

**FIRST TIME MOTHERS: EXPLORING THE RELATIONSHIP  
BETWEEN SHAME MEMORIES, AND THE EXPERIENCES OF  
SHAME COMPASSION AND MOTHERHOOD.**

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## **ABSTRACT**

### **Background**

Shame memories from childhood/adolescence, which operate as traumatic memories and become central to personal identity, have been associated with shame in adulthood. Shame has been reported in the context of motherhood but not yet investigated within Gilbert's (1998, 2010) biopsychosocial framework. Self-compassion, as an orientation to care for oneself has been found to buffer people against the psychological impact of stressful events, such as the transition to motherhood.

### **Aims**

Drawing on the biopsychosocial framework, this study aimed firstly to profile the shame memories of first time mothers in the UK and Ireland. Secondly, it aimed to explore the relationships between the traumatic and centrality features of shame memories, shame, compassion, fears of compassion and emotional adjustment to motherhood.

### **Method**

Drawing on a critical realist epistemological position, this study adopted a cross-sectional, quantitative approach. New mothers (N = 133) across the UK and Ireland were recruited on social media forums to complete a series of established self-report questionnaires via an online survey platform.

### **Results**

The most frequently selected category of shame situation recalled by mothers was 'exposure of perceived negative personal attributes, characteristics, behaviour to others' (N = 34). Canonical correlation analysis revealed that shame memories predicted shame, compassion and fears of compassion. Multiple regression analysis revealed self-compassion to be the only significant predictor of emotional adjustment to motherhood in the model. Shame did not moderate this relationship.

## **Conclusion**

Participants experienced shame, fears of receiving compassion and low levels of self-compassion suggesting that they may be experiencing distress with insufficient access to self-soothing skills. Nonetheless, a more self-compassionate attitude was associated with greater emotional adjustment to motherhood. Perinatal health services are advised to promote the development of compassion at all levels.

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## LIST OF ABBREVIATIONS

Below is a list of the most commonly used abbreviations in the current study. Relevant citations are provided in the main body.

AM = autobiographical memory

SM = shame memories

CFT = Compassion Focused Therapy

S-cS = Self-compassion scale

AMQ = Autobiographical Memory Questionnaire

SEI = Shame Experiences Interview

IES-R = The Impact of Event Scale-Revised

CES-S = The Centrality of Event Scale-Short Version

OAS-2 = The Other as Shamer Scale-2

FCS-1 = Fears of Compassion Scale 1 (expressing compassion for others)

FCS-2 = Fears of Compassion Scale 2 (responding to compassion from others)

FCS-3 = Fears of Compassion Scale 3 (self-compassion)

BAM-13 = The Being a Mother Scale

CCA = Canonical correlation analysis

## 1. INTRODUCTION

### 1.1. Overview

Contemporary ideas of mothering are elucidated with a particular focus on the transition to motherhood and the challenges associated with mother-infant bonding, thereby setting the context for the variables of interest in this study: shame and compassion. Following this, two literature reviews are presented detailing how maternal shame and compassion have been directly investigated to date, providing a rationale for the study's overall aim and research questions.

### 1.2. Mothering ideology

Tummala-Narra (2009) suggests that motherhood in contemporary Western society needs to be considered in the context of rapidly changing social circumstances. For example, scientific and technological progress, increased access to information through the media, and increased geographic mobility have contributed to shifts in cultural ideas about mothering, which impact on mothers' internal worlds. She proposes that societal changes can create challenges for mothers in reorganising their sense of identity and evoke an idealisation of cultural expectations of mothering that have become increasingly rigorous. Such models of mothering have been coined in a variety of ways: "*intensive mothering*" (Hays, 1996), "*the perfect mother*," (Orenstein, 2000) "*new-momism*" (Douglas & Michaels, 2004) and "*mommy mystique*" (Warner, 2005). These ideals demand mothers to give of themselves at all times and in all domains – physically, emotionally, cognitively, and spiritually. This presents near impossible standards, which, if they are subscribed to, lock mothers into a sort of prison, where women are bound by the myths of motherhood bringing potentially negative consequences including shame (Villani, 1997).

### 1.3. Transition to motherhood

Pregnancy, birth and the postnatal period bring considerable physical, psychological and social change for women as they negotiate their motherhood role (Mercer, 2004). The transition to motherhood is a radical life event, which requires reorganising goals, behaviours, and responsibilities to reach new perceptions of the self (Barba & Selder, 1995). A challenge associated with negotiating the myths detailed above relates to the idea that new motherhood is presented culturally as a time of immense joy. Media images portray happy mothers and babies, and helpful partners (Nicolson, 1990). However, not all women experience those things, which can leave them feeling different and inadequate compared with this stereotype. Cree (2010) suggests that in a society with little intimate contact with other families, a mother may come to believe that she is the only one struggling with this new role, resulting in a sense of shame and self-criticism.

Perinatal (i.e., the period during pregnancy and the first year after childbirth; Bauer, Parsonage, Knapp, Lemmi, & Adelaja; 2014) care in developed countries has expanded from traditional goals of preventing, detecting and managing physical problems, to broader aims such as supporting mothers' emotional wellbeing. It is common for new mothers to experience a period of distress following childbirth, commonly known as "*baby blues*" (Cree, 2015; Lee & Chung, 2007; Pitt, 1973; Seyfried & Marcus, 2003). According to the Royal College of Midwives (Underdown & Barlow, 2012), this distress typically dissipates; however, for more than 10% of women, it results in women meeting the criteria for a diagnosable mental health problem. According to Bauer et al., (2014), approximately half of all cases of perinatal depression and anxiety persist undetected. The authors implore perinatal mental health problems to be taken seriously as a major public health issue because if they go untreated, the impact can be devastating for women and their families.

Increasing evidence regarding early brain development and in particular, the importance of early relationships as the context for infants to develop emotional and behavioural wellbeing, has highlighted the specific importance of mothers building a bond with their baby (Balbernie, 2001; Gerhardt, 2006; Kolb, 2009).

The ability of mothers and infants to form intimate bonds depends on various conditions that enable the attachment system to function appropriately but there are many threats that can negatively impact this process. For example, exhaustion, birth difficulties, hormonal change, lack of support, fears of inadequacy (Cree, 2010), isolation, judgment, and blaming by the media (Scotland, 2015). Underdown and Barlow (2012) report anecdotal evidence indicating that 1:5 women may experience bonding difficulties with their baby, and that this can be associated with feelings of shame.

Midwives suggest that they are in a unique position to provide an enabling environment for bonding to take place (Underdown & Barlow, 2012). Supporting a woman through this transition offers many opportunities for midwives to explore women's attitudes and hopes for their parenting experience. Education and open discussions with expectant and new mothers about the potential challenges of motherhood may normalise distress and help dispel some of the myths upon which shame thrives. Scotland (2015) suggests that dealing effectively with perinatal distress is about valuing love, connection, and stillness, over and above productivity, achievement and acquisition. This sentiment values compassion for the common human experience of distress, over and above the potential shame associated with failing to meet unrealistic ideals.

#### **1.4. Shame**

Charles Darwin (2013) observed shame in humans worldwide - involving blushing, downward cast eyes, passive posture, confusion of mind, and lowered head. The roots of the word are thought to stem from an older word meaning 'to cover' and shame is often expression by covering oneself, literally or metaphorically (Lewis, 1971). In recent decades, a deluge of writing has emerged dealing with shame from a variety of perspectives in disciplines such as, literature, anthropology, philosophy, sociology and psychology. Shame is now recognised as a major phenomenon of contemporary times, a basic element of individual and social life in the late capitalist society (Giddens, 1991; Lasch, 1991) and it is a taken for granted feature of motherhood (Sutherland, 2010).

#### 1.4.1. Shame in psychology

Shame has taken center stage in various fields of psychology. Shame theories are grounded in various schools of thought, for example, psychoanalytic theories such as Jungian (Jacoby, 1994), affect theories (e.g., Kaufman, 1989; Nathanson, 1992; Tomkins, 1987), affect-cognitive theories (e.g., Lewis, 1992, 1993, 1995), and cognitive behavioural theories (e.g., Beck, Emery, & Greenberg, 1985; Klass, 1990). Developmental psychologists also present different ideas about when shame develops, for example, from the first few months of life (Nathanson, 1992; Schore, 1994) to aged 2-3 years (Lewis, 1993, 1995; Stipek, 1995). Shame can be studied in terms of its components and mechanisms (Tangney, 1996), for example, as: a primary, secondary or composite emotion, a cognition/belief, a behaviour, an evolved bio-behavioural mechanism and an interpersonal dynamic. It can also be used to describe experiences at different levels, for example, internal experiences, relational events and cultural practices. Shame theorists converge on the crucial nature of shame but also on the potentially harmful effects of it (Andrews, Qian, & Valentine, 2002; Gilbert, 1998; Kaufman, 1989; Lewis, 1971; Lewis, 1992; Retzinger, 1998; Tangney & Dearing, 2002; Tangney & Fisher, 1995).

Many theoretical approaches merge on the idea that shame is a multifaceted self-conscious experience related to evaluation of the self (Kaufman, 1989; Lewis, 1971; Tangney & Dearing, 2002; Tangney & Fisher, 1995; Tracy & Robins, 2004). However, other theorists suggest that at a fundamental level shame is a social emotion, associated with the experience of having negative elements of oneself exposed (Lewis, 1992, 2003), and a sense of being negatively experienced by others (Gilbert, 1992, 1998). Based on the latter more social understanding of shame, Gilbert (1998, 2002) has developed the biopsychosocial model of shame, which posits that shame derives from the innate motives of humans for attachment (Bowlby, 1969/1982; Cassidy & Shaver, 1999), group belonging (Baumeister & Leary, 1995) and concern with social ranking (Gilbert, 1992, 2000).

Gilbert (1998) argues that while there is growing consensus about what shame is and how it works, there are still many different views and Andrews (1998)

cautions that the methodologies do not exist to explore these differences empirically. Blum (2008) explains how current methodologies are fraught with poor reliability and validity and high inter-correlations between supposedly different subscales and furthermore, that many of these problems can be traced to differences in definitions, approaches, and measurement methods, rendering comparative analysis futile. The current study positions itself within the definitions and methodologies of recent shame research based on the biopsychosocial model of shame elaborated by Gilbert (1998, 2002).

#### 1.4.2. Biopsychosocial model of shame

Relationships are essential for human survival and wellbeing (Baumeister & Leary, 1995; Bowlby, 1969/1982; Buss, 2003; Gilbert, 1989). In line with this, humans have evolved a host of motivational systems to seek and respond to attachment to carers (Bowlby, 1969/1982; Cassidy & Shaver, 1999) and groups (Baumeister & Leary, 1995). The ability to create a desirable impression of the self with others is crucial and so humans develop and mature various competencies for self-conscious awareness (Lewis, 2003; Tracy & Robins, 2004) and social understanding (e.g., theory of mind [Byrne, 1995]; mentalising [Liotti & Gilbert, 2011]). At all life stages, being loved, accepted, and chosen by others for social roles, impacts on brain development and affect regulation, deactivating threat systems and fostering feelings of safeness and connectedness (Cacciopo, Berston, Sheridan, & McClintock, 2000; Masten, 2001). Contrarily, being criticised, rejected, ridiculed, and abused compromises affect regulation, jeopardises the co-construction of desirable social roles and activates threat responses (Ectoff, 1999; Gilbert, 1989, 1997, 2007a; Gilbert & Irons, 2009). In this view, shame has evolved as a cautionary signal, letting one know they are unable to elicit positive feelings in others. Thus, generating self-monitoring, self-blaming and submissive responses (Matos, Pinto-Gouveia & Costa, 2011) to keep oneself safe from potential attacks, rejection and exclusion (Gilbert, 1997, 2002, 2003 2007a; Gilbert & Irons, 2009)

#### 1.4.3. External and internal shame

Experiencing the self as having negative qualities in the minds of others can trigger what Gilbert (1997, 1998, 2003) defined as external shame. This is where attention is attuned outwardly, to the mind of the other about the self.

This experience is a threat to self-identity and can prompt externalising (e.g., aggression towards others) or internalising (e.g., self-criticism) defenses. Within this model, shame can therefore be internalised, where one identifies with the mind of the other and engages in unfavorable self-evaluations (Gilbert, 1998, 2003; Gilbert & Irons, 2009). This internal shame is a sense of the self as globally flawed, inadequate, and undesirable. Consequently, one's attention is directed towards one's own emotions, characteristics and behaviour (Gilbert, 2003; Gilbert & Irons, 2009; Tangney & Dearing, 2002).

Shame experiences typically involve both types of shame, fuelling each other (Gilbert, 2007b; Kim, Thibodeau, & Jorgensen, 2011) but can vary depending on developmental period or early history of shaming experiences (Cunha, Matos, Faria, & Zagalo, 2012), for example. Both delineations of shame have been associated with the development and perpetuation of mental health problems, specifically depression (Andrews et al., 2002; Cheung, Gilbert, & Irons, 2004; Kim et al., 2011; Tangney, Stuewig, & Mashek, 2007; Thompson & Berenbaum, 2006) and anxiety (Pinto-Gouveia & Matos, 2011; Tangney, Wagner, & Gramzow, 1992).

#### 1.4.4 Shame memories

Previous experiences of relationships can become coded as interpersonal memories (Brewin, 2006), acting as a lens that guides emotional processing and interactions. Shame events may take place throughout one's life and foster painful self-devaluations, which have an enduring effect on one's sense of self and social relationships. As such, shame experiences such as bullying, rejection and abuse can be conceptualised as social traumas (Matos & Pinto-Gouveia, 2016). Shame proneness (i.e., the readiness with which someone experiences shame and hence the frequency and intensity of the emotion; Gilbert, 1998) appears to have trauma-like roots in early experiences of shaming, rejection, abandonment, emotional control or negligence, and critical, abusive, or harsh parenting (Andrews, 2002; Claesson & Sohlberg, 2002; Gilbert, Allan, & Goss, 1996; Schore, 2001; Stuewig & McCloskey, 2005; Webb, Heisler, Call, Chickering, & Colburn, 2007). When a child experiences the emotions of others directed towards them in early shaming experiences, they can become foundations for self-beliefs (Gilbert, 2003). They are registered in

autobiographical memory (AM) as emotionally salient experiences and produce susceptibility to shame-based problems. When these experiences are internalised, it can result in similar self-evaluations that is, a sense of the self as inferior, flawed and rejectable (Gilbert, 1998, 2002; Mikulincer & Shaver, 2005). Following this line of reasoning, researchers from the University of Coimbra, Portugal began a series of investigations into the traumatic and centrality features of shame memories (SMs).

#### *1.4.4.1. Autobiographical memories*

Before describing this body of SM research, it is important to first consider AM. AM refers to memory for personal life events. It is fundamental to an individual's sense of self and to one's ability to pursue goals effectively through learning from past experiences (Conway & Pleydell-Pearce, 2000). AM theorists (Conway, 2005; Rubin, 2005; Talarico, LaBar, & Rubin, 2004) have argued that memories of past emotional experiences are usually used to recreate current emotional states and the relevance of AM properties to psychological distress has been established (Berntsen, Willert, & Rubin, 2003; Rubin, 2005; Wenzel & Jordan, 2005). For example, Berntsen et al. (2003) found that traumas form dysfunctional reference points for the organisation of personal memories for individuals experiencing Post Traumatic Stress Disorder (PTSD) symptoms, which leads to fluctuations between vivid intrusions and avoidance.

AM is thought to serve four key functions: self, directive, social, (Bluck, Alea, Haberman, & Rubin, 2005; Pillemer, 1992), and adaptive (Williams, Conway, & Cohen, 2008). The self-function is of particular significance to the current study's exploration of SMs. This function draws on memories to promote continuity and development of a coherent sense of identity over time (Barclay, 1996; Bluck & Levine, 1998; Conway, 1996). This relationship between AM and the self is considered to be dynamic and reciprocal; the self influences the encoding, storage, and retrieval of AMs and likewise knowledge of, and beliefs about the self are confirmed and supported by memories of specific experiences (Conway, 2005). The self guides attention to/from various objects, events, and feelings. Thereby, regulating the meaning associated with experiences and how these are recorded or discarded (Conway, 2005; Wang & Conway, 2004).

Events recalled in AM are usually multimodal in that they involve individual senses (e.g., hearing, smell, vision, taste, body sense) and fluctuate in spatial, temporal, emotional, and narrative content and context. These component processes form an integrative memory system according to the basic-systems model (Rubin, 2005; Rubin, Schrauf, & Greenberg, 2003). This model has proposed several basic properties of AMs, which have been studied using the Autobiographical Memory Questionnaire (AMQ, see detailed description in Methods section; Rubin, Burt, & Fifield, 2003; Rubin, Schrauf, et al., 2003; Sheen, Kemp, & Rubin, 2001).

These properties may be conceptualised under the following clusters: cognitive meta-judgments of *recollection* and *belief*; *component processes* and *properties of events and memories*. Recollection relates to a sense of reliving the original experience and traveling back in time to the event such that one remembers it rather than just knowing it happened. Belief relates to the accuracy of the memory, a sense of confidence that the event occurred as it is remembered, and one would testify on that memory (Rubin, Schrauf et al., 2003). Component processes include imagery, language, narrative and emotion. Imagery components are related to vividness of AMs, which has been related to emotional intensity and negative emotionality in general (Bluck & Li, 2001; Talarico et al., 2004). Emotion is also known to play a crucial role in that it modulates memory (see Holland & Kesinger [2010] for review). Properties of events include the importance of the remembered event as an anchor for the sense of self and a turning point in ones life. It also assesses the specificity of the event, whether it occurred once or represents multiple similar occurrences.

#### 1.4.4.2. *Shame traumatic and central memories*

Shame memories are a particular type of AM and the aforementioned Portuguese researchers have identified that SMs entail traumatic memory qualities, eliciting intrusions, hyperarousal and emotional avoidance and that they become key to identity, texturing the sense of self (e.g., Matos & Pinto-Gouveia, 2010, 2014; Matos, Pinto-Gouveia, & Duarte, 2013; Matos, Pinto-Gouveia, & Gilbert, 2013; Pinto-Gouveia & Matos, 2011; Pinto-Gouveia, Matos, Castilho, & Xavier, 2014). Such memories can become well interconnected

with other autobiographical knowledge - becoming central to one's self-identity, structuring one's life story and forming reference points that attribute meaning to experiences (Berntsen & Rubin, 2006, 2007; Pinto-Gouveia, & Matos, 2011). When activated, they guide attention, emotional and cognitive processing, and trigger defensive behaviours (Gilbert, 2007a; Pinto-Gouveia, et al., 2014).

This body of research has found that shame experiences from childhood/adolescence that operate as traumatic and central memories are associated with feelings of internal and external shame in adulthood and with elevated vulnerability to depression, stress, anxiety and paranoia (Matos & Pinto-Gouveia, 2010, 2014; Matos, Pinto-Gouveia, Duarte, 2013; Matos, Pinto-Gouveia, Gilbert, 2013; Pinto-Gouveia & Matos, 2011). Moreover, it has been argued that shame traumatic and central memories influence depression via increased feelings of shame, specifically, internal shame (Matos, Pinto-Gouveia & Duarte, 2013).

#### *1.4.4.3. Autobiographical memory properties of shame memories*

Matos and Pinto-Gouveia (2016) explored the AM properties of SMs in 412 college students and found that these memories displayed lower AM features than those reported in the AM research (Rubin, Boals, & Berntsen 2008; Rubin, Schrauf, et al., 2003). The authors hypothesised that this may be due to the fact that the memories were older than those previously explored. The researchers set out to understand what AM properties lead to recollection and belief in SMs, which is important, because these elements may affect how one experiences and acts on the memory, and how it becomes integrated in one's sense of self and subsequent processing. They found that strength of recollection in SMs was mainly predicted by the vividness of auditory imagery and the intensity of emotions, and to a lesser extent by the linguistic component *in words*. The authors also found that for participants with high SM traumatic and centrality features, shame AM had a stronger sense of recollection and belief compared with those participants who reported low shame traumatic and centrality features. For those with high SM traumatic and centrality features, shame AM properties presented heightened vividness of visual, spatial, and auditory imagery, as well as enhanced language components, increased narrative coherence, elevated reliving of emotions, and greater importance than those

who reported low traumatic and centrality features. This suggests that shame AM properties are enhanced for individuals whose SMs operate as traumatic memories that form central components of identity, which is consistent with previous research on AM for highly important, negative, intrusive, important or traumatic memories (Bernsten et al., 2003; Rubin, Feldman, & Beckham, 2004; Talarico et al., 2004). This research sheds some light on how particular AM properties are key to how SMs become structured as traumatic and central memories.

#### *1.4.4.4. Shame Memories and attachment figures*

Matos and Pinto-Gouveia (2014) found that SMs involving attachment figures displayed stronger associations with internal shame and depressive symptoms compared with SMs involving others, which revealed higher correlations with external shame. However, only traumatic and central memories involving attachment figures moderated the impact of external and internal shame on depression. This means that for individuals with medium and high levels of shame, it is those individuals whose SMs with attachment figures are more traumatic and central to their identity that tend to report more depressive symptoms. Matos, Pinto-Gouveia and Costa (2011) found that for SMs involving an attachment figure, the impact upon depression appears to be direct and not mediated by emotion regulation processes (i.e., rumination, dissociation and thought suppression), whereas the relationship is indirect with memories involving others.

There is a host of literature to suggest that one's own experience of being parented impacts on one's experience of parenting and that carrying out mothering activities like breastfeeding, can activate these memories consciously or unconsciously (Crockenberg & Leerkes, 2003, Fraiberg, Adelson, & Shapiro, 1975; Kendall-Tackett, 2001; Kitzinger, 1996; Klingelhafer, 2007; Rhodes & Hutchinson 1994). Considering this, alongside the SM findings that point to the importance of attachment figures in the way shame experiences are organised in AMs, in addition to the activation of the attachment system in the perinatal period, there is a need to explore SMs involving attachment figures with this population.

## 1.5. Compassion

The healing attributes of compassion have been authored for centuries. The Dalai Lama often stresses a focus on compassion in the search for happiness (Dalai Lama, 1995, 2001) and the components of compassion are now being investigated by Western psychological science (Davidson & Harrington, 2002; Davidson et al., 2003; Gilbert 2000b, 2005, 2009a; Neff 2003a, 2003b). Compassion is considered a skill that can be trained and there is increasing evidence that practicing compassion can impact on neurophysiological and immune systems (Davidson 2003; Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008). Additionally, compassion has recently been a focus in relation to shame-based problems (Gilbert, 2005, 2009, 2010, 2014; Gilbert, McEwan, Matos, & Ravis, 2011; Neff, 2011).

### 1.5.1. Compassion in psychology

Theoretical models of compassion emphasise different elements, including healthy self-relating (Neff, 2003a, 2003b), compassionate appraisals (Goetz, Keltner, & Simon-Thomas, 2010), and compassionate attention and intentionality (Dalai Lama, 2001). Gilbert (2010, 2014) describes social mentalities, focused on attuning to and alleviating distress. His evolutionary conceptualisation of compassion focuses on the interplay between three affect regulation systems (Depue & Morrone-Strupinsky, 2005; Liotti & Gilbert, 2011) detailed below.

1. The threat system detects threat and engages mechanisms to protect against danger. It is linked to emotions like fear, anger, disgust and shame and it can be activated by diverse stimuli, such as social interactions and emotional memories.
2. The drive system links with motivation and reward systems related to evolutionary necessities such as food, alliances, and territories. Individuals experience a loss of positive feelings when such systems fail, which is perceived as a threat and activates shame, for example, when one's status, self-identity or social acceptance is at risk.

3. The soothing system is linked to the attachment system. Feelings of affiliation, safeness and connectedness are triggered by positive social interactions. It also has a role in soothing distress that is generated by threat. Conversely, early interactions, such as shame experiences, may under stimulate this system and sharpen one's threat-protection system (Gilbert, 2005, 2009b). Compassion is encapsulated in the safeness–soothing system and involves capacities for: sympathy, tolerating unpleasant emotions, empathic understanding and non-judging, as well as motivation to care (Gilbert, 2005, 2009a, 2010). In this model, compassion is conceptualised as an evolved motivational system for regulating negative affect through attuning to the feelings of others and the self, and expressing feelings of warmth and safeness (Gilbert, 1989; Spikins, Rutherford, & Needham, 2010).

#### 1.5.2 Compassion Focused Therapy (CFT)

The emotional regulation system can be mapped in various other ways (Panksepp 1998), but Gilbert (2010) suggests that this three-system model offers a useful heuristic for clinical thinking, out of which he has developed CFT. The idea behind CFT is that the evolution of cognitive competencies for reasoning, reflection, mentalising, anticipating, and imagining can cause problems in the organisation of the threat and drive system systems, which can be easily prompted into destructive behaviours and mental health difficulties (Gilbert, 2014). However, motives for caring, affiliative, and altruistic behaviour can organise the brain in such a way as counteract this. As such, CFT focuses on developing capacities for mindfully accessing, tolerating, and directing affiliative motives and emotions and cultivating compassion.

#### 1.5.3. Orientations of compassion

Recent investigations have focused on three flows of compassion: receiving compassion from others and expressing compassion for others and for the self (Gilbert 2009b; Gilbert, McEwan, Matos, et al., 2011; Neff 2003a; Neff, 2003b). Receiving compassion from others has gained attention recently. Expressions of concern from others may satisfy fundamental needs to belong and feel connected (Baumeister & Leary, 1995), which results in physical and

psychological benefits. Nonetheless, receiving compassion can activate fear, avoidance, grief or loneliness for some (Gilbert, McEwan, Matos et al., 2011).

Expressing compassion for others is a feature in nearly all cultures and spiritual traditions (Moses, 2002) and is thought to be more palatable than self-compassion (Germer, 2009). Cosley, McCoy, Saslow and Epel (2013) found that compassion for others can increase acceptance of social support, which may lead to more adaptive stress responses. Similarly, Lutz et al. (2008) found that regular practice of compassion for others has an impact on stress response and the frontal cortex. Sprehcer and Fehr (2005, p.630) have studied what they call compassionate love, which they define as “*an attitude toward other(s), either close others or strangers or all of humanity; containing feelings, cognitions, and behaviors that are focused on caring, concern, tenderness, and an orientation toward supporting, helping, and understanding the other(s), particularly when the other(s) is (are) perceived to be suffering or in need.*” They developed three scales to explore: compassionate love for: strangers and humanity, for close others and for a specific close other and found that compassionate love was associated positively with helping behaviour toward others. Nonetheless, it must be noted that compassion for others can be suppressed and inhibited (Gilbert, McEwan, Matos et al., 2011). For example, some individuals become personally distressed by others’ distress and become avoidant (Collins & Read, 1994; Feeney & Collins, 2001; Mikulincer, Shaver, Gillath, & Nitzberg, 2005).

Neff (2003b) conceptualises self-compassion as being kind and understanding towards the self during the occurrence of pain and failure as opposed to being self-critical. It involves recognising that mistakes and suffering are part of a common human condition rather than perceiving them as isolating and it involves maintaining a mindful awareness of painful experiences instead of avoiding, suppressing or over-identifying with them. A growing body of research suggests that self-compassion is positively related to positive affect, adaptive coping, and social connectedness and can be an effective countermeasure to self-criticism, rumination, avoidance, and perfectionism (Barnard & Curry, 2011; Gilbert, 2005; Neff, 2009, 2011), for example. Moreover, cultivating self-compassion, through skills practice or meditation, can have a powerful impact

on negative affect and bolsters mental and physical wellbeing (Barnard & Curry, 2011; Hutcherson, Seppala, & Gross, 2008; Kelly, Zuroff, Foa, & Gilbert, 2009; Raes, 2011).

#### 1.5.4. Fears of compassion

As CFT advanced, blocks, fears, and resistances to compassion and the experience of affiliative emotion became apparent. Gilbert, McEwan, Matos et al. (2011) developed a self-report measure to examine the degree to which individuals fear self-compassion out of concern that they are undeserving of it, will become dependent on it, lose their self-criticism, become a less desirable person, and/or drop their personal standards.

Gilbert, McEwan, Catarino and Baião (2014) found that fears of receiving compassion from the self and others, were strongly correlated with self-criticism, depression, anxiety and stress, and negatively associated with self-compassion and self-reassurance. Gilbert, McEwan, Gibbons, Chotai, Duarte and Matos (2011) found these fears to be linked to fears of happiness in general, and problems with emotional processing and mindfulness. Fear of compassion for the self and from others has also been linked to insecure adult attachment styles in clinical (Gilbert, McEwan, Catarino, Baião, & Palmeira, 2014) and student populations (Gilbert, McEwan, Matos et al., 2011). For insecurely attached individuals, seeking support from others in the past may have been ineffective, unattainable, unreliable, or dangerous, which may render people fearful of compassion from others. Kindness may trigger these memories for individuals who have experienced neglect and abuse, because they activate the attachment system and hence trigger the memories coded there so that compassion is experienced as threatening (Van Der Hart, Nijenhuis, & Steele, 2006).

Kelly, Carter, Zuroff and Borairi (2013) explored fears of compassion and response to a compassion focused intervention for individuals diagnosed with an eating disorder. Baseline fear of self-compassion interacted with baseline self-compassion to predict changes in shame over 12 weeks of the intervention. Across levels of self-compassion, lower fear of self-compassion was associated with greater decreases in shame, whereas, higher fear of self-compassion was

associated with negligible changes in shame. Results are consistent with Gilbert's (2005, 2009a) model, which posits that compassion from self and others is crucial for the alleviation of shame. Furthermore, these results highlight the importance of working with fears of/blocks to compassion when working with shame.

Compassion plays an important role in emotion regulation and in alleviating shame. Individuals who are blocked or fearful of accessing such emotions may struggle with emotional regulation suggesting these are important therapeutic targets and particularly for those high in shame. Compassion interventions have been found to overcome these fears (Gilbert & Procter, 2006; Jazaieri et al., 2012; Lawrence & Lee, 2014). As such, it is important for clinicians to be aware of the complexities involved in stimulating and cultivating compassion but also appreciate how important it is to do so. Considering this, alongside the importance of SMs in developing one's sense of self and their impact on emotional and cognitive processing, there is a need to explore SMs relations with the various flows of compassion and fears of compassion.

The preceding account details the variables of interest in the current study (i.e., shame memories, shame, compassion and fears of compassion), situating them in their theoretical contexts and highlighting gaps in the research base. The following sections add to this by reviewing the motherhood literature relating to these variables. This is to further highlight gaps in the research base, thus locating the current study's research questions.

## **1.6 Literature review I: maternal shame**

Sutherland (2010) claims that the most prevalent finding in motherhood research is that mothers experience shame and guilt in relation to their roles as mothers, though she highlights that this has not been specifically researched with any depth, particularly shame. The following narrative literature review attempted to describe and discuss the existing literature in which maternal shame has been the intended unit of investigation. Using Booth, Papaioannou

and Sutton's (2012) framework for defining the scope of a review, this review will explore:

1. Who = mothers
2. What = maternal shame
3. How (will the study impact on the who) = situate and rationalise the current study which was aimed at exploring maternal shame and compassion in early motherhood

A systematic database search was conducted in order to identify papers relevant to these objectives. The search was conducted using PsycINFO, PsychARTICLES, CINAHL Plus and Scopus with 'shame' as a search term, plus a range of search terms for motherhood and the perinatal period. Additional searches were conducted of the grey literature using Google Scholar and other open source repositories (Research Gate, Academia, CORE) were also examined. Once relevant articles were identified, the reference lists of those articles were also searched to locate relevant publications not brought up by previous searches. Appendix A contains further details on the searches conducted including details of search terms, the limiters applied, inclusion and exclusion criteria as well as the number of studies identified. Both qualitative and quantitative studies were included worldwide. The following narrative review attempt to synthesis the literature identified in order to locate the research questions in their theoretical underpinnings.

#### 1.6.1 Sociological context as a source of maternal shame

Sutherland (2010) wrote a discussion piece probing institutional and interactional dynamics that place mothers at risk of guilt and shame, specifically: good mothering ideologies, labour force participation and gendered households. Sutherland (2010) argues that it is important to explore shame within the mothering role because it involves a "*global condemnation of the self*", according to Tangney and Dearing's (2002, p. 118) description and it is related to a variety of mental health problems. Importantly, she distinguishes guilt and shame conceptually, suggesting that a mother would be experiencing guilt if she expressed a negative self-evaluation relating to behaviour stemming from a specific task, whereas she would be experiencing shame if she

described herself, as having not met an idealised self-image, in relation to others. Sutherland (2010) does not refer to Gilbert's (1998, 2003) delineations of internal and external shame but it appears that what she is describing may fit more closely with the former.

Sutherland (2010) provides a comprehensive overview of the societal forces listed above and how they act as risk factors for guilt and shame. For example, writing from a US context, Sutherland (2010) points to differences in the societal norms across class and ethnicity, suggesting that norms tell middle class women to be primary caregivers to their children, whereas, mothers receiving public assistance are considered a drain to society and should be forced to work. This sentiment also seems prevalent in the UK and Irish context (Orgad & De Benedicts, 2015) and both positions create ideal conditions for shame to fester. For example, women can feel ashamed for not being a productive labourer contributing directly to the neoliberal economy. Similarly, tensions are often present between the desire to work, thereby maintaining an identity outside of motherhood and the ideological forces that suggest mothers are the best care takers and that motherhood should 'complete a women' (Douglas & Michaels, 2004).

#### 1.6.2 Self-discrepancy theory to explain maternal shame

Sutherland (2010) also wondered about women who do not experience shame and the associated processes. Drawing on self-discrepancy theory (Higgins, 1987), Adams (2015) developed a nursing theory to try to explain just that. She wondered how some women are able to experience the mismatch between the ideal motherhood image and actual self and adapt with unproblematic emotional reactions, while other women experience the changes that occur in early motherhood with a range of emotions from devastation to elation (Beck, 2002; Mercer, 2004).

According to self-discrepancy theory, when one's beliefs and actions do not align with one's ideal or obligatory beliefs, this brings with it emotional discomfort. Higgins (1987) described four self-guides that one strives to achieve (i.e., ideal/own, ideal/other, ought/own, and ought/other). A discrepancy occurs when there is a mismatch between the two. Depending on the value of the self-

guide to the individual, discrepancies can result in: no emotional reaction, an adjustment to the self-guide, or a negative emotional reaction. The various types of discrepancy are thought to bring a unique emotional reaction. The 'ideal/other' discrepancy is thought to elicit feelings of shame and embarrassment when the individual believes there are attributes that others ideally wish they possessed but they do not. When there is an 'ought/own' discrepancy, the individual believes they do not possess certain attributes that they ought to possess and feels guilt.

