’s Syndrome, LD, other), age not specified</td>
<td><strong>Well-being</strong>&lt;br&gt;PSS-10 ParentSS PWB</td>
<td><strong>Well-being</strong>&lt;br&gt;Significant pre-post improvements in general stress and parenting stress, maintained at FU.</td>
</tr>
<tr>
<td></td>
<td>Recruitment Via one community disabilities organisation, including its support group leaders and newsletter.</td>
<td><strong>Qualitative feedback</strong> (responses to question: Do you feel you got something of lasting value or importance from taking the MBSR program?)</td>
<td><strong>Significant pre-post improvements in reported psychological well-being, maintained at FU.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Country of residence</strong>&lt;br&gt;United States</td>
<td><strong>Other</strong>&lt;br&gt;MAAS</td>
<td><strong>Mediation analysis</strong>&lt;br&gt;Multiple linear regression showed significant negative association change in mindfulness and change in stress; no analysis of S-C as potential mediator.</td>
<td></td>
</tr>
<tr>
<td><strong>9. Mann (2016)</strong></td>
<td>Manual development and pilot RCT of group MBCT</td>
<td><strong>Parents</strong>&lt;br&gt;Parents (N=38; 2 male) with history of recurrent depression (3+ episodes) in full or partial remission at time of participation.</td>
<td><strong>Self-compassion</strong>&lt;br&gt;SCS (26 item) Total Score</td>
<td><strong>Self-compassion</strong>&lt;br&gt;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 compared to Cx group.</td>
</tr>
<tr>
<td></td>
<td>Three time points: Baseline (B), four months post-randomisation (PI) and follow-up nine months post-randomisation (FU)</td>
<td><strong>Children</strong>&lt;br&gt;2–6 years (NOS).</td>
<td><strong>Well-being</strong>&lt;br&gt;BDI-II PSI-SF</td>
<td><strong>Well-being</strong>&lt;br&gt;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.</td>
</tr>
<tr>
<td></td>
<td>Recruitment Via GPs, local health visiting teams, mental health services and advertisements in community settings.</td>
<td><strong>Other</strong>&lt;br&gt;FFMQ Semi-structured qualitative interview</td>
<td><strong>Mediation analysis</strong>&lt;br&gt;No analysis of S-C or other potential mediator</td>
<td></td>
</tr>
</tbody>
</table>

**Pilot RCT of a mindfulness-based intervention**

- **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

**Intervention effects**

**Self-compassion**

- SCS (26 item) Total Score

**Well-being**

- PES, Maternal Self-Efficacy Subscale
- DASS-21
- SWLS
- SHS

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

### 11. Coatsworth (2014)

**RCT of mindfulness-enhanced strengthening families programme (MSFP) compared to ordinary SFP and attention control.**

- **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

**Intervention effects**

**Self-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.

**Mediation analysis**

No analysis of S-C as potential mediator.

**Note**: NOS = not otherwise specified; ns = not significant (p > .05); S-C = self-compassion; MBSR = mindfulness-based stress reduction; MBCT = mindfulness-based cognitive therapy
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); STA-I = State-Trait Anxiety Inventory-Form Y (Spielberger, 1983; Portuguese Version: Daniel and Ponioco-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

<table>
<thead>
<tr>
<th>First author (year)</th>
<th>Therapeutic approach</th>
<th>Comparison group(s)</th>
<th>Format of intervention</th>
<th>Contact time / duration</th>
<th>Attrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bazzano (2013)</td>
<td>MBSR (Kabat-Zinn et al. 1992) adapted for parents of children with disabilities</td>
<td>None</td>
<td>Group</td>
<td>8 weekly 2h sessions + 4h silent retreat + audio-guided home practice</td>
<td>PI = 13% FU = 49%</td>
</tr>
<tr>
<td>Mann (2016)</td>
<td>MBCT (Segal et al. 2002a) adapted for parents.</td>
<td>Treatment as Usual (TAU)</td>
<td>Group</td>
<td>8 weekly sessions (length not specified) plus home practice.</td>
<td>Both groups: PI =15%, FU = 13% Tx group: PI = 6%, FU = 11 % Cx group: PI = 27% FU = 16%</td>
</tr>
<tr>
<td>Perez-Blasco (2013)</td>
<td>MBSR, MBCT &amp; Mindful Self-Compassion (Neff, 2011) adapted for breastfeeding mothers.</td>
<td>No treatment</td>
<td>Group</td>
<td>8 weekly 2h sessions plus home practice</td>
<td>All groups: PI = 13%, FU = 21% MSFP: PI = 10%, FU = 19% SFP: PI = 13%, PI = 18% Cx group: PI = 15%, FU = 28%</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Summary Score</td>
<td>16/18 = 0.89</td>
<td>16/21 = 0.76</td>
<td>14/18 = 0.77</td>
<td>19/20 = 0.95</td>
<td>18/20 = 0.90</td>
<td>18/22 = 0.81</td>
<td>14/22 = 0.63</td>
<td>19/22 = 0.86</td>
<td>25/26 = 0.96</td>
<td>20/26 = 0.77</td>
<td>20/26 = 0.77</td>
</tr>
</tbody>
</table>
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 $\chi^2(4)$
SELF-COMPASSION AND WELL-BEING IN PARENTHOOD

