Shame, paranoia and psychological distress: The influence of an online self-compassion intervention

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The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

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ABSTRACT

Background: High levels of shame are frequently reported in individuals with experiences of paranoia, and recent literature suggests that shame is an important factor in the development of paranoia following stressful life events. Psychological therapies that involve the development of self-compassion are designed to address high levels of shame, and emerging evidence suggests promise for the effectiveness of these interventions for individuals with paranoia. However, there have been no studies to date that examine the specific relationship between shame, self-compassion and paranoia.

Method: A randomised group comparison design was used to investigate the efficacy of a web-based intervention designed to increase self-compassion in reducing levels of shame and paranoia when compared to a control intervention. **Results:** The experimental intervention did not increase levels of self-compassion in participants, and therefore it was not possible to assess the impact of this on levels of shame and paranoia. However, the self-compassion intervention did reduce general psychological distress in participants randomised to that condition. Cross-sectional analyses revealed a number of significant correlations between self-compassion, shame and paranoia.

Conclusions: The results suggest that a brief online intervention may not be sufficiently intensive to increase self-compassion, but that such interventions may be of use in reducing more general psychological distress. Self-compassion, shame and paranoia all seem to be related, but further experimental research is needed to better establish the processes through which self-compassion interacts with shame to influence experiences of paranoia.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

ANCOVA: Analysis of Covariance

BPS: British Psychological Society

CAPE: Community Assessment of Psychic Experiences

CFT: Compassion Focused Therapy

CORE-10: Clinical Outcome in Routine Evaluation- 10 Item

ESS: Experiences of Shame Scale

JTC: Jumping to Conclusions

PANSS: Positive and Negative Syndrome Scales

SCS: Self-Compassion Scale

SSPS: The State Social Paranoia Scale

VAS: Visual Analogue Scales

INTRODUCTION

Paranoia is a commonly reported experience within the general population. A number of cognitive and emotional factors have been suggested to play a part in the development and maintenance of paranoid thinking. High levels of shame, in particular, have recently been shown to be an important factor in the development of paranoia following stressful life events. Emerging evidence suggests that interventions to increase self-compassion may be of help in reducing both feelings of shame and paranoia, but this relationship remains relatively unexplored. This review will describe the concept of paranoia, the role of shame in relation to the development of paranoia, and the evidence for self-compassion interventions in the context of both shame and paranoia. Finally, the research aims and hypotheses will be outlined.

Terminology

There has been considerable debate about the language best suited to describing experiences of psychological distress in recent years, considered to be reflective of the wider debate about the nature and causes of such experiences (British Psychological Society (BPS), 2014a). The field of clinical psychology has witnessed a move away from language that describes experiences of psychological distress as an "illness", that presents the individual as a "passive victim of an active pathology", towards more "flexible language" about these experiences (May, 2004, p.3). In keeping with this, for the purposes of this thesis the term 'unusual experiences' will be used to describe experiences that fall under the umbrella of psychosis, and 'experiences' will be used rather than 'symptoms'. The terms 'paranoia' and 'paranoid thoughts' will be used to refer to an individual holding beliefs about others wanting to harm them. Although it is acknowledged that 'paranoia' is sometimes considered a medical term, in keeping with

almost all of the literature on the topic, it was considered to be the most appropriate term to use in this context.

Psychosis

Whilst this thesis focuses specifically on paranoia, research into this experience is often imbedded within the literature on psychosis and as such, it is important to first define what is meant by 'psychosis' before looking more specifically at paranoia.

   Definition.

Psychosis is an umbrella term for a number of unusual experiences that affect the way an individual perceives and responds to the world around them. 'Unusual experiences' that fall under the umbrella of 'psychosis' include "hearing voices", "holding (apparently) unusual beliefs", and "becoming unexpressive, withdrawn, apathetic or unmotivated" (British Psychological Society (BPS), 2000). Although medical terms such as 'schizophrenia' are still frequently used within healthcare settings and in the wider society, Bentall (1990) suggests that these unusual experiences are best understood through a focus on the individual's experiences rather than a psychiatric diagnosis.

Paranoia

   Definition.

There is little consensus within the literature on one specific definition of paranoia, evidenced by the use of terms such as paranoia and delusions being used interchangeably and to denote discrete concepts (Freeman, 2007). Furthermore, research studies investigating the concept rarely define paranoia, considered to be a result of authors believing this to be self-evident (Freeman, 2007).

Drawing upon attempts at defining paranoia by Fenigstein and Valable (1992) and Ellet, Lopes and Chadwick (2003), Matos, Pinto-Gouveia and Gilbert (2013, p.335) propose that paranoia is best understood as an "ordinary psychological process characterised by a perception of planned intentions of harm by others towards the self". This definition emphasises the idea that the processes underlying paranoia are understandable responses to experiences, and not something that necessarily implies that the individual with these beliefs is 'mentally ill' (Matos et al., 2013).

Paranoid thinking is the second most frequently reported experience that falls under the umbrella term of psychosis (Freeman & Garety, 2006), but is also considered to be an important factor in post-traumatic stress disorder (PTSD), anxiety and depression and thus is clinically significant within its own right (Freeman, 2007). Furthermore, paranoia is a complex, multifaceted concept that covers a wide variety of beliefs including differences in the type and severity of threat, identity and intention of the persecutor (Freeman, Garety & Kuipers, 2001).

Prevalence of paranoid thoughts.

It is estimated that 10-15% of the general population regularly experience paranoid thoughts (Freeman, 2007), although as Freeman, Garety, Bebbington, Smith, Rollinson et al. (2005) note, due to the stigma associated with these experiences some individuals may be reluctant to disclose them, and as such these figures may be an underestimation of the true prevalence. Furthermore, the BPS propose that epidemiological studies are likely to underestimate the true prevalence of these experiences as individuals who are not distressed by them are not captured in the sample (BPS, 2014a). These figures also do not often account for content or amount of distress caused by these thoughts (Freeman, 2007).

An attempt to address these issues was made by Freeman et al. (2005) who investigated the prevalence of paranoid ideas in a sample of over 1,200 University students. The study revealed that paranoid thoughts were a weekly occurrence for a third of participants, with individuals reporting differing levels of threat associated with these thoughts. Thoughts about others intending to cause mild harm were more commonly reported than thoughts about the intention of more severe harm, leading the authors to suggest that paranoid thoughts can be represented as a hierarchy of experiences (see Figure 1). Although the generalisability of the results is limited due to the population sampled and the reliance on participants to opt in to complete the questionnaire (which may attract individuals who are more prone to psychological difficulties), the results nevertheless suggest that these thoughts are common.
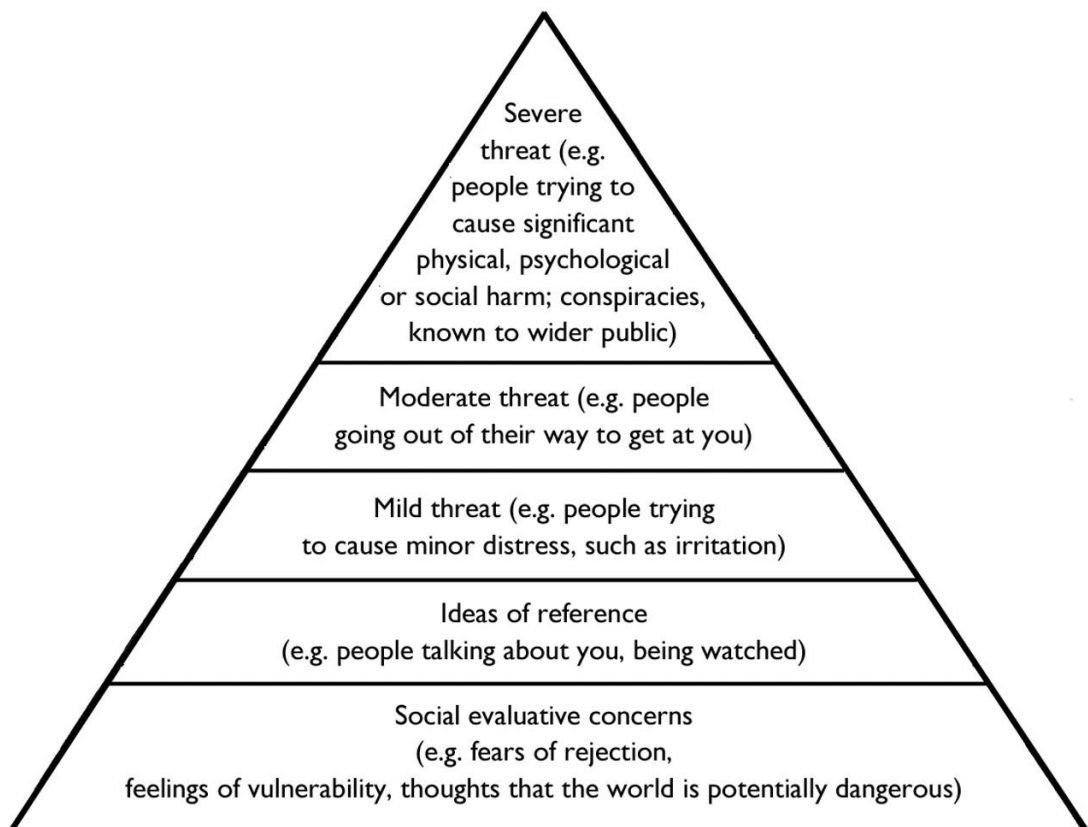
Figure 1. Hierarchy of paranoid thoughts (Freeman et al., 2005)

The suggestion that paranoid thoughts can be conceptualised as a hierarchy of experiences is supported by a review of 15 studies investigating the prevalence of paranoia, which estimated that approximately 1-3% of the non-clinical population experience paranoid ideas to the same level of distress as found in a clinical population (Freeman, 2006). Indeed, paranoid ideas within the general population have been shown to be associated with distress and impairment in social and occupational functioning (Olfson, Lewis-Fernandez, Weissman, Feder, Gameroff et al., 2002). Freeman (2006) reports that a further 5-6% of the non-clinical population experience paranoid ideas to a lesser degree (although these are still associated with a certain level of distress), and that another 10-15% of the non-clinical population have relatively regular paranoid ideas that cause little distress. Further support for the hierarchy comes from the results of a meta-analysis revealing that approximately 75-90% of paranoid ideas are fleeting and fade over time (van Os, Linscott, Myin-Germeys, Delespaul & Krabbendam, 2009).