Conceptually, this description seems to link to ideas of external and internal shame (Gilbert, 1998, 2003) respectively, rather than shame and guilt. Theorists suggest that guilt involves a negative evaluation of a specific behavior, whereas shame represents a more global negative self-evaluation (Tangney, 2002; Tangney et al. 2007). Furthermore, research has suggested that it is difficult to disentangle internalised ideals from one's sense of what other people hold as standards (Ozgul, Heubeck, Ward, & Wilkinson, 2003; Phillips and Silvia 2005; Tangney, Niedenthal, Covert, & Barlow, 1998). This is consistent with the theoretical view that external and internal shame are closely related (Gilbert, 1998, 2003). Some research (Tangney et al. 1998) has found that self-discrepancies generally are related to shame, but not guilt (Tangney et al. 1998) and other studies (Ozgul et al. 2003) have found that they are related to both experiences.

Although Adams (2015) did not test this theory directly with mothers, two years prior to publication, Liss, Schiffrin and Rizzo (2013) set out to investigate the relationships between maternal guilt, shame, self-discrepancy and fear of negative evaluation. The authors argued that self-discrepancy theory could shed light on one possible explanation for maternal guilt and shame, such that women experience a discrepancy between their ideal sense of who they think they should be as a mother and their actual sense of self in this role. They do not distinguish between an 'ought/own' or 'ideal/other' discrepancy. Instead they suggest, in line with Sutherland (2010), that society sets very high standards for being a perfect/intensive mother that have been internalised by women (Hays 1996; Tummala-Narra 2009). The authors also draw attention to the fact that one can experience domain specific shame (Gilbert, 2007a), such as shame

specifically about one's role as a mother. In line with the biopsychosocial model of shame, they suggest that shame involves a sense of social evaluation and an expectation or fear that one will be socially judged by others (Gilbert 1998, 2007a).

List et al. (2013) recruited 181 mothers (children <5 years; in the US) to complete an online survey including the guilt and shame subscales of the State Shame and Guilt Scale (Marschall, Sanftner & Tangney, 1994). This measure was chosen in an attempt to capture shame in the context of answering questions about motherhood rather than a dispositional tendency towards shame. However, without referring to a specific behaviour, the degree to which this approach can truly capture shame-about-self versus guilt-about-behaviour distinction is questionable (Tangney, 1996). Mothers in that study experienced guilt and shame at similar levels, which were relatively low. However, both increased with the amount of self-discrepancy and fear of negative evaluation. Additionally, fear of negative evaluation moderated the relationship between self-discrepancy and shame, in that for mothers who reported a high fear of negative evaluation, the association between self-discrepancy and shame was high. Whereas, maternal self-discrepancy and shame were not related among mothers who reported low fear of negative evaluation.

Liss et al. (2013) discuss these results in terms of the perils associated with internalising idealised standards of motherhood. They comment on the homogeneity of their sample, which was mostly Caucasian, married, and middle/upper-middle class. Nonetheless, Hays (1996) argues that this demographic group may be more sensitive to demands of the motherhood ideal and Lareau (2002) suggested that working class women are less likely to enlist intensive mothering behaviours. Liss et al. (2013) speculate whether this may shield working class mothers from the associated pressures but also suggest that not having the resources to meet their children's basic needs of may contribute to shame. These speculations require research investigations before any such conclusions could be drawn.

Many studies highlight a discrepancy between the expectations and experience of motherhood worldwide and that developing postnatal depression (PND) is

more likely when a discrepancy occurs (Boldero, Moretti, Bell, & Francis, 2005; Gao, Chan, You, & Li, 2010; Haga, Lynne, Slinning, & Kraft, 2012). Adam's (2015) suggests that nursing is well placed to develop prenatal education to address the motherhood myths and help expectant mothers to create a realistic image of motherhood, which could potentially decrease the risk for PND and the isolation felt by mothers who may experience discrepancies.

### 1.6.3 Perinatal hospitalisation and grief

Six studies originating in Australia have investigated shame and guilt in the context of infant hospitalisation and parental grief following the death of an infant.

In the context of perinatal hospitalisation of the infant, parents often blame themselves for their newborn's predicament (e.g., Affleck, Tennen, & Rowe, 1991). Affleck et al. (1991) emphasised the difference between self-blame that reflects a parent's character (i.e., shame-motivated characterological self-blame) and self-blame that reflects a parent's behavior (i.e., guilt-motivated behavioural self-blame) (Tilghman-Osborne, Cole, Felton, & Ciesla, 2008). Barr (2010, 2011, 2015) examined proneness to shame and guilt in Australian parents of infants in neo-natal intensive care units. All three studies used the Test of Self-Conscious Affect (TOSCA; Tangney & Dearing, 2002), where participants report the likelihood of shame-related affective, cognitive, and behavioural responses to everyday life scenarios. This is a widely used measure of shame, yet the ecological validity of this scale has been questioned due to the hypothetical nature of the scenarios (Andrews, 1998). For example, it is questionable whether responses reflect what participants actually do in real life (Brewin & Andrews, 1992; Segal & Dobson, 1992). Furthermore, the TOSCA largely describes behaviour that the person feels ashamed of. This can lead to confounding with guilt and does not take account of expansions in concept of shame that include other dimensions e.g., characteristics and private events, such that shame prone individuals may ruminate about personal shortcomings, for example (Andrews 1998).

Barr (2010, 2015) found that proneness to shame and especially fear of death predicted NICU-related parental distress. Barr (2015) controlled for partner

effects and revealed that a mother's shame-proneness was not related to her husband's stress or vice versa. Barr (2011) found that moderate levels of shame-proneness predicted posttraumatic growth, whereas high and low levels did not. This adds support to proposals that a moderate level of shame may promote psychological health (Barrett, 1995; Harder & Greenwald, 2000; Malatesta & Wilson, 1988).

Barr and Cacciatore (2007) and Barr (2004, 2012) explored shame-proneness following the death of a child. All three studies employed the Personal Feelings Questionnaire-2 (PFQ-2; Harder & Zalma, 1990), which presents emotion words/phrases and asks participants to rate how frequently they experience the feeling. This measure is thought to have high face validity but relies heavily on respondent's ability to distinguish between guilt and shame in an abstract context (Tangney, 1996). Barr and Cacciatore (2007) and Barr (2004) similarly found that shame-proneness had moderate correlations with grief. Barr (2004) found that chronic (PFQ-2) shame-proneness contributed more than situational (TOSCA) shame proneness to the variance in late grief, suggesting that the frequency with which individuals report shame in their everyday lives may be more relevant to late grief than the likelihood with which shame is experienced in response to here-and now hypothetical, transgressions or failures. However, they also suggest that the PFQ-2 may be more representative of shame than the TOSCA, since the former does not confound shame with low self-esteem or constrain shame to negative self-evaluation, for example (Andrews, 1998). Barr (2012) found that situational shame (TOSCA) had significant partner relationships in women and therefore, recommended that bereavement counseling should attend to the negative effect of men's emotions on women's grief.

These studies suggest that maternal shame-proneness is linked to the amount of stress experienced when their child is hospitalised, their own fears of death and grief reactions. The ethnic make-up of the studies appeared to mirror that of the Australian population (Barr, 2004) and all studies had reasonable sample sizes (N = 63 - 441), which points to the generalisability of findings across similar cultures. Three of these studies included fathers and two investigated the impact of partners' responses, illuminating the complex picture of how

shame manifests with mothers in this cohort. Nonetheless, it must be noted that the measures used to assess shame do not differentiate between internal and external dimensions of the shame experience and have been criticised for poor ecological validity and confounding with guilt, for example.

#### 1.6.4. Mental health literature

Confounding with guilt is a common problem in this body of research, such that shame and guilt are often grouped together conceptually. This is evident in the Postpartum Depression Screening Scale (PDSS; Beck & Gable, 2002). Shame is regularly referred to in the literature on PND. However, the current review was interested only in those studies that explored shame directly. As such, the present search revealed a study by Beck and Indman (2005), which set out to provide a profile of 133 women in San Francisco diagnosed with PND using the PDSS. This scale consists of seven dimensions, one of which is 'guilt/shame' (Beck & Gable, 2002). The authors suggest that "*guilt over not being a better mother*" dominates this dimension (Beck & Indman, 2005, pp.571). However, when considering this statement, it appears to fit more closely with the conceptualisation of shame described in much of the literature (i.e., a global self-statement rather than guilt over behaviour (Tangney, 2002; Tangney et al. 2007) and indeed, evaluation of the 5 items reveals that 4 of the 5 items appear to fall more in line with this conceptualisation of shame rather than guilt (e.g., "I felt like a failure as a mother"). In this study, the 'guilt/shame' subscale ranked fourth highest in severity of symptoms ( $M = 17.17$ ) compared with emotional lability which was ranked most highly by women in the study ( $M = 19.46$ ). The authors suggest that most women suffering from PND are experiencing significant shame in relation to their symptoms, for example, shame about their irritability. Yet caution must be exercised in interpreting this because the authors do not distinguish conceptually between shame and guilt.

#### 1.6.5 Breastfeeding

In the previous study, there were issues relating to researchers/professionals confounding shame and guilt conceptually. Similarly, Sutherland (2010) pointed out that parents in qualitative interviews generally use the word 'guilt' to describe their experience when it may be more accurate to describe their emotional experience as 'shame'. Shame theorists have also noted that the

average person rarely speaks of their 'shame.' Instead, "*people refer to guilt... when they mean shame, guilt, or some combination of the two*" (Tangney & Dearing, 2003, pp.11). The following two qualitative studies give insight into how shame is experienced by new mothers in the context of breastfeeding; one of these draws attention to the guilt/shame distinction.

Murphy (2012) wrote a dissertation exploring maternal shame while breastfeeding a firstborn baby in the US. She reviewed breastfeeding research and identified that failure to meet breastfeeding expectations resulted in shame and guilt (Hauck & Irurita, 2002; Maslow & Szilagyi-Kessler, 1946; Mozingo et al., 2000). Furthermore, shame and guilt were experienced across demographic group (e.g. age, education, ethnicity, geography). She noted that studies tended to link shame and guilt, rather define and differentiate them. Murphy (2012) used Giorgi's (2009) descriptive phenomenological method to analyse interviews with three mothers to a first time baby. Analysis revealed that shame and guilt were linked, used interchangeably, and differentiated. In line with theoretical accounts (Lewis, 1971; Tangney 2002), when shame and guilt were differentiated, shame was a failure of the self, and guilt was a transgression. These experiences had a negative impact on mothers' sense of self and others and created a desire to withdraw from peers.

In a much larger UK sample, Thomson, Ebisch-Burton and Flacking (2015) reviewed the narratives of 63 breastfeeding and non-breastfeeding women garnered from a focus group or interview. The authors outline three themes that illustrated how shame was experienced and furthermore, they suggest - internalised. That is: through 'undermining and insufficient support', 'perceptions of inadequate mothering' and 'exposure of women's bodies and infant feeding methods'. The authors used Lazare's (1987) theoretical framework to conceptualise these experiences because of its capacity to illuminate shame through an interaction of personal, cultural, structural and social factors. For example, Lazare (1987) suggests that shame in a clinical interaction may operate from the interplay between: a shame-inducing event; vulnerability/context of the individual; and the social context. For example, breastfeeding may reflect a shame-inducing event, the vulnerabilities/context of new motherhood (e.g. the physical and psychological changes), may mean

women are susceptible to shame, and finally, negative responses to mother's bodies, feeding methods and abilities, inappropriate and undermining support can lead women to feel inadequate and isolated.

This study suggests that women may experience judgement and condemnation within community contexts and in interactions with health professionals, which leads them to feel inadequate. Although not explicitly stated, this links to external and internal shame (Gilbert, 1998, 2003) respectively. In line with the sociological arguments put forward by Sutherland (2010) above, Thomson et al. (2015) highlights the need for strategies and support that address personal, cultural, ideological and structural constraints of infant feeding, furthermore, Murphy (2012) recommends examining the tone of breastfeeding culture to understand the potentially shame inducing messages it creates.

#### 1.6.6 Parenting responses to child behaviour

The following four studies used quantitative methods to explore the relations between maternal shame and parenting perceptions of and responses to child behaviour. Two studies detailed here use the TOSCA and so are subject to the same measurement limitations mentioned above. One study employed the Compass of Shame Scale (CoSS; Elison, Lennon, & Pulos, 2006) adapted for sport situations (Elison & Partridge, 2012). The original CoSS was developed to assess an individual's use of the four 'maladaptive' shame coping styles described by Nathanson (1992): attack self, withdrawal, attack other, and avoidance. Finally, another publication used a novel approach to assessing shame across two studies, which involved the presentation of shame related words.

Scarnier, Schimader and Lickel (2009), in the US examined parental guilt and shame responses in relation to their child's misdeeds across two studies (N = 74 & 123 mothers). They assessed shame by presenting participants with a list of shame related words and invited them to rate how much shame they felt as a result of the event they just described. In Study 1, parents wrote about their child's worst transgression. Results indicated that their ratings of perceived public exposure and threat to their self-image predicted shame. On the other hand, the degree to which they felt a lack of control over their child and believed

the act harmed others predicted guilt. Furthermore, in Study 2, when mothers rated their reactions to an imagined wrongdoing, the presence of a critical observer tended to elevate shame but not guilt. Although not explicitly stated by the authors, this fits with the biopsychosocial model of shame in that it is a social event and the idea that being judged is important (Gilbert, 1998, 2003). Furthermore, it seems to suggest that external shame, rather than internal shame was prevalent. Thus study may have benefitted from assessing internal and external shame separately using psychometrical validated tools. In both studies, feelings of public exposure highlighted the perception that the mothers are flawed as a person or a parent. Similarly, shame predicted 'maladaptive' discipline strategies (e.g., over-reactivity and removal of warmth).

Linked to this, Mills, Freeman, Clara, Elgar, Walling and Mak (2007) found that maternal (N = 198; child 3.6-4.5 years), shame-proneness (using the TOSCA) was associated with negative and/or worrying approaches to the child. Negative thinking about the child mediated the relationship between critical/rejecting parenting and shame, supporting the idea that negative feelings may increase the likelihood of critical/rejecting behaviour and anxiety may increase the likelihood of overprotective parenting. However, they caution the speculative nature of this interpretation and suggest for example, that negative approaches may be caused by another variable such as a general disposition towards negative affectivity.

Partridge and Wann (2015) explored trait shame coping styles in youth sport parents (77% mothers in the US) using the CoSS (Elison, Lennon, & Pulos, 2006) adapted for sport situations (Elison & Partridge, 2012). A major strength of this study relates to the adaptation of the scenarios in the scale for sporting specific situations, leading to ecological validity. The results suggest that parents who hold higher sporting related expectations for their children and greater 'dysfunctional' fan qualities are more likely to direct anger inward in response to a shame experience (i.e., feeling inadequate for their child's performance). Similarly, Graham (1997) recruited 136 mothers in Washington to explore the relationships between maternal shame proneness, mother's reports of child conduct problems and attributions for their children's behaviour. Results indicated that maternal shame-proneness (using the TOSCA) was correlated

positively with mothers' reports of child conduct problems and the irritation they reported in response to their children's noncompliant behaviour. These findings evidence a positive association between shame-proneness and proclivity to anger/irritation and are consistent with previous research (e.g., Tangney, Wagner, Fletcher, Gramzow, 1992).

These studies highlight the important link between maternal shame and a mother's understanding of their child's behaviour, their coping responses and the strategies they employ in parenting and furthermore, a link with anger. Shame theorists argue that anxiety and hostility are central to shame experience (Lewis, 1971; Tangney & Dearing, 2002) and so as an attachment emotion, shame blurs parent-child boundaries through such feelings. For example, shame-prone parents may project shame onto their child - anxiety and negative feelings develop as the child becomes the object of parent's self-blame (Mills et al., 2007). As such, identifying helpful ways to work with shame should have benefits for both parent and child.

#### 1.6.8 Working with maternal shame and the urge to hide

Considering the literature detailed here relating to maternal shame and the potential negative consequences associated with high levels of shame, it is surprising that the current review only revealed one publication that detailed ways of working with maternal shame and another paper that describes reflections from therapists who have worked with maternal shame. Both of these publications highlight the urge to hide that is associated with shame and was emphasized by Murphy (2012) above in the context of breastfeeding. One final paper described here emphasises this element to the shame experience through a qualitative study of mothers with eating difficulties.

Jones (2012) wrote a book chapter in which she describes the atypical and successful use of video in mother-infant work; a baby was filmed interacting with the therapist because the mother found it difficult to be looked at. She felt excruciating shame towards herself and the child was steeped with this experience, which stifled his urges to spontaneously express himself. Positioning the mother as the observer helped to work around the mother's shame.

In a family therapy paper, McNab and Kavner (2001) write about their development as therapists working with mothers and daughters. They explore shame as a result of the contemporary mother blaming discourse, which they suggest, stems from assumptions that mothers are responsible for their children's behaviour and development (partly derived from psychological ideas like attachment theory [Bowlby, 1969/1982]). The writers detail how therapists are invited to join the dominant narrative of mother blaming and can find it difficult to hear about shameful internal experiences, which results in a denial of their existence.

Such denial/secretcy is common to the experience of shame. For example, Rørtveit, Åström and Severinsson (2010) interviewed eight mothers with eating difficulties in Norway. The main theme in the study related to shame as a secret experience endured in silence, which fits with Tangney and Dearing (2002, p. 186), who suggest, "*shame has its corrosive effect when hidden and denied*".

These papers highlight how shame obscures itself, wreaking havoc for relationships. They also underline the importance of bringing shameful emotions into conversations, providing training and supervision related to family work and shame, as well as the opportunity for creativity in working with shame. Considering the development of CFT for shame based problems, it is surprising that the current review did not reveal any published literature investigating it's application to maternal shame.

#### 1.6.9 Take-home message I

Sternberg (1991) suggests that literature reviews should have a take-home message. As such, what can be taken from this review is that shame is consistently reported as an experience associated with motherhood but has been scarcely researched with any consistency.

There exist pockets where maternal shame has been investigated in more detail (e.g., maternal grief and infant hospitalisation). This body of research is the only one that examined the relationships between maternal shame and other internal experiences in a perinatal context. As such, this review has highlighted a gap in

the literature relating to perinatal maternal shame. There is a need for more research exploring the relationship between maternal shame in the prenatal period and indicators of emotional adjustment and self-to –self-relating, for example.

Additionally, this review has highlighted conceptual and methodological concerns with some of literature relating to maternal shame. For example, only a portion of the identified publications attempted to distinguish between guilt and shame, others fell prey to conceptual and methodological limitations such as choosing measures of shame that confound with guilt.

Although none of the studies identified in the current review positioned themselves with a biosychosocial conceptualisation of shame (Gilbert, 1998, 2003), many highlighted the socially focused nature of shame problems. The theme relating to internalising the ideals of motherhood was consistently reflected on as a source of potential shame for mothers. The internalisation of shame has implications for maternal mental health, infant developmental outcomes and family functioning (Murray & Cooper 1997; Underdown & Barlow, 2012). As such, the literature base could benefit from exploring external and internal shame (Gilbert, 1998, 2003) as separate but overlapping concepts in an attempt to elucidate the extent to which shame is internalised by mothers. Furthermore, none of the literature identified explored shame memories, which may be important considering the growing evidence that shame based problems in adulthood can be related to early experience of shaming (e.g., Matos & Pinto-Gouveia, 2010, 2014).

Despite the limitations to the research base outlined, the mix of methodologies (i.e., quantitative and qualitative) presented here and presence of large-scale studies provides strong evidence for the presence of shame in motherhood and thick descriptions of its phenomenology. The current study set out to address gaps in the research base by exploring shame in the context of early motherhood with a UK and Irish sample using instruments that aim to minimise confounding with guilt. It is the first known study with this cohort that is positioned within the biosychosocial model and explored internal and external shame as separate but overlapping constructs. Furthermore, shame memories

were examined for the first time in the literature with this cohort, as well as their relations with maternal shame in adulthood.

## **1.7 Literature review II: maternal compassion**

A similar approach to the one described above was employed in the second narrative review of the literature on maternal compassion (see Appendix B). The following provides a narrative account of the literature identified.

### 1.7.1. Perinatal period

Michelle Cree is a perinatal Clinical Psychologist working in the UK who has been using CFT both directly with mothers, and also with health professionals. Cree (2010) wrote an article exploring the use of CFT for women experiencing significant psychological distress in the perinatal period. She put forward a convincing explanation for bonding problems in the perinatal period and the rationale for stimulating the soothing-attachment system through CFT. She draws on Carter (2003) who describes how interactions between social context, a parent's personal history and the neurophysiology of attachment can contribute to conditions in which parent-infant bonding becomes problematic. Although not explicitly stated, personal history could encompass shame experiences from childhood. Cree (2010) details how CFT's focus on the enhancement of the soothing-oxytocin system presents a model for conceptualising and intervening where a compromised maternal soothing-oxytocin system impacts upon mother-infant relating. Where problems occur, she suggests that stimulating the soothing system will stimulate the production of oxytocin. This will in turn bring the attachment system back on line, turning up the soothing-oxytocin system sufficiently to inhibit the threat system.

Cree (2010) describes how an infant under threat seeks an attachment figure to protect and sooth it. If this is responded to with a sense of calmness and comfort, the feeling of seeking comfort is associated with expectations of relief and beliefs that others can provide this. Whereas, if this seeking is repeatedly met with anger, anxiety, disgust, or indifference, then seeking closeness with other can become associated with internal experiences of anger and rejection,

and associated beliefs that others will hurt or abandon (Ferster, 1973). Such emotional memories become learnt emotional contingencies continuing into adulthood and the need for comfort and/or or the offer of closeness/ kindness by others can activate emotional memories that can in turn trigger a threat response. When a mother gives birth her soothing-oxytocin system is stimulated which facilitates bonding (Carter, 1998). However, as a result of earlier emotional conditioning, it may also trigger the emotional memories related to a mother's own attachment system. If these experiences were aversive, this process may account for a panic/ helplessness response by some mothers to the distress their infant, rather than a drive to soothe. The SM research arising from Portugal has begun exploring the impact of early shaming experiences in the attachment relationship and the motherhood literature may benefit from such investigations considering the activation of this system at this time.

Cree (2010) details the intervention components for developing maternal self-compassion as well as bringing compassion into the mother-infant relationship (e.g., understanding the threat, validating and de-shaming, developing attributes of compassion etc.). She concludes by suggesting that the use of CFT with perinatal and mother-infant distress is in its infancy and research is planned to empirically assess its effectiveness. However, the current literature search did not reveal any such research. Cree (2010) points to her clinical experience as overwhelmingly positive, suggesting that CFT has wide applicability, and often quite rapid and marked improvement. She reports that women particularly value the fact that CFT is de-shaming, explanatory, transparent, and has a clear trajectory. Cree (2015) extended this work in a self-help book detailing CFT's application to distress in the post-partum.

Some support for interventions aimed at increasing self-compassion in the perinatal population comes from Spain, where Perez-Blasco, Viguer and Rodrigo (2013) tested an eight-week mindfulness-based intervention aimed at improving a number of indices including self-compassion in breastfeeding mothers. A randomised controlled design with an intervention and control group (N = 13 in each group) was used. Mothers in the intervention group scored higher on self-compassion (using Neff's [2003b] self-compassion scale [S-cS]) and exhibited significantly less stress, anxiety, and psychological distress,

compared with mothers in the control group. These results are promising and the RCT format could be viewed as a potential strength. However, caution must be employed in interpretation, as the sample size was small.

In her dissertation, Sawyer-Cohen (2010) conducted a prospective examination of prenatal mindfulness and self-compassion and postpartum anxiety, depression and attachment. Participants were 196 first time mothers in the US who completed self-report questionnaires during pregnancy and at 3-8 months postpartum (including the S-cS). Results revealed that when controlling for prenatal depression and postnatal social support, higher self-compassion during pregnancy predicted fewer postnatal depressive symptoms. Structural equation modeling revealed that prenatal self-compassion predicted a considerable amount of the variance in postnatal anxiety and depression, which was in turn associated with postnatal attachment. This study drew on Neff's conceptualisation of self-compassion as an emotional regulation strategy (Neff, 2003b) and provides further support for interventions aimed enhancing self-compassion and indeed, support for the use of preventative interventions during pregnancy.

In the only qualitative study produced by this literature search, Woekel and Ebbeck (2013) in the US explored the relevance of self-compassion to women (1-10 months post-partum) in coping with their changing bodies. Eighteen women were interviewed at the start and end of one month, and kept journals in the meantime. Prior to the first interview, participants completed the S-cS to supplement their introduction to the components of self-compassion outlined by Neff (2003). They were asked to consider these components and provide personal examples of how they were (or were not) compassionate to themselves. Although not declared so by the researchers, this may have acted as a psychoeducational intervention. The women provided examples of self-compassion through a caring motivation mindset in which they focused on positive health behaviours. However, they also lacked compassion towards themselves and their bodies at times and were critical/harsh in their comparisons to others, for example. When they employed self-compassion, the participants felt they benefited. These findings add to the limited research base related body self-compassion and in particular, shed light on an important

aspect of the maternal experience – that of the changing body.

### 1.7.2. Maternal attachment and mindful parenting

Mindful parenting is a set of practices aimed at enhancing present moment awareness in the parent–child relationship and involves the cultivation of compassion and acceptance. Four papers described in the current review can be situated in this domain, such that compassion has been explored in the context of mindful parenting interventions. One of these studies was presented above in relating to perinatal maternal mental health, the following three papers investigate maternal self-compassion in relation to various child indices.

In Portugal, Moreira, Gouveia, Carona, Silva and Canavarro, (2014) found that mother's (N = 171) own attachment orientation was indirectly associated with their child's (aged 8 -18 years) quality of life through parenting stress and self-compassion (measured by the S-cS). In particular, more attachment-related avoidance and anxiety among women toward their own mother were related to lower children's quality of life through higher levels of parenting stress and lower levels of maternal self-compassion. In a study published one year later by many of the same authors, higher levels of maternal attachment anxiety (N = 299; school-aged children) were found to be indirectly associated with lower levels of mindful parenting through lower levels of self-compassion as measured by the S-cS (Moreira, Carona, Silva, Nunes and Canavarro, 2015).

Geurtzen, Scholte, Engels, Tak, and van Zundert (2014) explored the association between mindful parenting (N = 901: 94% mothers) and adolescents' internalising problems. The authors used the Dutch version of the Interpersonal Mindfulness in Parenting Scale (IM-P) (de Bruin Topper, M., Muskens, J. G. A. M., Kamphuis, J. H., & Bögels, 2012). This has several subscales, two of which relate to compassion. One is 'compassion for the child' and the other is 'non-judgmental acceptance of parental functioning'. The authors suggest that the latter reflects the concept of parental self-compassion, drawing on (Neff, 2003b). Results showed that while controlling for traditional parenting dimensions (i.e., responsiveness, control and autonomy [e.g., Barber 1996] and parental symptoms of depression and anxiety, only non-judgmental acceptance of parental functioning was significantly associated with

adolescents' internalising problems. This means that children of parents who reported higher levels of non-judgmental acceptance of their own parental functioning reported fewer symptoms of anxiety and depression. The authors speculate whether parents instill a sense of self-compassion in adolescents through a process of modeling or imitation (e.g., Bandura 1986). Though not explicitly stated, this is similar to a process of internalisation of self-compassionate ideas. However, this has not been tested empirically and so caution must be exercised when interpreting causality.

These three studies underline the importance of designing parenting programs aimed at helping parents to become more self-compassionate. This may be particularly important for insecurely attached parents and this component may be more important than other mindful parenting practices. However, these studies were conducted with children older than infants and do not shed light on mother-infant bonding and/or maternal mental health in that period. The latter study, alongside the next study described are however, the only two studies identified where compassion as an orientation towards the child were investigated. All other studies identified in this explored self-compassion.

### 1.7.3. Stress response in parenting

Miller, Kahle, Lopez, and Hastings (2015) explored compassionate love for baby using the Compassionate Love Scale (Sprecher & Fehr, 2005). They recruited 83 mothers in the US and explored links amongst mothers' compassionate love for their child (3.5 years), their autonomic nervous system activity, and parenting behaviour during varying degrees of difficult interactions. Interestingly, the authors distinguish between compassionate love as a collection of attitudes, cognitions, emotions, and actions linked with selfless concern and giving of oneself for the wellbeing of others (Underwood, 2009) and compassion, which they consider an affective response to the suffering of another that motivates helping and a desire to alleviate suffering (Goetz, Keltner, & Simon-Thomas, 2010).

Results revealed that compassionate love was associated with warmer and less harsh and negative parenting behaviours. Likewise, it appeared to help mothers avoid stress-induced adverse parenting, and particularly for those who

experienced strong physiological arousal during challenging parenting situations. The authors suggest that despite being physiologically stressed, the deep care and other-focused goals that underlie a compassionate approach to caregiving provided mothers with necessary resources to avoid a “fight-or-flight” style of harsh parenting.

The authors comment on how compassion training programs have been linked to lower physiological reactivity to stress (Pace, Negi, Adame, Cole, Sivilli, Brown, et al., 2009) and how it may be surprising that their study found no significant direct correlations between compassionate love and adaptive physiological functioning during stress (e.g., down regulation of sympathetic nervous system or up regulation of parasympathetic nervous system). They speculate that mothers’ dispositional compassionate love is likely to differ from compassion cultivated by training, such that it may lack the mindfulness element and thus, mothers would experience the normal physiological profile of being frustrated by an difficult task but that their compassionate love would still provide a regulatory buffer against behavioral expression of the arousal. Furthermore, they suggest that compassionate love in mothers may be more closely associated with other physiological systems, such as the oxytocin hormone (Hastings, Miller, Kahle, & Zahn-Waxler, 2014). However, as described earlier, Cree (2010) suggests that mindful development of compassion through training can stimulate the oxytocin system for mothers enough to override the threat response.

#### 1.7.5. Parenting children on the autistic spectrum

Neff and Faso (2015) recruited 51 parents (40 mothers) of children on the autistic spectrum and found that self-compassion (measured by the S-cS) predicted parental wellbeing over and above child symptom severity, which suggests that the amount of difficulty faced by these parents does not seem to be as important to wellbeing as how parents relate to themselves at difficult times. This fits with the self-compassion theory as an emotional regulation system (e.g., Neff, 2003, Gilbert, 1998). The authors caution the generalisability of their results, pointing to research indicating that a more economically diverse population may produce different results (Park, Turnbull, & Turnbull, 2002). Park et al. (2002) conducted a literature review examining the impact of poverty

on the quality of life in families of children with disabilities. They did not directly comment on compassion, though, they did point out the negative effects of stress and it would be interesting to see if compassion has the same buffering effect with these families.

#### 1.7.6. Socialisation messages

Wray-Lake, Flanagan and Maggs (2012) in the US investigated compassion in a novel way. It was one of only two studies in the review that did not use the S-cS as a means of assessing maternal compassion. They explored compassion as a socialisation message by mothers to their children. The authors did not situate their understanding of compassion in a theoretical framework, instead they described compassion as “e.g., *caring for others*” (pp.250) and that “*compassion value messages communicate that all people should be treated with respect and kindness*” (pp.251). Six items measured mothers’ value messages of compassion (e.g., “I tell my children to be helpful to others, especially the less fortunate”). Results suggest emphasis is placed on certain values depending on mothers’ backgrounds, their children’s characteristics, and the broader social context. For example, individual differences in compassion messages were predicted by neighbourhood cohesion, such that when adolescents reported more cohesion, mothers reported more compassion messages. This fits with Neff and Faso’s (2015) speculations above that societal variables may impact on compassion.

#### 1.7.7. Child behaviour

In a UK based dissertation, Legge (2013) recruited 38 parents (36 mothers; children 2-6 years) who were in remission with recurrent major depressive episodes. Like many of the studies identified here, this study drew on Neff’s conceptualisation of compassion and it was assessed using the S-cS. Results showed that higher levels of maternal self-compassion were positively associated with parental attributions of child behaviour to external factors, such as situational influences in both positive and negative situations. This suggests self-compassion is unifying approach that does not distinguish between positive and negative events. Self-compassion overall was associated with higher parental sensitivity. Legge (2013) discusses this finding specifically in relation to self-judgement, suggesting that less self-judgement encourages a similar

thought processes towards others such that a parent with less self-judgement may feel more connected to their child and better able to respond sensitively.

#### 1.7.9. Take home message II

Shame in relation to mothering has been authored for many years, whereas the current review revealed that compassion has been explored relatively recently. Similarly, there was only one study that examined compassion qualitatively indicating less interest in the phenomenology of compassion than with shame.

The findings from the current review point to the protective benefits of compassion in parenting and in particular self-compassion. By definition, self-compassion, as a motivation to care for oneself, may buffer against the psychological impact of stressful events (Leary, Tate, Adams, Allen, & Hancock, 2007), such as the transition to motherhood. Most of the studies presented here promote the incorporation of compassion training in parenting interventions.

However, no studies explored the relationships between compassion and shame and/or compassion and fears of compassion in this cohort. The latter is important when considering the activation of the attachment system during this period and the impact that negative attachment experiences can have on motivations and abilities for current caregiving.

The almost total use of the S-cS in the studies enables comparisons across studies with a robust and reliable measure, but limits explorations to self-compassion. Relatively few studies looked at flows of compassion beyond self-compassion and no study looked at receiving compassion from others or fears of compassion.

The vast majority of the publications detailed here stem from the US and continental Europe. The current study aimed to address gaps in the literature base by investigating compassion in a UK and Irish sample. It also examined two flows of compassion; that is self-compassion and mother's compassionate love for their baby, as well as exploring fears of compassion in this cohort. Furthermore, interrelationships between the flows of compassion, fears of compassion, shame and shame memories were examined to elucidate links

between these experiences and the experience of early motherhood.

## **1.8. Summary and study rationale**

Recent investigations have shown that SMs construed as central to one's identity, tend to be highly accessible and psychologically harmful, translating into traumatic stress reactions and heightened feelings of shame in adulthood, leaving people vulnerable to depression, and in particular SMs involving attachment figures. Considering the activation of the attachment system and associated memories in early motherhood, the current study aimed to profile the AM, traumatic and central properties of SMs involving attachment figures of first time mother. Moreover, it is the first known UK and Irish based study in this area and moved away from the focus on mental health problems to these variables relations with the experience of early motherhood.