$= 3.39, p = .495$; anxiety $\chi^2 (1) = 0.49, p = .486$; stress $\chi^2 (4) = 4.93, p = .294$; positive psychological well-being $\chi^2 (1) = 1.95, p = .163$) 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 ($5 \times 5 + 10$; 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 ($5 \times 2 + 10$; 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 (Gouveia, 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, Gouveia 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

**Depression**
- Estimated mean = -0.50
- 95% CI = -0.56 - -0.43
- Range = 0.20 (-0.65 - -0.43)
- Estimated alpha < .001

**Anxiety**
- Estimated mean = -0.21
- 95% CI = -0.33 - -0.08
- Range = 0.14 (-0.33 - -0.19)
- Estimated alpha = .002

**Stress**
- Estimated mean = -0.57
- 95% CI = -0.62 - -0.52
- Range = 0.28 (-0.66 - -0.38)
- Estimated alpha < .001

**Positive well-being measures**
- Estimated mean = 0.47
- 95% CI = 0.30 - 0.61
- Range = 0.22 (0.35 - 0.57)
- Estimated alpha < .001
# 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

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

\(^a\)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 Coatsworth 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


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 mental 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-week 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

<table>
<thead>
<tr>
<th></th>
<th>Intervention group</th>
<th>Control group</th>
<th>Both conditions</th>
<th>Between group comparison</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 104</td>
<td>N = 101</td>
<td>N = 205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers age (years)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>U = 4805.50, Z = -1.05</td>
<td>p = .293</td>
</tr>
<tr>
<td></td>
<td>35.42 (3.98)</td>
<td>34.81 (3.89)</td>
<td>35.12 (3.94)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child’s age (months)</td>
<td></td>
<td></td>
<td></td>
<td>U = 5139.50, Z = -0.266</td>
<td>p = .790</td>
</tr>
<tr>
<td></td>
<td>5.26 (3.30)</td>
<td>5.12 (3.18)</td>
<td>5.19 (3.23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child gender</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>50 (48%)</td>
<td>58 (57%)</td>
<td>108 (52.7%)</td>
<td>χ² = 1.796, p = .209</td>
<td></td>
</tr>
<tr>
<td>Family structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single parent</td>
<td>3 (2.9%)</td>
<td>2 (2%)</td>
<td>5 (2.4%)</td>
<td>χ² = 0.176, p = .675</td>
<td></td>
</tr>
<tr>
<td>Older siblings</td>
<td>40 (38.5%)</td>
<td>39 (39.6%)</td>
<td>79 (39.0%)</td>
<td>χ² = 0.001, p = .982</td>
<td></td>
</tr>
<tr>
<td>Ethnic origin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>98 (94.2%)</td>
<td>94 (93.1%)</td>
<td>192 (94.1%)</td>
<td>χ² = 0.130, p = .937</td>
<td></td>
</tr>
<tr>
<td>Non-white</td>
<td>5 (4.8%)</td>
<td>6 (6%)</td>
<td>11 (5.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1 (1%)</td>
<td>0 (0%)</td>
<td>1 (0.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>96 (92.3%)</td>
<td>99 (98%)</td>
<td>195 (95.1%)</td>
<td>χ² = 3.603, p = .058</td>
<td></td>
</tr>
<tr>
<td>Degree-level education</td>
<td>95 (91.4%)</td>
<td>92 (92.1%)</td>
<td>188 (91.7%)</td>
<td>χ² = 0.004, p = .948</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional/managerial</td>
<td>81 (78.0%)</td>
<td>77 (76.2%)</td>
<td>158 (77.1%)</td>
<td>χ² = 2.1962, p = .533</td>
<td></td>
</tr>
<tr>
<td>Intermediate occupations</td>
<td>14 (13.4%)</td>
<td>15 (14.9%)</td>
<td>29 (14.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical, semi-routine &amp; routine occupations</td>
<td>5 (4.8%)</td>
<td>2 (2.0%)</td>
<td>7 (3.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>4 (3.8%)</td>
<td>7 (6.9%)</td>
<td>11 (5.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below £25,000</td>
<td>7 (6.7%)</td>
<td>5 (5%)</td>
<td>12 (5.9%)</td>
<td>χ² = 2.313, p = .509</td>
<td></td>
</tr>
<tr>
<td>£25–35,000</td>
<td>11 (10.6%)</td>
<td>6 (5.9%)</td>
<td>17 (8.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above £35,000</td>
<td>79 (76.0%)</td>
<td>85 (84.2%)</td>
<td>164 (80.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>7 (6.7%)</td>
<td>5 (5%)</td>
<td>12 (5.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current mental health treatment</td>
<td>10 (9.6%)</td>
<td>8 (7.9%)</td>
<td>18 (8.8%)</td>
<td>χ² = 0.184, p = .668</td>
<td></td>
</tr>
<tr>
<td>Psychotropic medication</td>
<td>3 (2.9%)</td>
<td>1 (2%)</td>
<td>4 (2.0%)</td>
<td>χ² = 2.033, p = .566</td>
<td></td>
</tr>
<tr>
<td>Talking therapy</td>
<td>3 (2.9%)</td>
<td>5 (5%)</td>
<td>8 (3.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both meds &amp; therapy</td>
<td>2 (1.9%)</td>
<td>1 (1.0%)</td>
<td>3 (1.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>2 (1.9%)</td>
<td>3 (3.0%)</td>
<td>5 (2.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous experience of self-compassion or mindfulness</td>
<td>22 (21.2%)</td>
<td>22 (21.8%)</td>
<td>44 (21.52%)</td>
<td>χ² = 0.012, p = .913</td>
<td></td>
</tr>
</tbody>
</table>
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.
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
The table below provides a summary of sessions and exercises designed for the Kindness for Mums Online (KFMO) intervention.