In summary, although there is some variation in the frequency and intensity of these experiences, individuals within a non-clinical population report paranoid ideas similar in nature to those within a clinical population. The finding that paranoia is a common experience amongst the general population supports the continuum model of psychosis (Claridge, 1990; Bentall, Claridge & Slade, 1989).

Continuum model of psychosis.

The continuum view of unusual experiences postulates that the experiences that fall under the umbrella term of psychosis exist on a continuum with 'normal' experience. Unusual experiences are believed to result from multiple interacting factors, and as such cannot be considered a truly dichotomous phenomenon as advocated by the medical model of psychosis (van Os et al., 2009). Contrary to the use of psychiatric diagnoses, which allow for individuals to be placed into discrete groups (i.e. individuals who

experience psychosis versus those who do not), the continuum view of psychosis does not lend itself to the categorisation of individuals in the same manner.

Claridge (1997) reports that this view of psychosis as dimensional experiences lying on a continuum with normality is widely accepted amongst psychologists and some psychiatrists, although there is some debate within the literature about the amount of existing evidence that supports this model. Whereas Lawrie, Hall, McIntosh, Owens & Johnstone (2010) suggest that the scientific evidence for the continuum of psychosis is limited, a systematic review of continuum versus categorical models of psychosis found that the prevailing viewpoint is that processes underlying experiences of psychosis lie on a continuum (Linscott & van Os, 2010).

The model arose from findings that unusual experiences are common within the general population as has been illustrated with paranoid thoughts, discussed above. For example, although the reported prevalence of auditory verbal hallucinations in the general population varies widely (Johns, Kompus, Connell, Humpston, Lincoln et al., 2014), it is estimated that one in ten people will hear a voice talking to them when there is no one actually there during their lifetime (BPS, 2014a). Similarly to paranoid thoughts the frequency of, and distress caused by, these experiences vary depending on the individual. The finding that paranoid ideas are common experiences within the general population provides support for the view that these experiences can be understood as existing on a continuum, rather than the population being divided into those who do experience them and those who do not.

The BPS (2014a) suggest that individuals who have infrequent unusual experiences or do not find their experiences distressing may lie at one end of the continuum, whereas individuals who have frequent unusual experiences that they find distressing may lie on the other end. Therefore, it is likely that the individuals who find their experiences distressing will be most likely to access mental health services for

support, though the level of support an individual seeks is also likely to vary over time. Despite the apparent importance of the level of distress associated with an individual's experiences, historically much of the research into interventions for unusual experiences focuses solely on reducing the frequency of these experiences rather than the distress caused by them.

May (2004) suggests that the level of distress an individual experiences is determined by the relationship that an individual has with their experiences, rather than the experience itself. The way in which unusual experiences are interpreted varies widely across different cultures. This has been illustrated recently by a study investigating the differences in how individuals who hear voices relate to their experiences across the United States of America, India and Ghana (Luhrmann, Padmavati, Tharoor & Osei, 2015). The study concluded that participants from India and Ghana were more likely to describe the relationship that they had with the voices as positive when compared to participants from the United States, and were less likely to describe their experiences as being indicative of psychological illness (Luhrmann et al., 2015). Thus, how an individual relates to their experiences seems to be influenced by society's view on the meaning of that experience. This is an important factor in determining the level of distress, and could in part explain why some individuals with experiences of psychosis do not seek care from mental health services.

In summary, paranoid thoughts and other unusual experiences are common within the general population, and are thought to vary in terms of the frequency and distress caused by them. An implication of viewing these experiences as being on a continuum with normal experience is that researching them within a non-clinical population rather than focusing solely on the most severe examples is important, and can also inform the understanding of clinical phenomena (Ellett & Wildschut, 2014; Freeman, Freeman & Garety, 2006; Freeman, 2007).

Risk factors for clinically significant paranoia.

There are many psychological, social and biological risk factors thought to increase an individual's susceptibility to experiencing clinically significant levels of psychosis (Aitchison, Meehan & Murray, 1999). One area that has received considerable research interest and links to clinical practice is the relationship between childhood adversity and later psychological distress. Adverse childhood events can be divided into subcategories of 'interpersonal loss' (including death or divorce of parents and separation from parents), parental difficulties (including psychological difficulties, substance misuse, criminality and violence), maltreatment (including physical, emotional and sexual abuse, and neglect), 'other childhood adversities' (including serious physical illness and financial adversity) (Kessler, McLaughlin, Green, Gruber, Sampson et al., 2010), and 'peer victimisation' (including bullying) (Varese, Smeets, Drukker, Lieverse, Lataster et al., 2012).

The psychological consequences of early adverse events have long been studied, with adverse events in childhood being shown to be uniquely associated with later psychological difficulties, even after controlling for relevant demographic variables (Briere, Woo, McRae, Folz & Sitzman, 1997). More specifically to unusual experiences, a recent meta-analysis concluded that adults who experience early adversity are almost three times as likely to have experiences that fall under the umbrella of psychosis later in life than those who do not (Varese et al., 2012). Increasing evidence supports an association between sexual abuse in childhood and unusual experiences (Bebbington, Jonas, Kuipers, King, Cooper et al., 2011). Indeed, data from a national household survey revealed that adults who have experienced non-consensual sexual intercourse before the age of 16 are ten times more likely to develop unusual experiences than those who have not (Bebbington et al., 2011).

Despite the relationship between early adverse experience and psychological distress receiving considerable attention within the literature, as Bentall, Wickham, Shevlin and Varese (2012) note, the mechanisms behind these associations are poorly understood. The authors suggest that the reason for this may be due to the vast breadth of investigated outcomes (Bentall et al, 2012). In order to address this issue Bentall and colleagues looked more closely at 'specific adversity-symptom' relationships, and found children who had experienced either 'attachment-disrupting' events (such as being brought up in institutionalised care or being neglected) or physical abuse tended to display higher levels of paranoia (as measured by the Psychosis Screening Questionnaire (PSQ, Bebbington and Nayani, 1995)) than children who had not experienced these events (Bentall et al., 2012). The authors suggest that this finding supports existing evidence about the psychological mechanisms underpinning paranoid ideation, which include hypervigilance to social threats and a propensity to externally attribute negative experiences to the actions of others, both argued to be a probable consequence of disruption of early attachment and experiences of being victimised (Bentall et al., 2012).

Although there is an increasing amount of evidence to support the association between adverse childhood events and unusual experiences (e.g. Schafer & Fisher, 2011; Varese et al., 2012), no predictors have been identified to explain why some individuals who have experienced adverse events in childhood develop unusual experiences and others do not (Ucok, Direk, Koyuncu, Keskin-Ergen, Yuksel et al., 2013). A number of researchers have contributed to the literature on psychological processes underlying the development of paranoia.

Psychological models of paranoia.

As suggested in Matos et al.'s (2013) definition of paranoia, the processes involved in the development of this experience are understandable and as Freeman

(2007) proposes, having an awareness of the potentially hostile intentions of others can be a highly adaptive strategy. A number of different models of paranoia have been developed within the literature, and a brief introduction to a number of these is documented below. Several of the most prominent theories of the psychological mechanisms involved in the development and maintenance of paranoia emphasise the relevance of a negative view of the self and others, and the corresponding negative emotions (Hartmann, Sundag & Lincoln, 2014).