The claims that shame forms a central component of many women's experience of motherhood have been made, yet there exists a paucity of research, particularly in relation to Gilbert's (1998, 2010) dimensions of internal and external shame and specifically in relation to the experience of early motherhood. The motherhood research on shame consistently reflects on the internalisation of motherhood ideals and this is the first study that aims to assess the overlapping but distinct categories of internal and external shame. This is important as it will shed light on which dimension relates more strongly to the experience of motherhood i.e., the judgments of others (external shame) or self-evaluations (internal shame).

Compassion has been found to buffer the harmful effects of stressful life events, for example, parenting, yet people's abilities and motivations to develop compassion vary. Fears of compassion can be major blocks to wellbeing, especially for people with high levels of shame. Considering the research linking compassion to the quality of parent-child relationships and the importance of mother-infant bonding, as well as maternal wellbeing, this study aimed to be the first known study in the UK and Ireland to explore various flows of compassion (i.e., self-self and self-baby) and fears of compassion (i.e., self-self, self-other,

other-self) in early motherhood and their relations to the experience of motherhood. Furthermore, the Portuguese research on SMs emphasises the importance of addressing SMs, particularly involving attachment figures, when working with individuals that find compassion difficult/scary. However, no study has empirically examined whether a link exists between SMs and compassion or fears of compassion. This study also aims to address this gap.

### **1.9. Clinical utility**

This exploratory study can be situated within a public health framework aiming to add to the literature on wellbeing during the perinatal. This study aimed to inform the development of preventative initiatives, such as those alluded to by the Royal College of Midwives (Underdown & Barlow, 2012) and shed light on individuals that may be more vulnerable to shame-based problems and/or may need particular consideration in the development of such initiatives.

### **1.10. Research questions**

To allow for digestible research questions, the following is assumed:

- SMs refer to the shame memories of first time mothers that involve attachment figures.
- Shame refers to internal and external shame.
- Compassion refers to self-compassion and compassionate love for baby.
- Fears of compassion refer to fear of self-compassion, fear of expressing compassion for others, and fear of receiving compassion from others.

*Research question 1: What are the characteristics of shame memories?*

*Research question 2: Do the properties of SMs predict the following internal experiences: shame, compassion and fears of compassion?*

*Research question 3:*

a: What factors best predict the experience of motherhood?

b: Are there factors that moderate this relationship

## **2. METHOD**

### **2.1. Overview**

Ethical issues are first considered. Then the study's epistemological position is outlined providing context for the choice of design. Finally, the materials, procedure and the analytic strategy are delineated.

### **2.2. Ethical issues**

The study was registered with, and ethical approval (see Appendix C) was obtained from the University of East London. Minor changes were requested by the Research and Ethics Committee and were addressed before recruitment. The study complied with the British Psychological Society Ethics Guidelines for Internet-mediated Research (2013) as well as the Code of Human Research Ethics (2010). Both documents have a principle 'maximising benefit and minimising harm', which embodies many of the other key principles including 'ensuring scientific value' (maximising benefits) whilst taking steps to protect participants from any adverse effects stemming from the research (minimising harm). According to the latter document, these steps may include gaining valid consent, ensuring anonymity and confidentiality (to minimise harm) and maintaining appropriate levels of control over the research process (to help maximise benefits and minimise harm).

#### **2.2.1. Informed Consent**

Informed consent was ensured by providing participants with an information sheet (see Appendix D), which detailed key information about the study, its purpose and aims, intended methods as well as matters of confidentiality/ anonymity. Participants were encouraged to print or save a copy of this for their reference. The contact details of the researcher and those of her supervisor were also provided. Contact details of a university official were also provided for the reporting of any concerns. Participants were invited to ask questions prior to, during, or following participation. Participants were also informed that

regardless of indicating their consent, they had the right to withdraw from the research at any point until they submitted their responses. Data could not be destroyed after this point because participation was anonymous so individual responses could not be identified. A consent form (see Appendix E) followed the presentation of the information sheet. Consent was considered at two time points: initially by way of the electronic consent form and secondly by way of submitting responses or not withdrawing incomplete responses.

### 2.2.2. Confidentiality

Participants were informed that their responses to the study questionnaires were completely anonymous. Participants were given the opportunity to email the researcher if they were interested in receiving a summary of the results and/or being entered into the draw (see Section 2.8.3. for more details). They were invited to email these requests to ensure that responses could not be linked to their email address. The email addresses were kept on a password-protected file on the researcher's computer and were destroyed once participants had been informed of the results of the draw and/or the summary of the study results. All other data will be kept for 5 years in a password-protected file on the researcher's computer. After this time, data will be destroyed in accordance with the Caldicott principle and the Data Protection Act (1998).

### 2.2.3. Potential Distress

The participant information sheet outlined potential risks. Participants were informed that completing the study may have made them aware of potentially difficult experiences from the past and/or present and they were given a list of agencies that they could contact should the study bring up any distressing feelings that they may want to discuss further. They were also advised that their participation was voluntary and they could withdraw at any point until they submitted their responses.

The current study was conducted online (see Section 2.8 for more details). In line with the ethical guidelines cited above, consideration was given to the cost-benefit of inviting participants to engage with potentially distressing situations without face-to-face support. It was decided that the increased access to participants, which was afforded by the online format added to the scientific

integrity of the study. Furthermore, the measures described above were put in place to minimise the risks associated with this format.

#### 2.2.4. Debriefing

Once questionnaires were completed, participants were presented with the debrief sheet where they were reminded of the purpose of the study, the researcher's contact details, and list of supportive agencies (see Appendix F).

### **2.3. Epistemology**

Epistemological positions can be considered under three categories: realist, phenomenological, and social constructionist (Willig, 2012). Realists seek reliable knowledge from a world that exists independently of one's awareness of it. Realism extends on a continuum between naive and critical. In the former, knowledge equates to fact and directly mirrors a universal reality. As such, if something exists it can be objectively verified by the logical testing. This position is known as positivism. A more critical shift occurred with the idea that the perspective of the observer influences what is perceived. Godfrey-Smith (2000) describes the theory-ladenness of observation, which questions whether observational evidence can be considered neutral and unbiased, suggesting that observations are corrupted by theoretical assumptions in a way that precludes this role. Questioning of neutrality became the foundation of more critical, post-positivist views.

The current study adopted a critical realist position, which has been developed in writings by Bhaskar since the 1970s, as well as other key writers (e.g. Sayer, 1997). Critical realism stresses the generalising task of scientific activity by seeking to identify mechanisms that generate empirical phenomena (Alvesson & Skoldberg, 2009) as well as function as an agency of human emancipation (Bhaskar, 1998). The current study aimed to explore mechanisms influencing the experience of motherhood and with this, inform interventions to support women during this transition.

Critical realism recognises that science is sculpted by a range of ideological, social and political contexts. However, “the mechanisms that it identifies operate prior to and independently of their discovery” (Bhaskar, 1998: p. xii). Thus, critical realists assume scientific data can reveal aspects of reality but does not view this as a direct mirroring. For example, this research study invited participants to explore their experience of shame; however, participants may not have been fully aware of all the elements influencing their experience e.g., family beliefs, cultural expectations and the history of the concept itself. As a result, the data does not explain the historical and political factors that drive, shape and maintain these structures, for example, contemporary motherhood ideologies. In this respect, critical realists argue that it is necessary to go beyond the data and draw from other disciplines (Harper & Andrews, 2012). This was briefly addressed in the introduction chapter when considering shame from a sociological perspective.

Critical realism encourages efforts to investigate reality but to engage in these attempts cautiously and critically. Pligram and Bentall (1999, p. 271) have suggested that critical realism is a more helpful approach to mental health issues because “*this position respects empirical findings about the reality of misery and its multiple determinants but does not collapse into ... naive realism*”. Critical realism accepts causal arguments but remains cognisant of the relationship between empirical approaches and professional interests and social forces. In line with a critical realist position, this study attempted to investigate, measure and quantify phenomena (such as ‘shame’) within a material reality that researcher believed exists independent of personal experience and across time. From this perspective, a theory-driven approach can be taken, such that the current investigations were situated in the frame of Gilbert’s (1998, 2010) biosychosocial models of shame and compassion, for example. Despite this however, the researcher also believed that the concepts under investigation are socially constructed categories, rather than ‘real’ physical entities, and perceptions of their nature and determinants change across time and across socio-political, historical and cultural contexts (e.g., shifts in views on motherhood [Tummala-Narra, 2009])

The current attempt to measure/quantify these constructs is not aimed at mirroring reality or absolute truth; rather it is indirect and interpreted within the present context. From this position, knowledge is fallible and findings must be interpreted tentatively in light of their limitations. The introduction and discussion chapters take account of how perceptions are shaped by theoretical resources and investigative interests (McEvoy & Richards, 2006), as well as the fallibility of observation (Trochim, 2000).

## **2.4. Design**

In light of the epistemological stance outlined above and with the research questions in mind, a cross-sectional (i.e., data collected at one time point) quantitative approach, employing self-report questionnaires, was undertaken. A quantitative approach was adopted because this study was interested in exploring the relationships between the variables of interest. A cross-sectional approach employing established self-report measures was undertaken because the study aimed to replicate and extend the previous body of research exploring shame memories at the University of Coimbra, Portugal, which utilised similar methods and instruments. Section 2.6 details the measures employed and the decision-making processes involved.

This study aimed to reduce measurement and researcher bias and error by, for example, using standardised questionnaires presented in random order, with the exception of the Autobiographical Memory Questionnaire (AMQ; Rubin, Burt et al.; Rubin, Schrauf, et al., 2003; Sheen et al., 2001). The rationale for presenting the AMQ first is discussed in Section 2.8. Randomisation was aimed at reducing fatigue and/or order effects. Another element of control in the study was that of anonymised responding, which was aimed at reducing social desirability bias and also to encourage participation. Considering the online nature of this study, it was thought that participants may be wary of providing their name.

## **2.5. Participants**

### 2.5.1. Inclusion criteria

Participants were required to meet the following criteria to take part in the study:

- Female: because the study focuses on the experience of mothers.
- Aged 18+ years: to avoid potential confounding variables related to underage pregnancy and parenthood.
- Living in the UK or Ireland: because no previous studies investigating SMs have been conducted in this region. Consideration was given to making the study worldwide due to the recruitment medium; however, after care was a consideration and it would not have been possible to provide a list of country-specific agencies that participants could contact if the study brought up issues participants would like to discuss further.
- First time mother: to ensure that the target experiences would be new and not previously encountered or processed via existing experiences of motherhood.
- Relevant infant(s) currently under the age of one year: to fall in line with the NICE Guidelines for Antenatal and Postnatal Mental Health (2014), which defines the postnatal period as up to one year after childbirth.
- Although not explicitly indicated, participants must also speak English because the study was provided in English only and translated versions of the questionnaires were not available.

### 2.5.2. Recruitment

Convenience sampling was employed. The study was advertised on the Internet including online forums such as Mumsnet, as well as social media sites: Facebook, Twitter, and Reddit (see Appendix G for examples of specific sites of advertisement). Many of these channels required permission before advertising. The same advertising message was used for forums and Reddit, with an abbreviated version used for Twitter and Facebook posts (see Appendix H).

## **2.6. Materials**

All questionnaires were reviewed by the researcher and her supervisor, consideration was given to their psychometric properties, length, content and face validity, and cost. Many of the questionnaires employed were chosen because they were used in previous shame memory/biopsychosocial shame research.

### 2.6.1. Priming for shame memory

The Shame Experiences Interview (SEI; Matos & Pinto-Gouveia, 2006) is a semi-structured interview designed to assess the phenomenology of a shame experiences from childhood or adolescence. It explores emotional, cognitive, behavioural, motivational and contextual components of shame and it's autobiographical, traumatic and centrality memory characteristics. The SEI begins with an explanation of the concept of shame and provides three examples of shame experiences from childhood and adolescence. Following this, there are three main parts to the SEI. In the first part, a significant shame memory from childhood or adolescence that involved peers, teachers, strangers, or others, is elicited and assessed regarding its phenomenological and memory characteristics. The second part involves a similar process in relation to a significant shame memory involving an attachment figure (father, mother or other carer). The third part measures the accessibility to positive and negative memories with attachment figures from childhood and adolescence. After each part, participants are invited to complete a set of self-report questionnaires in relation to the shame memory elicited. These questionnaires measure the shame traumatic memory characteristics, centrality of shame memory and autobiographical memory characteristics.

In line with previous research (e.g., Pinto-Gouveia & Matos, 2011), the current study used elements of the SEI. Firstly, it modified the explanation of the concept of shame and the three examples of shame experiences (see Appendix I). The current study was only interested in shame experiences involving attachment figures and as such, the two examples that did not include attachment figures were replaced with two examples involving attachment figures. One of the new examples was an adaptation of an original example in the SEI (i.e., the example involving Alex), such that the type of shame situation was similar but the focus was changed from a memory involving peers to one involving attachment figures. Such an adaptation was not possible with the other SEI situation and as such, the researcher and her supervisor developed a novel example (i.e., the example involving Denise). A number of situations were elaborated and considered and this example was chosen as it was thought to depict an everyday circumstance in order to highlight that shame can arise from events that may be considered innocuous. The new/adapted examples were then sent to the lead author of the SEI, Dr Marcela Matos, who approved them, alongside the other grammatical/semantic adaptations detailed in Appendix I.

Once primed for the SM, participants in the current study were then invited to recall a significant SM from childhood or adolescence that involved an attachment figure and they were then invited to complete the same set of self-report questionnaires used in the SEI using that memory as an anchor for their responses. No Cronbach's alpha has been reported for the SEI itself, however, please see Section 2.6.2. for a description of the self-report measures including reliability considerations.

Participants were also asked to select the age range they were at the time of the event and to categorise the type of situation based on elaborated categories from the SEI. The descriptions used in the SEI were designed to be used by the interviewer so for the purposes of this study, the categories were elaborated with examples so that participants themselves could categorise the shame situation elicited (see Appendix J).

Permission was sought and granted from the lead authors of each of the following scales, to use in the current study.

### 2.6.2. Shame memory questionnaires

The following three self-report questionnaires form components to the SEI (Matos & Pinto-Gouveia, 2006) described above and have been employed repeatedly in the body of research exploring shame memories stemming from the University of Coimbra, Portugal that the current study aimed to replicate and extend (e.g., Matos & Pinto-Gouveia, 2010, 2014).

The Autobiographical Memory Questionnaire (AMQ; Rubin, Burt, et al., 2003; Rubin, Schrauf, et al., 2003; Sheen et al., 2001) is sensitive to the conscious experience of remembering. It comprises a set of questions (which vary according to the research aims) that assess a variety of autobiographical memory properties of a particular event, in this case, the shame memory nominated by participants. All items used a 7-point scale and each scale was considered individually rather than being summed. The measure is not typically totaled and so psychometric properties are not reported. The rationale for excluding items relates to considerations of their face validity in relation to the research aims and indeed, feedback from the pilot regarding the length of time taken to participate in the study. Items used in the current study are indicated in the Results chapter.

The Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997) was designed to measure distress for a specific life event, and in this study, in relation to the SM. This scale has 22 items rated on a 5-point scale, from 0 (not at all) to 4 (extremely). It is composed of three subscales that measure characteristics considered key to traumatic memories: avoidance (e.g., “I stayed away from reminders of it”), intrusion (e.g., “Any reminder brought back feelings about it”) and hyperarousal (e.g., “I was jumpy and easily startled”). Participants were asked to indicate how distressing each experience has been during the past week. Higher scores are suggestive of greater traumatic properties of the memory. Similar to previous SM research (e.g., Matos & Pinto-Gouveia, 2010) a total scale score was calculated for the current study. In the original validation study, Cronbach alphas for the subscales ranged from .87 to .92 for intrusion, .84 to .86 for avoidance and .79 to .90 for hyperarousal.

The Centrality of Event Scale-Short Version (CES-S; Berntsen & Rubin, 2006)

assesses the extent to which a memory for a stressful event, in this study, the shame memory, forms a reference point for personal identity and attribution of meaning to other experiences in a person's life. The long version of this scale has been used in previous shame memory research (e.g., Pinto-Gouveia & Matos, 2011). In the current study, participants were instructed to answer the questionnaire based on the centrality throughout their lives of a significant shame experience from their childhood/adolescence using the adjusted wording from Pinto-Gouveia and Matos (2011; Cronbach's alpha: .96). This self-report questionnaire consists of 8 (of the original 20 items), rated on 5-point scale, from 1 (totally disagree) to 5 (totally agree). It measures three interdependent characteristics of a negative emotional event that load on to a single factor: the extent to which the event is a central component of one's personal identity (e.g., "I feel that this event has become part of my identity"), is viewed as a landmark in one's life story (e.g., "I feel that this event has become a central part of my life story") and acts as a reference point for inferences and attributions in everyday life (e.g., "This event has coloured the way I think and feel about other experiences"). Higher scores are suggestive of greater centrality features of the shame memory. In the original validation study, Cronbach's alpha for the CES-S was .88.

### 2.6.3. Shame questionnaires

The Other as Shamer Scale-2 (OAS-2; Matos, Pinto-Gouveia, Gilbert, Duarte, Figueiredo, 2015). This is a self-report instrument constructed to measure external shame. It is composed of 8 items from the original 18-item scale (Goss, Gilbert, & Allan, 1994). Respondents rated on a 5-point scale from 0 (never) to 4 (almost always), the frequency of their feelings and experiences on items such as "I feel other people see me as not quite good enough" and "I think that other people look down on me". No referential time period was indicated in the instructions. Higher scores suggest greater external shame. Cronbach's alpha of .82 for the OAS-2 was reported in the validation study. This measure was chosen to fall in line with the existing shame memory research.

The Social Comparison Scale (SCS; Allan & Gilbert, 1995) was designed to measure self-perceptions of social rank and relative social standing. In this study it was employed to assess levels of internal shame, as recommended by

Matos and Pinto-Gouveia (2010). In their study, Matos and Pinto-Gouveia (2010) use the Experience of Shame Scale (Andrews, Qian, & Valentine, 2002) and comment on its limitations, specifically doubts concerning this questionnaire as an external, rather than internal shame. The Internalized Shame Scale (Cook, 1994, 2001) was also considered for use, however, it was not possible due to the cost implications. Despite not being designed specifically to measure internal shame, the SCS taps feelings of shame surrounding how people view themselves in relation to others and uses a semantic differential technique consisting of 11 bipolar constructs. Participants rated themselves along a 10-point scale (e.g., 'In relationship to others I feel: incompetent - more competent). No referential time period was indicated in the instructions. Low scores point to feelings of inferiority and general low rank self-perceptions. Cronbach's alpha of .91 was reported in the original study.

#### 2.6.4. Compassion questionnaires

The Self-Compassion Scale (S-cS; Neff, 2003b) is a 26-item scale that assesses three factors of positive self-compassion: self-kindness (e.g., I try to be loving towards myself when I'm feeling emotional pain), common humanity (e.g., I try to see my failings as part of the human condition), and mindfulness (e.g., When something upsets me I try to keep my emotions in balance), and three factors focusing on a lack of self-compassion: self-judgment (e.g., I'm disapproving and judgmental about my own flaws and inadequacies), isolation (e.g., When I fail at something that's important to me, I tend to feel alone in my failure), and over-identification (e.g., When something upsets me I get carried away with my feelings). Participants indicate how often they engage in these ways of self-relating on a scale, from 1 (almost never) to 5 (almost always). No referential time period was indicated in the instructions. An overall self-compassion score was calculated for each participant by reverse coding responses to the lack of self-compassion subscales. Higher scores are suggestive of higher levels of self-compassion. Cronbach's alphas ranging from .75 to .81 were reported in the original study. This scale was chosen for use in the current study as it is a widely used measure of self-compassion making comparison with previous research possible.

The Compassionate Love Scale (CLSO-B; Sprecher & Fehr, 2005) is a 21-item scale measuring compassionate love for others. There are three versions of this scale: one assesses compassionate love towards close others, another assesses compassionate love for a specific other, and the third measures compassionate love towards strangers. In the current study, compassionate love for specific other (baby) was used. Example items include “I spend a lot of time concerned about the wellbeing of my baby” and “I often have tender feelings toward my baby when he or she seems to be in need”. Various compassion scales were examined for suitability for specifying the object of compassion and this scale was chosen as previous research (Miller et al., 2015) used this scale in a similar way with mothers towards where their preschool children were the objects of compassionate love. Respondents were asked to rate how true each compassionate statement is on a 7-point scale ranging from 1 (not at all true of me) to 7 (very true of me). No referential time period was indicated in the instructions. Higher scores are suggestive of higher levels of compassionate love. Cronbach’s alpha of .95 was reported in the original study.

There are three separate Fear of Compassion Scales (Gilbert, McEwan, Matos et al., 2011), with ratings on a 5-point scale from 0 (don’t agree at all) to 4 (completely agree). These scale were chosen as they are the only known measures of this construct.

- Scale 1: Expressing compassion for others (FCS-1) comprises 10 items (e.g., “I fear that being too compassionate makes people an easy target”).
- Scale 2: Responding to the expression of compassion from others (FCS2) comprises 13 items (e.g., “Wanting others to be kind to oneself is a weakness”).
- Scale 3: Expressing kindness and compassion towards yourself (FCS-3) comprises 15 items (e.g., “Getting on in life is about being tough rather than compassionate”).

No referential time period was indicated in the instructions. Higher scores are suggestive of higher fears of compassion. Cronbach’s alpha’s of .92 for self, .85 from others, and .84 were reported for the original sample.

#### 2.6.5. Experience of motherhood questionnaire

The Being a Mother Scale: 13 (BAM-13; Matthey, 2011) is a measure of emotional adjustment to motherhood, defined as a their satisfaction with a broad range of maternal experiences (e.g., parenting confidence, coping, and guilt). Various measures of postnatal depression were considered for use, however, this scale was chosen as the study was interested in satisfaction with the experience of motherhood, rather than mood symptomatology. Items include: "I have found it hard to cope when my baby cries"; "I have felt unsupported"; and "I worry I am not as good as other mothers." The possible responses for each item are "Yes, most or all of the time"; "Yes, some of the time"; "No, not very often"; and "No, rarely or never." No referential time period was indicated in the instructions. Each item was scored from 0 to 3, with high scores indicating dissatisfaction or difficulty with motherhood. Cronbach's alpha was .78 for the original study. There was also an open ended question: "If you have found being a mother very stressful, very difficult, or unenjoyable, why do you think this is?". This question was the only part of the survey that was optional, as it was not analysed formally in this study. It was not removed as an agreement was made with the author to present the scale in its original form.

#### 2.6.6. Applications and programmes

LimeSurvey (2015) is a free and open source online survey application. It enabled the researcher to develop and publish the online survey, collect responses, create statistics, and export the resulting data to other applications. Various survey platforms were investigated for use in this study and it became clear that LimeSurvey was the only one offering the option to randomise the presentation of questionnaires. This, alongside a helpful online support community prompted the decision to use it in this study.

Statistical Package for the Social Sciences version 22.0 (SPSS; IBM Corp., 2013) is an analytics software that was used to analyse that data in this study.

Random.org (2016) is a smart phone application that was used to pick the winning participant (see section 2.8.3.).

## 2.7. Pilot phase

The first pilot phase of the online survey involved 5 participants (i.e., women without children) and the second involved 4 participants (i.e. 3 women with infants of approximately 36 months old, and one mother in the target population). Participants were asked to comment generally on their experience of participation and indicate if anything was unclear. The online survey design/format was new to the researcher and so the first phase was aimed at identifying any obvious glitches with progression through the survey and grammatical/formatting issues. The second phase was aimed at understanding what it was like to complete as a mother of an infant.

Based on the feedback, revisions were made to the presentation of the questions and response options. An important change was based on a comment that many new mothers would be breastfeeding and so may opt to complete the survey on a smart phone, rather than laptop or PC – formatting would consequently be an issue (e.g., items per page).

Feedback raised concerns about whether participants would clearly understand what might constitute a shameful experience, therefore the number of examples of shame experiences from childhood or adolescence was changed from one, which was used in the original instructions in the SEI (Matos & Pinto-Gouveia, 2006; see Section 2.6.1) to three.

The pilot phase was also used to assess the time taken to complete the full battery of questionnaires. It took approximately 20-30 minutes to complete. The majority of participants in the pilot (n = 6) commented on the length of time it took to complete the study, raising concerns as to whether new mothers would have time to take part. This, alongside other considerations relating to the psychometric properties of various measures, prompted the decision to use the shorter versions of 2 questionnaires.

## **2.8. Procedure**

### 2.8.1. Informed consent

Once the study URL was followed by participants, they were presented with the information sheet (see Appendix D) and consent form (see Appendix E).

Participants were not permitted to continue to subsequent sections of the survey without completing all items on the current page to ensure complete data sets were collected for each participant. This also meant that participants were not able to go beyond the consent page without indicating their consent.

### 2.8.2. Data collected

Once consent had been obtained, participants were invited to provide demographic information (see Appendix K). The next task provided participants with a brief introduction to the concept of shame and attachment figures, followed by an instruction to recall a significant and stressful shame experience from their childhood/adolescence involving an attachment figure (see Section 2.6.1.).

Following this, participants were requested to complete the AMQ (see Section 2.6.2), which solicits various properties of this memory. It was decided that the AMQ would need to be completed before the other scales to allow participants to have a concrete memory in mind serving as a basis to answer the remaining questionnaires. The remaining questionnaires were presented in random order.

### 2.8.3. Following participation

Once questionnaires were completed, participants were presented with the debrief sheet (see Appendix F).

Due to the time consuming nature of the task, participants were given the option of being entered into a prize draw for an Amazon voucher. The gesture hopefully provided the message that the researcher values participants time and input. The amount of £50 was chosen as it seemed appropriate to the amount of time it took to complete the task. Amazon vouchers were chosen as the participant could choose whether they spent the money on baby related items, or in other ways, giving a breadth of options.

Participants were given the opportunity to email the researcher if they were interested in receiving a summary of the results and/or being entered into the draw. When requests were received, an acknowledgement email was returned to the participant (see Appendix L). Each participant who opted for entry to the prize draw (36% of the sample) was assigned a corresponding number. The researcher, witnessed by her supervisor, used a random number generator to pick the winning participant. The voucher was then emailed to the winner and all interested participants who opted into the draw were informed of the results of the prize draw. Similarly, all interested participants were provided with a summary of the study findings (see Appendix M).

## **2.9. Analytic strategy**

Data was analysed using SPSS (IBM Corp., 2013). Macros were added for the canonical correlation analysis (CCA) and moderation analysis (Hayes, 2012; IBM, 2016).

Descriptive statistics were computed for: the phenomenological properties of SMs, their autobiographical memory, centrality and traumatic features, as well as shame, compassion and fears of compassion.

A CCA (Hotelling, 1936) was conducted as an exploratory analysis (Tabachnick & Fidell, 2007; University of North Texas [UNT], 2016) to investigate whether SM traumatic and centrality features predict shame, compassion and fears of compassion. Efforts were made by the researcher and her supervisor to employ a multivariate multiple regression analysis on the statistical package R (R Development Core Team, 2008) in order to address this research question. However, it was not possible to access the appropriate support for this method and so alternatives were explored. A multivariate analysis of variance (MANOVA) was considered for use but this was not opted for because it is typically used to make group comparisons, which was not appropriate for the current study. It is common for researchers to employ a number of multiple regression analyses to answer questions such as these. However, running multiple comparisons runs the risk of increasing type 1 errors (Hsu, 1996;

Westfall & Young, 1993) so this approach was discarded. The Institute for Digital Research and Education (2016) suggest that CCA is appropriate in the same situations where multiple regression would be, but where there are multiple inter-correlated dependent variables (DV). Hair, Anderson, Tatham, and William (1998) report that CCA is the most appropriate and powerful multivariate technique when there are multiple independent variables (IVs) and DVs. Hair (2010) reports that CCA better reflects the reality of research studies. For example, the complexity of studies on human behaviour may suggest multiple variables representing a concept and can be problematic when the examined separately. Moreover, if they exist, it can identify two or more unique relationships. Thus, CCA is not only theoretically consistent with analysing data involving multiple sets of variables, it is technically able to (Thompson, 1991).

A multiple regression analysis was calculated to investigate what factors best predict the experience of motherhood (Cohen, Cohen, West, & Aiken, 2003; Tabachnick & Fidell, 2007). Moderation analyses were undertaken to further explore the significant relationships reported (Hayes, 2012).

### 2.9.1. Sample size considerations

#### *2.9.1.1. Correlations*

To detect a moderate correlation, G\*Power (Erdfelder, Faul, & Buchner, 1996) revealed that 89 participants would provide 95% power to discover that relationships, if they exist, are statistically significant.

#### *2.9.1.2. Ratio of cases to independent variables for the MRA*

Cohen and Cohen (1975) suggest a minimum of 10 participants per IV is appropriate for regression equations using six or more predictors, but that there would be better power to identify a small effect size with 30 participants per variable. Tabachnick and Fidell (2007) recommend using the values report by Green (1991), who provided an overview of the methods employed to assess regression sample sizes and concluded that assuming a moderate relationship,  $N > 50 + 8m$  (where  $m$  = number of IVs) should be used for testing the multiple correlation and  $N > 104 + m$  for testing individual predictors. The current study was interested in both and so used the highest of these values (i.e., 122).

### *2.9.1.3. Ratio of cases to independent variables for the CCA*

Barcikowski and Stevens (1975) suggest that if there are strong canonical correlations (i.e.,  $> .7$ ), then sample sizes of 50 are sufficient, whereas weaker canonical correlations (e.g.,  $= 0.3$ ) require larger sample sizes ( $n > 200$ ) to be detected. Stevens (1996) suggests that for reliable estimates of the canonical factor loadings, a minimum of 20 cases per variable is required. In the current study this suggests that 180 cases would be needed. Dattalo (2013) recommends that researchers combine both perspectives to triangulate a minimally sufficient sample size for CCA, which was the approach taken in the current study.

## **3. RESULTS**

### **3.1. Overview**

This chapter details the sample characteristics, data screening procedures, and results of the analyses relating to each research question. Appendix N contains relevant SPSS output including graphs.

### **3.2 Participants**

There were 614 respondents in the current study.

#### 3.2.1. Missing data

Two broad categories of mechanisms for treating missing data exist: deletion methods and imputation methods. The decision was taken to use only complete responses in the current study. This approach is known as listwise deletion or complete case analysis. Although critique exists (e.g., Enders, 2010) about this type of deletion, this method is still most commonly applied approach in many fields of research (Eekhout, de Boer, Twisk, de Vet, & Heymans, 2012; Piggot, 2001). Listwise deletion has the advantage of comparability across analyses, which is not possible with pairwise deletion. Its major advantage over imputation methods is that of simplicity. It can be used with any kind of statistical analysis and no special computational methods are required (Soli-Bori, 2013). It is this benefit of simplicity that informed the current decision because missing outcome variables pose different problems from missing predictor variables according to Little (1992). For example, when the outcomes are missing at random, those cases with missing outcomes and complete predictors do not contribute any information to a linear model exploring the relationships between the outcome and the predictors. Variables in the current study act as both predictor and outcome variables depending on the research question under investigation. As such, considering the scope of the current study in terms of the various relationships and model tested, only complete data has been used. Therefore  $N = 133$  for all analyses.

### 3.2.2. Participant characteristics

Table 1 details participant characteristics for the 133 individuals that completed the study.

Of the participants that did not complete the study ( $N = 481$ ), demographic information was available for 288 individuals. As such, the following proportions pertain to 133 'completers' and 288 'non-completers':

- 95.5% of completers selected 'White' ethnic backgrounds compared with 94.6% of non-completers.
- 78.2% of completers selected their place of residence was England compared with 77.8% of non-completers.
- 41.4% of completers selected the age range 30 - 34 years compared with 39.2% of non-completers.
- 95.5% of completers reported that they gave birth, compared with 98.2% non-completers.
- 40.6% of completers said that they were in a relationship for 1 - 5 years compared with 38.9% non-completers.
- 56.6% of completers reported that they have not now or ever experienced distress for which they received professional support (i.e., talking therapy or medication) compared with 63.5% of non-completers.

**Table 1 - Participant characteristics**

<b>Characteristics</b>	<b>n</b>	<b>%</b>
<i>Current residence</i>		
England	104	78.2
Ireland	12	9
Northern Ireland	7	5.3
Scotland	6	4.5
Wales	4	3
<i>Age (in years)</i>		
18-24	18	13.5
25-29	35	26.3
30-34	55	41.4
35-39	22	16.5
40-44	2	1.5
45-49	1	0.8
<i>Ethnic background</i>		
Asian/Asian British - Chinese	1	0.8
Asian/Asian British - Indian	2	1.5
Any other Black/Black British background	1	0.8
Any other mixed/multiple ethnic background	2	1.5
White – English, Northern Irish, Scottish, Welsh	117	88
Any other White background	10	7.5
<i>Route to motherhood</i>		
Gave birth	127	95.5
Surrogacy	2	1.5
Adoption	1	0.8
Partner biological parent	2	1.5
Other	1	0.8
<i>Length of relationship</i>		
No relationship	2	1.5
Less than 1 year	4	3
1-5 years	54	40.6
6-10 years	48	36.1
More than 10 years	25	18.8
<i>Psychological support or psychotropic intervention</i>		
In the past	47	35.3
Currently	16	12
No	70	52.6

### 3.3. Data distribution

Table 2 includes the means (M), Standard Deviations (SDs), Kolmogorov-Smirnov (K-S) with a Lilliefors (1967) significance level, as well as skewness (SK) and kurtosis (Rku) values for the: Impact of Events Scale Revised (IES-R), Centrality of Events Scale-short version (CES-S), Other as Shamer Scale-2 (OAS-2), Social Comparison Scale (SCS), Self-compassion Scale (S-cS), Compassionate Love for Specific Other Scale–baby (CLSO-B), Fears of Compassion Scale 1 (FCS-1; expressing compassion for others), Fears of Compassion Scale 2 (FCS-2; responding to compassion from others), Fears of Compassion Scale 3 (FCS-3; self-compassion) and Being a Mother Scale-13 (BaM-13).