<table>
<thead>
<tr>
<th>Session</th>
<th>Focus of session</th>
<th>Description of exercises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session one</td>
<td><strong>Part 1: What is self-kindness?</strong> This introduced the idea of self-kindness and explored a range of reactions to this idea.</td>
<td><strong>Choosing a nurturing activity.</strong> 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.</td>
</tr>
<tr>
<td></td>
<td><strong>Part 2: Shaking hands with the ‘inner critic’.</strong> Introduction to the idea of self-judgement and self-critical thinking and how these might manifest in the context of caring for an infant.</td>
<td><strong>What might you say to a friend?</strong> 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.</td>
</tr>
<tr>
<td>Session two</td>
<td><strong>Part 1: Birth.</strong> 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.</td>
<td><strong>Choosing a kindness object.</strong> 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.</td>
</tr>
<tr>
<td></td>
<td><strong>Part 2: Feeding, sleeping and the first few days.</strong> 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.</td>
<td><strong>Breathe it in.</strong> Participants were invited to take a deep breath of fresh air, paying attention to this experience.</td>
</tr>
<tr>
<td>Session three</td>
<td><strong>Part 1: The emotional roller coaster.</strong> 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.</td>
<td><strong>Nature time.</strong> 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.</td>
</tr>
<tr>
<td></td>
<td><strong>Part 2: Ambivalence.</strong> This examined the common experience of ambivalence about one’s baby and about motherhood.</td>
<td><strong>Post-it note kindness.</strong> 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’).</td>
</tr>
<tr>
<td><strong>Session four</strong></td>
<td><strong>Part 1: Other people’s opinions.</strong> 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.</td>
<td><strong>Bubbles of self-kindness.</strong> 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 ‘<em>Am I looking after myself?</em>’ and ‘<em>What do I need right now?</em>’</td>
</tr>
<tr>
<td><strong>Part 2: Relationships.</strong> 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.</td>
<td><strong>Kindness for others.</strong> 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.</td>
<td></td>
</tr>
<tr>
<td><strong>Session five</strong></td>
<td><strong>Part 1: Expectations versus reality.</strong> 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.</td>
<td><strong>What used to make you smile?</strong> 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).</td>
</tr>
<tr>
<td><strong>Part 2: New mum identity.</strong> 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.</td>
<td><strong>Mum milestones.</strong> 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.</td>
<td></td>
</tr>
<tr>
<td><strong>Ending and going forward</strong></td>
<td>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.</td>
<td><strong>A pat on the shoulder.</strong> 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Sending kindness to your hands.</strong> 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.</td>
</tr>
</tbody>
</table>
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 $\kappa^2$.

**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

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

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: \( U = 1558.50, Z = -0.599, p = .551, r = -0.03 \); 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)
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, 2.258) and an effect size of $\kappa^2 = .0911 \ CI=(.033, .173)$. Thus, as hypothesized, change in self-compassion statistically mediated the effect of KFMO 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 & Bjorkli, 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


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.  

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.  

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-focused 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 are 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 be 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 are 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. Anonymised 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 by email which group 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-focused 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

I consent to take part in this research study

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.

I consent to participate in the prize draw

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 ☐

[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

Canterbury Christ Church University
Salomons Centre for Applied Psychology

New Mum? We Need You!

We are looking for women who have a baby under one year to try out a new online programme... for FREE!
(and help us to potentially help other mums in the future...)

Kindness for Mums Online is a brief, free, online programme that contains information, quotes from other mums, and exercises you can try. It aims to help you:

- learn self-kindness,
- soothe your 'inner critic'
- believe in yourself when you become a parent

For more information or to take part visit www.kindnessformums.org or email xxxxxxxxxxxx@canterbury.ac.uk

Online study advert

Canterbury Christ Church University
Salomons Centre for Applied Psychology

New Mum? We Need You!

We are looking for women who have a baby under one year to try out a new online programme... for FREE!
(and help us potentially help other mums in the future...)

For more information or to take part visit www.kindnessformums.org or email xxxxxxxxxxxx@canterbury.ac.uk
Appendix E: Questionnaires

The Warwick-Edinburgh Mental Well-being Scale


[This has been removed from the electronic copy]
Self-Compassion Scale—Short Form (SCS-SF)


[This has been removed from the electronic copy]
The Forms of Self-Criticism and Self-Reassurance Scale (FSCSRS)


[This has been removed from the electronic copy]
Depression, Anxiety and Stress Scales – 21 item version (DASS-21)


[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:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never (0)</th>
<th>Less than once a week (1)</th>
<th>Around once a week (2)</th>
<th>More than once a week (3)</th>
<th>Most days (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login to the website</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Read some of the session text</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Try out an exercise from the programme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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](http://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.
Welcome to Kindness for Mums Online

Motherhood has its rewards, but it can be hard too. It can be hard physically, emotionally and practically. When a baby arrives, mothers have to adapt to a new lifestyle, learn new skills, function on very little sleep and face conflicting advice from others all while recovering from the birth and dealing with extreme emotional highs and lows. In addition to all this, our relationships can suffer, friendships might change and as our babies get older, new challenges can arise. Despite managing so much, mums can have a tendency to be critical of themselves, to feel guilty, and to try to live up to very high standards or judge themselves harshly.