Evolutionary models of paranoia

Similarly to other forms of psychological distress, the development of paranoid thinking can be understood from an evolutionary perspective. Paranoia involves the detection of threat to oneself from others; a process universally observed in animals (Gilbert, Boxall, Cheung & Irons, 2005). Efficiently detecting social threats within one's environment is essential for species survival (Green & Phillips, 2004). Indeed, a review of the literature on the perception of social threat concluded that paranoia could be understood as the adaptive mechanisms that have been evolved to enable efficient threat detection from others (Green & Phillips, 2004). Gilbert (2009) proposed two types of threat; external threat can be considered a result of an individual's fear of rejection from others and internal threat can be considered a result of an individual's internal emotions and criticisms. Within the evolutionary perspective it has been argued that it is common for beliefs about the self as inferior or different compared to others as powerful and threatening to be prevalent in individuals with paranoid thoughts (Garety, Kuipers, Fowler, Freeman & Bebbington, 2001). These negative perceptions of the self as vulnerable and of others as potentially threatening are thought to occur in the context of an over-activation of the processes designed to detect threat, and an underdevelopment of the processes designed to help an individual feel safe by reducing distress when facing perceived danger (Matos et al., 2013). According to Compassion Focused

Therapy (CFT), developing an individual's ability to compassionately respond to themselves through training that individual to generate self-soothing imagery activates processes designed to soothe distress from anticipated threat, which reduces the dominance of the threat system (Gilbert & Irons, 2004; Gilbert, 2009).

Attributional model of paranoia

From a psychological viewpoint, paranoia is considered to be present within "the context of emotional distress", and to be preceded by experiences that have led to negative beliefs about the self, others and the outside world (Freeman & Garety, 2006, p.408). Bentall, Kinderman and Kaney (1994)'s attributional model seeks to explain how people's experiences can lead to negative beliefs about the self, and how defences employed as a protective mechanism can increase an individual's likelihood of experiencing paranoid thoughts. This model posits that threats to the beliefs one has about themselves (e.g. the self-concept) cause individuals to become more aware of the discrepancies between internal representations of the 'ideal' and 'actual' selves. In order to reduce this discrepancy as much as possible, the individual then begins to externally attribute any potential threats, thereby protecting their self-esteem. For example, an individual believing that they are responsible for the bad things that happen is likely to make that individual feel bad about themselves (i.e. 'bad me' paranoia (Trower & Chadwick, 1995)), whereas if that individual feels that they are free of blame, then they are more likely to feel better about themselves (i.e. 'poor me' paranoia (Trower & Chadwick, 1995)) (Kinderman & Bentall, 1998).

Although external attribution results in the individual's ideal and actual selves being more aligned, it is thought to be at the expense of increasing the discrepancy between how they believe others perceive them and how they perceive themselves, serving to maintain the cycle of external attributions. This is illustrated in figure 2 below.
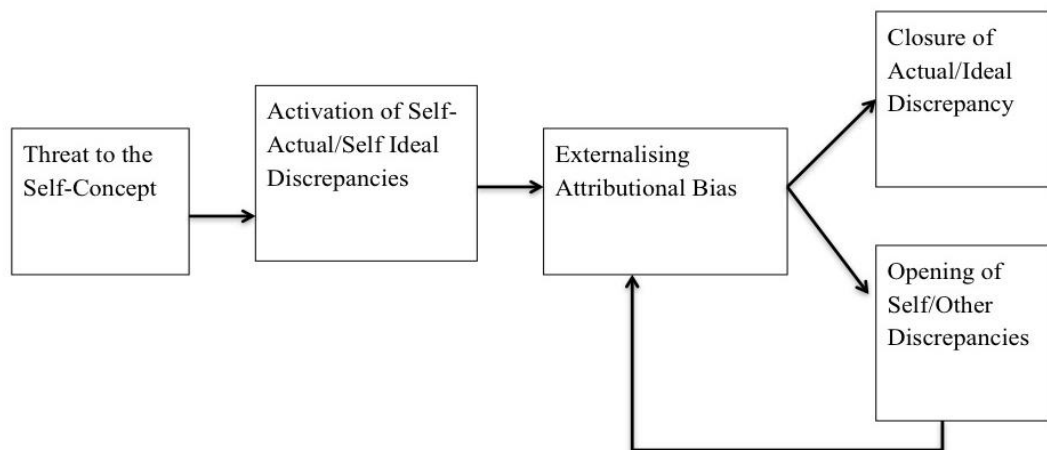
Figure 2 Relationships between self-discrepancies and attributional style in paranoia (Bentall et al., 1994)

A major criticism of this model is that it suggests that the defences employed to protect against negative beliefs about the self should result in self-esteem being preserved, whereas research had shown that over three quarters of individuals exhibiting paranoid thoughts displayed low levels of self-esteem (Freeman, Garety, Fowler, Kuipers, Dunn et al., 1998). Although more recent research has revealed that the relationship between self-esteem and paranoia is more complex than initially thought, with self-esteem having been shown to fluctuate over time (Thewissen, Bentall, Lecomte, van Os & Myin-Germeys, 2008; Thewissen, Myin-Germeys, Bentall, de Graaf, Vollebergh et al., 2007), the attributional model was still unable to account for this.

In response to this criticism, the original attributional model has since been updated to incorporate the dynamic and fluctuating aspects of self-esteem. The updated 'attribution-self-representation cycle' (Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001) suggests that there is a cyclical relationship between attributions and self-representations, in that attributions not only influence how one views themselves,

but that changes in how one sees themselves affects future attributions (see Figure 3). Thus, an individual's psychological response to negative experience is likely to produce changes in the way that that individual appraises negative experiences in the future as well as an immediate change in mood (Bentall, 2004).
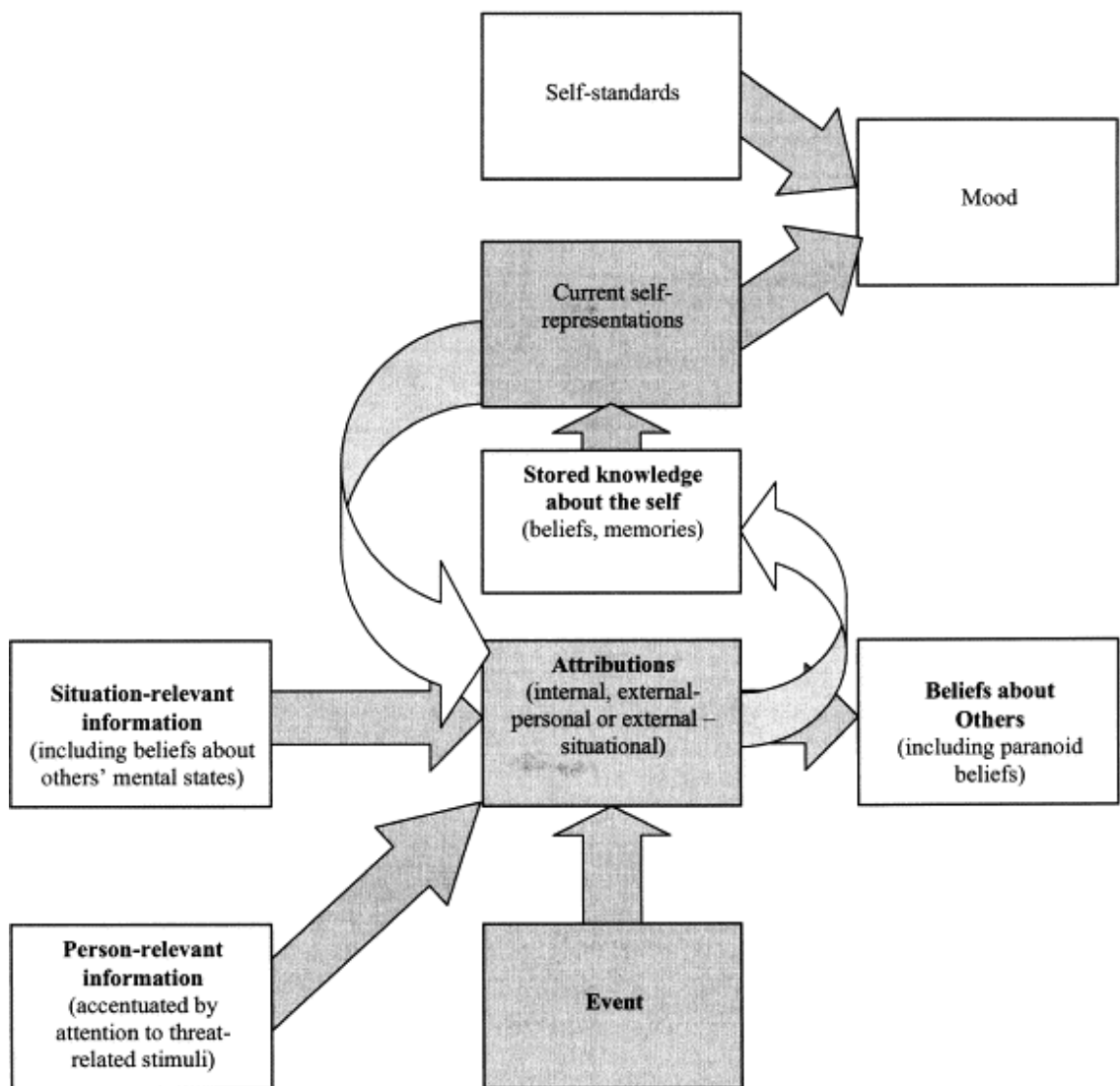
Figure 3. Attribution-self-representation cycle of paranoia (Bentall et al., 2001)