According to Neff (2016), average self-compassion scores tend to be 3. She suggests that scores of 1 - 2.5 indicate low self-compassion, scores of 2.5 - 3.5 indicate moderate self-compassion and scores of 3.5 - 5 indicate high levels of self-compassion. This indicates that on average women in the current study may be experiencing low levels of self-compassion. The BaM-13 was designed so it would be used in clinical services that often require cut-off scores to screen for depression. As such, Matthey (2001) suggests a score of 9 or more may be useful for this purpose but only if women concurrently report high levels of distress. Results of the current study suggest that women on average in the current study may be finding this time difficult. Further interpretation of the means in Table 2 can be found in the Discussion chapter where the mean scores reported in the current study are compared with mean scores reported in previous research in order to contextualise them within the research base. These descriptions can be found under the relevant headings for each variable/construct. The following is an account of normality distribution considerations in respect of these descriptive statistics.

**Table 2 - Descriptive statistics and distribution parameters for the: IES-R, CES-S, CLSO-B, FCS-1, FCS-2, FCS-3, Bam-13, OAS, SCS, S-cS, & AMQ**

Variable	M	SD	SK	Rku	K-S
IES-R	2.52	2.69	1.00	.02	.00
CES-S	18.95	8.14	.84	-1.06	.01
OAS-2	16.07	6.90	.83	-.15	.20*
SCS	52.58	15.95	-.09	-.33	.20*
S-cS	2.49	.70	.29	-.09	.20*
CLSO-B	6.50	.99	-3.79	15.16	.00
FCS-1	16.03	8.14	.50	-.46	.00
FCS-2	17.80	12.14	.43	-.70	.02
FCS-3	17.60	13.74	.65	-.30	.00
BaM-13	13.64	6.23	.11	-.70	.07
<i>AMQ items</i>					
Reliving	4.12	1.68	-.14	-.83	.00
Back in time	3.96	1.92	.05	-1.04	.00
Remember/know	5.38	1.64	-1.00	.68	.00
Testify	4.69	1.89	-.40	-.94	.00
See	4.84	1.51	-.51	-.09	.00
Setting	5.46	1.55	-.32	-.56	.00
Spatial	4.54	1.75	-1.03	.61	.00
Hear	4.35	1.72	-.22	-.75	.00
Talk	4.25	1.85	-.14	-1.07	.00
In words	3.94	1.86	-.03	-.90	.00
Story	4.44	1.97	-.40	-.95	.00
Emotions	4.78	1.64	-.45	-.51	.00
Importance	4.41	1.81	-.29	-.79	.00
Rehearsal	3.87	1.82	.02	-1.07	.00

*Note.* \*Lower bound of true significance.

Evaluation of the variables' frequency histograms and P-P plots were conducted. Distribution was also assessed through evaluating SK and Rku. Curran, West, and Finch's (1996) thresholds for SK (between -2 and 2) and Rku (between -7 and 7) revealed that the CLSO-B deviated significantly from normal. Bulmer (2003) suggests distributions are:

- highly skewed for values less than -1 or greater than 1, which applied to

the CLSO-B;

- moderately skewed for values between -1 and -.05 or between .5 and 1, which applied to the: IES-R, CES-S, OAS-2 and FCS-3;
- approximately symmetric for values between -.5 and .5, which applied to the: SCS, S-cS, FCS-1, FCS-2 and BaM-13.

K-S tests rejected the null hypothesis for the: IES-R, CES-S, CLSO-B, FCS-1, FCS-2, and FCS-3, suggesting non-normal sample distributions for these variables and normal distributions for the: OAS, SCS, BaM-13 and S-cS. Field (2005) cautions that the K-S test can be significant when scores only slightly deviate from a normal distribution in large samples. As such, they should always be interpreted in conjunction with SK and Rku and plots such as, histograms and P-P plots.

Tabachnich and Fidell (2007) suggest screening for univariate outliers before multivariate outliers because the statistics used detect the latter are sensitive to violations of normality. The total scores for all measures were standardised in order to assess for univariate outliers with values greater than 3.29 (Field, 2009; Howell, 1998; Tabachnich & Fidell, 2007). Five cases for the CLSO-B scale had standardised scores above 3.29.

Much debate surrounds the detection and treatment of outliers (e.g., Cousineau & Chartier, 2010; Leys, Ley, Klein, Bernard, & Licata, 2013). Logarithmic and square root transformations were performed on the five CLSO-B scores, which did not improve the distribution. Consideration was given to removing these cases, however, Field (2009) recommends not doing this unless it is believed that the scores do not come from the population of interest. Furthermore, this study was interested in the range of experiences reported by participants and as such, outliers were kept in the data set.

### 3.3.1. Summary

These analyses produced ambiguous results. Curran et al.'s (1996) criteria suggest normal distribution for most variables, whereas the K-S tests suggest non-normal distributions for many variables. Micceri (1989) reviewed the literature on normality and suggested that ambiguity between tests of normality

is common. Many authors (e.g., Geary, 1947; Micceri, 1989; Pearson, 1895) raise questions about the prevalence of normality among real-world distributions.

The robustness of the parametric tests was considered in order to evaluate the potential impact of non-normality for the current study. Consensus on this topic has not been achieved, however, Micceri's (1989, pp. 158) literature review concluded that, "*parametric statistics exhibit robustness or conservatism with regard to alpha in a variety of non-normal conditions given large and equal sample sizes*". Disagreement exists regarding the meaning of large in this context (Bradley, 1980). Pallant (2007) suggests that with large enough sample sizes ( $> 30$ ), violation of the normality should not cause problems, implying that that parametric procedures can be employed even when the data are not normally distributed (Elliot & Woodward, 2007). Wilcox (2005) suggests that with heavy-tailed distributions (which is the case for the CLSO-B) larger samples would be necessary and suggests transformations might be useful. Logarithmic and square root transformations were performed on the CLSO-B and they did not improve the distribution.

Considering the multiplicity of factors that contribute to decisions around robustness and normality, alongside the fact that consensus has not been achieved, the current study aimed to take extra caution to reduce the potential impact of bias. Transformations were considered and not opted for because they often do not remedy data distribution issues (Glass, Peckham, & Saunders, 1972; Wright & Field, 2009), which was observed with the CLSO-B transformation. Non-parametric measures were also considered. However, these are deemed to be less sensitive, and less efficient than corresponding parametric measures (Bluman, 2011), as well as being geared toward hypothesis testing rather than estimation of effects (Whitely & Ball, 2002).

Bootstrapping procedures (DiCiccio & Efron, 1996; Efron & Tibshirani, 1993) have been recommended to enhance the significance tests of models and likelihood of robust confidence intervals (CI) around parameter estimates (e.g., Adèr & Mellenbergh, Fields, 2009; Salibian-Barrera & Zamar, 2002; Wright & Field, 2009). As such, bootstrapping was conducted with the following Pearson

product-moment correlations, regression and moderation analyses, which means that CIs, standard errors (SEs), and significance values are based on bootstrapping with a 95% bias-corrected and accelerated (BCa) CI and 1,000 bootstrap samples.

### **3.4. Research question 1: What are the characteristics of shame memories?**

The age in years at the time of the memory and type of SM derived from the Shame Experiences Interview (SEI) are detailed in Table 3. The most selected category for the age when the shame situation occurred was 7-10 years (33.8%). With respect to the type of shame event, '*exposure of perceived negative personal attributes, characteristics, behaviour*', was selected most frequently by participants (25.6%), followed by 21.1% who selected '*criticism by an attachment figure*', whereas '*reflected shame*' was chosen by one participant (0.8%). Ten percent of mothers in the current study reported a SM involving abuse (i.e., physical, sexual, emotional). Fifty four percent of participants remembered this shame situation as a one off event, compared with 25.6% as merged and 20.3% as extended.

The autobiographical memory (AM), traumatic and centrality features of participants' shame memories (SMs) as measured by the: AMQ, IES-R and CES-S, are presented in Table 2. These figures are compared with those reported in previous research in order to contextualise them within the research base (see Section 4.4.).

**Table 3 – Shame memory characteristics**

<b>Characteristic</b>	<b><i>n</i></b>	<b>% of sample</b>
<i>AMQ merged/extended</i>		
Once	72	54.1
Merged	34	25.6
Extended	27	20.3
<i>Age in years at time of memory</i>		
0-3	3	2.3
4-6	15	11.3
7-10	45	33.8
11-13	36	27.1
14-17	34	25.6
<i>Type of shame situation</i>		
Criticism by attachment figure	28	21.1
Exposure of perceived negative personal attributes, characteristics, behaviour to others	34	25.6
Negative comments about the body, weight, bodily shape or physical appearance	19	14.3
Comparisons with significant others	6	4.5
Physical abuse	7	5.3
Shame of personal habits	11	8.3
Sexual abuse	9	6.8
Emotional/psychological abuse	8	6.0
Reflected shame	1	.8

### **3.5. Bivariate Correlations**

Table 4 displays Pearson's correlation coefficients ( $r$ ), which established the direction, size, and significance of relationships between the variables of interest. Most of the correlations between variables were significant with the exception of those between the: BaM-13 and CES-S, IES-R and CLSO-B, CLSO-B and CES-S, and OAS-S and S-cS. The strongest correlation was between the FCS-2 and FCS-3 ( $r = .88$ ,  $CI = .72 - .86$ ).

**Table 4 – Pearson’s correlation coefficients, bootstrapped significance values and confidence intervals**

	<b>BaM-13</b>	<b>CES-S</b>	<b>FCS-1</b>	<b>FCS-2</b>	<b>FCS-3</b>	<b>SCS</b>	<b>OAS-2</b>	<b>S-cS</b>	<b>IES-R</b>	<b>CLSO-B</b>
<b>BaM-13</b>	1									
<b>CES-S</b>	.12	1								
<b>CI</b>	-.07 - .30									
<b>FCS1</b>	.29**	.31**	1							
<b>CI</b>	.12 - .43	.15 - .45								
<b>FCS2</b>	.36**	.36**	.66**	1						
<b>CI</b>	.20 - .50	.22 - .50	.55 - .765							
<b>FCS3</b>	.39**	.44**	.55**	.80**	1					
<b>CI</b>	.22 - .53	.28 - .58	.41 - .67	.72 - .86						
<b>SCS</b>	-.27**	-.31**	-.24**	-.43**	-.44**	1				
<b>CI</b>	-.43 - -.08	-.46 - -.14	-.41 - -.06	-.58 - -.26	-.58 - -.29					
<b>OAS2</b>	.39*	.37**	.37**	.60**	.57**	-.64**	1			
<b>CI</b>	.20 - .53	.20 - .53	.2 - .52	.47 - .71	.45 - .68	-.74 - -.52				
<b>S-cS</b>	-.48**	-.28**	-.37**	-.51**	-.55**	.58**	-.65**	1		
<b>CI</b>	-.59 - -.35	-.44 - -.12	-.5 - -.2	-.63 - -.36	-.67 - -.36	.44 - .68	-.74 - -.52			
<b>IES-R</b>	.18	.49**	.38**	.49**	.51**	-.23**	.39**	-.29**	1	
<b>CI</b>	-.01 - .35	.34 - .62	.22 - .62	.33 - .62	.35 - .65	-.4 - -.06	.25 - .53	-.45 - -.12		
<b>CLSO-B</b>	-.05	-.10	-.31**	-.31**	-.38**	-.16*	-.09	-.06	-.31**	1
<b>CI</b>	-.2 - .08	-.26 - .07	-.45 - -.14	-.46 - -.14	-.49 - -.21	-.34 - .01	-.27 - .09	-.16 - .07	-.47 - -.11	

\*\*Correlation significant at the 0.01 level \*Correlation significant at the 0.05 level

### **3.6. Research question 2: Do the traumatic and centrality properties of shame memories predict the following internal experiences: shame, compassion and fears of compassion?**

Appendix O contains a glossary of terms relating to canonical correlation analysis (CCA)

#### 3.6.1 Data entry

The IES-R and CES-S were entered in Set 1 (i.e., SM properties) and the OAS2, SCS, CLSO-B, S-cS, FCS1, FCS2, and FCS3 were entered in Set 2 (i.e., internal experiences). The weighed sum of each of these sets are known as Canonical Variate-1 and Canonical Variate-2, respectively.

#### 3.6.2. Considerations

To ensure that the underlying assumptions were met, a number of issues were considered.

##### *6.5.2.1 Ratio of cases to predictor variables*

Based on triangulation of the techniques described in the Method chapter, 133 was deemed an adequate number of cases for the current study.

##### *6.5.2.2. Normality, linearity and homoscedasticity*

CCA does not require normally distributed variables, however, normality is desirable because it standardises a distribution to enable higher correlations. Multivariate normality is required for significance tests of each canonical function but the evaluation of multivariate normality can be difficult (Sherry & Hanson, 2005; Tabachnick & Fidell, 2007). Such tests are not readily available therefore prevailing guideline is to assess for univariate normality and make transformations if necessary (Hair, 2010). Refer to section 3.3 for decisions on data distribution.

CCA assumes linear relations among variables. If the canonical variates relate in a nonlinear manner, the relationship will not be reflected in the canonical correlation, additionally, homoscedasticity should be remedied if discovered

(Hair et al., 1998). These assumptions have been met for this data set - see section 6.7.2.3.

#### *6.5.2.3. Multicollinearity*

Multicollinearity confounds the ability of CCA to isolate the effect of any single variable, making interpretation less reliable. No multicollinearity was found for the current data set - see Section 6.7.2.3.

#### 3.6.4. Assessing the overall fit: significance and magnitude of canonical correlations and redundancy analysis

Wilks (1932) lambda was used for testing the null hypothesis that the canonical correlations were equal to zero. Only the first canonical correlation (i.e., Function 1) was statistically significant, Wilks's  $\lambda = .61$ ,  $F(14, 248) = 4.90$ ,  $p < .001$ . Function 2 did not explain a statistically significant amount of shared variance between the variable sets, Wilks's  $\lambda = .94$ ,  $F(6, 125) = .1.23$ ,  $p = .29$ .  $R$  for the first canonical correlation was .59 and it was .24 for the second. Squaring these values revealed that the first canonical correlation represented 35.01% of the overlapping variance between the canonical variates and the second represented 5.57%. Tabachnick and Fidell (2007) recommend only interpreting functions that reach statistical significance. As such, only Function 1 was interpreted.

Redundancy analysis (Stewart & Love, 1968) for Function 1 revealed that Canonical Variate-2 explains 25.6% of the variance in Canonical Variate-1 and Canonical Variate-1 explains 17% of the variance in Canonical Variate-2. Although Hair et al. (1998) suggest it is important to interpret these values, UNT (2016) cautions that redundancy coefficients are not truly part of the multivariate nature of the analysis in the sense they are unaffected by the inter-correlations of the variables being predicted and the analysis is not intended to optimize their value.

The results of these analysis suggest that when the traumatic and centrality properties of shame memories are collapsed into their canonical variate, and internal experiences (i.e., shame, compassion and fears of compassion) are collapsed into their canonical variate, the strength of the canonical correlation

between the two variates was .59 (i.e., a medium relationship). Furthermore, when the traumatic and centrality properties of shame memories are collapsed into their canonical variate, this variate predicts (i.e., explains 17% of the variance in) the internal experiences variate (i.e., shame, compassion and fears of compassion). Similarly, when the internal experiences variate (i.e., shame, compassion and fears of compassion) are collapsed into their canonical variate, this variate predicts (i.e., explains 25.6% of the variance in) the shame memory variate. The strength of the canonical correlation between the two variates was .59 (i.e., a medium relationship).

#### 3.6.5. Interpreting canonical variates

Table 5 reports canonical weights (standardised coefficients), canonical loadings (structure correlations), and canonical cross-loadings.

Standardised coefficients are similar to beta values in regression analysis.

Variables with larger weights contribute more to the canonical variates.

Variables with opposite signs display an inverse relationship with each other, whereas variables with weights of the same sign display direct relationships.

However, the same critiques associated with the interpretation of beta weights (e.g., small weights may suggest that the variable is irrelevant or that it has been partialled out of the association because of high multicollinearity) have been applied to interpreting the relative importance of a variable by its canonical weight, suggesting caution in using these values for interpretation. As such, canonical loadings are considered relatively more valid than weights for interpreting the canonical relationships (Hair et al., 1998). Canonical loadings and weights may vary amongst samples. This variability suggests that loadings, and the associated relationships, may be sample-specific, attributable to chance or extraneous factors (Lambert & Durand, 1975).

**Table 5 - Standardised coefficients, canonical loadings, squared structure coefficients and cross loadings**

	<b>Standardized canonical coefficients</b>	<b>Canonical loadings</b>	<b>Squared structure coefficients %</b>	<b>Canonical cross loadings</b>	<b>Canonical cross loadings %</b>
<b>Variate 1</b>					
IES-R	-.73	-.93	86.49	-.55	30.36
CES-S	-.42	-.72	51.84	-.46	21.07
<b>Variate 2</b>					
OAS-2	-.34	-.75	56.25	-.44	19.36
SCS	.04	.50	25	.3	8.7
CLSO-B	.16	.46	21.16	.27	7.02
S-cS	-.08	.55	30.25	.33	10.89
FCS-1	-.19	-.69	47.61	-.40	16
FCS-2	-.06	-.87	75.69	-.51	26.01
FCS-3	-.58	-.94	88.36	-.56	31.36

Figure 1 displays the canonical loadings for Function 1. Most researchers do not interpret loadings below .3 (Buchanan, 2015; Tabachnick & Fidell, 2007). However, Tabachnick and Fidell (2007, p. 587) also suggest that this interpretation is a “*matter of taste*” and point to factor analysis literature (Comrey & Lee, 1992) that suggests loadings in excess of:

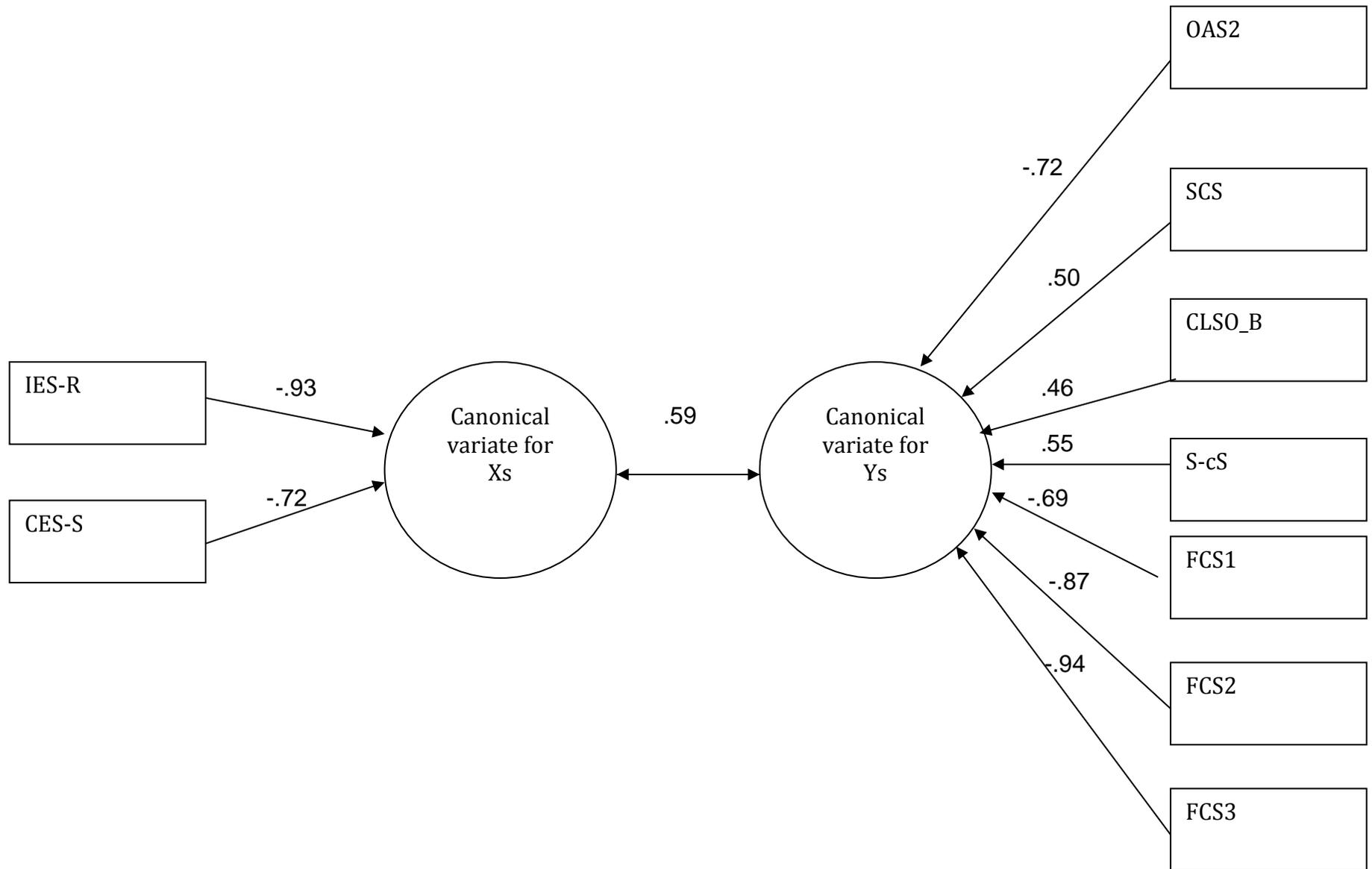
- .71 (50%) are considered excellent, which is the case for both the IES-R and CES-S in the SM variate (i.e., Canonical Variate-1) and the; FCS-3, FCS-2, and OAS-2 for the IE variate (i.e., Canonical Variate-2);
- .64 (40%) are considered very good, which is the case for the FCS-1 in the IE variate;
- .55 (30%) are considered good, which is not the case for any variable in either variate;
- .45 (20%) are considered fair, which is the case for the S-cS, SCS, and CLSO-B in the IE variate;
- .32 (10%) are considered poor, which is not the case for any variable in either canonical variate.

The Impact of Events Scale - Revised displayed the strongest relationship with the canonical variate for shame memories and the Fears of Compassion Scale - 3, Fears of Compassion Scale - 2, and Other as Shamer Scale - 2 exhibit the strongest relationships with the canonical variate for internal experiences in the current analysis.

Cross-loadings have been suggested as an alternative to canonical loadings (Bartlett, 1941). This involves correlating each of the DVs with the independent canonical variate, and vice versa. As such, the Impact of Events Scale - Revised is better predictor of internal experiences than the Centrality of Events Scale- short version.

#### 3.6.6. Sensitivity analysis

Validation of the CCA through sensitivity analysis of the IV canonical variate (Hair et al., 1998) was carried out. The CCA was rerun, first with one IV (i.e., CES-S or IES-R) deleted and then the other. Canonical loadings and canonical correlations remained stable, providing evidence for the validation of this model.



**Figure 1. Canonical Loadings for Function**

### **3.7. Research question 3a: What factors best predict the experience of motherhood?**

A multiple regression analysis was performed using the BaM-13 (experience of motherhood) as the criterion variable and the IES-R, CES-S, OAS-2, SCS, S-cS, CLSO-B, FCS-1, FCS-2 and FCS-3 as predictor variables.

#### 3.7.2. Considerations

To ensure that the underlying assumptions were met, a number of issues were considered.

##### *6.7.2.1. Ratio of cases to predictor variables*

Based on discussion in the Method chapter, the current study had 11 more cases than the required minimum of 122.

##### *6.7.2.3. Homoscedasticity, linearity and independent and normally distributed errors*

A graph plotting standardised residuals with standardised predicted values was evaluated. It revealed random and evenly dispersed points indicating that the assumptions of linearity and homoscedasticity have been met (Cohen & Cohen, 1983, Pedhazur, 1997). Likewise, the majority of points were within -2 and 2 standardised residuals from 0 and the K-S rejected the null hypothesis,  $D(131) = .05$ ,  $p = .2$ , suggesting a normal distribution. The Durbin-Watson (1951) statistic was used to test for serial correlations between errors. Values less than  $<1$  and  $>3$  are considered significantly different from 2, which is the ideal value. The current data met assumption of independent errors with a value of 1.92.

##### *6.7.2.3. Multicollinearity*

Bowerman and O'Connell (1990) suggest that if the average variance inflation factor is greater than 1, then multicollinearity may be influencing the model. The values for the current study ranged from 1.51 - 3.79. However, Myers' (1990) suggests that only values greater than 10 are concerning. Furthermore, Menard (1995) argues that tolerance values less than .01 are concerning, the current study found values ranging from .26 – 69.

### 3.7.3. Regression model

Table 6 displays the standardised regression coefficients ( $\beta$ ), bootstrapped significance values (p), CIs and SEs and bias for the regression model.  $R = .52$ , which was significantly different from zero,  $F(9, 123) = 5.03$ ,  $p < .001$ .  $R$  squared suggests that 26.9% the variability in the experience of motherhood was predicted by the predictor variables. The S-cS was the only significant predictor variable in the model,  $\beta = -.36$ ,  $t = -3.20$ ,  $p < 0.01$ , suggesting that high self-compassion predicts higher satisfaction with the experience of motherhood.

**Table 6 – Bootstrapped multiple regression analysis**

Variable	p	$\beta$	Bias	95% CI	SE beta
CES-S	.35	-.09	.01	-.22 - .10	.08
FCS-1	.48	.08	-.01	-.10 - .20	.08
FCS-2	.95	.01	.01	-.15 - .17	.08
FCS-3	.23	.18	-.00	-.07 - .22	.07
SCS	.47	.08	-.00	-.07 - .13	.05
OAS-2	.38	.11	-.01	-.18 - .36	.14
S-cS	.00	-.36	.08	-5.18- -.98	1.09
IES-R	.76	-.03	.02	-.55 - .48	.26
CLSO-B	.81	.02	-.04	-1.21 - 1.17	.62

#### *3.7.3.1. Outliers and influential cases*

Mahalanobis (1936) distances were scanned to identify values greater than 27.88 using the Barnett and Lewis (1978) guidelines. This revealed two cases exceeding that value. Cooks distance revealed that no cases were greater than 1 (Cook & Weisberg, 1982).

Field (2009) recommends no more than 5% of cases should have standardized residuals greater than 2. The current model revealed 4 cases, which were close to 2 (i.e.  $< 2.2$ ). He also recommends looking at the DFBeta statistic for values greater than 1 regarding influences: none were found.

The above analyses reveal conflicting results about the influence of specific cases on the overall model, Field (2009) suggests that if Cooks distance is within the suggested limit, it is not concerning. However, the regression model

was rerun without the two outliers identified by Mahalanobis distances and no improvement in model fit was revealed.

### *3.7.3.2 Cross-validation of regression model*

R squared depicts how much the variance in motherhood is accounted for by the model in the current sample and adjusted R squared using Wherry's (1931) formula depicts how much variance would be accounted for if derived from the population. However, this has been critiqued because it does not reveal anything about how well the regression model would predict a different set of data from the same population (Stevens, 1992). As such, the regression model was cross-validated using Stein's (1960) adjusted  $R^2$  to determine how well the model derived from the current sample might predict motherhood in different samples. This value produced a figure of 9% (see Appendix P).

## **3.8. Research question 3b: Are there factors that moderate this relationship?**

Based on the theoretical arguments for the impact of shame on motherhood, the following analyses explored whether shame had a moderating effect on the significant relationship reported between self-compassion (S-cS) and the experience of motherhood (BaM-13). As such, two hierarchical multiple regression analyses were conducted; one relating to internal shame and the other for external shame.

In the first model, the SCS (internal shame) and S-cS were entered. These variables accounted for a significant amount of variance in the BaM-13,  $R^2 = .23$ ,  $F(2, 130) = 19.55$ ,  $p < .001$ . To avoid potentially problematic high multicollinearity with the interaction term, the variables were centred and an interaction term between SCS and S-cS was created (Aiken & West, 1991). This interaction term was added to the regression model, which did not account for a significant proportion of the variance in the BAM-13,  $\Delta R^2 = .05$ ,  $\Delta F(1, 129) = 8.98$ ,  $p = .003$ ,  $\beta = .01$ ,  $t(129) = 1.88$ ,  $p = .06$ .

In the second model, the OAS-2 (external shame) and S-cS were entered.

These variables accounted for a significant amount of variance in the BaM-13 [ $R^2 = .24$ ,  $F(2, 130) = 20.39$ ,  $p < .001$ ]. Similar procedures to those employed for external shame were carried out. When the interaction term was added to the regression model, it did not account for a significant proportion of the variance in the BAM-13,  $\Delta R^2 = .03$ ,  $\Delta F(1, 129) = 5.18$ ,  $p = .03$ ,  $\beta = -.08$ ,  $t(129) = -1.62$ ,  $p = .11$ .

These results suggest that internal and external shame did not act as moderators in the relationship between self-compassion and the experience of motherhood.

## **4. DISCUSSION**

### **4.1. Overview**

The aims of the study and summary of findings are provided, followed by a discussion of the sample characteristics. Results of each research question are then considered in the context of existing literature. This is followed by a discussion of the implications of these findings for practice. Strengths, limitations and directions for future research are also outlined. Additionally, a reflective account by the researcher is provided and the final summary and conclusions are elucidated.

### **4.2. Aims and summary of findings**

This study aimed to explore relations between specific characteristics of shame memories (SM), experiences of shame, compassion and fears of compassion in a sample of first time mothers in the UK and Ireland. Three research questions guided this exploration. Below is a commentary on the sample characteristics and a discussion of the findings. Canonical correlation analyses revealed that the shame traumatic and centrality features of SMs involving attachment figures were predictive of current experiences of shame, compassion and fears of compassion in this sample; however, further exploration of these relationships is warranted to identify the pathways involved. Of particular importance is the finding that self-compassion was found to be a significant predictor of the experience of motherhood.

### **4.3. Sample characteristics**

The demographic variables relating to individuals that completed the study were compared with responses from participants that did not complete the study. Visual observation of the frequency of selected categories revealed similar responses across all demographic categories; indicating that there was little

difference across the demographic indicators elicited in the study when comparing 'completers' with 'non-completers'. However, these differences were not tested for statistical significance, rendering this finding tentative. Furthermore, demographic data was only available for 59.9% of 'non-completers'. It is possible that if full data was available, significant differences may have existed between 'completers' and 'non-completers'.

The majority of complete responders in the current study identified as White British. This finding fits with much of the mothering research reviewed in the Introduction chapter, where authors commented on the largely Caucasian make-up of their samples (e.g., Liss et al., 2013; Thompson et al., 2015); indicating a gap in the research base and a potential bias in study design. Future research would benefit from consideration of the potential reasons for poor uptake of such studies from women who identify with ethnic backgrounds other than White and design studies that overcome these issues. Perhaps qualitative research would shed light on the particular barriers involved. For example, it is possible that the concepts under investigation do not have the same relevance to mothers from particular ethnic backgrounds and/or are constructed in a different way. For example, languages of collectivist cultures may not have specific words for particular aspects of experience; emotions may be expressed more in terms of relationships to family, group or the community (Mesquita, 2001; Mesquita & Walker, 2003).

The most frequently selected age group by participants in the present study was 30-34 years (41.4%), which is older than the average age of first time mothers in England and Wales in 2013 (i.e., 28.3 years; Office of National Statistics [ONS], 2016a). Only four participants stated that they were not in a relationship at the time of participation. The ONS (2016b) reported that there were almost 1.9 million lone parents with dependent children in the UK in 2013, of which 91% were female. Although it is not possible to compare directly, it seems lone parents may have been under-represented in this sample.

Six participants did not give birth to the infant(s) in question, suggesting that it is important to consider alternative routes to motherhood in this type of research. However, further investigation as to whether the various routes to motherhood

differ or converge in relation to the study variables may be warranted. Almost half of the participants had experienced distress for which they sought professional support at some stage in their lives, while 16 were currently seeking support. This may point a selection bias in that participants who have engaged with concepts of mental health and wellbeing opted to take in the study.

The fact that participants comprised a convenience sample of computer literate, predominantly White British women, who were in a relationship and in their 30s suggest caution should be applied in extrapolating the results to the general population of first time mothers. However, the findings detailed here may be considered representative of experiences for this cohort of first time mothers.

#### **4.4. Research question 1: What are the characteristics of shame memories?**

This study profiled the SMs of first time mothers by detailing the age in years at the time of the memory and the type of shame situation recalled. It also examined the autobiographical, traumatic and centrality features of the memory.

##### 4.4.1. Details of shame situation recalled

The most frequently selected category for the age when the shame situation occurred was 7-10 years ( $n = 45$ ). Matos and Pinto-Gouveia (2014) who also investigated SMs with attachment figures found a mean age of 11.5 years (SD = 4.41) in their study. Using elaborated categories from the Shame Experiences Interview (SEI; Matos & Pinto-Gouveia, 2006), the current study reported a different pattern of responding to participants in the Matos and Pinto-Gouveia (2014) study, where the complete SEI was used to investigate SMs involving attachment figures with a general population sample. However, these differences were not tested for statistical significance meaning comparisons are tentative. Nonetheless, differences may have arisen due to inherent disparities between the populations under investigation i.e., general population compared with first time mothers. However, differences may also be due to methodological divergence, in that; participants self-selected the category of shame experience

in the current study compared with researcher coding in the Matos and Pinto-Gouveia (2014) study.

'*Reflected shame*' represented the second most frequently selected category in the Portuguese research (23%,  $n = 49$ ), whereas, this category was selected by only one participant in the present study. A high proportion of participants in each study selected '*criticism by an attachment figure*' (current study:  $n = 28$ , 21.1%; Portuguese sample: 31.5%,  $n = 67$ ). Twenty-four mothers (18.1%) in the current study recalled a SM involving abuse (i.e., physical, sexual, emotional). These findings add support to literature that identifies experiences of rejection, criticism, neglect, abuse, or bullying as potentially shaming (Andrews, 2002; Claesson & Sohlberg, 2002; Gilbert, 2007b; Gilbert et al., 1996; Gilbert & Irons, 2008; Gilbert & Gerlsma, 1999; Schore, 2001; Webb et al., 2007).

Although not tested for statistical significance, the proportion of participants who recalled sexual abuse memories was slightly higher in the current study ( $n = 9$ , 6.8%) compared with the Portuguese study ( $n = 12$ , 5.6%), perhaps lending support to the literature that suggests child birth, breastfeeding and motherhood can trigger such memories (Klingelhafer, 2007; Musick, 1995; Simkin, 2010; Simkin & Klaus, 2004). Further research could explore whether these specific types of memories had more traumatic features in light of the reports in this literature that suggest flashbacks may be common.