Kindness for Mums Online is a brief programme that aims to help you learn more self-kindness, soothe your ‘inner critic’, and believe in yourself when you become a parent. There are five sessions, each containing information, quotes from other mums and exercises you can try. You can use the programme flexibly and at your own pace. We recommend approximately ten-to fifteen minutes per week for reading (whenever this suits you) and a few minutes each day to try out an exercise.

The programme is newly developed and at the moment is only accessible as part of a research study. It is free to join and in fact you have the chance to win £50 in vouchers if you take part! Find out more on the Information page or try our FAQs. We hope you will consider participating in the study to learn more about self-kindness and help us to potentially help other mums in the future.
INFORMATION

Kindness for Mums Online has been developed as part of a research study at Canterbury Christ Church University. The study is investigating how self-kindness and self-criticism are related to women's experiences and well-being in the first year after having a baby. It also aims to test whether completing the Kindness for Mums Online programme helps mums to increase self-kindness and whether this has any impact on well-being more generally. Taking part involves answering a set of online questionnaires three times (over twelve weeks) as well as completing the online programme. Completing the questionnaires will take about 20 minutes on each occasion and your answers will remain completely confidential.

To get a login for the programme you need to register for the study. If you decide you would like to take part, you will either be invited to complete the Kindness for Mums Online programme during the first six weeks of your participation or after twelve weeks. When you register for the study, you will be notified about when you will be able to take part in the programme (this is randomly allocated by a computer programme) and then we will notify you that your login for Kindness for Mums Online has been activated at the appropriate time. You can access the programme on your computer, tablet or mobile phone any time that suits you.

To register for the study you can click here or click ‘REGISTER’ at the top of the page any time. For more information try our FAQs or for full details read the Study Documents. To find out about who is involved in running the study go to About Us section. If you still have any questions you can Contact Us.

Website built by Webdesignmike, Design by Chris Dunne.
Frequently Asked Questions (FAQs)

Who is Kindness for Mums Online for?

Kindness for Mums Online has been designed for women who are caring for a baby (or multiple babies) under the age of one year. You could be a biological, adoptive or foster mum. At present, the programme is not designed for dads, though we hope to be able to extend it to them in the future.

How long does the programme take to complete?

The programme itself is designed to be followed over five weeks (but there is some flexibility in how long you can take). How you use the programme is up to you. It is designed to fit around your busy life as a mum. We recommend ten-to-fifteen minutes per week for reading, whenever this suits you, and a few minutes each day to try out an exercise.

How long will I be involved in the study?

If you enrol in the study, you will be involved for between twelve and eighteen weeks. You will be asked to fill in a set of online questionnaires during the first, sixth and twelfth week. When you enrol in the study, a computer programme will randomly assign you to either get access to the Kindness for Mums Online programme straight away or after twelve weeks (see the Information page or read the full Study Documents for details).

Do I need to pay to use Kindness for Mums Online?

No. It is free to access Kindness for Mums Online as part of the research study.

Will I get paid to take part in the research study?

We are not able to pay you for your time but you can choose to be entered 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.

Can I access Kindness for Mums Online without taking part in the study?
Session One

Part 2: Shaking Hands with the Inner Critic

The inner critics that lurk inside many of us can really go to town when we become mums. They thrive on sleepless nights, low energy and emotional confusion. They can be heard clearest when we compare ourselves negatively to others and when we feel we aren’t living up to an (often impossible) ideal we’ve set ourselves.

Some people have raging inner critics that can be vicious and attacking, and some people don’t have any tendency to judge themselves harshly at all. Most of us are probably somewhere between these two extremes for all sorts of reasons (e.g. genetics, temperament, upbringing, life experiences).
Intervention – Session one, part 2 (logged in area)

My Sessions
- Introduction
- Session One
- Session Two
- Session Three
- Session Four
- Session Five
- Ending and Going Forward

Session One
Click through the next few screens to read comments about how some mum’s inner critics have shown themselves...

Previous  Session Progress  Next

Mum Quotes

Canterbury Christ Church

Website built by Webdesignamite. Design by Chris Dunne.
Intervention – Session one, part 2 (logged in area)

Session One

Everyone else was managing everything better than me. They had better nappy bags, and nice buggies. They had better partners, better in-laws, better houses. They had better tactics to get their babies to sleep. Basically I just thought I was a rubbish mum and couldn’t do anything right...