Threat anticipation model of paranoia

Freeman and colleagues developed the threat anticipation model of paranoia to account for the weaknesses that they perceived with Bentall et al.'s model (Freeman, 2007; Freeman & Freeman, 2008). This model recognises multiple factors associated with

paranoia, and emphasises the importance of emotional processes, unusual experiences, reasoning biases and social factors, including adverse events (see Figure 4). The model was developed to incorporate the attributional bias element of Bentall et al.'s (2001) attribution-self-representation model, but these authors argue that paranoid thoughts are a direct reflection of the emotions of the individual rather than a defence (Freeman, Garety, Kuipers, Fowler & Bebbington, 2002). In particular, the model hypothesises that interpretations of others as threatening are more likely to be made when an individual is in a negative emotional state (Freeman, 2007).
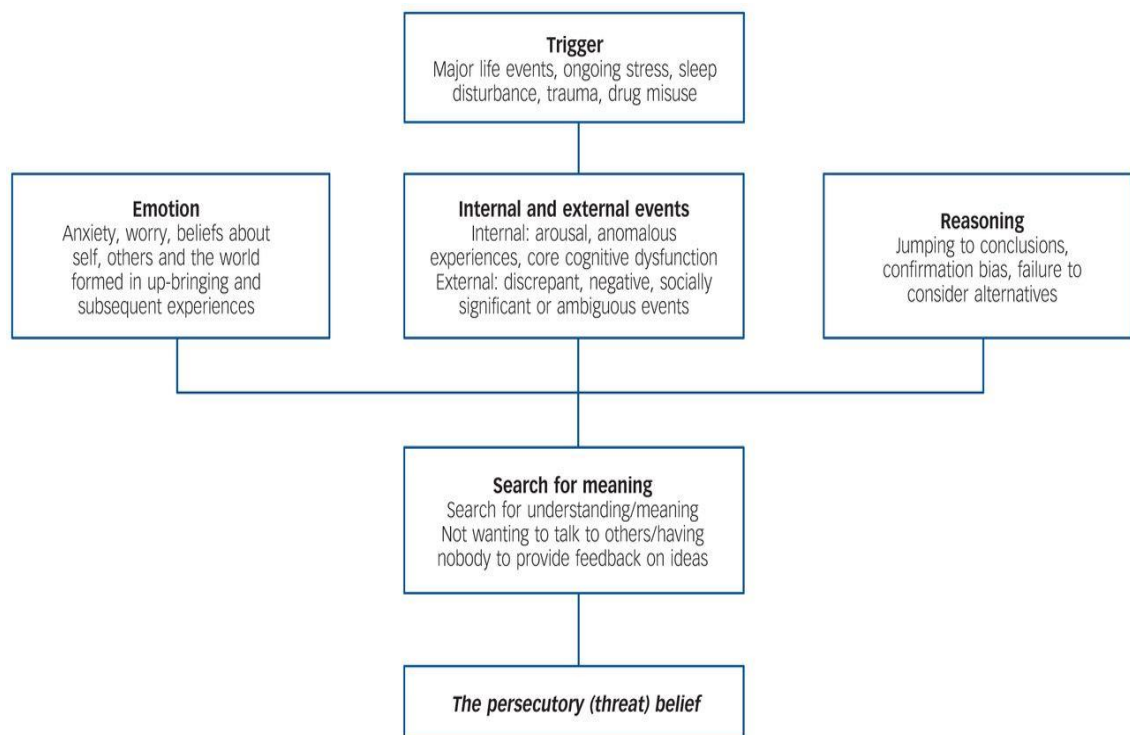
Figure 4. Threat anticipation model of paranoia (Freeman, 2007; Freeman & Freeman, 2008)

In summary, all the models discussed above highlight the importance of both emotions and cognitive processes in the development of paranoid thoughts, but whereas the attribution-self-representation cycle suggests that paranoid thoughts are a product of emotions that are defended against, the threat anticipation model suggests that paranoid

thoughts are a direct representation of these emotions. Lincoln, Hohenhaus & Hartmann (2013) suggest that the factors that have been identified as relevant to the development of paranoid thoughts can be broadly characterised as translating factors that 'come into play on the pathway' between external stressors and the paranoid thoughts. They suggest that the psychological models of the development of paranoid ideas such as those discussed above usually distinguish between two types of translating factors; cognitive and emotional (Lincoln et al., 2013).

Cognitive translating factors

Cognitive translating factors refer to cognitive processes thought to be involved in the development of unusual experiences (Lincoln et al., 2013). A number of cognitive factors have been investigated in relation to the development of paranoia, including jumping to conclusions (Garety et al., 2001; Sanford, Lecomte, Leclerc, Wykes & Woodward, 2013), theory of mind (Craig, Hatton, Craig & Bentall, 2004; Harrington, Langdon, Siegert & McClure, 2005) and attributional style (Craig et al., 2004). Impairments in cognitive processes are central to all psychological models of paranoia described above.

The tendency to 'jump to conclusions' is one of the most replicated findings in the development of paranoia (Freeman, 2007). Jumping to conclusions (JTC) is when individuals make decisions relatively early on the basis of limited information (Fine, Gardner, Craigie & Gold, 2007; Garety & Freeman, 1999). A jumping to conclusions bias in the development and maintenance of paranoid ideas is supported in a recent meta-analysis (Ross, McKay, Coltheart & Langdon, 2015) and review of studies (Garety & Freeman, 2013).

Emotional translating factors

Emotional translating factors refer to the emotions that are considered to play a role in the development of paranoid thoughts (Lincoln et al., 2013). A number of researchers

have investigated the role of emotions in contributing to experiences of paranoia (Freeman & Garety, 2003; Huppert & Smith, 2005; Morrison & Wells, 2007). It has been proposed that paranoia may represent a manifestation of emotional concerns as described in the threat-anticipation model of paranoia (Freeman, 2007; Freeman & Freeman, 2008). This is supported by reports of parallels between an individual's emotional state and thematic content in paranoia (Freeman et al., 2002; Freeman & Garety, 2003).

A number of different emotions have been suggested as having a central role in the development of paranoia in both clinical and non-clinical populations including anxiety, depression, anger, disgust and jealousy (Freeman & Garety, 2003; Martin & Penn, 2001). More recently, shame has been shown to be associated with paranoid thoughts (e.g. Matos, Pinto-Gouveia & Duarte, 2012; Johnson, Jones, Lin, Wood, Heinze et al., 2014).

Shame

Shame can be understood as a response to the social threat of being 'unattractive' (Pinto-Gouveia, Matos, Castilho & Xavier, 2014), and can be viewed as comprising two key components: internal and external shame (Gilbert & Procter, 2006). Internal shame focuses on an individual's perception of the self, with the self often being viewed as 'inadequate, flawed or bad', whereas external shame focuses on others' view of the self, with the self often being viewed as having unattractive characteristics that make one 'rejectable' (Gilbert & Procter, 2006). These are thought to raise a number of defences, such as 'wanting to hide, conceal and not be seen'. Internal and external shame can merge together, resulting in the individual experiencing the outside world as being hostile, and becoming critical and hostile towards their own sense of self (Gilbert & Procter, 2006). Thus, an individual's view of the self, together with that individual's

perception of how they are perceived by others, are central components to both shame and the psychological processes underlying paranoia.

Shame and guilt are considered to be distinct concepts (Tangney & Dearing, 2002). Guilt refers to a sense of having done something wrong, either in reality or our imagination, whereas shame relates to our sense of who we are (Clark, 2012). Whilst shame has been linked with a number of unhelpful ways of functioning and life difficulties, guilt has been shown to be reliably associated with adaptive outcomes (Tangney, Stuewig & Mashek, 2007).

Shame in psychological distress.

High levels of shame have been associated with poor adjustment (as measured by depression, post-traumatic stress disorder and self-esteem scales) following childhood sexual abuse (Feiring, Taska & Lewis, 2002). A reduction in shame over the course of a year in children who had been abused was associated with improvement across all indicators of adjustment; although the study did not investigate why some of these children experienced a reduction in shame and others did not (Feiring et al., 2002). Nevertheless, as a reduction in shame appears to be linked to increased wellbeing, this suggests that shame is an important factor for clinicians to consider. The importance of clinical psychologists addressing this issue in therapy is further highlighted by the findings that high levels of shame are a known risk factor for higher frequencies of self-injury (VanDerhei, Rojahn, Stuewig & McKnight, 2014) and the development of a poor therapeutic relationship (Black, Curran & Dyer, 2013).

Shame in paranoia.

Individuals with experiences of psychosis as measured by the German version of the Structured Clinical Interview for DSM-IV (SCID-I; Wittchen, Wunderlich, Gruschwitz & Zaudig, 1997) have been shown to experience higher levels of shame than non-clinical populations (Suslow, Roestel, Ohrmann & Arolt, 2003), although it is important

to note that no direction of causality can be inferred from this study. The role of shame in paranoia has recently been investigated in both the general community and clinical populations. For example, a review of three studies found feelings of shame experienced by students significantly correlated with paranoid thoughts (Tangney & Dearing, 2002). Further support for this relationship comes from a study exploring the associations between shame memories, internal and external shame and paranoia, that found a strong correlation between levels of external shame (i.e. feeling as though one lives in the minds of others as inferior or 'rejectable') and experiences of paranoia (Matos et al., 2012).