#### 4.4.2. Autobiographical memory properties

Table 2 displays descriptive statistics for the Autobiographical Memory Questionnaire (AMQ; Rubin, Burt, et al., 2003; Rubin, Schrauf, et al., 2003; Sheen et al., 2001) items in the current study. Matos and Pinto-Gouveia (2016) is the only known study that details AM properties of SMs; they did so with a general population sample. When compared with the Matos and Pinto-Gouveia (2016) study, the majority of AMQ items in the current study presented slightly higher mean scores: vividness of visual ('*see*'  $M = 4.84$ ,  $SD = 1.51$  compared with  $M = 4.55$ ,  $SD = 1.64$ ), and auditory imagery ('*hear*'  $M = 4.35$ ,  $SD = 1.72$  compared with  $M = 3.94$ ,  $SD = 1.68$ ), increased language components ('*talk*' [ $M = 4.25$ ,  $SD = 1.85$  compared with  $M = 3.60$ ,  $SD = 1.63$ ] and '*in words*' [ $M = 3.94$ ,  $SD = 1.86$  compared with,  $M = 3.86$ ,  $SD 1.60$ ]), elevated '*narrative*' coherence

( $M = 4.44$ ,  $SD = 1.97$ , compared with  $M = 4.18$ ,  $SD = 1.58$ ), enhanced reliving of 'emotions' ( $M = 4.78$ ,  $SD = 1.64$  compared with  $M = 4.01$ ,  $SD = 1.69$ ), greater 'importance' ( $M = 4.41$ ,  $SD = 1.81$  compared with  $M = 3.98$ ,  $SD = 1.71$ ), and stronger belief in the memory ('testify';  $M = 4.69$ ,  $SD = 1.89$  compared with  $M = 4.58$ ,  $SD = 1.71$ ). Scores were lower in the current study for the following indices: 'relieving' [ $M = 4.12$ ,  $SD = 1.68$  compared with  $M = 4.27$ ,  $SD = 1.44$ ], 'back in time' [ $M = 3.96$ ,  $SD = 1.96$  compared with  $M = 4.01$ ,  $SD = 1.59$ ] 'rehearsal' [ $M = 3.87$ ,  $SD = 1.82$  compared with  $M = 4.70$ ,  $SD = 1.89$ ] and vividness of 'spatial' imagery ( $M = 4.76$ ,  $SD = 1.45$  compared with  $M = 4.54$ ,  $SD = 1.75$ ).

It must be noted that these differences were not tested for statistical significance and indeed the SMs in the Matos and Pinto-Gouveia (2016) study were not distinguished specifically for memories with attachment figures making comparisons tentative. Future research would benefit from testing these differences statistically before making definitive claims towards difference. Nonetheless, a possible explanation for the higher means may be related to the idea that becoming a mother heightens/intensifies certain components of mothers' memories of their own experience of being parented, thereby supporting literature which suggests that parenting and carrying out mothering activities like breastfeeding can activate such memories (e.g., Klingelhafer, 2007).

When combined 'criticism by an attachment figure' and 'negative comments about personal attributes' were the categories of shame event selected by the highest proportion of participants (35.4%) in the current study. Considering the high relevance of language in these shame events (i.e., being criticised/ridiculed etc.), this may account for the higher mean scores relating to the linguistic components of the AMQ 'in words' and 'talk' than those reported in AM research (Rubin et al., 2008; Rubin, Schrauf et al., 2003) where participants recalled events based on neutral or emotionally charged cue words. Although caution must be exercised when interpreting differences as they were not tested for statistical significance. Matos and Pinto-Gouveia (2016) found that apart from reliving the emotions felt in the recalled shame episode, it is the vividness of hearing the memory in the mind and recalling the words used by others to label the self, for example, that is key to the sense of travelling back in time and

reliving the shame experience. Future research would benefit from examining the interrelationships between the AMQ items with this cohort in order to identify the properties that affect how mothers experience and act on the SM, and also how it becomes integrated in their cognitive networks and influences subsequent processing. This could illuminate the pathways with which past shame experiences become integrated in mother's AM and become relevant in everyday processing of events as they negotiate their new motherhood role.

The AMQ item '*importance*' investigates the importance of the remembered event (Pillemer, 1998) as an anchor, critical juncture, or turning point in one's life. This is analogous to the centrality of event theory outlined by Berntsen and Rubin (2006, 2007), which was investigated in the current study in relation to mothers SMs using the Centrality of Events Scale-Short Version (CES-S; Berntsen & Rubin, 2006). As such, one would expect a high correlation between this AMQ item and the CES-S. Matos and Pinto-Gouveia (2016) found a positive moderate correlation ( $r = .41$ ) between importance and the CES, which was amongst the highest of the correlation between AMQ items and the CES in their study. The next phase of the current study aims to investigate this relationship.

#### 4.4.3. Centrality memory features

When averaged by the number of items, the CES-S scores for females from the general population reported by Pinto-Gouveia and Matos (2011;  $M = 43.7$ ,  $SD = 18.31$ , 20-items) were lower than those found in the current study ( $M = 18.95$ ,  $SD = 8.14$ , 8-items). This is a similar pattern to those found in mixed-sex research from the general population where the SMs elicited were specifically involving attachment figures (Matos & Pinto-Gouveia, 2014; CES  $M = 49.25$ ,  $SD = 19.17$ , 20-items). However, it must be noted that these differences were not tested for statistical significance and so conclusions are tentative.

Nonetheless, the data gathered in the current study support Berntsen and Rubin's (2006, 2007) centrality of event theory, which posits that memories of negative emotional events can become central to one's life story, and identity acting as reference points for inferences made in the everyday and for generating future expectations. Furthermore, this data builds on the findings of

previous SM research (e.g., Pinto-Gouveia & Matos, 2011) with general population samples, which suggests shame experiences can become key to self-identity and narratives; such that the current study provides evidence of this process in a cohort of first time mothers. This may mean that mothers who have had experiences of being criticised, for example, as a young person may be more likely to experience similar current and future events as shaming and in the present context, in relation to their mothering abilities.

The relatively higher scores reported in the current study suggest that the SMs recalled by mothers were accessible memories that helped to anchor and stabilise their conceptions of themselves and possibly more so than those reported by other SM research. A large body of evidence supports the connection between how parents experienced their own upbringing and how they parent their children (Belsky, Conger, & Capaldi, 2009; Puttallaz, Constanzo, Grimes, & Sherman, 1998; Van Ijzendoorn, 1992). The current results may lend more support for the idea that becoming a mother makes one's own attachment memories more accessible and available as reference points guiding how one parent their own children and their motherhood narratives.

In addition, Table 4 reveals that the centrality of SMs for first time mothers were positively and significantly associated with both internal shame and external shame (see Section 4.5.1. for further discussion). Also of note is that the current study used the short version of the CES, suggesting that the short version for this scale may be just as sensitive to SM centrality features as the longer version.

#### 4.4.4. Traumatic memory features

The Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997) mean score for female participants from the general population reported by Matos and Pinto-Gouveia (2010;  $M = 3.79$ ,  $SD = 2.64$ ), was higher than that found with the current sample ( $M = 2.52$ ,  $SD = 2.69$ ). This is a similar pattern to mixed sex-research with the general population where the SMs elicited were specifically involving attachment figures ( $M = 3.65$ ,  $SD = 2.55$  [Matos, Pinto-Gouveia, & Costa, 2011];  $M = 2.97$ ,  $SD = 1.98$  [Pinto-Gouveia & Matos, 2014]). The lower scores suggest that the SMs of first time mothers elicited lower avoidance,

intrusions, and hyperarousal responses than previous SM research. However, it must be noted that these differences were not tested for statistical significance. Nonetheless, the lower scores may be related to the differing instructions provided to participants in previous research than in the current study. The previous SM research asked participants to answer the IES-R in relation to the course of their lifetime. However, the current study retained the original wording, which invited participants to respond in relation to the past week. This, taken together with the fact that the centrality and AM properties of the SMs were higher than previous SM research may suggest that the current IES-R scores may not be a true reflection of the traumatic memory properties of mothers SMs throughout their lifetime, or indeed since they became a mother. Further research could benefit from instructing participants to respond to the IES-R in relation to the time since becoming a mother.

Nonetheless, the current scores are worth noting and suggest that the shame episodes recalled may have operated as a threat activating memory, revealing traumatic memory characteristics for this cohort within the week that they completed the survey. In addition, Table 4 reveals that the traumatic features of SMs for first time mothers were positively and significantly associated with both internal shame and external shame (see Section 4.5.1. for further discussion).

#### 4.4.5. Traumatic, centrality & autobiographical memory properties

Contrary to evidence from AM literature (Rubin, Schrauf, et al., 2003; Talarico et al., 2004), the AM item '*rehearsal*' was found to be negatively associated with the traumatic and centrality features of the SMs in the Matos and Pinto-Gouveia (2016) study. In other words, the less the SM was talked or thought about, the more it acted as a traumatic and central memory. This makes sense when considering shame is associated with secrecy and non-disclosure (Gilbert, 1998; MacDonald, 1998), and talking about it typically activates and intensifies the same painful affects (Gilbert, 1998, 2002; Lewis, 1992, 2003; Retzinger, 1998; Tangney & Dearing, 2002). As such, individuals may avoid the activation of SMs, which in turn may compromise the reconstruction of the associated meaning and prevent shame from being repaired. This may then facilitate such experiences becoming key to personal identity and life story. By forming highly available reference points in an individual's cognitive structures, these

memories may become integrated in one's AM, with greater potential to create intrusions, arousal and avoidance symptoms. The mothering research might benefit from comparisons between the AM properties and the centrality and traumatic memory features to examine whether similar patterns emerge, particularly in light of the tentative conclusion that rehearsal items displayed even lower mean scores in the current study compared with previous research and centrality scores appeared higher.

Furthermore, complex mediational chain was found by Matos and Pinto-Gouveia (2016) in which '*importance*', '*emotions*' and '*rehearsal*' properties of shame AM impact upon external and internal shame fully through their effects upon traumatic and central SM features. In turn, these shame AM properties impact upon anxiety, depression, and stress fully through their direct effect upon traumatic and central SM features and through their indirect effect upon external and internal shame. The next phase of this research could benefit from replicating the analysis carried out by Matos and Pinto-Gouveia (2016) with the current data to shed light on how mothers AMs are structured and how they impact upon shame and the experience of motherhood.

#### **4.5. Research question 2: Do the properties of shame memories predict the following internal experiences: shame, compassion and fears of compassion?**

This study investigated whether the SMs predicted current experiences of shame (internal and external), compassion (self-compassion and compassionate love for baby), and fears of compassion (fear of compassion for the self, for others and receiving compassion from others). The following section explores the results for each of these variables individually and then considers their relations with SMs.

##### **4.5.1. Shame**

The results discussed above suggest that shame may be experienced in a variety of situations, all of which entail a threat to self-identity and social existence and loss of attractiveness in the eyes of others. This fits with the

biopsychosocial model of shame (Gilbert, 1998, 2002, 2007a). Within family contexts, experiences of criticism, hostility, abuse or neglect from parents lay down affect-based memories of others as threatening and of the self as unattractive, undesirable or unlovable. These experiences influence how individuals perceive themselves as existing in the minds of others (external shame) and self-evaluations (internal shame).

As previously mentioned, Blum (2008) suggests that current methodologies for exploring shame are fraught with difficulties and that many of these problems can be traced to differences in definitions, approaches, and measurement methods, rendering comparative analysis futile. The current study does not bypass all of these problems, yet it attempted to avoid confounding with guilt by using measures that tapped into global evaluations of the self rather than transgressions about specific behaviour (i.e., guilt) and indeed, it did this within Gilbert's (1998, 2003) theoretical framework upon which many studies have been conducted, making comparison between studies possible at a conceptual/theoretical level.

#### *4.5.1.1 External shame*

External shame, as measured by the Other as Shamer Scale-2 (OAS-2; Matos et al., 2015) was higher in the current study than previous shame research. The only known study using the OAS-2 was the original validation study, which reported  $M = 7.29$ ,  $SD = 3.88$  (Matos et al., 2015) in a general population sample, compared with  $M = 16.07$ ,  $SD = 6.9$  in the current study. In order to compare with studies that used the longer version, mean scores were divided by the number of items in each version of the scale. This also revealed higher scores in the current study ( $M = 2.01$ ) compared with previous SM research ( $M = 1.08$  [Matos & Pinto-Gouveia, 2010],  $M = 1.19$  [Matos, Pinto-Gouveia, & Duarte, 2013]) and other shame research with student samples ( $M = 1.25$ , Gilbert, 2000). External shame can be a distressing social experience associated with the perception that one is being evaluated as inferior or unattractive by others, and that might produce rejection or put down (Gilbert, 2002; Kaufman, 1989). The presence of external shame with this cohort fits with evidence from the current literature review that suggests breastfeeding and non-breastfeeding mothers may experience judgment and disapproval in health

visits and community contexts, resulting in a sense of failure, inadequacy and isolation (Thomson et al., 2015). Moreover, negative judgments in relation to infant feeding methods may lead to reduced confidence and maternal wellbeing (Taylor & Wallace 2012; Thomson & Dykes 2011).

#### *4.5.5.2 Internal shame*

Internal shame was assessed in the current study with the Social Comparison Scale (SCS; Allan & Gilbert, 1995), where higher scores suggest more favorable self to other comparisons. Scores for the SCS in the current study ( $M = 52.58$ ,  $SD = 15.95$ ) compare with previous SCS research with students ( $M = 64.67$ ,  $SD = 11.65$  [Allan & Gilbert, 1995];  $M = 64.56$ ,  $SD = 10.34$  [Bellew, Gilbert, Mills, McEwan, & Gale, 2006];  $M = 59.58$ ,  $SD = 14.96$  [Gilbert, 2000];  $M = 60.77$ ,  $SD = 13.46$  [Gilbert & Miles, 2000]), and clinical populations [ $M = 30.98$ ,  $SD = 13.66$  [Gilbert, Irons, Olsen, Gilbert, & McEwan, 2006];  $M = 40.63$ ,  $SD = 17.46$  [Gilbert, 2000];  $M = 38.90$ ,  $SD = 13.47$  [Allan & Gilbert, 1995]], in that first time mothers report less favorable comparisons with others than student populations and they report more favorable comparisons than clinical samples. However, these differences were not tested for statistical significance. Internal shame can be a painful social experience that emerges as a private feeling related to one's own negative personal judgments of their attributes, characteristics, feelings and fantasises (Cook, 1996; Gilbert, 2003). The presence of internal shame with this cohort fits with reports from the literature review suggesting that mothers internalise the judgments of others (e.g., Liss et al., 2013; Thomson et al., 2015).

These findings related to the presence of internal and external shame with this cohort also fit with findings from the literature that conceptualise shame as stemming from a discrepancy between the ideal sense of who they think they should be as a mother and their actual sense of self in this role (Adams, 2015; Liss et al., 2013). The higher scores relating to external shame compared with internal shame in the current study may be particularly important when one considers Liss et al.'s (2013) finding that fear of negative evaluation moderated the relationship between self-discrepancy and shame. Similarly, Scarnier et al., (2009) reported that feelings of public exposure emphasised the perception that the mothers were flawed as a person or a parent. These findings suggest that

the presence of an external observer who may judge mothers is particularly important for mother's experience of shame.

Table 2 depicts how emotional adjustment to the experience of motherhood (measured by the BaM-13 [Matthey, 2001]) is positively and significantly associated with both internal shame and external shame. The same is to say that as levels of internal and external shame increased, so too did difficulties adjusting to the motherhood role. The presence of internal and external shame and the significant relationships between shame and emotional adjustment to motherhood warrants attention when considering the link between shame and mental health difficulties (e.g., Andrews, 1995; Andrews et al., 2002; Cheung et al., 2004; Irons & Gilbert, 2005; Gilbert, 2000; Lee, Scragg, & Turner, 2001; Tangney, Wagner, & Gramzow, 1992, Thompson & Berenbaum, 2006). Perinatal depression is a major health risk for mothers and babies (Alder, Fink, Bitzer, Hösli, & Holzgreve, 2007), which makes identification of risk factors an important public health issue (Henshaw, Fried, Teeters, & Siskind, 2014).

Further elaboration of how shame develops could also be beneficial. Research (Avison 1995; Cassidy & Davies 2003; Rosenfield 1989; Ross 2000) has suggested that instead of experiencing their perceived shortcomings as externally mandated, women perceive them as personal failures, which often occur in conjunction with high levels of distress and low perceived control. As such, it is suggested that mothers experience shame when they are unable to conform to standards they have adopted for themselves and that have been dictated by societal expectations (Sutherland, 2010). However, further investigation of the psychological and societal factors involved is needed.

#### *4.5.5.2 Shame memories and shame*

The canonical correlation analysis (CCA) revealed that the external and internal shame related to the overall SM construct, with SMs explaining 19.36% and 8.7% of the variance in these variables respectively. A similar pattern is observed when comparing the correlations found between SM variables individually (i.e., traumatic and centrality features) with internal and external shame, such that the relationships were stronger between the SM variable and external shame in the current cohort, both when considered individually and

when collapsed into one construct.

These results suggest that mothers whose SMs act as salient reference points for the organisation of autobiographical knowledge tend to report more shame in adulthood. As such, mothers whose SM function as turning points in their life story, as important elements of their personal identity and as reference points to everyday reasoning, tend judge themselves negatively (e.g., as inferior or inadequate) and tend to believe they exist negatively in the minds of others (e.g., as undesirable or inferior). Similarly, mothers whose SMs operate as traumatic memories with its characteristics of intrusion, avoidance and hyperarousal tend perceive themselves negatively and tend to believe they exist negatively in the minds of others.

These findings are consistent with the body of SM research stemming from Portugal that was conducted with general population or student samples (e.g., Matos & Pinto-Gouveia, 2014; Pinto-Gouveia & Matos, 2011) and other studies that have found associations between shame in adulthood and memories of negative early experiences of and memories of early experiences of put-down, indifference, neglect, criticism, rejection or abuse to shame feelings in adulthood (Andrews, 2002; Claesson & Sohlberg, 2002; Gilbert et al., 1996; Gilbert et al., 2003; Gilbert & Irons, 2009; Schore, 2001). Furthermore, this data sustain the theoretical claims that early shame experiences are stored as emotional memories in AM and can then become the foundations for negative beliefs about the self and increase proneness to shame in adulthood (Gilbert, 2003; Lewis, 1992; Mikulincer & Shaver, 2005).

Contrary to previous research (Matos, Pinto-Gouveia, & Duarte, 2013), Matos and Pinto-Gouveia (2016) found that centrality of the SM was not significantly associated with internal shame when all variables were considered simultaneously in their path model. The authors speculate that this may mean that SMs that become central to life story and identity are particularly related to a sense existing negatively in the mind of the others (i.e., external shame). However, they point to shame and attachment theorists (Bowlby, 1969/1982; Gilbert, 1998, 2002; Kaufman, 1989) who note that the way one experiences themselves, derives predominately from how one feels they exist for others and

that this co-construction of the self is linked to experiences of having the negative emotions of others directed at them, laying down emotional memories of how others respond to them and anchoring self-perceptions (Baldwin, 1997; Gilbert, 2003, 2007). As such, they point to a methodological limitation that may underlie their finding; such that the measure of internal shame they employed was not designed to assess negative self-evaluations and that previous findings (e.g., Matos, Pinto-Gouveia, & Duarte, 2013) were based on responses to the Internalized Shame Scale (ISS; Cook, 1994, 2001), specifically developed to internal shame indicating that comparisons may not be reliable. Similarly, although the Social Comparison Scale (SCS; Allan & Gilbert, 1995) used to assess internal shame in the current study was designed to assess self-evaluations, relative to other people, it is more specifically designed to assess perceptions of social ranking and it lacks specificity to motherhood. As such, comparisons may not be reliable. Future studies would benefit from clarifying these inconsistencies. For example, replicating this study using the ISS.

#### 4.5.2. Compassion

Rearing interactions characterised by shame, neglect and fear of withdrawal of love, may over stimulate brain pathways that mediate the threat system leading to more readily triggered and intense negative affect and defensive strategies, such as depression (Matos & Pinto-Gouveia, 2014; Perry, Pollard, Blakley, Baker, & Vigilante, 1995). Simultaneously, one's ability to feel safe and connected to others, and modulate distress via self-soothing may be undermined for individuals that grow up in such adverse environments (Gilbert, 2009b; Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006). The current study aimed to elaborate compassion and fears of compassion in first time mothers and investigate for the first known time whether early experiences of shaming display associations with compassion, which has been conceptualised as an emotional regulation capacity, and/or fears of compassion in adulthood.

##### *4.5.2.1. Self-compassion*

Self-compassion scores as measured by the Self-compassion Scale (S-cS; Neff, 2003b) in the current study ( $M = 2.49$ ,  $SD = .70$ ) were lower than those reported by Woekel and Ebbeck (2013;  $M = 3.28$ ,  $SD = 0.67$ ) in the US who investigated mothers bodies 1-10 months post partum and were lower than

Perez-Blasco et al. (2013; intervention group pre scores:  $M = 3.11$ ,  $SD = .38$ , control group pre scores:  $M = 3.31$ ,  $SD = .69$ ) who studied breast feeding mothers in Spain, and also lower than Neff and Faso (2015;  $M = 3.11$ ,  $SD = .75$ ) who investigated parents of children on the autistic spectrum in the US. It must be noted however, that these comparisons were not tested for statistical significance. Nonetheless these differences may suggest that mothers in the current study exhibited less kindness to themselves in instances of perceived inadequacy, failure, or suffering than mothers in the other studies. Self-compassion and its relevance to the experience of motherhood is elaborated in Section 4.6. Future research would benefit from examining each subscale of the S-cS to illuminate which element of self-compassion (i.e., mindfulness, kindness, common humanity) mothers find most difficult.

The correlational analysis (see Table 4) revealed that self-compassion showed significant positive associations with internal and external shame, such that as levels of shame increased, self-compassion decreased. This is consistent with previous general population research into eating symptomatology, which revealed that self-compassion was negatively associated with internal (Barrow, 2007) and external shame (Barrow, 2007; Ferreira, Pinto-Gouveia, & Duarte, 2013). Furthermore, Mosewich, Kowalski, Sabiston, Sedgwick and Tracy (2011) found that self-compassion was negatively related to shame-proneness in young female athletes.

These results suggest that mothers who tended to perceive themselves as flawed and inadequate and believe that others also judge negatively, also tended to be less mindful of their difficult experiences and approach themselves with an attitude of kindness rather than judgment. Future research would benefit from examining each subscale of the S-cS to illuminate which element of self-compassion is most related to internal and external shame. For example, one might expect that there would be high correlations between the subscales related to self-judgments and internal shame. Considering the stresses associated with the transition to motherhood (Nyström & Öhring, 2004) and the presence of shame in the current sample, it suggests that these mothers may have been experiencing distress with decreased self-soothing resources.

However, investigations were limited to compassion and so mothers may be using other emotional regulation strategies.

#### *4.5.2.2. Compassionate love for baby*

Compassionate love for baby was assessed in the current study using the Compassionate Love Scale (CLSO-B; Sprecher & Fehr, 2005). Scores were negatively skewed towards mothers having high compassionate love for their baby in the current study. This supports claims from an evolutionary perspective that the suffering of vulnerable individuals especially crying babies, is a potent elicitor of compassion (Zahn-Waxler, Friedman, & Cummins, 1983). However, Wray-Lake et al. (2012) comment that given its social desirability, compassion may be highly endorsed. Nonetheless, it is important to note that there was a spread of scores suggesting that some mothers in the current study found it difficult to adopt this compassionate stance towards their baby. Furthermore, questions have been raised about the content validity of this scale because three items include the word 'compassion' or 'compassionate love', which requires respondents to define these concepts themselves. Additionally, not all items on the scale relate to suffering and debate exists whether these items may in fact be assessing dimensions of empathy and kindness instead (Strauss, Lever Taylor, Gu, Kuyken, Baer, Jones, et al., 2016).

Only one other study was found in which this scale was employed with a child as the object of compassionate love, unfortunately this study did not report the means scores for comparison (Miller et al., 2015). However, results revealed that compassionate love for their young child appeared to help mothers who experienced strong physiological arousal during challenging parenting situations avoid stress-induced adverse parenting. The high scores found in this study may reflect similar advantages for first time mothers, though further research is needed to test this empirically.

Compassionate love for baby showed a low but significant positive correlation with internal but not external shame in the current study (see Table 4), which suggests that as internal shame increased compassionate love for baby decreased. This means that mothers who judged themselves negative as inadequate or flawed also tended to show less compassionate love for their

baby, whereas this relationship was not significant for mothers who think others judge them negatively. Perhaps there is a sense of internal shame related to not having compassionate feelings for their baby. However, future research would need to investigate this before such conclusions could be drawn.

#### *4.5.2.3. Shame memories and compassion*

The CCA results suggest that self-compassion and compassionate love for baby relate to the SM canonical variate with SMs explaining 10.89% and 7.02% of the variance in these variables respectively. These were amongst the lowest variances explained by the SM variate, suggesting that SMs are not as strong predictors of compassion as they are with the other internal experiences examined. Similarly, correlational analysis revealed only a significant relationship between traumatic and centrality memory properties and self-compassion, whereas this relationship was not significant for compassionate love for baby. Self-compassion was found to moderate the impact of shame traumatic and centrality features on eating 'psychopathology' (Ferreira, Matos, Duarte & Pinto-Gouveia, 2015). It is possible that the weak relationships revealed by the CCA and absence of significant correlations in the current study may suggest that compassion has moderating effects on the relationship between SMs and motherhood, for example. Further analysis would be necessary to test this.

Furthermore, early positive affiliative interactions, especially those within the family where a child experiences being loved, accepted, valued and cared for, foster feelings of safeness. This stimulates adaptive physiological and emotional regulation, and offers important coping resources to deal with adversity (Caccioppo et al., 2000; Gilbert, 2005, 2010; Masten, 2001; Schore, 1994). Evidence suggest that memories of experiencing safeness, warmth and nurture during childhood are related to wellbeing and health, heightened self-accepting and nurturing abilities, and protection against mental health problems, such as depression (Cacioppo et al., 2000; Cheng & Furnham, 2004; DeHart, Pelham & Tennen, 2006; Gilbert et al., 2006; Mikulincer & Shaver, 2004; Schore, 1994; Richter, Gilbert & McEwan, 2009). Future mothering research might benefit from incorporating memories of safeness and warmth into their investigations.

#### 4.5.3. Fears of compassion

There are many reasons why people can fear or block compassion. One reason is associated with the view that compassion is a weakness or indulgence. Other reasons by might be related to the fact that individuals who have experienced abuse and neglect may have these memories reactivated by experiences of kindness. With compassion, the attachment system becomes stimulated and the memories coded there get triggered (Gilbert, McEwan, Catarino, & Baião, 2014). The current study is the first known study to examine relations between SMs and fears of compassion.

##### *4.5.3.1. Fear of expressing compassion for others*

Mean scores for fear of extending compassion to others, as measured by the Fear of Compassion Scale-1 (FCS-1; Gilbert, McEwan, Matos et al., 2011) in the current study ( $M = 16.03$ ,  $SD = 8.14$ ) were lower than the original validation study with students ( $M = 21.18$ ,  $SD = 6.71$ ). However, these differences were not tested for statistical significance. In the original study, fear of being compassionate to others was significantly associated with insecure attachment styles. Insecure attachment is related to difficulties with empathic engagement and abilities to effectively care for others (Mikulincer et al., 2005). These findings may fit with the current study where there was a significant correlation between fear of extending compassion towards others and compassionate love for baby (see Table 4) in that as fears of expressing compassion increased, compassionate love for baby decreased. Future research might benefit from investigating the mechanisms and pathways involved.

##### *4.5.3.2. Fear of receiving compassion from others and the self*

Fears of compassion for the self as measured by the Fear of Compassion Scale-3 (FCS-3 [Gilbert, McEwan, Matos et al., 2011];  $M = 17.60$ ,  $SD = 13.74$ ) and fear of receiving compassion from others as measured by the Fear of Compassion Scale-2 (FCS-2 [Gilbert, McEwan, Matos et al., 2011];  $M = 17.8$ ,  $SD = 12.14$ ) were higher in the present study when compared with the original study with students ( $M = 16.12$ ,  $SD = 10.38$  and  $M = 15.78$ ,  $SD = 7.81$  respectively [Gilbert, McEwan, Matos et al., 2011]). However, these differences were not tested for statistical significance. The original study suggests that correlational findings between these scales (which was also present in the

current study) may reflect difficulties with experiencing affiliative emotions in general. Fear of receiving compassion from others was associated with stress, self-criticism, insecure attachment, depression, and anxiety (Gilbert, McEwan, Matos et al., 2011). These fears mean that people may actively resist compassionate experiences or behaviours. Increasing this aspect of compassion may be beneficial to assist in enhancing relationships and social connectedness (Jazaieri et al., 2013), which may be particularly important for mothers who report being isolated.

#### *4.5.3.3. Shame memories and fears of compassion*

This is the first known study that compared the traumatic and centrality of SMs with fears of compassion. Results revealed that the traumatic and centrality of SMs for first time mothers were positively and significantly associated with fears of compassion in all directions and most significantly with fear of self-compassion (see Table 4). Additionally, the CCA revealed relationships between the SMs variate and the FCSs, which were amongst the highest of the variances predicted in the model. Fear of self-compassion was the highest (31.36%) followed by fear of receiving compassion from others (26.01%). This is an important finding and suggests that memories from childhood that form central reference points to life story and identity and elicit traumatic properties may be implicated in the development of fears of affiliative emotions.

These findings fit with recent research on mechanisms that block compassion (Gilbert, McEwan, Gibbons, et al., 2012; Rockliff, Karl, McEwan, Gilbert, Matos, & Gilbert, 2011) and suggests that memories of being shamed by a loved one may be related to difficulties in experiencing self-compassion and receiving compassion from others. In fact, the experience of these feelings may reactivate these SMs and trigger conditioned emotional responses (e.g., fight, flight, avoidance). For mothers for example, they might find the feelings of safeness and warmth often associated with taking care of a baby as scary and respond with anxiety, avoidance, aggression or dissociation. The literature suggests that fear of self-compassion can be high if people come from low affection or abusive backgrounds, for example (Bowlby, 1980; Gilbert, 2007; Mikulincer & Shaver, 2007) and research has found that people who rate high on self-criticism in particular can struggle with developing self-compassion (Gilbert &

Procter, 2006; Mayhew & Gilbert, 2008; Rockliff, Gilbert, McEwan, Lightman, & Glover, 2008). Future research in this area would benefit from investigating relations between the types of SMs recalled with the various flows of compassion and fears of compassion. For example, it may be that memories of being criticised by loved ones may be related to self-criticism and fears of compassion in adulthood.

#### **4.6. Research question 3: What factors best predict the experience of motherhood and are there factors that moderate this relationship?**

The current study aimed to extend previous work on the association between SMs and mental health difficulties (e.g., Matos & Pinto-Gouveia, 2011) by exploring SMs relation to the experience of motherhood. It was also interested in the relationship between shame, compassion and fears of compassion and motherhood.

##### 4.6.1. Experience of motherhood

The Being a Mother Scale (BaM-13; Matthey, 2001) was designed to measure emotional adjustment to and enjoyment of motherhood, rather than mood symptomatology. The scale aimed to capture the consistent themes found in research (Brown, Lumley, Small, & Astbury 1994; Mauthner, 1999; Nicolson, 1999) on mothers of infants and toddlers (i.e., regret, confidence, isolation, relationship with child, support, coping, and guilt). The BaM-13 was designed so it would be used in clinical services that often require cut-off scores to screen for depression. As such, Matthey (2001) suggests a score of nine or more may be useful for this purpose but only if women concurrently report high levels of distress.

In the original community sample, almost one third of the scores fell in this range, although the percentage of those women who also reported stress was quite low. More women in the current sample ( $n = 105$ , 79%) reported scores of nine or more. The mean score in the current study ( $M = 13.64$ ,  $SD = 6.23$ ) was also higher than the original sample ( $M = 7.0$ ,  $SD = 5.4$ ). Matthey (2001) reported that first time mothers found this role more difficult than multiparous

women in that they report: feeling guilty, lacking confidence, difficulty coping with their crying infant, worrying about something happening to their infant and that they are not as good as other mothers. Findings suggest that first time mothers in the current study found their roles as mothers even more difficult than those in the original sample.

#### 4.6.2. Prediction and moderation

The SM, shame, compassion and fear of compassion variables were entered into a regression model to assess what factors best predict the experience of motherhood. The predictor variables significantly accounted for 26% of the variance in the experience of motherhood scores in the current sample. This can be considered a reasonable proportion of the variance in light of the multitude of factors that can have an influence at this time (e.g., depression in pregnancy, social support, [Beck & Watson-Driscoll 2006; Goldbort 2002], experience of traumatic birth [Elmire, Schmied, Wilkes, & Jackson 2010], length of maternity leave [Chatterji & Markowitz, 2004] personality factors, intimacy with partner, satisfaction with work [Mulsow, Caldera, Pursley, Reifman, & Huston, 2002], and infant temperament [Gelfand, Teti, Radin Fox, 1992]).

Closer inspection of the model revealed that when the other variables were controlled for, self-compassion was the only significant predictor of the experience of motherhood. Given the theoretical arguments for the impact of shame on the experience of motherhood, internal and external shame were investigated as potential moderators of the relationship between self-compassion and motherhood. Surprisingly, the results did not reach significance, suggesting that self-compassion predicted emotional adjustment to motherhood in the current sample, irrespective of levels of shame.

These findings suggest that extending compassion to one's self in this transitional period was associated with higher maternal role adjustment and satisfaction. It adds to the literature that reports self-compassion is related to adaptive coping (Neff 2004; Neff & Vonk 2009), less self-criticism, perfectionism, depression and anxiety, in addition to greater life satisfaction and social connectedness (Neff, 2004), self-worth stability, social comparison, and self-consciousness (Neff & Vonk, 2009). As discussed in the literature review,

Neff and Faso's (2015) study suggested that how parents relate to themselves at difficult times (i.e., self-compassion) was more important than the degree of difficulty they faced. Woekel and Ebbeck (2013) investigated self-compassion 1-10 months post-partum. These mothers reported that using a self-compassionate approach was beneficial to how they viewed themselves regardless of whether they were in the low, moderate or high self-compassion category. The current literature review revealed that Compassion Focused Therapy for the perinatal period is being delivered (Cree, 2010) but has not yet been empirically investigated. The findings in the current research lend support to the value of such work and offer avenues for future research.