I hated having my photo taken because I thought I looked washed out, tired and old. I was critical about my appearance all the time.
Intervention – Session one, exercise two (logged in area; ‘read’ option expanded)

Imagine someone you know came to you and said that they were exhausted, hadn’t slept or eaten properly for weeks (or months or even years). Imagine they told you that over the last few months or weeks they had been bandied and achingly, confused and fearful. You would probably want to reach out and help them. You might want to give them a big hug, listen to them, speak gently to them, perhaps send them off to bed for a nap, and cook them a nice meal. However, if you are a new mother (or when you were a new mother), have you been able to turn even a portion of this kindly care and attention to yourself whilst in the midst of nurturing your baby? For this exercise see if you can stop and notice the next time you give yourself a harsh time and ask – would you speak to a friend like that? Try speaking to yourself how you would to someone else (this might be out loud or just to yourself). At first it might be hard to think of what you might ‘say’ to yourself so some ideas could be:

‘You’re doing great as you are’
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

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

Purpose

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

<table>
<thead>
<tr>
<th>Condition</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Mothers' Well-being</td>
<td>Other: Kindness for Mums</td>
</tr>
</tbody>
</table>

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

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

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-Criticism/Attacking and Self-Resilience scale [Time Frame: Post-intervention (i.e. 6-weeks post baseline)]
- Change from baseline at 12-weeks on the Depression, Anxiety and Stress Scale 21-item version [Time Frame: Post-intervention (i.e. 6-weeks after 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-Criticism/Attacking and Self-Resilience 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)
The Development and Initial Evaluation of a Web-based, Compassion-focused Course for New Mothers - Full Text View - ClinicalTrials.gov

**Purpose:**
An online self-help course designed to promote self-kindness and self-compassion in new mothers.

**Experimental Group (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.

**Details:**
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 well-being.

**Eligibility**
- **Ages Eligible for Study:** 18 years and older (Adult: Senior)
- **Sexes Eligible for Study:** Female
- **Accepts Healthy Volunteers:** Yes

**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 substantial threat at the time of enrollment

**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: NCT02776815

**Sponsors and Collaborators**
Canterbury Christ Church University

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

**More Information**
- **Responsible Party:** Canterbury Christ Church University
- **ClinicalTrials.gov Identifier:** NCT02776815
- **History of Changes:**
- **Other Study ID Numbers:** IsobelGammerMRP2015
- **Study First Received:** May 16, 2014
- **Last Updated:** February 5, 2017
- **Individual Participant Data Access:** No

ClinicalTrials.gov processed this record on April 15, 2017
**Appendix I: Data exploration**

Baseline statistics (intervention group)

<table>
<thead>
<tr>
<th>Group</th>
<th>Q1 WEMWBS Total Score</th>
<th>Q1 SCS Total Score (mean)</th>
<th>Q1 DASS Depression Total Score</th>
<th>Q1 DASS Anxiety Total Score</th>
<th>Q1 DASS Stress Total Score</th>
<th>Q1 FSCSRS Hated Self Subscale</th>
<th>Q1 FSCSRS Reassured Self Subscale</th>
<th>Q1 FSCSRS Superior Self Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Group</td>
<td>N Valid</td>
<td>104</td>
<td>104</td>
<td>104</td>
<td>104</td>
<td>104</td>
<td>104</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>44.37</td>
<td>2.5489</td>
<td>4.82</td>
<td>3.29</td>
<td>9.70</td>
<td>3.66</td>
<td>16.32</td>
</tr>
<tr>
<td>Std. Error of Mean</td>
<td></td>
<td>.811</td>
<td>.06832</td>
<td>.456</td>
<td>.329</td>
<td>.411</td>
<td>.394</td>
<td>.608</td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td>44.00</td>
<td>2.4167</td>
<td>3.00</td>
<td>2.00</td>
<td>9.00</td>
<td>2.00</td>
<td>16.00</td>
</tr>
<tr>
<td>Skewness</td>
<td></td>
<td>.012</td>
<td>.343</td>
<td>1.264</td>
<td>1.395</td>
<td>.401</td>
<td>1.585</td>
<td>.019</td>
</tr>
<tr>
<td>Kurtosis</td>
<td></td>
<td>-.546</td>
<td>-.418</td>
<td>.957</td>
<td>1.578</td>
<td>-.345</td>
<td>2.397</td>
<td>-.205</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td></td>
<td>.469</td>
<td>.469</td>
<td>.469</td>
<td>.469</td>
<td>.469</td>
<td>.469</td>
<td>.469</td>
</tr>
<tr>
<td>Range</td>
<td></td>
<td>37</td>
<td>3.08</td>
<td>19</td>
<td>15</td>
<td>20</td>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td>Percentiles</td>
<td>25</td>
<td>39.00</td>
<td>2.0833</td>
<td>1.25</td>
<td>1.00</td>
<td>6.00</td>
<td>1.00</td>
<td>13.00</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>44.00</td>
<td>2.4167</td>
<td>3.00</td>
<td>2.00</td>
<td>9.00</td>
<td>2.00</td>
<td>16.00</td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>51.75</td>
<td>3.0000</td>
<td>7.75</td>
<td>5.00</td>
<td>13.00</td>
<td>5.00</td>
<td>20.00</td>
</tr>
</tbody>
</table>
Baseline statistics (control group)