Shame has also been shown to moderate the relationship between stressful life events and paranoia in a clinical population, suggesting that an increased level of shame may amplify paranoia in adults who experience stressful life events (Johnson et al., 2014). Taken together, these findings suggest that higher levels of shame are associated with increased paranoia, though these give little insight into the processes behind this relationship as the focus of the shame is not addressed. In fact, Leeming and Boyle (2004) point out that the majority of clinically focused shame research does not address the context in which shame arises, which they argue to be of uppermost importance due to shame being 'about something and in response to something or someone', and as such is inseparable from its context.

Pinto-Gouveia, Matos and colleagues have made some attempts at addressing this issue through priming participants to focus on particular memories whilst they rate their experience of shame. These studies concluded that the more central to an individual's identity and traumatic a memory is, the higher the level of paranoia (Matos et al., 2012), and that external shame seems to partially mediate the relationship between shame memories and paranoia (Pinto-Gouveia et al., 2014). Taken together, these findings suggest that shame can be viewed as an emotional 'translating factor' in

the development of paranoia. Thus, addressing levels of shame in individuals at risk of developing clinical levels of paranoia seems an important area for clinicians.

As these ideas about the processes behind the development of high levels of paranoia are beginning to be researched, Leeming and Boyle (2004) suggest that it may also be important to investigate "the processes by which experiences of shame may or may not lead to psychological difficulties" (p391). Although from the studies mentioned above it is apparent that individuals who experience events that evoke feelings of shame are more susceptible to developing paranoid thoughts, a proportion of these individuals do not, suggesting that there may be other factors that impact on shame to protect against paranoid thoughts. One factor that has recently been shown to buffer against feelings of shame and psychological difficulties is self-compassion (e.g. Albertson, Neff & Dill-Shackleford, 2015).

Self-compassion

Self-compassion can be defined as holding a warm, caring, safe relationship with oneself (Gilbert, 2009). It can be viewed as entailing the following three components (Neff, 2003a, p.224):

(i) "self-kindness", defined as "extending kindness and understanding to oneself"

(ii) "common humanity", defined as viewing one's own experiences as "part of the larger human experience rather than seeing them as separating and isolating"

(iii) "mindfulness", defined as the ability to "hold one's painful thoughts and feelings in balanced awareness rather than over-identifying with them".

Self-compassion and psychological wellbeing.

Self-compassion is believed to be the antithesis to self-criticism (Neff, 2003a). Leary, Tate, Adams, Allen and Hancock (2007) found that individuals with higher scores on

the Self-Compassion Scale had fewer reported self-critical thoughts in response to negative events than individuals with lower scores.

Self-compassion has also been shown to be associated with psychological wellbeing. A meta-analysis of 14 studies investigating the link between self-compassion and mental health found a large effect size for the inverse relationship between self-compassion and psychopathology (MacBeth & Gumley, 2012). More specifically, self-compassion has been shown to mediate the relationship between childhood maltreatment severity and later psychological difficulties (Jativa & Cerezo, 2014; Vetesse, Dyer, Ling Li & Wekerle, 2011), to partially mediate the relationship between shame and psychological difficulties (Reid, Temko, Moghaddam & Fong, 2014) and to moderate an individual's reaction to distressing situations such as failure, rejection and embarrassment (Leary et al., 2007).

Self-compassion and paranoia.

Self-compassion has been shown to be significantly inversely related to scores on the 'positive symptoms' subscale of the 'Positive and Negative Syndrome Scales' (PANSS; Kay, Fiszbein & Opler, 1987) in a clinical population. However, although paranoia falls under the 'positive symptoms' subscale of the PANSS, from this study it is not possible to determine whether there is a relationship between self-compassion and paranoia specifically. This relationship has, however, been established within a non-clinical population by Mills, Gilbert, Bellew, McEwan and Gale (2007), who found that paranoia (as measured by the Paranoia Scale; Fenigstein & Vanable, 1992) is significantly correlated with negative factors on the Self-Compassion Scale (SCS; Neff, 2003b) including 'self-judgment', 'isolation' and 'over-identification'. Mills et al. (2007) also found self-criticism (the antithesis to self-compassion) to be linked to paranoid thoughts in a student population.

In summary, self-compassion has been linked to increased psychological wellbeing, and cross-sectional research suggests that it is inversely related to paranoid thoughts. Therefore, although from these studies we cannot determine the direction of the relationship between self-compassion and paranoia, it does suggest that individuals at risk of developing or exacerbating paranoia may benefit from developing their capacity for self-compassion. Developing an understanding of, and cultivating, self-compassion with a view to using these skills to reduce feelings of shame is one of the central tenets of Compassion Focused Therapy (CFT; Gilbert, 2009). CFT was developed following Gilbert's observation that, when using Cognitive Behavioural Therapy with clients, the clients could understand the logic of changing how they thought about and judged things, but the interventions seemed ineffective at changing feelings about the self, particularly shame (Gilbert, 2009).

Interventions to increase self-compassion.

Therapies that incorporate a focus on self-compassion (such as CFT) have begun to show that the capacity for self-compassion can be developed through training. For example, in a study investigating compassionate mind training in a group format, individuals with high baseline levels of shame and self-criticism showed significant decreases in levels of self-criticism, shame, depression and feelings of inferiority following the training (Gilbert & Procter, 2006). This project was considered by the authors to be a 'pre-trial' study, and as such did not offer a control group. Braehler, Gumley, Harper, Wallace, Norrie & Gilbert (2013) investigated the impact of a CFT group compared to 'treatment as usual' (TAU) for individuals with experiences of psychosis. The intervention group aimed to reduce shame, stigma, self-blame and build compassionate skills, and involved participants taking part in 16 group sessions. The authors report that individuals randomised to the CFT group reported a significant increase in compassion following treatment in the way that the individuals talked about

their experiences of psychosis and recovery. The increases in compassion were significantly correlated with decreases in depression. Although the study found that individuals who underwent the CFT group spoke more compassionately about their experiences of psychosis following the intervention, as the authors did not capture any measures related to frequency or distress caused by experiences of psychosis, it is not possible to conclude how the intervention impacted upon the frequency or distress associated with experiences of psychosis.

Neff and Germer (2013) comment that approaches have focused on clinical populations, but that interventions to enhance psychological wellbeing in both clinical and non-clinical populations would be beneficial. An intervention specifically designed to increase self-compassion was evaluated within the general population by Neff and Germer (2013). Participants attended a 2-hour session once a week over the course of 8 weeks. The results suggest that significant improvements in levels of self-compassion were maintained at 6-month follow up. Participants who attended the group also reported reduced levels of depression, anxiety and stress following the intervention. Although the impact of the self-compassion group was compared to a waiting list control group, as there was no active control group and the intervention involved a large amount of group work, it is possible that being a member of a group confounded the reported benefits of the intervention.

Despite increasing evidence suggesting that self-compassion is a skill that can be cultivated in individuals with psychological difficulties, to date only a handful of studies have investigated the impact of developing self-compassion in individuals with unusual experiences. However, a case series of compassionate mind training for individuals who hear malevolent voices reported lower levels of paranoia (as measured by the Symptom Checklist-90 (SCL-90); Derogatis, 1992) in individuals after receiving a course of CFT

(Mayhew & Gilbert, 2008), suggesting promise for these interventions for individuals with paranoid thoughts.

The only study to have looked specifically at the impact of self-compassion on paranoia investigated the effect of a brief compassionate image training exercise in undergraduate students (Lincoln et al., 2013). The results of this study found that participants randomised to the compassionate image condition reported reduced levels of paranoia after being primed to think of personally relevant distressing situations compared to those in the control condition. This finding was most significant for individuals who reported the highest levels of lifetime unusual experiences at baseline. The authors suggest that the effect of the compassionate image exercise on paranoia was mediated by reduced negative emotions. Although those conducting the study did not prime for a particular negative emotion, participants reported feelings of shame, anger, anxiety and sadness in relation to being asked to think of a personally relevant distressing situation (Lincoln et al., 2013). Although this finding suggests that increasing levels of self-compassion through training individuals to develop compassionate images can reduce paranoia, perhaps through reducing negative emotions, levels of self-compassion before and after the intervention were not captured, and it is therefore not possible to determine whether this reduced paranoia was a result of increased self-compassion.

Gilbert and Procter (2006) report that the use of images to encourage one to direct compassion, understanding and warmth towards the self has been used within Buddhism for many years. Using compassionate images to develop self-compassion is based on the idea that if an individual can learn to create soothing experiences through developing compassionate images, then they may be more likely to be able to activate this soothing system during times of distress (Gilbert & Procter, 2006). This was confirmed by reports from participants following compassionate image training that

being able to generate these images when distressed had significantly contributed to that individual's ability to cope with crises (Gilbert & Procter, 2006).

To summarise, research has shown that it is possible to develop self-compassion in both clinical and non-clinical populations. These studies have shown that interventions designed to increase self-compassion also seem to reduce feelings of depression and anxiety. There also seems to be promise that developing self-compassion may be of use in reducing paranoid thoughts, perhaps through reducing negative emotions, but that the exact relationship between self-compassion, paranoia and negative emotions remains unclear.

Self-compassion and cognitive processes.