Neff's (2003a) construct of self-compassion consists of three interrelated bipolar dimensions: self-kindness - self-judgment (i.e., approaching suffering through the lens of care and understanding instead of self-criticism and judgment), mindfulness - over-identification (i.e., mindful awareness of distressing experiences as opposed to avoiding, or ruminating), and common humanity - isolation (i.e., recognition that such experiences are part of a common human experience rather than feeling isolated or ashamed). Because mothers who extend compassion to themselves display more self-kindness, they may be less self-critical of their parenting practices and feel more confident in their abilities. Their greater sense of common humanity might accommodate greater acceptance of their limitations and their infants' demands. Their greater capacity for mindful awareness of difficult experiences instead of suppressing or ruminating about them may help them to be more aware of their internal states and those of their infant (Moreira, Carona, et al., 2015).

Körner et al. (2015) examined the association between the S-cS subscales and depression in a large community sample and reported that isolation predicted 18% of the variance in depressive symptoms, followed by over-identification, self-kindness, mindfulness, and self-judgment. These findings point to the value each of the subscales can have in illuminating important facets of self-compassion that are relevant for certain experiences. It is recommended that future mothering research explore the unique contribution of these subscales to the experience of motherhood.

The study of self-compassion in parenting practices is growing, in particular in relation to mindful parenting practices. As previously discussed, Perez-Blasco et al. (2013) found mothers in the intervention group exhibited more self-compassion and less anxiety, stress, and psychological distress than mothers in the control group. Bogels, Lehtonen and Restifo (2010) reviewed the mindful parenting literature and speculated about the mechanisms of action involved. They suggest taking care of oneself with self-nourishing attention may be essential for good parenting. They also bring attention to Kabat-Zinn and Kabat-Zinn (2009) who noted that when parents' inner resources become eroded, it is important to find ways to replenish them that are not at expense of their children. The authors suggest that by engaging in meditation, parents learn to apply positive self-attention and begin to develop self-compassion and that this may be one of the mechanisms through which mindfulness training works for parents. This is important when considering the comments of mothers in the Woekel and Ebbeck (2010) study who advocated for the use of a self-compassionate approach to ensure that mothers are not forgotten in the process of mothering.

#### **4.7. Clinical implications of the research**

Like all major life changes, becoming a mother has the potential to be an enriching experience, while also posing stressful challenges that can impact on a woman's health, relationship with her partner, and infant bonding (Austin & Leader 2000; Leung, Arthur, & Martinson 2005; Ruiz & Avant 2005). A meta-analysis on the transition to parenting concluded that this is an overwhelming experience comprising stress and strain (Nyström & Öhrling, 2004). Much research exists on maternal adaptation to motherhood, specifically, maternal depression (Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Rallis, Skouteris, McCabe, & Milgrom, 2014). Although, caution has been advised regarding the interpretation of the typical complex emotions experienced by new mothers within a psychiatric frame (Barclay & Lloyd, 2010; Matthey, 2010). The NICE (2014) guidelines for this cohort emphasize the importance of using psychological approaches at an early stage before a mother reaches diagnostic criteria. As such, the current study aimed to explore emotional adjustment to the

experience of motherhood in the general population. It illuminated threats (i.e., shame and fears of compassion) associated with this transition as well as skills (i.e., self-compassion) that may support women during this time. The implications of these findings are considered below at an individual, group, service and societal level, as well as a potential role for technology.

#### 4.7.1. Individual, group and service level

Common to much mothering research is the idea that there are gaps between what mothers expected motherhood to be like and what it turned out to be. For example, McVeigh (1997) found that first time mothers felt unprepared. They had the feeling that no one told them about the harsh reality of taking care of a newborn, McVeigh (1997) called this a 'Conspiracy of Silence'. In a British qualitative study on the myths and the reality of motherhood, Choi, Henshaw, Baker and Tree (2005) report that mothers went through stages of disappointment and feelings of failure when they discovered the reality was different than their idealised expectations. Adams (2015) suggests that nursing is well placed to develop prenatal education to dispel motherhood myths. However, she does not elaborate on how nurses might do this.

The current author suggests that individual direct intervention with families in the perinatal time is one potential avenue, for example, through psychoeducational videos, leaflets and open conversations. Considering claims in the literature that women experience judgment and condemnation in conversations with health professionals, it may be that training or reflective spaces are needed for staff to consider their use of language, for example and also how their own ideas/values surrounding motherhood may be influencing how they communicate with new mothers. It is important that conversations be open, respectful and compassionate where mothers learn to trust themselves and their own ideas rather than feel shame because they fall short of idealised standards. Clinical Psychologist Michelle Cree has been using compassion-focused interventions with health professionals working in this area. No research has been published exploring the impact of this, however, this service level intervention seems a promising avenue of application.

In Sweden, Heinig (2006) found that childcare classes have been beneficial in

helping women cope with their new life as a mother (e.g., attenders enjoyed nursing and spending time with their children compared with non-attenders). Midwives have acknowledged that they have important roles for health education and counselling women, their families and the wider community. In their report (Underdown & Barlow, 2012), they talk about increased recognition of the significance of the changes taking place during the transition to parenthood, and the importance of preparing parents for their new roles. They point to how these ideas have underpinned the recent development of Preparation for Parenthood classes, many of which are replacing the more traditional antenatal classes. Given that self-compassion is skill that can be developed (Neff & Germer 2013; Smeets, Neff, Alberts, & Peters, 2014) and it offers a potential coping resource for mothers, educational classes could benefit from incorporating self-compassion training, with awareness of those who maybe be fearful of such affiliative emotions and associated plans to support those experiencing such blocks. .

#### 4.7.2. Societal level

There is scope for societal level intervention through public health initiatives, for example, advertising campaigns in the media. It is possible that new mothers would feel less oppressed by discourses and constructions of idealised motherhood if more balanced information was circulated about the changes that take place at this time and the demands of motherhood, alongside the joys and rewards. Public health campaigns focused on making it more acceptable to talk about the typical stresses associated with motherhood, rather than these being taboo, may reduce women's fear of their child being taken away (Tummala-Narra, 2009) or that they are unfit mothers, for example.

#### 4.2.3. Potential role for technology

An online survey of three thousand new mothers conducted by Netmums in 2015 reported that 28% of first time mothers felt lonely after giving birth (AXA PPP healthcare, 2015). Although technology has been implicated in the proliferation of myths related to an idealised motherhood (Tummala-Narra, 2009), it also offers great potential for providing balanced information and support as well a building connections. Gibson and Hanson (2013) reported that technology allowed mothers in their study to increase their confidence through

information and reassurance seeking. It also allowed them to engage in self-directed therapy via blogging or social networking. Technology played a key role in helping those mothers maintain a sense of their old self as well as build a new identity. Social networking sites appeared to act as community builders, in that mothers were kept up-to-date, had a way to contact other mothers, and could invite them to meet offline. Many of these issues refer to the elements of self-compassion described by Neff (2003a; e.g., reducing isolation and building a sense of common experience).

Relevant data was not found for the UK, however, US figures suggest that 72% of mothers use Facebook with 50% actively participating in social media access via mobile devices (Nielsenwire, 2016). The results of the current study alongside the opportunities afforded by technology point to a potential role for technology in promoting the practice of self-compassion, for example, via psychoeducation and/or online training and resources. In addition, technology could act as a platform on which to promote balanced images and discourses on motherhood.

#### **4.8. Strengths, limitations and future research**

The following discussion adds to previous mentions of the theoretical and methodological issues that impact on the interpretations of findings. Strengths, limitations and suggestions for future research are considered together under the relevant headings. Due to the multifaceted nature of the study, there is much scope for future research to build on these exploratory findings – many questions were raised that could benefit from further investigation.

##### **4.8.1. Pilot study**

Feedback at the second phase of the pilot, which resulted in making the survey more user-friendly for smartphones, was invaluable. It fitted with research (Gibson & Hanson, 2013), which reported that many mothers lamented that forums were only usable on a PC or laptop and pointed to Social networking sites, specifically Facebook as being more accessible via smartphones.

#### 4.8.2. Online data collection

The collection of data online allowed for wide geographic reach (Bachmann & Elfrink, 1996; Naglieri et al., 2004). Participants could opt to complete the questionnaire at a time and location that was convenient to them. They also had the option to save their responses and return to the survey at a later time, offering flexibility over pen and paper versions. Although there are advantages to the flexibility offered by online surveys, it also means that researchers relinquish control over the research environment. For example, it is possible that some participants made multiple submissions (Reips, 2002). Furthermore, it is not possible to verify participants' identities, age, or assess the effect of the research experience on them (Kraut, Olson, Banaji, Bruckman, Cohen, & Couper, 2004).

The absence of a researcher in online research makes it difficult to assess a participant's emotional state and thus to determine whether an individual has been distressed by taking part (Kraut et al., 2004; BPS, 2013). This limitation to the current study meant that potentially sensitive information was elicited without face-to-face support. To minimise the risks, efforts were made at two stages to provide details of supportive agencies in the event that the study brought up issues for participants that they wished to talk more about. Should the mothers have felt overwhelmed/distressed by issues discussed, the reduced social pressure (Sroull & Kiesler, 1991) in online research may have made it easier quit. This freedom is important considering the pressure to continue in face-to-face studies (e.g., Milgram, 1963).

The use of Limesurvey allowed the researcher to design the study so that participants could not skip questions, eliminating issues of missing data for complete responders. It also promoted accuracy in scoring and the randomisation of questionnaire presentation (Naglieri et al., 2004). The study was designed so responses would be anonymous. There are conflicting findings as to the benefits of this. For example, studies demonstrate that allowing student participants to respond anonymously to questions sometimes increased socially undesirable responses but consistently reduced accuracy and increased satisficing (Lelkes, Krosnick, Marx, Judd, & Park, 2012). Matthey, White and Rice (2010) investigated differences between groups of

mothers: one group who were asked to write their name on a questionnaire in response to questions around difficulty coping in a clinic setting, and another group who were asked not to write their name. They found no difference between the responses of each group.

#### 4.8.3. Type of data collected

While there was a large amount of data collected in the current study, it lacked potentially important demographic information such as the occupational status of the mother and whether it was a multiple or single birth, for example. Similarly, the age of the baby was not specified. It may be important to explore how the experiences under investigation differ or converge as mothers progress through the first year. The study also precluded an examination of the role of partners, and other family or cultural influences, which fits with critiques of investigating shame proneness as a personality disposition. Leeming and Boyle (2004) suggest that a focus on the intrapsychic mechanisms of shame have made the social constitution of shame less visible. For example, obscuring the conceptualisation of shame as relating to the salience of stigmatising discourses within specific social contexts. Importantly for this study, shaming discourses associated with motherhood myths may be relevant and qualitative enquiries could be added to future studies to elaborate the contexts in which shame and compassion are performed.

#### 4.8.4. Self-report measures

Self-report questionnaires fall prey to errors resulting from participant tendencies to agree, be indecisive, or pick extreme responses (Baldwin, 2000; Rust & Golombok). Moreover, participants may have had difficulty identifying and/or quantifying the experiences under investigation (Barrett & Campos, 1987). Most of the questionnaires used anchor words such as '*mostly*', which can be vague and difficult to quantify. This links to the arguments surrounding the use of closed-ended questions, in that each respondent understands questions differently and are not provided with the space to expand upon or explain their numerical response (Barker, Pistrang, & Elliott, 2002). The BaM-13 offers participants this chance at the end of the questionnaire. The next phase of this study (i.e., preparation for publication) could benefit from analysing the themes in those responses.

The use of self-report measure to tap early memories may raise concerns regarding the impact of current emotional states on recollections (Levine & Pizarro, 2004). However, in their review, Brewin, Andrews and Gotlib (1993) argue that retrospective recall data are typically accurate, stable over time and not distorted by depressed mood. Recent SM research using structured interviewing methodology along with self-report measures to assess SMs also support the reliability of these self-report data (Matos & Pinto Gouveia, 2014; Matos, Pinto Gouveia & Costa, 2011). Future mothering research might benefit from the use of the SEI to allow a more comprehensive exploration of SMs.

#### 4.8.5. Measuring internal shame

The SCS was designed as a measure of social comparison, which seems to fit with the ideas discussed here about mothers comparing themselves against an ideal. However, the items are not specific to motherhood. This scale uses a semantic differential technique where participants were forced to choose a response along a spectrum of contrasting positions that they may not experience (Barker et al., 2002). The Experience of Shame Scale (ESS; Andrews et al., 2002, was used in some of the SM research (e.g., Matos, Pinto-Gouveia, & Duarte, 2013; Pinto-Gouveia & Matos, 2010). This assesses feelings of shame around domains of self: character (e.g., personal habits, manner with others), behaviour and body. However, this measure has been criticised for not distinguishing between internal and external shame (Pinto-Gouveia & Matos, 2010). Nonetheless, it holds an element that might be useful in mothering research, items related to body shame. As previously discussed, the guilt and shame subscales of the State Shame and Guilt Scale (Marschall et al. 1994) were used by Liss et al. (2013) because the researchers were interested in shame within the context of responding to a questionnaire about motherhood. However, this measure is based on scenarios that are not specific to mothering, so it is possible that this scale was not sensitive to identifying maternal shame because the levels of shame in their cohort were low. This body of research could benefit from a mother specific social comparison/internal shame measure before making more robust claims about internal shame in this cohort.

#### 4.8.6. Measuring self-compassion

A recent review (Strauss et al., 2016). of definitions and measures of compassion proposed five elements of compassion after consolidating existing definitions: recognising suffering, understanding the universality of human suffering, feeling for the person suffering, tolerating uncomfortable feelings, and motivation to act/acting to alleviate suffering. The authors explored nine measures of compassion and reported the Neff's (2003b) S-cS was one of the strongest because it included items related to four of the five elements in the definition of compassion used in this review: the authors suggest that the scale does not include items specifically relating to being attentive to how one is feeling. This is interesting in light of the fact that there is a '*mindfulness*' subscale. Neff (2003b) conceptualises mindfulness of negative thoughts and feelings as not becoming overidentified with them, getting caught up and swept away by aversive reactions (Bishop, Lau, Shapiro, Carlson, Anderson, Carmody, et al., 2004). As such, it seems to that awareness is implied rather than directly investigated in the S-cS.

MacBeth and Gumley (2012) suggest that the S-cS measures beliefs and attitudes towards self-compassion, and as such, does not measure interpersonal and motivational elements that are emphasised in the biopsychosocial conceptualisation of compassion (Gilbert, 2010). Some authors (e.g., Muris, 2015) have argued that the S-cS should not measure uncompassionate behaviour and should only include items representing compassionate behaviour. Neff (2015) counters this by arguing that Gilbert (2010) includes non-judgement as a key component of compassion and so items assessing self-judgement are not inconsistent with this theoretical approach.

Considering the importance of self-compassion for maternal emotional adjustment revealed by the current study, alongside critiques that investigations into dispositional aspects of phenomena obscure context, the motherhood research might benefit from a qualitative investigation of self-compassion using, for example the Narrative Compassion Scale (MacBeth, 2011). Furthermore, the relatively little interest in qualitative investigations into self-compassion evidenced by only one study identified in the current literature search means

that qualitative investigations are warranted to investigate the phenomenology of self-compassion.

#### 4.8.7. Sample size

More than six hundred mothers responded to this study. This high level of interest could suggest that the concepts under investigation resonated with participants. The high rate of non-completers may be related to the time taken to complete the study. For example, participants may have been interrupted by mothering activities whilst completing the questionnaires. It is also possible that the study content became distressing for some participants leading them to stop (see Section 2.2. and 4.8.2. for consideration of the associated ethical implications of this). Another possible explanation for drop out may be related to the lack of cultural relevance as discussed in Section 4.3.

#### 4.8.8. Missing data

Allison (2000) suggests three criteria for evaluating a missing-data method, highlighting that a good method should:

1. Make bias as small as possible
2. Maximize the use of available information
3. Yield good estimates of uncertainty, such that there are accurate estimates of standard errors, confidence intervals and p-values

According to Allison (2000), listwise deletion does number 3 well, number 2, badly and is middling on number 1. Pigott (2010) advises that when missing data occur, it is important acknowledge the limitations of the data. As such, it must be noted that estimates in the current results may be biased if the data was not missing completely at random (Allison, 2000). Nonetheless, listwise deletion is very robust to violations of missing completely at random or missing at random for predictor variables in a regression analysis so long as missingness on the predictors does not depend on the dependent variable (Allison, 2000; Little, 1992). The next phase of this research might benefit for examining if data were missing at random.

Furthermore, it is important to note that listwise deletion does not use all the information gathered, which may carry ethical implications in that the experiences of many participants are not represented in the results.

#### 4.8.9. Analyses

The use of CCA was novel and suggests that it can be a useful exploratory tool for psychology research. Attempts were made to start exploring the relationships further through moderation analysis. However, the next step in this research would be to employ structural equation modelling (SEM; Bollen, 1989) to shed further light on the complex relationships between the variables of interest.

#### 4.8.10. Novelty/new evidence

The relationship between the variables of interest in the current study had not been examined previously for this cohort and for some (i.e., SMs and FOC), not in any population. Therefore, this study is contributing to literature surrounding shame, SMs, compassion, fears of compassion and motherhood. Results fit with the biopsychosocial model of shame and compassion and provide an exciting base with which to build future investigations.

#### 4.8.11. Generalisability

The correlational design of the study means that no causal conclusions can be drawn from the findings. Longitudinal studies should be carried out to enhance the understanding of the causal relation between the variables.

Sutherland (2010) warns that the great bulk of research speaks about mothering without distinguishing the Whiteness of the research. She suggests it is important to consider how racial and social class impact on constructions of motherhood. It is possible that the construction of motherhood presented in the current research did not fit for some cultural group, leading to a poor uptake. Although the researcher strived for the study sample to be representative of the population (e.g., it was advertised in cultural specific groups), self-selected sampling could have resulted in biased responses (Stanton, 1998). Access to the internet and/computer literacy were dimensions affecting inclusion/exclusion. Questionnaires also require a certain degree of literacy skills, which excludes a number of potential volunteers and participation was restricted to participants whose first language was English. It has also been highlighted that individuals who complete research questionnaires are generally not representative of the whole population, in that they are typically higher in

motivation, educational background and literacy skills (Barker et al., 2002). As previously mentioned, caution is warranted in extrapolating the finding beyond the demographic groups highlighted earlier.

#### 4.8.12. Feedback to participants

The researcher provided feedback to all participants who expressed their interest; enabling them to see how their input added new literature to the evidence-base, as well as hear the important message about the potentially beneficial effects of developing self-compassion and some related resources.

### **4.9. Reflective review**

I was humbled by the willingness of participants to give their time and energy to participating in this important research at a time when such resources are in demand. As a researcher, I found the process both challenging and exciting. It provided me with an invaluable learning experience, further developing my skills in research design, statistical analysis and also supporting my use of technology in such endeavours.

I was pleased to have the opportunity to research this topic as it reflects my clinical interests i.e., the transdiagnostic phenomenon of shame and the power of compassion in helping people reduce levels of distress. Furthermore, anecdotal evidence from mothers I have spoken to - friends, family, and participants from the study that contacted me, suggests that the issues explored are salient and there is a great need for research of this kind. Mothers appear to feel immense pressure from themselves, family and society to be 'the best' mothers, partners, colleagues, etc. and there is conflicting information about parenting practices that makes this a confusing time for first time mothers. I am pleased to be able to contribute to thinking in this arena considering the long-term impact of maternal mental wellbeing.

Although I recognise the limitations of quantitative research to fully capture the essence of experience for participants, it afforded many opportunities with which to begin thinking about the relevance of these experiences for this cohort.

For example, it allowed me to recruit a large number of mothers and give voice to their experiences - one of the important facets of critical realist epistemology is that it has an emancipatory element. As such, I plan to prepare this research for publication in the hope that it might inform the wider community of professionals working in this area. I believe the profession of clinical psychology has a duty to contribute to societal change and some of the tools available to us are our research skills.

#### **4.10. Summary of findings and conclusions**

Tentative claims can be made that mothers in the current study reported higher levels of shame than previous general population studies, as well as lower levels of self-compassion and more difficulties with emotional adjustment to motherhood.

Correlations between traumatic and centrality features of SM and the experience of motherhood were not significant. The regression also did not reveal them to be significant predictors of the experience of motherhood. However the CCA revealed them to be related to shame, compassion and fears of compassion, which may point to their impact on motherhood as indirect rather than direct. This was the first study to investigate the relationships between SMs and fears of compassion. Strong relationships were revealed, which warrants further research attention. The results emphasise the relevance of addressing SMs particularly with those who find compassion difficult or scary.

The correlations between shame and motherhood were significant, however, shame did not significantly predict motherhood in the current study, nor did it moderate the significant relationship between self-compassion and motherhood. This could be related to methodological limitations discussed, or indeed, the relationship could be indirect or more complex.

A key finding relates to the importance of self-compassion in the experience of motherhood, such that relating to oneself with an attitude of kindness and understanding positively predicts emotional adjustment to the experience of

motherhood. Perinatal mental health is a major public health issue that needs attention. Promoting the development of compassion is paramount at all levels – at the level of the individual and family, at the level of service provision and at a societal level.

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## APPENDICES

### Appendix A: Literature search - maternal shame

The guiding question in the literature search regarding maternal shame was: how has maternal shame been directly investigated in the literature to date?

The following search terms were used in an attempt to access literature pertaining directly to the experience of mothers, specifically around the perinatal period:

- mother\*
- maternal
- mum
- mom
- mommy
- \*natal
- \*partum
- puerper\*
- parent\*

These key words were searched together with 'shame' using the Boolean operators 'AND' and 'OR'.

Limiters included:

- English language only
- Adult only (18-65 years)
- Human only
- Female only
- Keyword and abstract only

These search terms and limiters were used in the following databases: Psychinfo, Psycarticles, CINAHL Plus via EBSCO and Scopus. A total of 67 articles were identified via EBSCO and 88 using Scopus. All titles and abstracts were checked for relevance to the guiding question. Google Scholar and other open source repositories (Research Gate, Academia, CORE), as well as grey literature including conference presentations and unpublished work were searched using similar terms to find additional relevant articles.

Inclusion criteria:

- In addition to the limiters applied, all studies were considered regardless of:
  - the date of publication
  - the country of origin
  - the type of methodology
  - how shame was investigated
  - the sample of mothers (i.e., they could be grieving, nulliparous, multiparous etc.)

Exclusion criteria:

- Poetry, fiction or other artistic literature
- If maternal shame had merely been reflected upon or brought up in the conclusion section of the abstract as opposed to being a direct unit of investigation in the publication.

The search identified 19 relevant pieces of literature including research studies, discussion papers, dissertations and book chapters. I was unable to gain full text access to two dissertations and so they have been excluded, leaving 18 items discussed in the current review.

## **Appendix B: Details of literature search - maternal compassion**

The guiding question in the literature search regarding maternal compassion was: how has maternal compassion been directly investigated in the literature to date?

The following search terms were used in an attempt to access literature pertaining directly to the experience of mothers and in particular around the perinatal period:

- mother\*
- maternal
- mum
- mom
- mommy
- \*natal
- \*partum
- puerper\*
- parent\*

These key words were searched together with 'compassion' using the Boolean operators 'AND' and 'OR'.

Limiters included:

- English language only
- Adult only (18-65 years)
- Human only
- Female only
- Keyword and abstract only

These search terms and limiters were used in the following databases: Psychinfo, Psycharticles, CINAHL Plus via EBSCO and Scopus. A total of 14 articles were identified via EBSCO and 57 using Scopus. All titles and abstracts were checked for relevance to the guiding question. Google Scholar and other open source repositories (Research Gate, Academia, CORE), as well as grey literature including conference presentations and unpublished work were searched using similar terms to find additional relevant articles.

Inclusion criteria:

- In addition to the limiters applied, all studies were considered regardless of:
  - the date of publication
  - the country of origin
  - the type of methodology
  - how compassion was investigated
  - the sample of mothers (i.e., they could be grieving, nulliparous, multiparous etc.)

Exclusion criteria:

- Poetry, fiction or other artistic literature
- If maternal compassion had merely been reflected upon or brought up in the conclusion section of the abstract as opposed to being a direct unit of investigation in the publication.

The search identified a total of 12 relevant pieces of literature including: research papers, dissertations and books. All of which are discussed in the relevant literature review.

## Appendix C: Ethical approval

### 10. NOTICE OF ETHICS REVIEW DECISION

11.

12. For research involving human participants

13. BSc/MSc/MA/Professional Doctorates in Clinical, Counselling and Educational Psychology

**SUPERVISOR:** Trishna Patel    **REVIEWER:** Sharon Cahill

**STUDENT:** Danielle Gaynor

**Title of proposed study:** Exploring new mothers shame memories and their current experience of shame, motherhood and compassion.

**Course:** Professional Doctorate in Clinical Psychology

**DECISION** (*Delete as necessary*):

**\*APPROVED, BUT MINOR CONDITIONS ARE REQUIRED BEFORE THE RESEARCH COMMENCES**

**APPROVED:** Ethics approval for the above named research study has been granted from the date of approval (see end of this notice) to the date it is submitted for assessment/examination.

**APPROVED, BUT MINOR AMENDMENTS ARE REQUIRED BEFORE THE RESEARCH COMMENCES** (see Minor Amendments box below): In this circumstance, re-submission of an ethics application is not required but the student must confirm with their supervisor that all minor amendments have been made before the research commences. Students are to do this by filling in the confirmation box below when all amendments have been attended to and emailing a copy of this decision notice to her/his supervisor for their records. The supervisor will then forward the student's confirmation to the School for its records.

**NOT APPROVED, MAJOR AMENDMENTS AND RE-SUBMISSION REQUIRED** (see Major Amendments box below): In this circumstance, a revised ethics application must be submitted and approved before any research takes place. The revised application will be reviewed by the same reviewer. If in doubt, students should ask their supervisor for support in revising their ethics application.

**Minor amendments required** *(for reviewer):*

I would like to see the introduction to shame and attachment figures that participants get. I am also wondering if there should be bit more information about shame and mothering – I felt a bit uneasy that if I were a participant that I should be feeling some shame about being a new mum? This maybe just needs some clarification

**Major amendments required** *(for reviewer):*

**Confirmation of making the above minor amendments** *(for students):*

I have noted and made all the required minor amendments, as stated above, before starting my research and collecting data.

Student's name *(Typed name to act as signature)*: Danielle Gaynor

Student number: u1331791

Date: 15<sup>th</sup> July 2015

**ASSESSMENT OF RISK TO RESEACHER** *(for reviewer)*

If the proposed research could expose the researcher to any of kind of emotional, physical or health and safety hazard? Please rate the degree of risk:

HIGH

MEDIUM

LOW

*Reviewer comments in relation to researcher risk (if any):*

**Reviewer** *(Typed name to act as signature)*: Sharon Cahill

**Date:** 7<sup>th</sup> July 2015

*This reviewer has assessed the ethics application for the named research study on behalf of the School of Psychology Research Ethics Committee (moderator of School ethics approvals)*

**PLEASE NOTE:**

\*For the researcher and participants involved in the above named study to be covered by UEL's insurance and indemnity policy, prior ethics approval from the School of Psychology (acting on behalf of the UEL Research Ethics Committee), and confirmation from students where minor amendments were required, must be obtained before any research takes place.

\*For the researcher and participants involved in the above named study to be covered by UEL's insurance and indemnity policy, travel approval from UEL (not the School of Psychology) must be gained if a researcher intends to travel overseas to collect data, even if this involves the researcher travelling to his/her home country to conduct the research. Application details can be found here: <http://www.uel.ac.uk/gradschool/ethics/fieldwork/>

## Appendix D: Participant information sheet



### Information Sheet

Researcher: Danielle Gaynor

Email: [u1331791@uel.ac.uk](mailto:u1331791@uel.ac.uk)

I would like to invite you to take part in a research study. Before you decide to participate, it is important for you to understand why the research is being carried out and what it would involve. Please read through the following information carefully before deciding whether or not you would like to take part in the research. Talk to others about the study if you wish. If something needs clarification or you have any unanswered questions please do not hesitate to ask the researcher or their supervisor.

#### **What is the purpose of the study?**

This study is part of a Doctoral Degree in Clinical Psychology. The aim of the study is to explore the relationship between past experiences of shame on new mothers' current feelings of shame, motherhood and ability to be compassionate. Being a new mother can bring up memories from the past of one's own experience of being cared for. This research will focus on memories where shame is a key aspect of that memory. Becoming a new mother can be a difficult experience for some. Societal and cultural expectation and views often lead to pregnancy and motherhood being presented as a time of great joy. Not experiencing this positivity or not experiencing it all of the time, may lead to feeling different and inadequate, possibly resulting in a sense of shame. This can often be difficult to manage and can cause one to feel further distress and experience lower mental well-being (e.g. low mood). Research has found that increasing one's ability to be compassionate to oneself can reduce some of the negative impact of experiencing high levels of shame and can also enhance mental well-being. Therefore, this study is useful in providing information that may help professionals, for example, to develop approaches to psychological intervention aimed at enhancing the well-being of mothers and also mother-infant bonding.

### **Who can participate in the study?**

- Females:
  - aged 18+ years,
  - living in the UK or Ireland and
  - who have become a first time mother,
  - to an infant(s) currently under the age of one year.

### **Who cannot participate in the study?**

Women who have been a mother for longer than one year or if you have become a mother in the past year, the child(ren) must not be over the age of one.

### **What will I be asked to do if I agree to take part?**

You will be asked to complete a set of questionnaires at your own pace, to which there are no right or wrong answers. The questionnaires will ask you about a previous experience of feeling shame, current feelings of shame and compassion and about your experiences of motherhood. The questionnaires should take approximately 20-30 minutes to complete.

### **What are my options for taking part in the study?**

It is entirely up to you whether you participate or not. If you do decide to take part, you can change your mind at any point before submitting your responses. The reason you cannot withdraw after submitting your responses is because the responses you give are anonymous and cannot be identified once submitted.

If you agree to participate you will be given the opportunity to be entered into a prize draw to win a £50 Amazon voucher. If you want to be entered into the draw, it will require you provide the researcher with your email address; however, this address will not be linked to your responses in any way. All email addresses provided will be deleted once the winner has been identified.

### **Are there any disadvantages or risks to taking part?**

Completing the questionnaires may make you more aware of potentially difficult experiences from the past and/or present. However, if you feel any discomfort or distress there are a number of services that you can contact, for example:

- Your General Practitioner (GP)
- The Maternal Mental Health Alliance (MMHA), which is a coalition of over sixty organisations committed to improving the mental health of pregnant women and new mothers. To find this list, please search for 'Maternal Mental Health Alliance' in your browser.
- Samaritans
  - Call 08457 90 90 90 (UK)

- Call 116 123 (Ireland)
- Email jo@samaritans.org

### **Complaints**

If you have a concern about any aspect of this study, you should ask to speak to the researcher who will do their best to answer your questions, or their supervisor. If you remain unhappy and wish to complain formally, you can do this through University of East London's Research Ethics Committee (Telephone: 020 8223 6683, Email: researchethics@uel.ac.uk).

### **Will the information I provide remain confidential?**

All the information provided by you is completely confidential; the responses you give to the questionnaires are completely anonymous. If you would like to receive a summary of the results of the study when it is completed and/or would like to be entered into the prize draw you will be invited to provide your email address. This will not be linked in any way to the responses you give to the questionnaires and will be kept in a password protected file on the researcher's computer. She will be the only person with access to this and they will be destroyed once the prize winner is identified and notified and the summary of the results have been sent to interested participants.

### **What will happen to the results of the research study?**

The results of the study will be written up as a doctoral thesis and submitted for publication in a psychological journal. You will be given the opportunity to indicate if you have an interest in receiving a summary of the results.

### **Who has reviewed the study?**

All research conducted in the University of East London is looked at by an independent group of people, called a Research Ethics Committee to protect your safety, rights, well-being and dignity.

### **Who can I contact if I have any questions?**

- The researcher, Danielle Gaynor can be contacted at u1331791@uel.ac.uk
- Her supervisor, Dr Trishna Patel can be contacted at t.patel@uel.ac.uk

**Thank you** for taking the time to read this information. **Please print and/or save** this page for your reference.

## **Appendix E: Consent form**

If you agree to participate, please tick all the boxes below indicating your understanding of what is involved in the study and your consent to participate.

I confirm that I have read and understood the information sheet for this study and have saved a copy for my reference.

I have been given the opportunity to ask questions, to which I have received satisfactory answers.

I understand that my involvement in this study is voluntary and that I may withdraw at any time prior to submitting the questionnaire, after which time my responses cannot be linked to me. As a result all the information I have provided to that point will not be recorded.

I understand that my involvement in this study and data from the research will remain strictly confidential. Only the researcher and her supervisor will have access to the data, to which I give my permission. It has been explained to me what will happen to the data once the research has been completed.

I hereby fully and freely agree to take part in the research, which has been fully explained to me.

## Appendix F: Participant debrief sheet

### Debriefing Sheet



Thank you very much for your participation in this study, it is greatly valued.

The aim of the study is to examine the relationship between past experiences of shame in new mothers on current feelings of shame, motherhood and abilities to be compassionate. This research is highly important as the experience of shame, which can often be difficult to manage can cause one to feel further distressed and lower mental well-being (e.g. low mood). Research has found that increasing one's ability to be compassionate to oneself can actually reduce some of the negative impact of experiencing high levels of shame and enhance mental well-being. Therefore, this study is useful in providing information that may help professionals, for example to develop approaches to psychological intervention aimed at enhancing the well-being of mothers and also mother-infant bonding.

If you have any **questions** relating to the study at this point, please do not hesitate to contact:

- The researcher, Danielle Gaynor at [u1331791@uel.ac.uk](mailto:u1331791@uel.ac.uk)
- Her supervisor, Dr Trishna Patel at [t.patel@uel.ac.uk](mailto:t.patel@uel.ac.uk)

If you feel any **discomfort or distress** there are a number of services that you can contact, for example:

- Your General Practitioner (GP)
- The Maternal Mental Health Alliance (MMHA), which is a coalition of over sixty organisations committed to improving the mental health of pregnant women and new mothers. To find this list, please search for 'Maternal Mental Health Alliance' in your browser.
- Samaritans
  - Call 08457 90 90 90 (UK)
  - Call 116 123 (Ireland)
  - Email [jo@samaritans.org](mailto:jo@samaritans.org)

If you would like to **receive a summary of the results of this study** once it is completed and/or would like to be **entered into the prize draw** to win an Amazon voucher, please email the researcher ([u1331791@uel.ac.uk](mailto:u1331791@uel.ac.uk)). The reason for this is because your responses can be kept completely anonymous, they cannot be linked to your email address in any way. In this email, simply indicate one of the following three options in the subject bar:

1. Request summary of results
2. Request entry to prize draw
3. Request summary of results and entry to prize draw

It is not necessary to add any further information to the main body of the email.