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

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>Group</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Q1 WEMWBS Total Score</td>
<td>Control Group</td>
<td>.065</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.077</td>
<td>104</td>
</tr>
<tr>
<td>Q1 SCS Total Score (mean)</td>
<td>Control Group</td>
<td>.071</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.085</td>
<td>104</td>
</tr>
<tr>
<td>Q1 DASS Depression Total Score</td>
<td>Control Group</td>
<td>.178</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.190</td>
<td>104</td>
</tr>
<tr>
<td>Q1 DASS Anxiety Total Score</td>
<td>Control Group</td>
<td>.202</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.198</td>
<td>104</td>
</tr>
<tr>
<td>Q1 DASS Stress Total Score</td>
<td>Control Group</td>
<td>.129</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.124</td>
<td>104</td>
</tr>
<tr>
<td>Q1 FSCSRS Hated Self Subscale</td>
<td>Control Group</td>
<td>.189</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.199</td>
<td>104</td>
</tr>
<tr>
<td>Q1 FSCSRS Reassured Self Subscale</td>
<td>Control Group</td>
<td>.071</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.066</td>
<td>104</td>
</tr>
<tr>
<td>Q1 FSCSRS Inferior Self Subscale</td>
<td>Control Group</td>
<td>.075</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.061</td>
<td>104</td>
</tr>
</tbody>
</table>

* This is a lower bound of the true significance.

a. Lilliefors Significance Correction
### Post-intervention statistics (intervention group)

<table>
<thead>
<tr>
<th>Group</th>
<th>Q2 WEMWB Total Score</th>
<th>Q2 SCS Total Score</th>
<th>Q2 DASS Depression Total Score</th>
<th>Q2 DASS Anxiety Total Score</th>
<th>Q2 DASS Stress Total Score</th>
<th>Q2 FSCSR Inferior Self</th>
<th>Q2 FSCSR Hated Self</th>
<th>Q2 FSCSR Reassured Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Group</td>
<td>N</td>
<td>Valid</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td>49.30</td>
<td>2.9444</td>
<td>3.11</td>
<td>2.28</td>
<td>7.50</td>
<td>16.77</td>
</tr>
<tr>
<td>Std. Error of Mean</td>
<td>.881</td>
<td>.08546</td>
<td>.382</td>
<td>.396</td>
<td>.540</td>
<td>1.098</td>
<td>.378</td>
<td>.829</td>
</tr>
<tr>
<td>Median</td>
<td>49.50</td>
<td>2.9167</td>
<td>2.00</td>
<td>1.00</td>
<td>6.50</td>
<td>17.00</td>
<td>2.00</td>
<td>17.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>6.474</td>
<td>2.62801</td>
<td>2.806</td>
<td>2.910</td>
<td>3.966</td>
<td>7.994</td>
<td>2.749</td>
<td>6.033</td>
</tr>
<tr>
<td>Skewness</td>
<td>.316</td>
<td>-.097</td>
<td>1.260</td>
<td>1.817</td>
<td>.532</td>
<td>.394</td>
<td>1.123</td>
<td>-.115</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.325</td>
<td>.325</td>
<td>.325</td>
<td>.325</td>
<td>.325</td>
<td>.327</td>
<td>.327</td>
<td>.327</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-.323</td>
<td>-.609</td>
<td>1.103</td>
<td>4.126</td>
<td>-.207</td>
<td>-.535</td>
<td>.751</td>
<td>-.665</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.639</td>
<td>.639</td>
<td>.639</td>
<td>.639</td>
<td>.639</td>
<td>.644</td>
<td>.644</td>
<td>.644</td>
</tr>
<tr>
<td>Range</td>
<td>30</td>
<td>2.75</td>
<td>12</td>
<td>14</td>
<td>17</td>
<td>32</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>Percentiles 25</td>
<td>44.00</td>
<td>2.4792</td>
<td>1.00</td>
<td>.00</td>
<td>5.00</td>
<td>11.00</td>
<td>1.00</td>
<td>13.50</td>
</tr>
<tr>
<td>50</td>
<td>49.50</td>
<td>2.9167</td>
<td>2.00</td>
<td>1.00</td>
<td>6.50</td>
<td>17.00</td>
<td>2.00</td>
<td>17.00</td>
</tr>
<tr>
<td>75</td>
<td>54.00</td>
<td>3.4375</td>
<td>4.25</td>
<td>4.00</td>
<td>10.00</td>
<td>22.50</td>
<td>4.50</td>
<td>23.00</td>
</tr>
</tbody>
</table>
### Post-intervention statistics (control group)