As discussed above, self-compassion appears to be inversely related to shame and paranoid thinking, but there is also recent, but limited, literature suggesting that self-compassion may impact on cognitive processes as well as on emotional factors. For example, a correlational study in an undergraduate student population found "self-kindness", "common humanity" and "mindfulness" (the three positive components of self-compassion as defined by Neff, 2003a) to be negatively correlated with "interpersonal cognitive distortions" (Akin, 2010, p2). In the study, "interpersonal cognitive distortions" refer to "thought patterns on the nature of relationships" (p2) and include external attribution bias, personalising, catastrophising, mental filtering and jumping to conclusions. As discussed above, the most widely cited cognitive process thought to be involved in paranoia is the tendency to jump to conclusions. Therefore, it is possible that self-compassion interventions may be of use for individuals with paranoid thoughts not just in reducing levels of shame, but also in reducing the individual's tendency to jump to conclusions.

Summary

Overall, the evidence for the benefits of developing self-compassion in order to buffer against shame and paranoia seems promising, though further research in this area is required. To date, no research studies have focused specifically on the relationship between self-compassion and experiences of shame and paranoia. Therefore, the aim of the current study is to look more specifically at the role of shame in paranoia, and the impact of a self-compassion intervention on this relationship. Furthermore, this study will also investigate whether a self-compassion intervention reduces an individual's tendency to jump to conclusions, as has been suggested.

Aims of current research

The project aims to investigate the effect of a brief, self-compassion imagery intervention on levels of shame, paranoia and general psychological distress compared to a control condition. In particular, the study will investigate the following hypotheses:

1. Participants who are randomised to receive the self-compassion intervention will show increased levels of self-compassion following the intervention compared to individuals randomised to the control condition, who will show no difference in levels of self-compassion following the intervention.

2. Participants who are randomised to receive the self-compassion intervention will show reduced levels of shame following the intervention compared to individuals randomised to the control condition, who will show no difference in levels of shame following the intervention.

3. Participants who are randomised to receive the self-compassion intervention will show reduced levels of paranoia following the intervention compared to individuals randomised to the control condition, who will show no difference in levels of paranoia following the intervention.

4. Participants who are randomised to receive the self-compassion intervention will show reduced levels of general psychological distress following the intervention compared to individuals randomised to the control condition, who will show no difference in levels of general psychological distress following the intervention.

5. Participants who are randomised to receive the self-compassion intervention will show a reduced tendency to jump to conclusions following the intervention compared to individuals randomised to the control condition, who will show no difference in a tendency to jump to conclusions following the intervention.

6. Any reduction in levels of paranoia following the self-compassion intervention will be mediated by a reduction in levels of shame.

7. The self-compassion intervention will be most effective at reducing paranoia for participants who report the highest levels of unusual experiences at baseline.

METHOD

Design

A randomised group comparison design was used to compare participants' responses on measures of self-compassion, shame, paranoia, general psychological distress and a tendency to jump to conclusions before and after receiving either an experimental or control intervention. Qualtrics, a web-based survey platform, randomised participants to either the self-compassion or control condition.

Power Analysis

To ensure that the study was sufficiently powered to detect a large enough effect size to denote a significantly relevant difference between the two groups, a power calculation was conducted using G*Power software (Faul & Erdfelder, 1992). The power analysis was performed using data from Lincoln et al.'s (2013) study as the effect size estimate. For the current study to have adequate power (d= 0.8), a total sample size of 90 was required, equating to 45 per condition.

Population and Sample

The target population was students and members of staff from the University of Leeds. Multiple methods of recruitment were employed, one of which targeted students from the Schools of Medicine and Healthcare specifically, and another which targeted members of staff from across the University.

Recruitment

The project was advertised to students and members of staff from the University of Leeds in three ways:

1. An email inviting students to take part in the project was circulated to students from the Schools of Medicine and Healthcare (Appendix A). This email comprised a brief summary of what would be expected from participants, and an embedded URL that interested participants could follow to find out more information on the project.

2. Posters advertising the project were displayed throughout University of Leeds buildings (Appendices B and C), and interested participants were able to tear off strips with details of how to find out more information about the project.

3. The project was also advertised on the 'Research Participants Wanted' section of the 'For Staff' University of Leeds website (Appendix D).

The project was not advertised using the words 'self-compassion', as it was thought that doing so might attract individuals with a specific interest in self-compassion, resulting in a biased sample. Instead, the study was advertised as a project investigating the effectiveness of visualisation-based coping strategies.

Measures

Prior to the intervention, demographic information and lifetime experiences of psychosis were collected from participants. Participants completed a series of measures at baseline and on completion of the intervention. These included measures of self-compassion, shame, paranoia and general psychological distress. Participants also completed a bead experiment that measures a tendency to 'jump to conclusions' before and after the intervention. Finally, in order to capture mood each day, and as a check that participants were engaging with the intervention, visual analogue scales were also administered daily once participants had listened to the exercise. Measures were selected based on their validity and reliability, and previous use within non-clinical populations.

Demographic information.

The following demographic information was obtained from participants:

- Age

- Gender

- Ethnicity

- Whether the participant was a member of staff or student

- If a student, which course the participant was undertaking at the University

- Alcohol and drug use

- Use of mental health services

The Community Assessment of Psychic Experiences.

The Community Assessment of Psychic Experiences (CAPE; Stefanis, Hanssen, Smirnis, Avramopoulos, Evdokimidis et al., 2002; Appendix E) is a 42-item self-report scale developed to assess unusual experiences over an individual's lifetime. The scale is based on the Delusions Inventory (PDI-21) developed by Peters, Joseph, Day and Garety (2004) and captures three dimensions: 'positive', 'negative' and 'depressive' experiences. Items are rated on a 4-point scale ranging from 0 (never) to 3 (almost always). The CAPE has been shown to be a valid and reliable measure of unusual experiences within the general population (Konings, Bak, Hanssen, van Os & Krabbendam, 2006; Mark & Toulopoulou, 2016). Konings et al. (2006) report general population means (and standard deviations) of the positive, negative and depressive subscales as 1.4 (0.25), 1.6 (0.38) and 1.7 (0.42), respectively.

Self-Compassion Scale.

The Self-Compassion Scale (SCS; Neff, 2003b; Appendix F) is a 26-item self-report measure assessing three components of self-compassion: self-kindness versus self-judgment; common humanity versus isolation; and mindfulness versus over-

identification. Responses to statements are rated on a 5-point scale ranging from 1 (almost never) to 5 (almost always). The self-judgment, isolation and over-identification items are reverse coded. The scale has been shown to have good predictive, convergent and discriminant validity and high internal reliability (Cronbach's alpha = 0.92) (Neff, 2003b). Neff (2003b) reports a mean total score of 18.26 (3.99) within a University undergraduate population. Participants were asked to consider how they had felt over the last week when completing the measure.

Experience of Shame Scale.

The Experience of Shame Scale (ESS; Andrews, Qian & Valentine, 2002; Appendix G) is a 25-item measure that assesses the experiential, cognitive and behavioural aspects of shame. The scale consists of three sub scales; characterological shame, behavioural shame and body shame. Responses are rated on a 4-point scale ranging from 1 (not at all) to 4 (very much), and scores can range from 25 to 100. The ESS has been shown to have good internal reliability (Cronbach's alpha = 0.92) and test-retest reliability over 11 weeks of r= 0.83 (Andrews et al., 2002). Andrews et al. (2002) report a mean score of 55.58 (13.95) within a University psychology undergraduate population. Participants were asked to consider whether they had experienced any of the items on the scale over the last week.

The State Social Paranoia Scale.

The State Social Paranoia Scale (SSPS; Freeman at al., 2007; Appendix H) is a 10-item self-report scale developed to measure state paranoia. Items are rated on a 5-point scale ranging from 1 (do not agree) to 5 (totally agree). The SSPS has been shown to be a valid measure of paranoid thinking, to have good internal reliability and adequate test-retest reliability within University student, general and clinical populations (Freeman et al., 2007). Freeman et al. (2007) report mean scores of 13.6 (4.7) in the University

student population and 12.7 (5.0) in the general population. Participants were asked to consider their experiences over the last week when completing the measure.

Although not part of the original SSPS, participants who indicated that they had experienced any of the SSPS items over the last week were asked to rate how distressing they had found experiencing each of the items on a 5-point scale ranging from 0 (not distressing) to 4 (very distressing). When designing the project, we thought it important to capture not only the frequency of participants experiencing paranoid thoughts, but also the level of distress caused by these, as is captured in other measures of trait paranoia (i.e. The Paranoia Checklist; Freeman et al., 2005).

CORE-10.

The Clinical Outcome in Routine Evaluation (CORE-10; Barkham, Bewick, Mullin, Gillbody, Connell et al., 2013; Appendix I) is a 10-item self-report measure to assess general psychological distress. It screens for anxiety, depression, trauma, physical problems, functioning and risk of self-harm. Respondents are asked to rate how they have been feeling over the last week in relation to the above domains using a 5-point scale ranging from 'not at all' to 'most or all of the time'. The CORE-10 has been shown to have high internal reliability (Cronbach's alpha = 0.90). Mean scores for the CORE-10 have been reported as 4.7 (4.8) within the general population (Connell & Barkham, 2007) and 8.0 (6.1) within a University student population (Bewick, Gill, Mulhern, Barkham & Hill, 2008).

Jumping to Conclusions Bead Experiment.