Thank you again for your time.

## **Appendix G: Sample of sites of advertisement**

### **Forums:**

- Mumsnet
- Netmums
- Babycentre.co.uk
- Emma's diary
- Justparent.co.uk
- Parents chat.co.uk
- Pregnancy forum
- Cow & Gate
- Nappyvalley

### **Example of Facebook groups:**

- Pre loved nappy friendly clothing
- UK & Ireland Woven for Babywearing
- Mummy and Pregnancy Advice
- Mums chat and advice selling page
- Clothbums anonymous
- Walking Mums London
- 102 Beyond Babywearing
- Prams on Plans
- Caesarean in Focus
- Birth Trauma Association
- Preloved cloth nappies and accessories
- CMPA Support for Reflux
- First Few Weeks
- Natural Hair Care for Afro Babyz
- NCT sling library discussion
- Infant and Children's Shoes UK Buy and Sell
- Ten Month Mammams UK
- Romany Children'swear New & Pre-loved
- Breastfeeding Questions
- Come Nurse With Me – Breastfeeding Buddies UK
- Home Birth UK
- Spanish Clothing

**Example of SubReddits:**

- /r/babies
- /r/NewParents
- /r/Ireland
- /r/Mommit
- /r/mombloggers
- /r/baby
- /r/NI
- /r/England
- /r/UK
- /r/Wales
- /r/Scotland
- /r/united
- 

**Example of Twitter feeds:**

- @BritMums
- @MadeForMums
- @Mumpreneur
- @MumsClub
- @MumsnetBloggers
- @Wandsworthmum
- @MNWandsworth
- @MumsnesTowers
- @Netmums
- @Dairyfreekids
- @BabyCenter
- @BFBasics
- @BfN\_UK
- @Brthcompanions
- @BirthTraumaHelp
- @PNDWale
- @Postnataldaware
- @supportingmamas

## **Appendix H: Advertising messages**

### Long version for forums and Reddit

Hello,

My name is Danielle Gaynor. I am currently training as a Clinical Psychologist and as part of my doctoral degree, I am carrying out some important research that I hope you can help me with.

Becoming a new mother can be a time of great joy and society often presents it in that way. But those who do not feel that way all the time, may feel different and inadequate compared with this stereotype, and this may lead to a sense of shame and self-criticism. Becoming a mother may also bring up memories of your own experiences of being cared for. I am interested in your memories and your experiences and I would like to invite you to participate in my study. I am interested in hearing from everyone, whatever way you are experiencing this time in your life.

**You are invited to complete a series of questionnaires online**, to which there are no right or wrong answers. Your time is valuable and as such, I am offering all participants the opportunity to be entered into a draw to **win a £50 voucher for Amazon**.

Please follow the link below for more information about the purpose of this research and what is involved in participation. You are under no obligation to participate by following this link.

The study link (with more information) is

<http://surveys.uelconnect.org.uk/index.php/471653/lang-en>

The Facebook page is

[www.facebook.com/NewMothersStudy](http://www.facebook.com/NewMothersStudy)

Twitter @NewMumsStudy

Many thanks,

Danielle.

### Short version for Facebook

Hello, I am carrying out some important research that I hope you can help me with. I am recruiting new mothers (first baby under 1, in the UK & Ireland) to participate in an online survey as part of my doctoral degree. Participants have the opportunity to win £50 Amazon voucher. Please follow this link for more information (and please consider resharing).

<http://surveys.uelconnect.org.uk/index.php/471653/lang-en>

### Short version for Twitter

Recruiting participants for doctoral research study. Please pass information to new mothers (with baby under 1 year)

<http://surveys.uelconnect.org.uk/index.php/471653/lang-en>

## **Appendix I: Modified instructions from the Shame Experiences Interview – priming for shame memory**

The experience of shame is common among all human beings and everyone, throughout life, has shame experiences. We know now that these are important experiences that might be related to several problems in people's lives

Shame is a negative self-conscious emotion associated with feeling inferior to others and devaluing yourself (*originally written as "feelings of inferiority and personal devaluation"*). Shame may involve different feelings and thoughts:

**External shame** is what we feel when we experience or think someone/others are being critical, hostile, looking down on us, or seeing us as inferior, inadequate, different, bad or weak; is what we feel when others criticise, reject, exclude or abuse us. Our feelings rise from how we think (*originally written as "feel"*) others feel about us.

**Internal shame** is what we feel when we feel or judge ourselves negatively, as inferior, inadequate, different, bad or weak. Our feelings rise from how we feel and think about ourselves.

In a certain situation we might feel external shame, internal shame or both. Sometimes, we can also feel humiliation, when we believe others are being bad or unfair to us, we feel anger and want revenge/to get back at them (*originally written as "on" them*). Shame feelings may blend with other feelings, such as anxiety, fear, anger, disgust or contempt. Furthermore, a great urge to hide, disappear or run away from the situation is part of the experience of shame.

Here are some examples of situations involving attachment figures that were experienced as shameful during childhood and adolescence.

*(Novel for this study:)* Denise, 5 years old, is running around the supermarket while her parents shop for groceries. She is chasing her sister and is running so fast that she does not see an elderly lady in front of her and she bumps into the lady. Denise's mother spots this collision and shouts at her to stop running and apologise to the lady. In that moment, Denise felt herself getting hot and start to blush, she felt sorry for what she had done and also nervous. She apologised sheepishly to the lady, ran to her mother's side and stayed there for the remainder of the shopping trip.

*(Part of the original SEI:)* John, 9 years old, is well behaved at school, has good marks, tries to concentrate in classes and does his homework everyday. However, every time he makes a mistake or he gets a poor mark on a test, his father is very critical and tells him he will never be someone in life and he is a disappointment. Whenever this happens, John feels extremely sad, ashamed

and thinks he is unable to meet others' expectations.

*(Novel for this study:)* Alex, 15 years old, has never liked to get involved in sports because she believed she was too clumsy. During a friendly football game between all family members while on holiday, she stumbled on the ball and the other team scored. Alex felt very ashamed and saw herself as inadequate and incompetent, different from her siblings and cousins. Even though her family did not make any negative remarks, she could not help think they had seen her as inadequate and inferior, and so they could reject her in some way. At that moment, Alex felt herself blushing, she felt nervous and tense and wished she could become invisible and disappear from the face of the earth. At the end of the game, she ran inside and swore not to get involved in any kind of sports again.

*(Added for the purposes of this study:)* You are now invited to remember a situation or experience during your childhood or adolescence that you find significant and where you felt shame. This situation must involve an attachment figure (i.e. you father, mother or other significant care giver)

## **Appendix J: Elaborated categories of shaming experiences from the Shame Experiences Interview**

1. Criticism by an attachment figure (e.g. putting down, making fun, belittling, rejection etc.).
2. Exposure of perceived negative personal attributes/ characteristics/ behaviour to others (e.g. being shown to display fussy, sulky, gossipy, sneaky, vain, greedy etc. behaviour).
3. Negative comments about the body, weight, bodily shape or physical appearance (e.g. teasing/ teasing someone for having freckles or being overweight etc.).
4. Comparisons with significant others (e.g. brothers, cousins, friends etc.).
5. Physical abuse (e.g. scratching, punching, slapping, biting, strangling, kicking etc.).
  
6. Shame of personal habits (e.g. clothes, hygiene, social interaction etc.).
7. Sexual abuse (e.g. sexual touching clothed or unclothed, showing children pornography etc.).
8. Emotional/ psychological abuse (e.g. deliberately trying to scare or humiliate a child, isolating/ ignoring them etc.).
9. Reflected shame (e.g. shame of an attachment figure's embarrassing behaviour/ attributes).
10. Shame of family status (e.g. being rich/ poor, having unemployment, divorce, criminal activity etc. in the family etc.)

## Appendix K: Demographic and personal information requested

Please indicate your geographic location

- drop down box with
  - England
  - Ireland
  - Northern Ireland
  - Scotland
  - Wales

Please indicate your age in years

- drop down box with
  - 18-24
  - 25-29
  - 30-34
  - 35-39
  - 40-44
  - 45-49
  - >50

Please choose the option that best describes your ethnic background

- drop down box with
  - Asian/Asian British
    - Bangladeshi
    - Chinese
    - Indian
    - Pakistani
    - Any other Asian background, please describe
  - Black/African/Caribbean/Black British
    - African
    - Caribbean
    - Any other Black/African/Caribbean background, please describe
  - Mixed/Multiple ethnic groups
    - Asian and White
    - Black African and White
    - Black Caribbean and White
    - Any other Mixed/Multiple ethnic background, please describe
  - White
    - English/Welsh/Scottish/Northern Irish/British
    - Gypsy or Irish Traveller
    - Irish
    - Any other White background, please describe

- Other ethnic group
  - Arab
  - Any other ethnic group, please describe

Please describe the option that best describes how you became a mother

- drop down with
  - I gave birth
  - Surrogacy
  - Adoption
  - Fostering
  - My partner is the biological parent
  - Other

Are you currently in a relationship?

- drop down box with
  - yes, for less than 1 year
  - yes, for 1-5 years
  - yes, for 6-10 years
  - yes, for greater than 10 years
  - not currently in a relationship

Have you in the past, or are you currently experiencing any psychological distress for which you have/are receiving professional support (i.e. talking therapy and/or medication)?

- drop down box with
  - yes currently
  - yes in the past
  - no

## **Appendix L: Acknowledgement email to participants**

Dear participant,

Many thanks for your participation in this study. Your contribution is invaluable and your patience completing questions is highly appreciated.

I will contact you in, or soon after, May 2016 with the summary of the study results and the results of the draw for the Amazon voucher.

If you have any questions or comments at any stage, please do not hesitate to contact me.

Best wishes,

Danielle Gaynor  
Trainee Clinical Psychologist  
University of East London

## Appendix M: Summary of study results for participants

### Participant Feedback

*Researcher: Danielle Gaynor*

*Email: u1331791@uel.ac.uk*

You took part in a research study between September 2015 and March 2016, which was aimed at exploring shame and compassion experienced by new mothers.

Thank you for your participation in this important research. I am writing to you now as you opted to receive a summary of the results.



#### Demographic information

133 first time mothers completed all questionnaires in the study:

- 78% of those lived in England, 9% in Ireland, 5% in Northern Ireland, 5% in Scotland and 3% in Wales.
- 95% of mothers identified their ethnic background as White, 1.5% as mixed multiple ethnic background, 2.5% as Asian British, and 1% as Black British.
- The age range of respondents was 18-49 years.
- 95% gave birth, while 1.5% had their baby through surrogacy, 1% via adoption, 1.5% indicated that their partner was the biological parent and 1% selected the category 'other' relating to the route to motherhood.

#### Main findings

The aim of the study was to explore the relationship between past experiences of shame and first time mothers' current feelings of shame, motherhood and compassionate motivations. The following results relate to an average for all mothers included in the study. It is important to note that individual experiences varied.

Shame: On average, mothers in the current study reported levels of shame that were lower than those reported in previous research involving participants who had received a mental health diagnosis, but higher than those reported by other studies involving participants from universities and communities. This indicates that there was a degree of heightened shame experienced by mothers who took part in the study.

The experience of motherhood: Results were consistent with previous research, which reported that on average, first time mothers found this role more difficult than women who were already mothers. Mothers reported: lacking confidence, finding it difficult coping with their crying baby, worrying that something may happen to their baby, worrying they are not as good as other mothers, and feeling guilty.

Self-compassion: Perhaps the **most important finding in the research** was that self-compassion predicted the experience of motherhood. This means that being compassionate with oneself was related to greater adjustment to/ satisfaction with the role of being a mother regardless of experiencing negative emotions such as high levels of shame.

Compassion can be thought of as “sensitivity to suffering in the self and others with a commitment to try to alleviate and prevent it”. Some authors have defined self-compassion as having three main elements: self-kindness, mindfulness, and common humanity.

- Self-kindness refers to facing suffering with an attitude of care and understanding instead of self-criticism and judgment.
- Mindfulness refers to a conscious awareness of painful experiences as opposed to ignoring, avoiding, or going over these negative past experiences in one’s own mind.
- Common humanity refers to the acknowledgment that one’s painful experiences are part of a common human condition rather than feeling isolated, ashamed, or different.

This is an important finding because like all major life changes, maternity has the potential to be an enriching experience. However, it can also pose stressful challenges that can affect a woman’s health, relationship with her partner, and bonding with her baby. This study suggests that the abilities of mothers to be aware of these stresses, to be kind to themselves rather than judgmental, and understand that these experiences are common, has been linked to an increased ability to cope with these challenges and find more satisfaction from this new motherhood role.

Self-compassion is not something one has or does not have, it is a skill that can be learnt and developed - it can be increased through practice.

For more information about self-compassion and some useful resources to support the development of these skills, please check out these links:

- <http://self-compassion.org/>
- <https://compassionatemind.co.uk/individuals>
- <http://www.compassionatewellbeing.co.uk/>

## Recommendations from the research

Perinatal mental health and wellbeing is a major public health issue that needs attention. The results of the current research point to the importance of developing compassion at multiple levels – at the level of the individual and family, the level of service provision and at a societal level. This research suggests that what is offered to new parents during the perinatal period may need to be reconsidered. Provision could benefit from the incorporation of compassionate mind training in antenatal classes for example, and/or the development of other dedicated compassion training groups for individuals and families. Services could also benefit from providing compassion training to health visitors and other involved professionals. It is also important to acknowledge the role of society in the development of shame. The dominant mothering ideology in Western society often results in women being held to unrealistic standards. The myths of ideal motherhood need to be challenged and new mothers need to be supported to develop their own way of being in this new role that is free from judgement and condemnation.

I would like to thank you again for your participation. If you have any questions or comments, please do not hesitate to contact me on the email address above.

If you have felt any discomfort or distress while reading these results, there are a number of services that you can contact, for example:

- Your General Practitioner
- The Maternal Mental Health Alliance (MMHA) is a coalition of over sixty UK organisations committed to improving the mental health of pregnant women and new mothers. The list is available here <http://maternalmentalhealthalliance.org.uk/>
- Samaritans
  - Call 08457 90 90 90 (UK)
  - Call 116 123 (Ireland)
  - Email [jo@samaritans.org](mailto:jo@samaritans.org)

Best wishes,

*Danielle Gaynor.*

## Appendix N: SPSS graphs and output

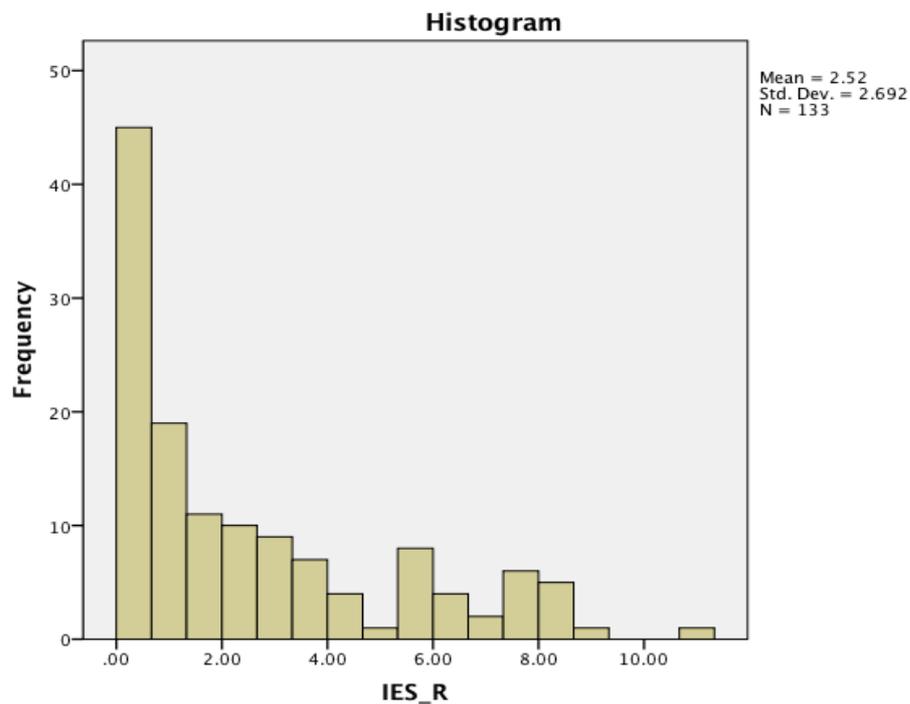


Figure N1. Histogram for the Impact of Events Scale-Revised (IES-R)

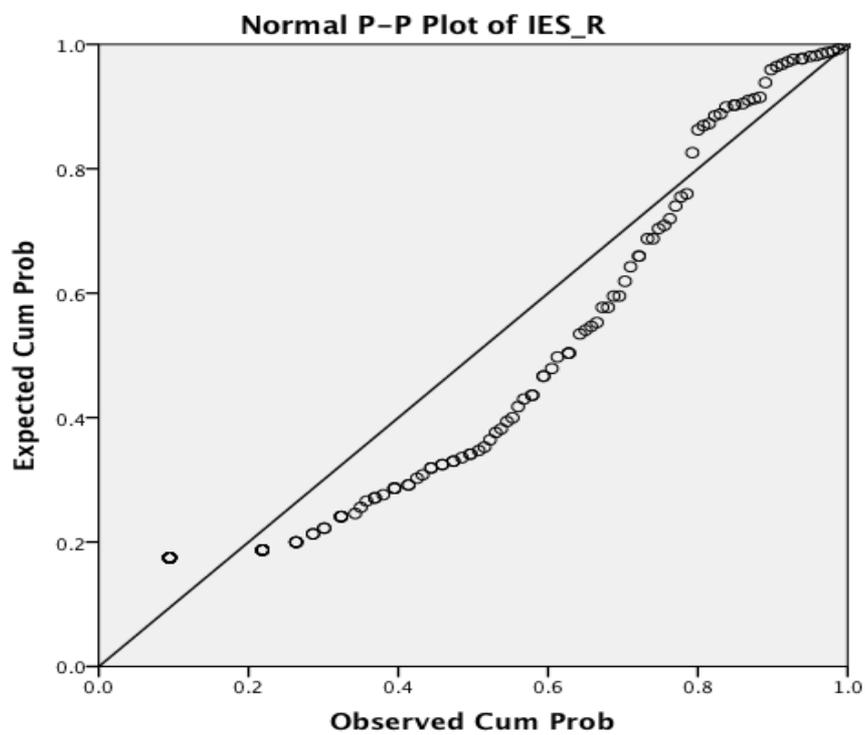


Figure N2. P-P plot for the Impact of Events Scale-Revised (IES-R)

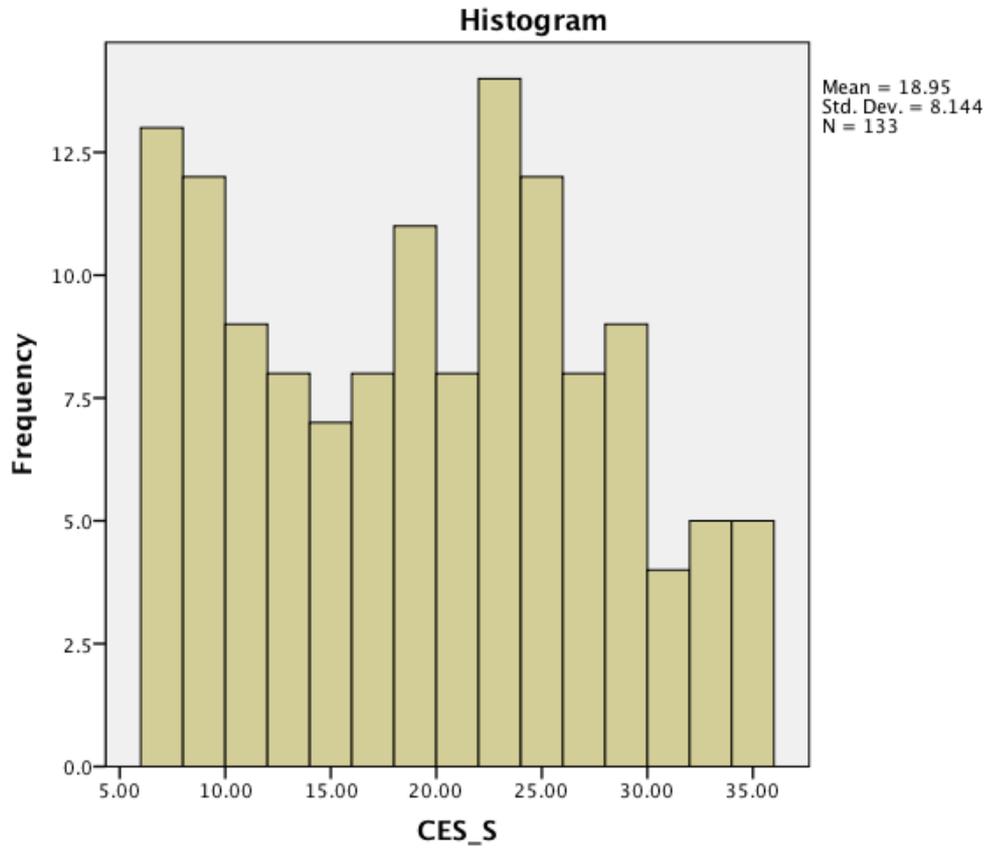


Figure N3. Histogram for the Centrality of Events Scale – Short Version (CES-S)

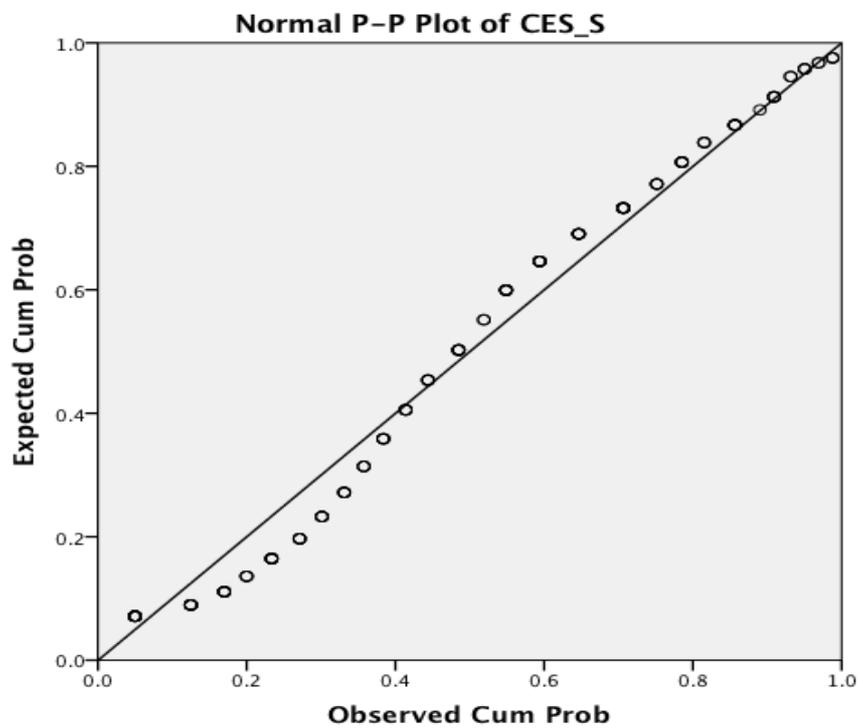


Figure N4. P-P plot for the Centrality of Events Scale – Short Version (CES-S)

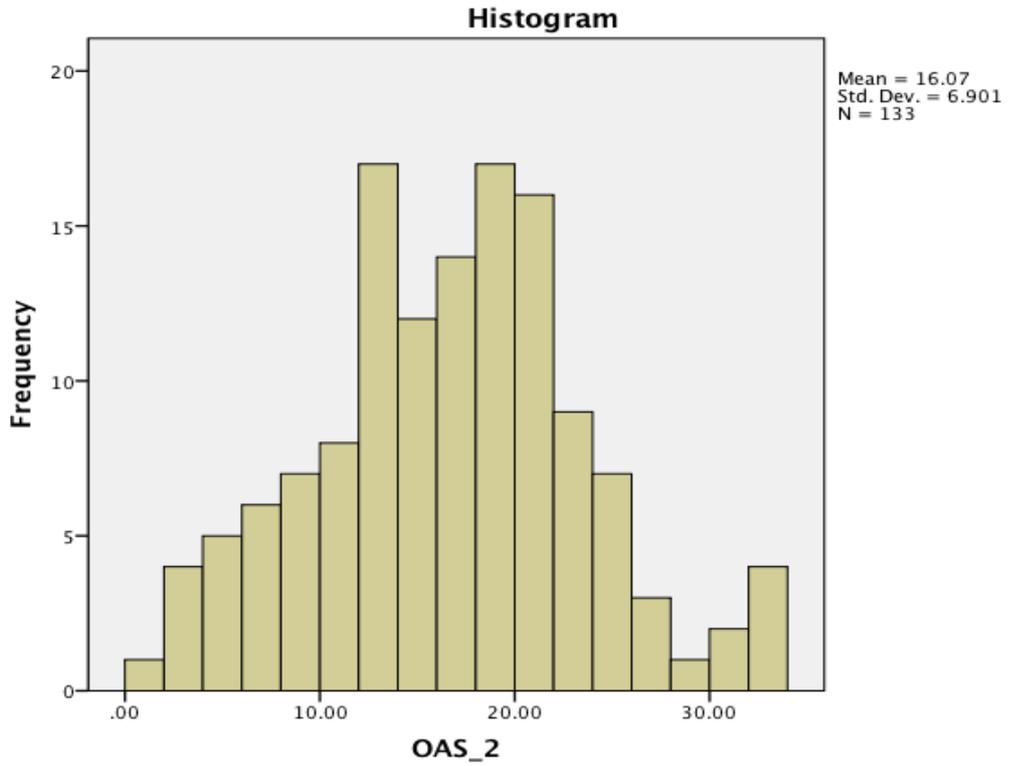


Figure N5. Histogram for the Other as Shamer Scale – 2 (OAS-2)

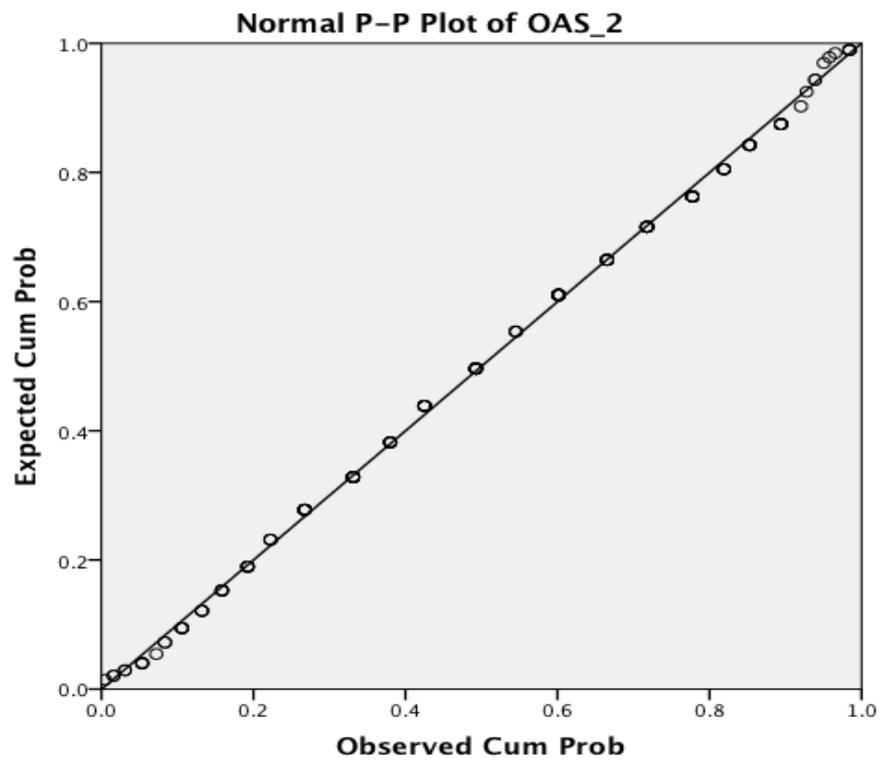


Figure N6. P-P plot for the Other as Shamer Scale – 2 (OAS-2)

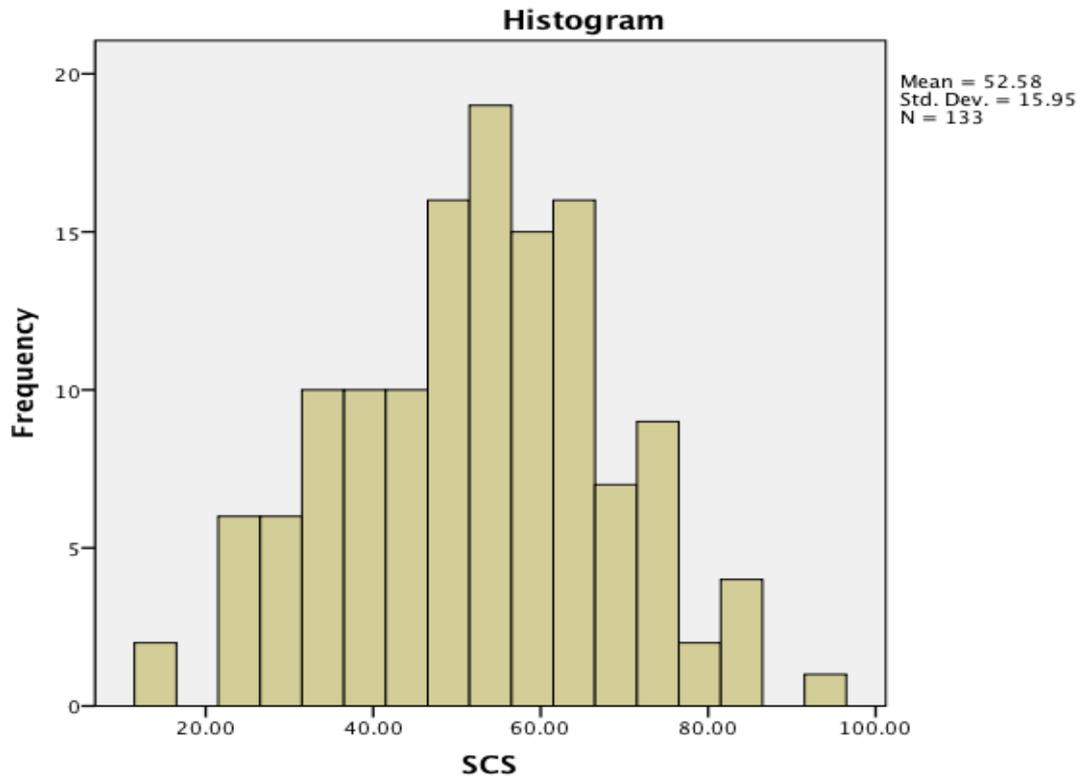


Figure N7. Histogram for the Social Comparison Scale (SCS)

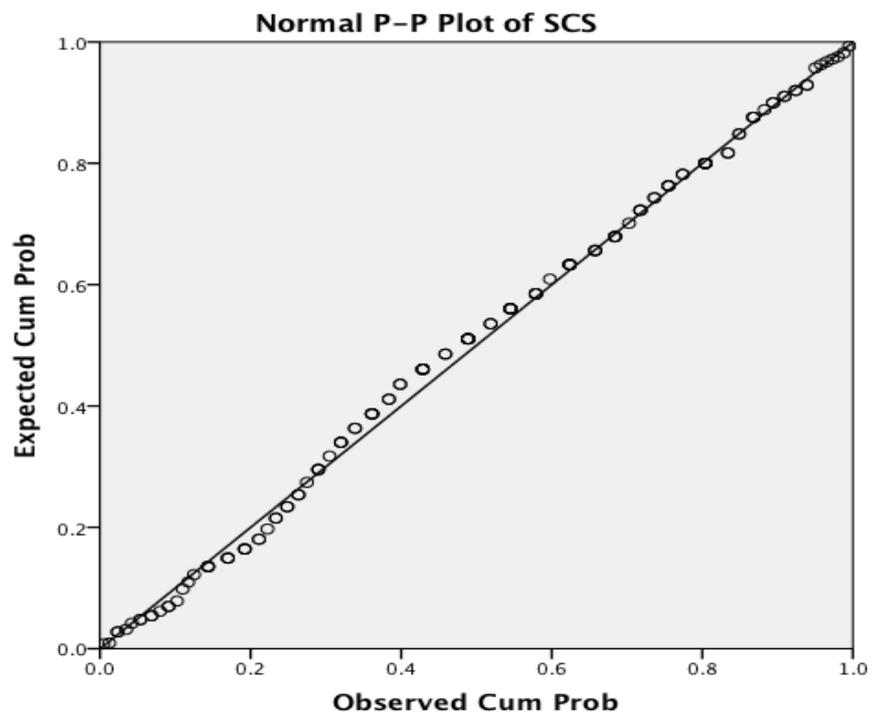


Figure N8. P-P plot for the Social Comparison Scale (SCS)