<table>
<thead>
<tr>
<th>Group</th>
<th>Q2 WEMWB Total Score</th>
<th>Q2 SCS Total Score</th>
<th>Q2 DASS Depression Total Score</th>
<th>Q2 DASS Anxiety Total Score</th>
<th>Q2 DASS Stress Total Score</th>
<th>Q2 FSCSR Reassured Self</th>
<th>Q2 FSCSR Hated Self</th>
<th>Q2 FSCSR Inferior Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>N</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Mean</td>
<td>46.35</td>
<td>2.7437</td>
<td>4.09</td>
<td>2.60</td>
<td>8.55</td>
<td>18.37</td>
<td>3.36</td>
<td>17.51</td>
</tr>
<tr>
<td>Std. Error of Mean</td>
<td>0.833</td>
<td>0.07463</td>
<td>0.413</td>
<td>0.306</td>
<td>0.498</td>
<td>0.950</td>
<td>0.391</td>
<td>0.670</td>
</tr>
<tr>
<td>Median</td>
<td>48.00</td>
<td>2.6667</td>
<td>3.00</td>
<td>1.50</td>
<td>8.00</td>
<td>19.00</td>
<td>2.00</td>
<td>18.00</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.716</td>
<td>0.253</td>
<td>1.871</td>
<td>1.593</td>
<td>0.726</td>
<td>-0.099</td>
<td>1.925</td>
<td>-0.555</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>0.269</td>
<td>0.269</td>
<td>0.269</td>
<td>0.269</td>
<td>0.269</td>
<td>0.272</td>
<td>0.272</td>
<td>0.272</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>0.299</td>
<td>-0.367</td>
<td>5.081</td>
<td>3.212</td>
<td>0.597</td>
<td>-0.735</td>
<td>4.891</td>
<td>0.284</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>0.532</td>
<td>0.532</td>
<td>0.532</td>
<td>0.532</td>
<td>0.532</td>
<td>0.538</td>
<td>0.538</td>
<td>0.538</td>
</tr>
<tr>
<td>Range</td>
<td>37</td>
<td>3.08</td>
<td>21</td>
<td>14</td>
<td>21</td>
<td>34</td>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td>Percentiles</td>
<td>25</td>
<td>40.25</td>
<td>2.2500</td>
<td>1.00</td>
<td>1.00</td>
<td>6.00</td>
<td>12.00</td>
<td>1.00</td>
</tr>
<tr>
<td>50</td>
<td>48.00</td>
<td>2.6667</td>
<td>3.00</td>
<td>1.50</td>
<td>8.00</td>
<td>19.00</td>
<td>2.00</td>
<td>18.00</td>
</tr>
<tr>
<td>75</td>
<td>52.00</td>
<td>3.1667</td>
<td>5.00</td>
<td>4.00</td>
<td>11.00</td>
<td>25.00</td>
<td>5.00</td>
<td>22.00</td>
</tr>
</tbody>
</table>
### Post-intervention normality tests

#### Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Group</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Q2 WEMWB Total Score</td>
<td>Control Group</td>
<td>.123</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.105</td>
<td>53</td>
</tr>
<tr>
<td>Q2 SCS Total Score</td>
<td>Control Group</td>
<td>.084</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.103</td>
<td>53</td>
</tr>
<tr>
<td>Q2 DASS Depression Total Score</td>
<td>Control Group</td>
<td>.183</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.219</td>
<td>53</td>
</tr>
<tr>
<td>Q2 DASS Anxiety Total Score</td>
<td>Control Group</td>
<td>.222</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.222</td>
<td>53</td>
</tr>
<tr>
<td>Q2 DASS Stress Total Score</td>
<td>Control Group</td>
<td>.132</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.147</td>
<td>53</td>
</tr>
<tr>
<td>Q2 FSCSR Inferior Self</td>
<td>Control Group</td>
<td>.071</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.089</td>
<td>53</td>
</tr>
<tr>
<td>Q2 FSCSR Hated Self</td>
<td>Control Group</td>
<td>.179</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.205</td>
<td>53</td>
</tr>
<tr>
<td>Q2 FSCSR Reassured Self</td>
<td>Control Group</td>
<td>.091</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Intervention Group</td>
<td>.100</td>
<td>53</td>
</tr>
</tbody>
</table>

* This is a lower bound of the true significance.

a. Lilliefors Significance Correction
Follow-up statistics (intervention group)

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Valid</th>
<th>Missing</th>
<th>Mean</th>
<th>Std. Error of Mean</th>
<th>Median</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Std. Error of Skewness</th>
<th>Kurtosis</th>
<th>Std. Error of Kurtosis</th>
<th>Range</th>
<th>Percentiles 25</th>
<th>Percentiles 50</th>
<th>Percentiles 75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Group</td>
<td>49</td>
<td>49</td>
<td>54</td>
<td>49.24</td>
<td>1.168</td>
<td>49.00</td>
<td>8.179</td>
<td>.075</td>
<td>.340</td>
<td>.286</td>
<td>.668</td>
<td>41</td>
<td>44.00</td>
<td>49.00</td>
<td>54.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.58</td>
<td>2.92</td>
<td>3.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>2.00</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.00</td>
<td>8.00</td>
<td>10.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.00</td>
<td>15.00</td>
<td>24.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.00</td>
<td>2.00</td>
<td>4.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.00</td>
<td>19.00</td>
<td>23.50</td>
</tr>
</tbody>
</table>
### Follow-up statistics (control group)