The Jumping to Conclusions Bead Experiment (Phillips & Edwards, 1966; Appendix J) is the most widely used experiment investigating a tendency to jump to conclusions. The experiment was designed to investigate individuals' style of reasoning whilst under uncertain conditions (Phillips & Edwards, 1966). It involves participants deciding whether a string of coloured beads are being drawn from either one of two hidden jars.

Each jar contains beads of two colours, though there are different proportions of the two colours in each jar. Participants are informed of the different proportions of colours in each of the jars. Once the participant reaches a decision as to which jar the beads are being drawn from, the task is terminated and the number of beads requested before the participant made their decision is recorded as the score. Therefore, the number of beads participants requested before making their decision served as the primary measure of outcome for this task.

Individuals who request two beads or fewer before deciding which jar the experimenter is pulling beads from are said to 'jump to conclusions' (Garety, Freeman, Jolley, Dunn, Bebbington et al., 2005). This jumping to conclusions bias has been shown to be present in 20% of a non-clinical sample (Freeman, Pugh & Garety, 2008). Thus, the number of participants who requested two beads or fewer before making their decision was considered in the analysis, in addition to the number of beads requested by participants. A computerised version of this task (Garety et al., 2005), which has been shown to be useful in researching this style of reasoning (e.g. Falcone, Murray, Wiffen, O'Connor, Russo et al., 2015; Garety, Joyce, Jolley, Emsley, Waller et al., 2013), was used in the current study.

In the original version of the task, each of the two jars contained 85 beads of one colour and 15 of the other. However, it has been suggested that by using this proportion of colours in the jars, one is unlikely to see any variation in performance across non-clinical samples (Garety et al., 2005). Instead, Garety et al. (2005) suggest that using a more difficult task (i.e. where the jars contain 60 beads of one colour and 40 of another) allows for more sensitivity in differentiating between individuals' performance on the task. The more difficult variation of the task (60:40 beads) was used in the current study.

Visual Analogue Scales.

Visual analogue scales (VAS; Appendix K) to capture general mood, paranoia and shame on a daily basis were administered following each daily exercise. A scale capturing how easily participants engaged with the exercise was also administered daily. Completion of these measures served as a check that participants had accessed the exercise each day. These VASs were only displayed to participants once enough time had elapsed for participants to have listened to the exercise.

Each VAS was a horizontal line measuring from 0-10, with the left hand side signifying an absence of the emotion (e.g. not at all ashamed) or ease engaging with the exercise and the right hand side signifying high levels of the emotion (e.g. very ashamed) or difficulty engaging with the exercise. Participants were asked to mark the line at the point that reflected their mood or ability to engage with the exercise. Previous research indicates that VASs are a good method for measuring fluctuations in mood related to experimental tasks (Goldstein & Willner, 2002; Johnson, Tarrier & Gooding, 2008). Furthermore, they are brief methods of capturing mood that have been shown to converge with longer scales (e.g. the Beck Depression Inventory (Beck, Steer & Brown, 1996; Folstein & Luria, 1973)).

Interventions

Both interventions lasted the same length of time (4 minutes 30 seconds) and were implemented in the same manner (e.g. both audio recorded and played through a computer). Participants' engagement with the task was monitored through their use of the website that hosted the exercises, and through completion of the VASs.

Compassionate image exercise.

This involved training the participants randomised to this intervention to create an image that conveys compassion and warmth to them (Appendix L & Supplementary

CD). This exercise was based on the script used in Lincoln et al.'s (2013) study, and on descriptions of how to create compassionate images provided by Gilbert in his writings on compassion-focused therapy (e.g. Gilbert & Procter, 2006). The compassionate image exercise was recorded as an audio file and made available to access via an online website for participants randomised to this condition to play in their own time.

Control exercise.

This involved training the participants randomised to this intervention to create a neutral control image (Appendix M & Supplementary CD). As in Lincoln et al.'s (2013) study, participants in the control group were asked to practice imagining a chair. This was comparable in length and level of detail to the self-compassionate image, and also made available to access via an online website.

Procedure

All parts of the study were completed via 'Qualtrics', an online database system. Figure 5 illustrates a flow chart of the study procedure.

Participants interested in taking part in the project were instructed to follow a link to the online database that stored all the information for the project. All participants were asked to read an information sheet (Appendix N) and demonstrate that they consented to take part in the project if they wanted to do so (Appendix O).

Participants who consented to take part in the project were asked to complete the baseline questionnaires. Once participants had completed the baseline measures, they were randomised to either the experimental or control condition by Qualtrics. Participants were then asked to complete the exercise that they had been randomised to daily over the course of the next week. Participants received daily emails with a link to the exercise they had been randomised to. After listening to the exercise each day, participants were asked to complete the VAS.

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┌─────────────────────────────────────────┐
│   Read Information Sheet & complete Consent │
│                  Form                       │
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┌─────────────────────────────────────────┐
│       Complete baseline measures          │
│  (CAPE, SCS, ESS, SSPS, CORE-10, JTC Bead  │
│              Experiment)                    │
└─────────────────────────────────────────┘
                     │
                     ▼
          ┌───────────────────┐
          │    Randomised      │
          └───────────────────┘
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│ Complete daily self-│  │ Complete daily     │
│ compassion exercise │  │ control exercise   │
│ and VAS over course │  │ and VAS over       │
│     of a week       │  │  course of a week  │
└────────────────────┘  └────────────────────┘
            │               │
            ▼               ▼
┌─────────────────────────────────────────┐
│    Complete post-intervention questionnaires │
│ (SCS, ESS, SSPS, CORE-10, JTC Bead Experiment) │
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          ┌───────────────────┐
          │     De-brief       │
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          │ Offered £10 gift   │
          │     voucher        │
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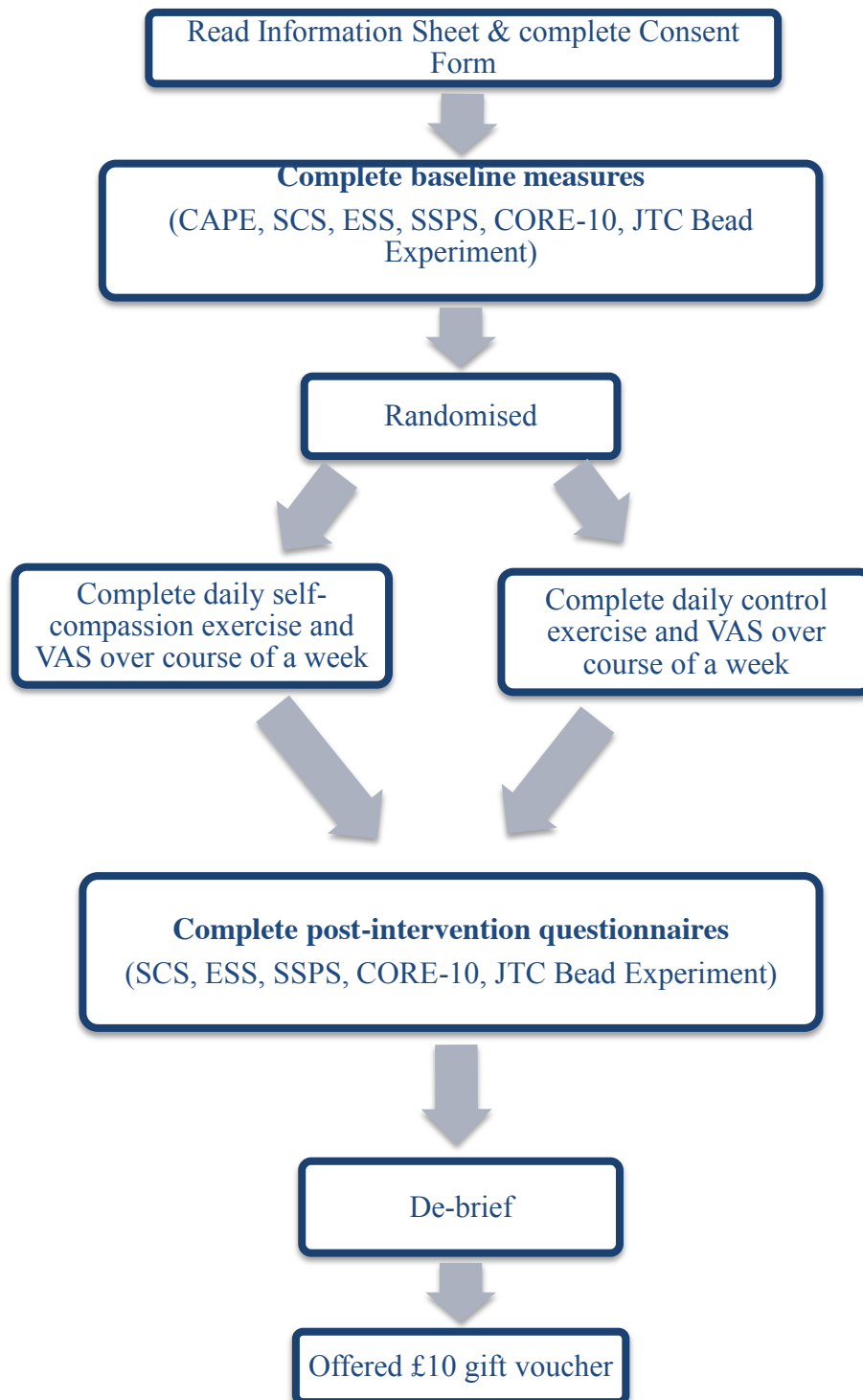
Figure 5. Study Procedure

Following the intervention over the week, participants were then asked to complete the baseline measures again in order to re-assess self-compassion, shame, paranoia, general psychological distress and a tendency to jump to conclusions.