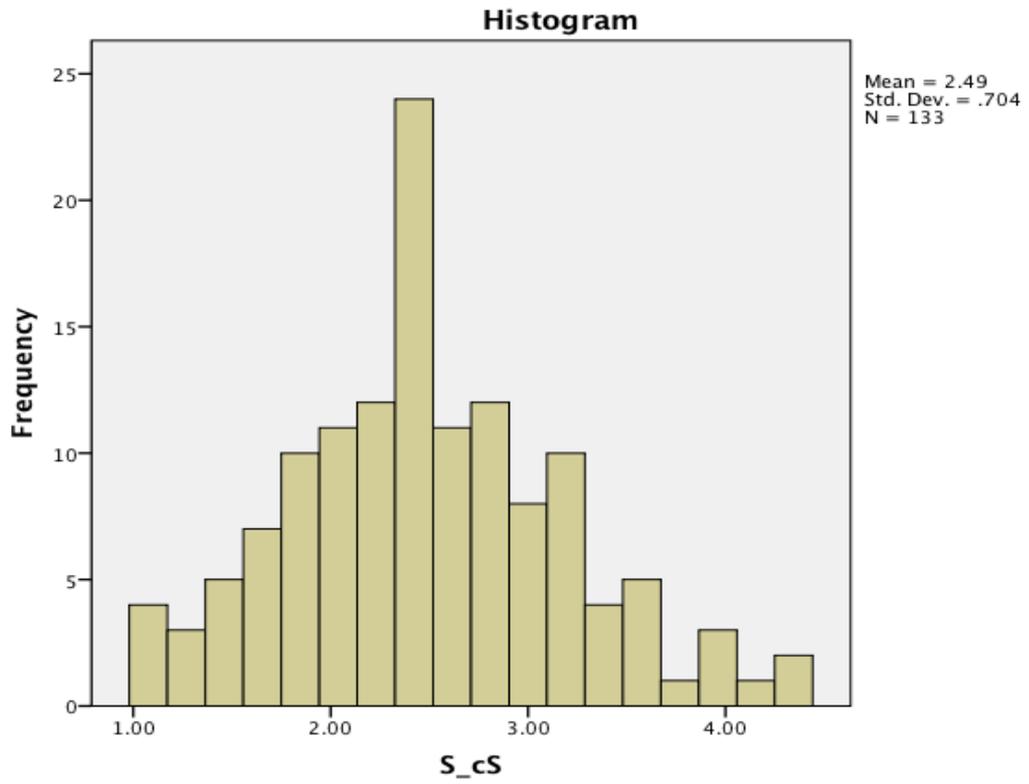


Figure N9. Histogram for the Self-compassion Scale (S-cS)

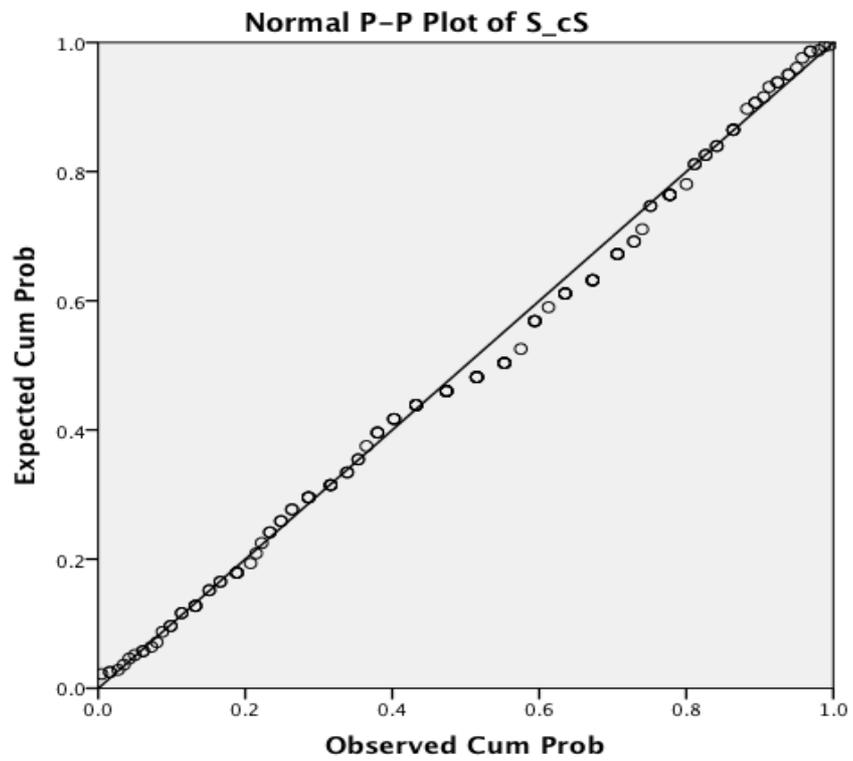


Figure N10. P-P plot for the Self-compassion Scale (S-cS)

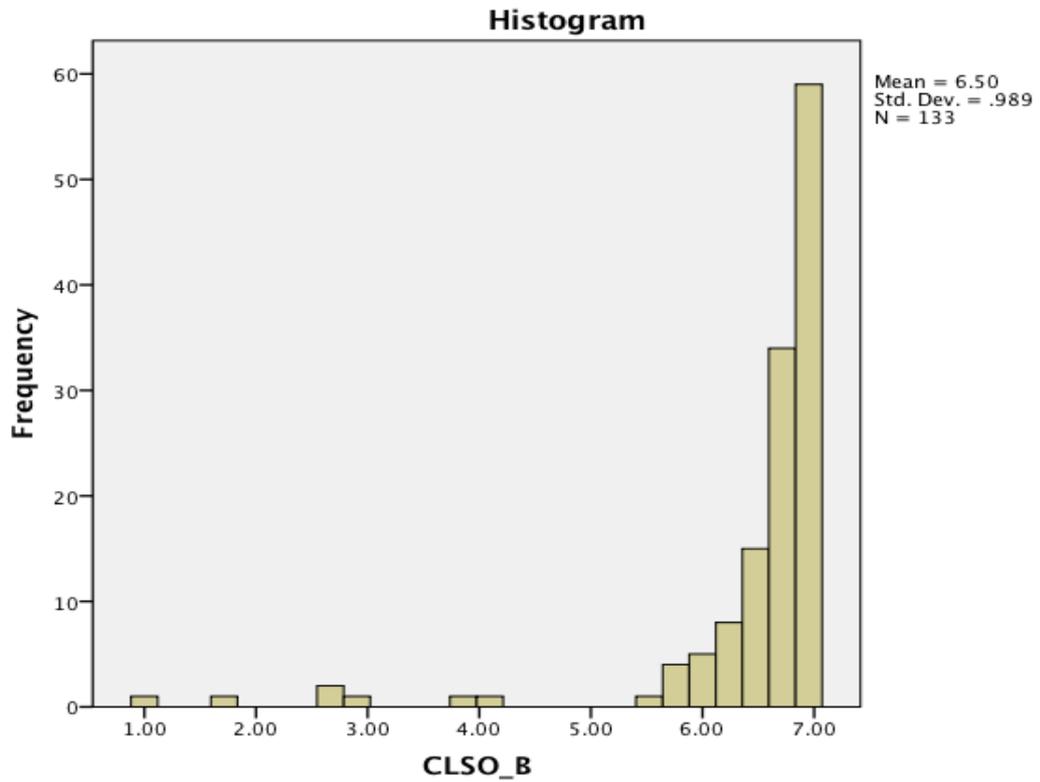


Figure N11. Histogram for the Compassionate Love of Specific Other Scale-Baby (CLSO-B)

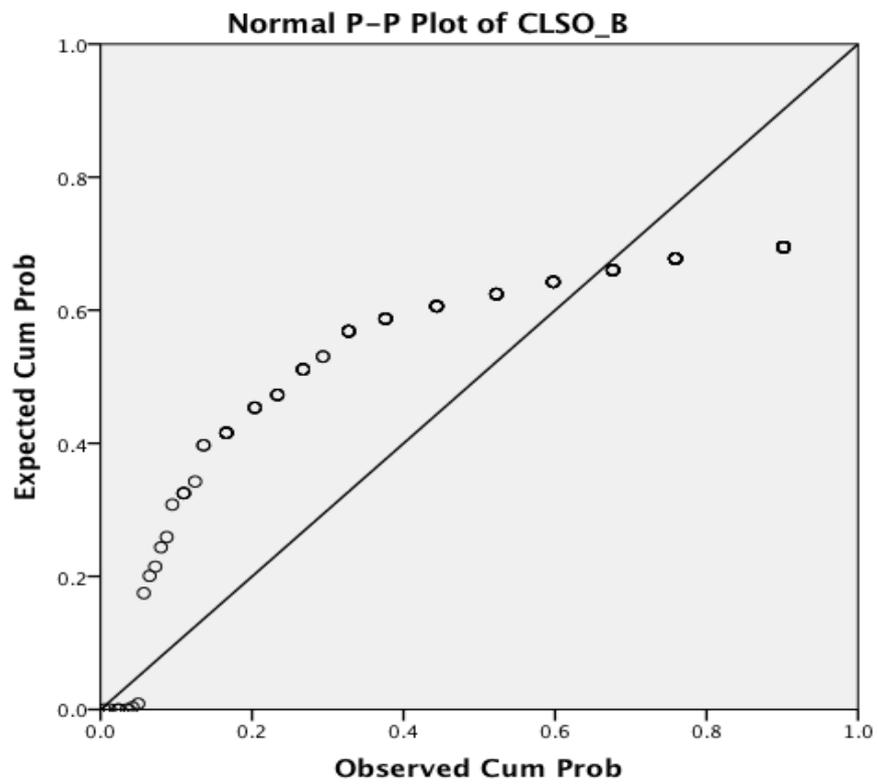


Figure N12. P-P plot for the Compassionate Love of Specific Other Scale-Baby (CLSO-B)

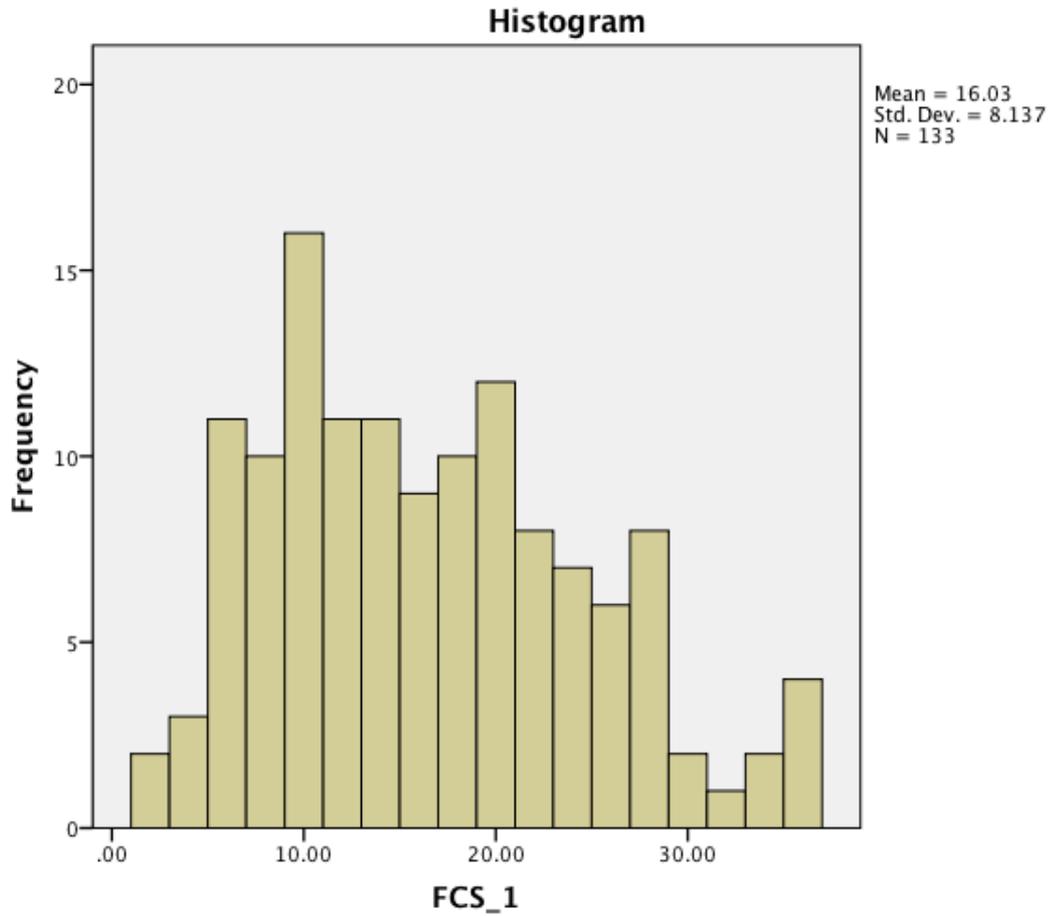


Figure N13. Histogram for the Fear of Compassion Scale – 1 (FCS-1)

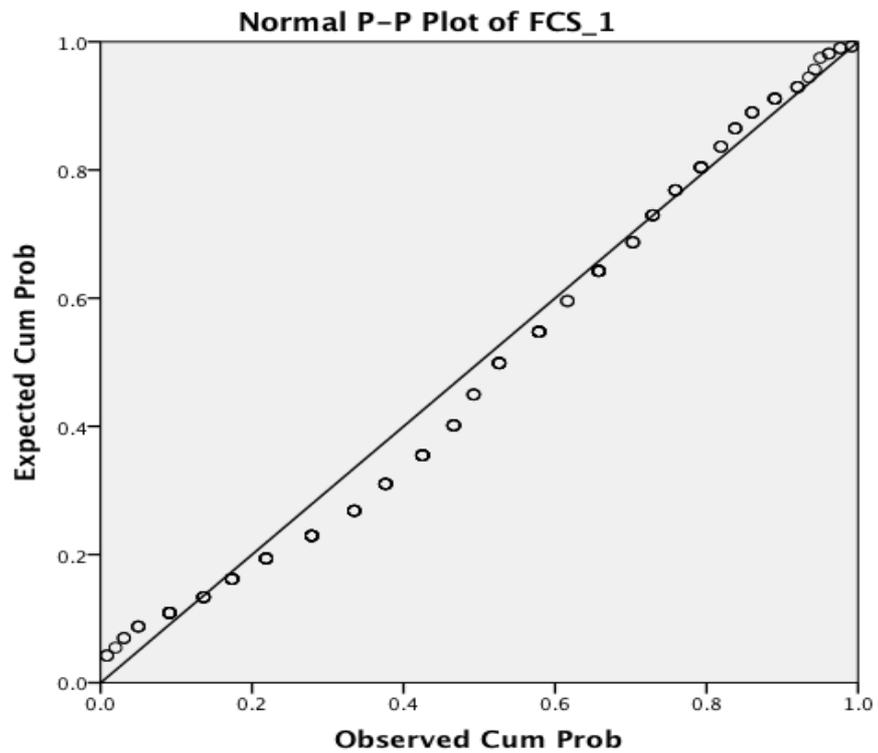


Figure N14. P-P plot for the Fear of Compassion Scale – 1 (FCS-1)

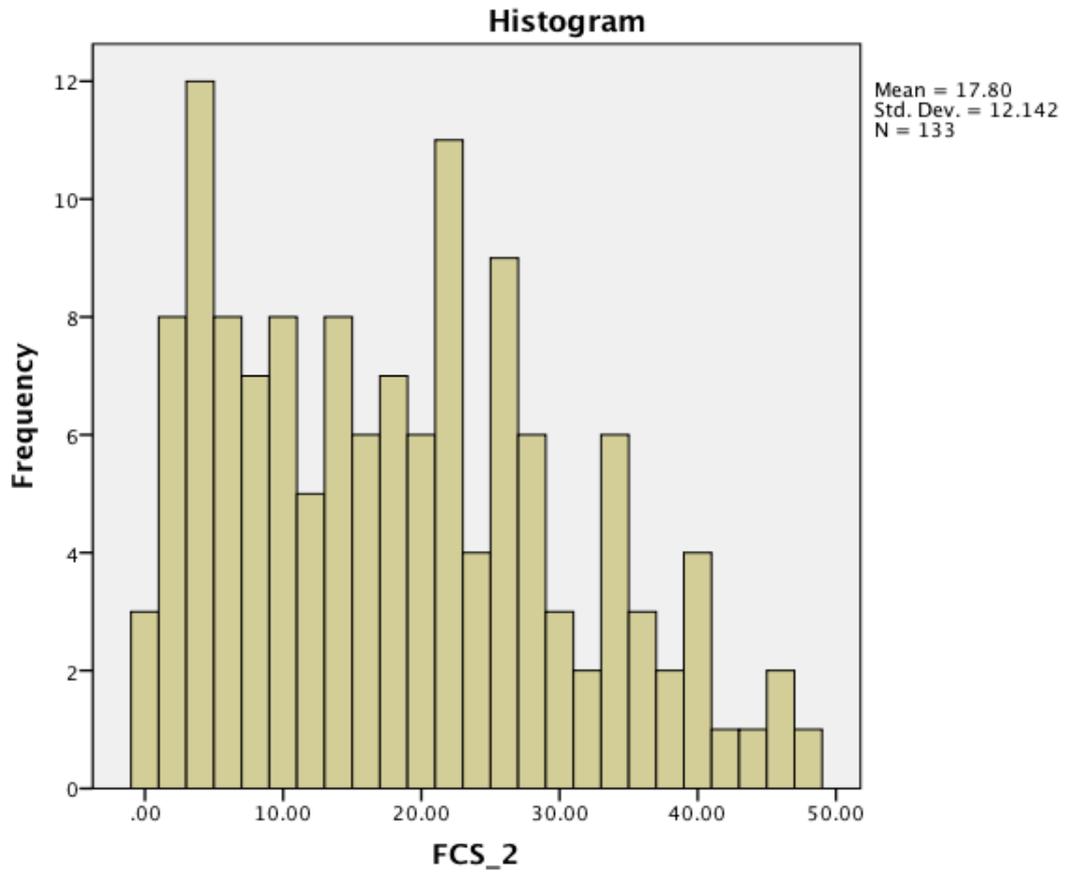


Figure N16. Histogram for the Fear of Compassion Scale – 2 (FCS-2)

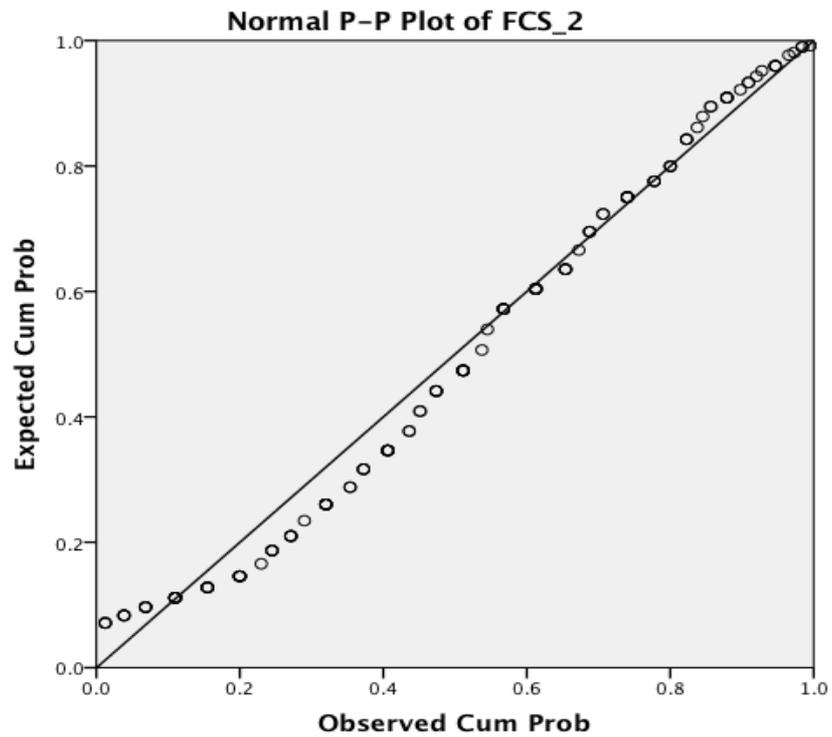


Figure N17. P-P plot for the Fear of Compassion Scale – 2 (FCS-2)

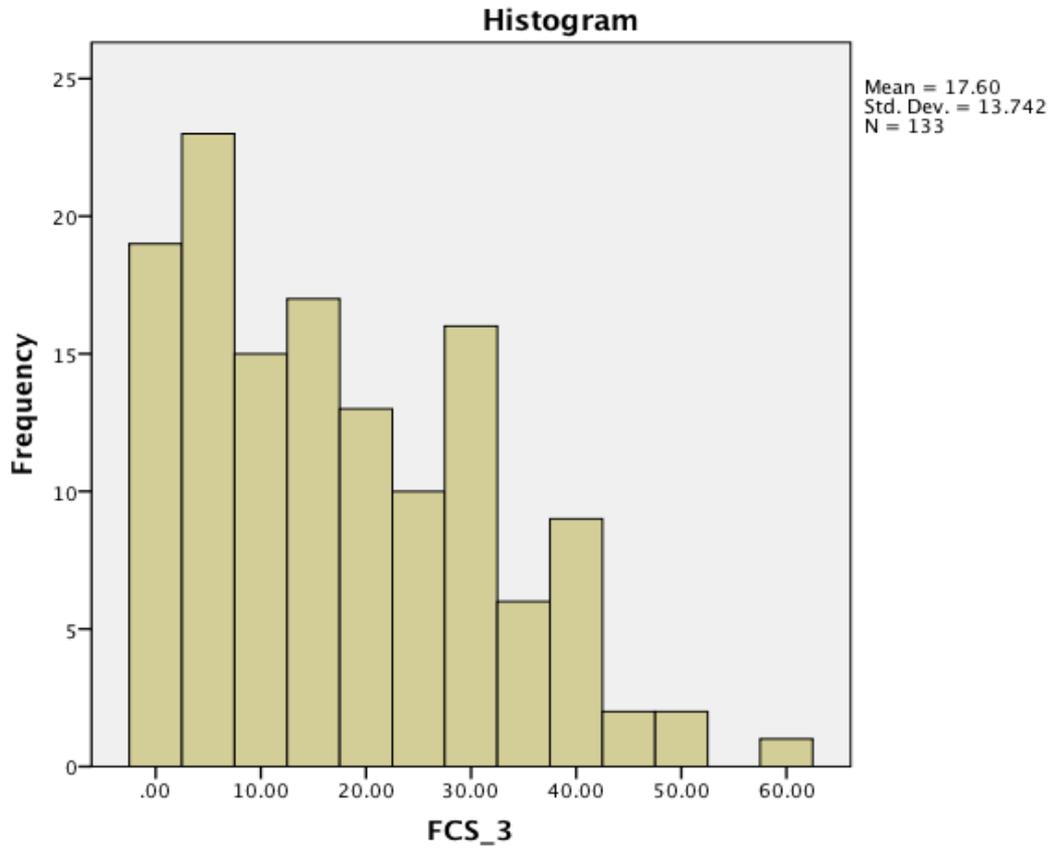


Figure N18. Histogram for the Fear of Compassion Scale – 3 (FCS-3)

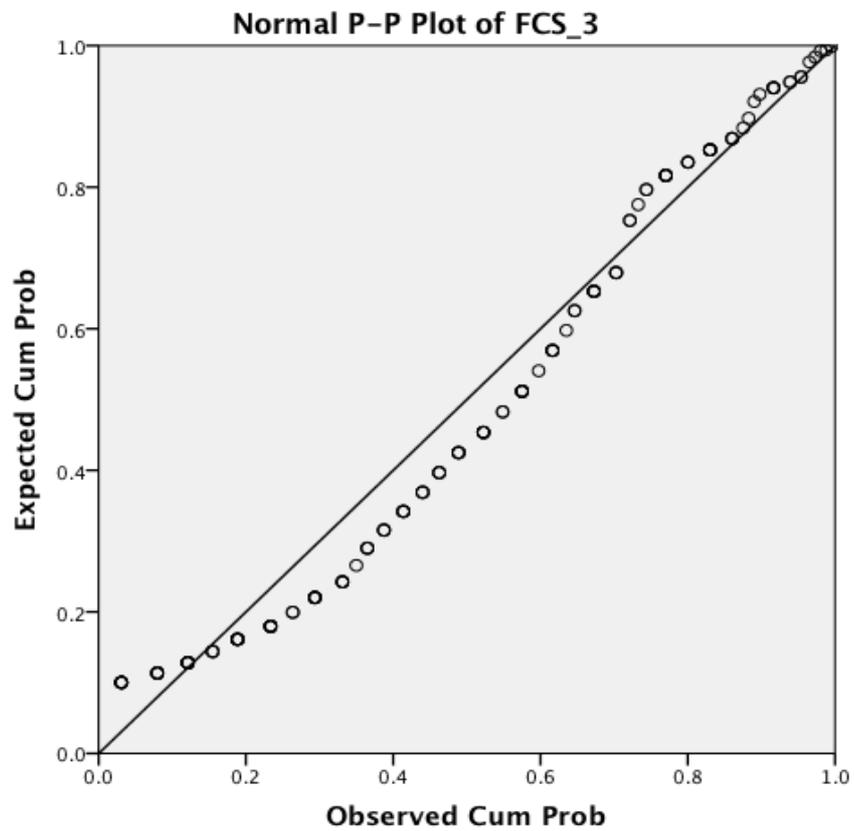


Figure N19. P-P plot for the Fear of Compassion Scale – 3 (FCS-3)

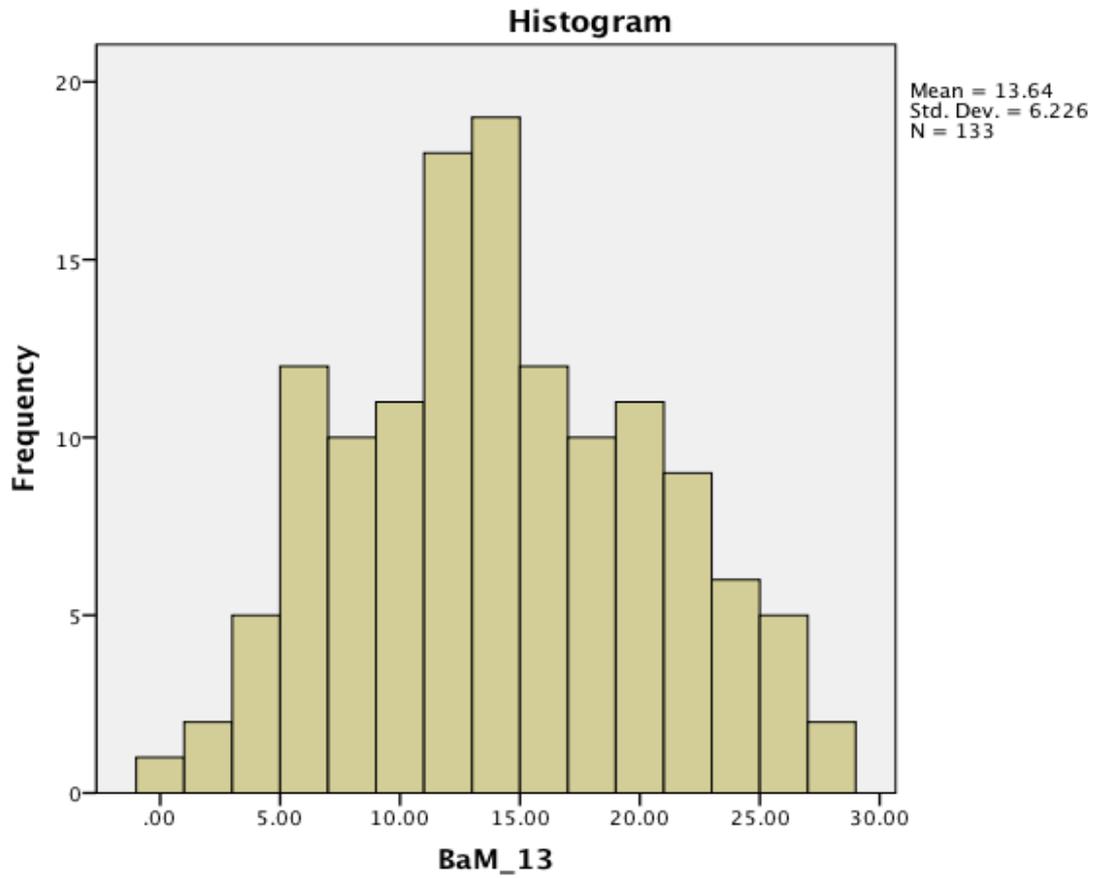


Figure N20. Histogram for the Being a Mother Scale – 13 (BaM-13)

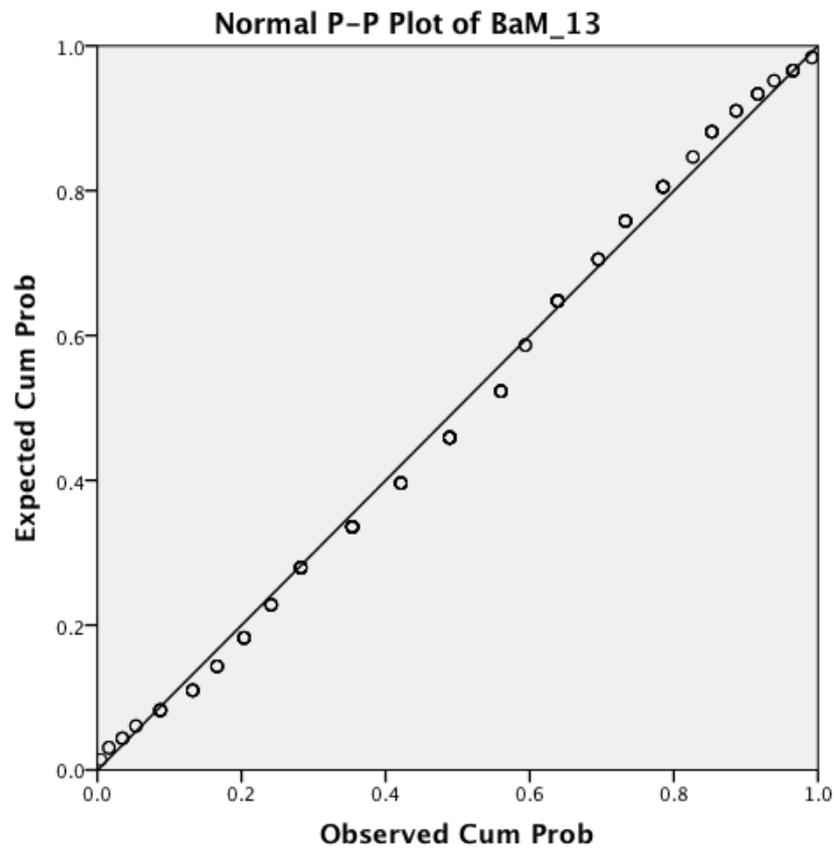


Figure N21. P-P plot for the Being a Mother Scale – 13 (BaM-13)

	Correlation	Eigenvalue	Wilks Statistic	F	Num D.F.	Denom D.F.	Sig.
1	.592	.539	.614	4.901	14.000	248.000	.000
2	.236	.059	.944	1.234	6.000	125.000	.293

H0 for Wilks test is that the correlations in the current and following rows are zero

Figure N22. Canonical correlations for Function 1 and Function 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.519 <sub>a</sub>	.269	.216	5.51360	.269	5.035	9	123	.000	1.930

Note. Predictors: (Constant), FCS\_3, CLSO\_B, CES\_S, FCS\_1, SCS, IES\_R, S\_cS, OAS\_2, FCS\_2  
 Dependent Variable: BaM\_13

Figure N23. Regression analysis: model summary

Model	Durbin-Watson	Bootstrap <sup>a</sup>			
		Bias	Std. Error	95% Confidence Interval	
				Lower	Upper
1	1.930	-.549	.149	1.104	1.665

Note. Bootstrap results are based on 1000 bootstrap samples

Figure N24. Regression analysis: bootstrap for model summary

Model	B	Bootstrap <sup>a</sup>				
		Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
1 (Constant)	16.468	.233	7.200	.020	3.041	30.520
IES_R	-.070	.016	.255	.783	-.550	.476
CES_S	-.066	.005	.080	.405	-.215	.103
OAS_2	.097	-.005	.139	.511	-.175	.359
SCS	.031	-.002	.050	.539	-.070	.125
S_cS	-3.188	.078	1.090	.001	-5.182	-.980
CLSO_B	.142	-.038	.620	.791	-1.209	1.169
FCS_1	.058	-.005	.077	.464	-.101	.201
FCS_2	.005	.005	.083	.954	-.151	.169
FCS_3	.080	-.002	.072	.258	-.067	.222

Note. Bootstrap results are based on 1000 bootstrap samples

Figure N25. Bootstrap for correlation coefficients

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.481 <sup>a</sup>	.231	.219	5.50067	.231	19.553	2	130	.000
2	.530 <sup>b</sup>	.281	.265	5.33931	.050	8.976	1	129	.003

Note. a Predictors: (Constant), S-cS, SCS

b. Predictors: (Constant), S-cS, SCS, Interaction internal shame & self-compassion

Figure N26. Moderation analysis for internal shame & self-compassion: model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.489 <sup>a</sup>	.239	.227	5.47354	.239	20.393	2	130	.000
2	.518 <sup>b</sup>	.268	.251	5.38763	.029	5.179	1	129	.025

Note. a. Predictors: (Constant), OAS-2, S-cS

b. Predictors: (Constant), OAS-2, S-cS, Interaction external shame & self-compassion

Figure N27. Moderation analysis for external shame & self-compassion: model summary

## Appendix O: Glossary of terms for the correlation analysis

**Canonical variates (CV)** are linear combinations that represent the weighted sum of the IVs in Set 1 and the DVs in Set 2.

A **canonical function** is the relationship between the CVs.

The **canonical correlation (CC)** is a measure of the strength of the overall relationship. The number of canonical functions and CCs equals the number of variables in the smaller set. CC analysis focuses on accounting for the maximum amount of the relationship between the two sets, which means that the first pair of CVs is derived to have the highest possible inter-correlation between the two sets and the second pair is then derived so that it exhibits the maximum relationship between the two sets not accounted for by the first pair of variates.

**Canonical loadings** measure the simple linear correlation between the IV and their respective CV.s These are also known as canonical structure correlations and can be interpreted like factor loadings.

**Canonical cross-loadings** are the correlation of each IV or DV with the opposite CV. They can be interpreted like canonical loadings, but with the opposite CV.

**Redundancy index** is the amount of variance in a CV explained by the other CV in the canonical function.

## Appendix P: Stein's formula – cross-validation of regression model

$$1 - [(n - 1 / n - k - 1) (n - 2 / n - k - 2) (n + 1 / n)] (1 - R^2)$$

$$1 - [(133 - 1 / 133 - 7 - 1) (133 - 2 / 133 - 7 - 2) (133 + 1 / 133)] (1 - .27)$$

$$1 - [(132 / 125) (131 / 124) (134 / 133)] (.73)$$

$$1 - [(1.06) (1.06) (1.01)] (.73)$$

$$1 - (1.24) (.73)$$

$$1 - .91 = - 0.09$$