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

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>Group</th>
<th>Kolmogorov-Smirnov[^a]</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Q3 WEMWBS Total Score (sum)</td>
<td>Control Group</td>
<td>.079</td>
<td>68</td>
</tr>
<tr>
<td>Q3 WEMWBS Total Score (sum)</td>
<td>Intervention Group</td>
<td>.096</td>
<td>49</td>
</tr>
<tr>
<td>Q3 SCS Total Score (mean after reverse coding)</td>
<td>Control Group</td>
<td>.081</td>
<td>68</td>
</tr>
<tr>
<td>Q3 SCS Total Score (mean after reverse coding)</td>
<td>Intervention Group</td>
<td>.085</td>
<td>49</td>
</tr>
<tr>
<td>Q3 DASS Depression score</td>
<td>Control Group</td>
<td>.194</td>
<td>68</td>
</tr>
<tr>
<td>Q3 DASS Depression score</td>
<td>Intervention Group</td>
<td>.204</td>
<td>49</td>
</tr>
<tr>
<td>Q3 DASS Anxiety score</td>
<td>Control Group</td>
<td>.191</td>
<td>68</td>
</tr>
<tr>
<td>Q3 DASS Anxiety score</td>
<td>Intervention Group</td>
<td>.242</td>
<td>49</td>
</tr>
<tr>
<td>Q3 DASS Stress Score</td>
<td>Control Group</td>
<td>.116</td>
<td>68</td>
</tr>
<tr>
<td>Q3 DASS Stress Score</td>
<td>Intervention Group</td>
<td>.100</td>
<td>49</td>
</tr>
<tr>
<td>Q3 FSCSRS Inferior Self</td>
<td>Control Group</td>
<td>.126</td>
<td>68</td>
</tr>
<tr>
<td>Q3 FSCSRS Inferior Self</td>
<td>Intervention Group</td>
<td>.124</td>
<td>49</td>
</tr>
<tr>
<td>Q3 FSCSRS Hated Self</td>
<td>Control Group</td>
<td>.223</td>
<td>68</td>
</tr>
<tr>
<td>Q3 FSCSRS Hated Self</td>
<td>Intervention Group</td>
<td>.207</td>
<td>49</td>
</tr>
<tr>
<td>Q3 FSCSRS Reassured Self</td>
<td>Control Group</td>
<td>.085</td>
<td>68</td>
</tr>
<tr>
<td>Q3 FSCSRS Reassured Self</td>
<td>Intervention Group</td>
<td>.097</td>
<td>49</td>
</tr>
</tbody>
</table>

[^a]: Lilliefors Significance Correction

[^*]: This is a lower bound of the true significance.
Appendix J: Baseline comparisons

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

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

\a. Grouping Variable: Group

2. Comparison on baseline 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                      | -6.15                           | -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

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

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

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

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)

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

* 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)

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

* 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 both the post-intervention and follow-up questionnaires ($N = 43$ intervention group, $N = 64$ control group)

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

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)
Appendix L: Per protocol analysis

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

<table>
<thead>
<tr>
<th>Test Statistics(^a)</th>
<th>Change score WEMWBS</th>
<th>Change score SCS TOT</th>
<th>Change Score DASS Anxiety Q1-Q2</th>
<th>Change Score DASS Depression Q1-Q2</th>
<th>Change Score DASS Stress Q1-Q2</th>
<th>Change Score FSCSR Hated self Q1-Q2</th>
<th>Change Score FSCSR Inferior self Q1-Q2</th>
<th>Change Score FACSR Reassured self Q1-Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>1455.500</td>
<td>1295.500</td>
<td>1897.000</td>
<td>1884.500</td>
<td>1580.000</td>
<td>1684.000</td>
<td>1587.000</td>
<td>1548.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>4695.500</td>
<td>4535.500</td>
<td>5137.000</td>
<td>3060.500</td>
<td>2756.000</td>
<td>2812.000</td>
<td>2715.000</td>
<td>4629.000</td>
</tr>
<tr>
<td>Z</td>
<td>-.291</td>
<td>-.080</td>
<td>-.115</td>
<td>-.176</td>
<td>-.162</td>
<td>-.775</td>
<td>-1.257</td>
<td>-1.459</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.022</td>
<td>.002</td>
<td>.909</td>
<td>.860</td>
<td>.093</td>
<td>.439</td>
<td>.209</td>
<td>.144</td>
</tr>
</tbody>
</table>

\(^a\) Grouping Variable: Group

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

<table>
<thead>
<tr>
<th>Test Statistics(^a)</th>
<th>FU Change Score WEMWBS Q1-Q3</th>
<th>FU Change Score SCS Q1-Q3</th>
<th>FU Change Score DASS Anxiety Score Q1-Q3</th>
<th>FU Change Score DASS Depression Score Q1-Q3</th>
<th>FU Change Score DASS Stress Score Q1-Q3</th>
<th>FU Change Score FSC Inferior Self Q1-Q3</th>
<th>FU Change Score FSC Hated Self Q1-Q3</th>
<th>FU Change Score FACSR Reassured Self Q1-Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>1248.000</td>
<td>950.000</td>
<td>1384.500</td>
<td>1390.000</td>
<td>1467.500</td>
<td>1322.000</td>
<td>1286.500</td>
<td>1221.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>3594.000</td>
<td>3296.000</td>
<td>2374.500</td>
<td>2380.000</td>
<td>2457.500</td>
<td>2312.000</td>
<td>2276.500</td>
<td>3567.000</td>
</tr>
<tr>
<td>Z</td>
<td>-.1479</td>
<td>-.3258</td>
<td>-.670</td>
<td>-.641</td>
<td>-.171</td>
<td>-1.039</td>
<td>-1.276</td>
<td>-1.647</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.139</td>
<td>.001</td>
<td>.503</td>
<td>.521</td>
<td>.865</td>
<td>.299</td>
<td>.202</td>
<td>.100</td>
</tr>
</tbody>
</table>

\(^a\) 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

• Article by DOI

• Book

• Book chapter

• Online document
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**

- **Group I**
  - mGlx1a
  - mGlx1b
  - mGlx1d
  - mGlx1E55
  - mGlx5a
  - mGlx5b

- **Group II**
  - mGlx3
  - mGlx3A54

- **Group III**
  - mGlx3A
  - mGlx6b

- 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.