Participants were then de-briefed and given the opportunity to withdraw their data from the study if they wished. Participants who were randomised to the control condition were offered access to the self-compassion intervention to listen to in their own time if they so wished. All participants were signposted to relevant support systems should they have required any further support. Finally, participants received either a £10 LOVE2SHOP or Amazon gift voucher once they had completed the project.

Ethical Considerations

Ethical approval for the study was granted from the School of Psychology Research Ethics Committee at the University of Leeds. The study was conducted in accordance with BPS Code of Human Research Ethics guidelines (2014b).

Informed Consent.

Before taking part in the study participants were:

- Provided with a written information sheet detailing what would be expected of them should they choose to participate in the study.

- Provided the opportunity to ask any questions regarding the study.

- Informed that participation in the study was optional, and that they were free to withdraw from it at anytime without giving a reason for doing so.

- Asked to demonstrate that they agreed to take part in the study by answering a number of questions.

Psychological Impact and Support Networks.

It was important to consider the emotional impact of participants completing questionnaires on subjects that may be sensitive in nature (e.g. feelings of shame and paranoia). Information on the sorts of questions that participants were going to be asked was documented on the information sheet that each participant read before agreeing to take part in the study. A "sources of support" information sheet (Appendix P) was displayed to participants each day after they had completed the task. This contained contact details of support networks available for the participant to contact if they felt the need for further support.

De-briefing.

Participants were de-briefed after taking part in the study as to the aims of the study, and were informed that they had a week to withdraw their data from the study if they so wished (Appendix Q). Participants were also asked at this stage whether they wished to receive a summary of the study outcome once the data had been analysed.

Data protection.

Participants were asked to enter their email addresses each day so that their responses could be matched up. Once participants had completed the study, their responses were allocated an anonymous code, and responses were stored separately from email addresses. All electronic data were stored on a secure server and password protected. Only the researcher and research supervisors had access to the raw data generated from the study.

Analysis

All analyses were carried out using SPSS 22.0 (SSPS, Inc Chicago, USA). Assumption testing was carried out following the guidance outlined by Tabachnick & Fidell (2013). Where the data did not meet sphericity assumptions, corrections were applied.

First, descriptive statistics for each group (experimental and control) were generated to gain an understanding of participant demographics and mean baseline scores on each of the outcome measures used. Secondly, a series of univariate analyses of covariance (ANCOVAs) were used to test the main effect of the intervention on shame, self-compassion, paranoia, general psychological distress, and tendency to jump to conclusions. Finally, correlation analyses were undertaken to assess the relationships between outcome measures.

Compliance check.

A priori compliance criterion was applied such that participants were required to listen to the exercise on at least 4 days over the course of the week. Participants were informed at the beginning of the study that in order to be offered a gift voucher on completion of the project they would need to meet this compliance requirement. Participants were also reminded of this in the daily email they were sent with the link to the exercise. Participants who had not listened to the exercise on more than three days over the week were sent an email informing them that they were no longer eligible to receive the gift voucher, but that they were welcome to continue with the project if they wished.

RESULTS

Participants

Attrition.

142 individuals consented to take part in the project. Of these, 13 (9%) did not complete the baseline questionnaires and were therefore not randomised. Of the remaining 129 participants who were randomised to receive either the self-compassion or control intervention, 23 participants (18%) did not listen to the exercise on at least 4 days over the course of the week as set out by the compliance criterion (see Compliance check section above) and chose not to continue with the project.

Towards the end of the recruitment phase of the study, 6 participants signed up to the project using non-University email addresses in relatively quick succession (i.e. all within the space of a few hours). This aroused some suspicion as to the authenticity of these email addresses as all belonging to different individuals affiliated with the University. Therefore, an email was sent to these email addresses asking for verification of affiliation with the University, but this was not provided and these participants did not continue with the project. The data from participants who had completed the project were then scanned to verify participants' University affiliation (i.e. by the participant using a University email account during some part of the project). It was not possible to verify the University affiliation of four participants who had completed the project, and therefore their data was not used in the analyses. Once this issue had been identified, participants were specifically asked to provide their University email addresses when signing up to the project, meaning that it was possible to ensure that subsequent participants were either members of staff or students from the University. Participant attrition is illustrated in Figure 6.
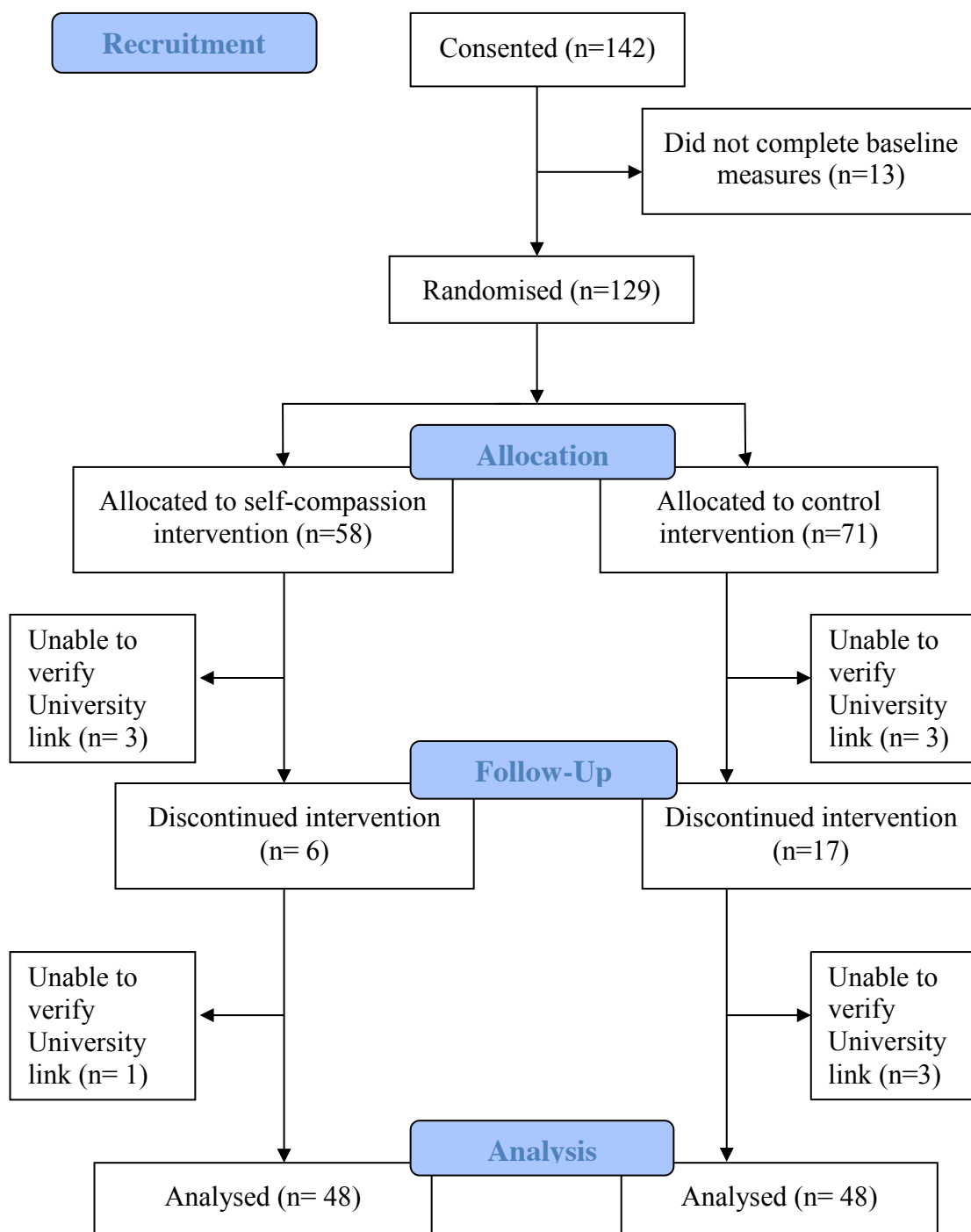
Figure 6. CONSORT diagram illustrating participant attrition

Demographics of participants included in the analysis.

The CONSORT guidelines on reporting randomised trials state that experimental groups should be compared for baseline demographic and clinical characteristics so that readers are able to consider how similar the groups are (Moher, Hopewell, Schulz, Montori, Gøtzsche et al., 2010). However, despite tests of statistical significance of baseline differences being common practice, these guidelines state that these are superfluous due to the fact that we already know that any differences between groups are a result of chance rather than bias (Moher et al., 2010).

Therefore, before running the analyses, it is important to characterise the sample in order to identify any demographic differences between those randomised to the experimental condition compared to those randomised to the control condition. Table 1 illustrates participant demographics for both groups across age, gender, ethnicity, occupational status, drug and alcohol use and treatment being received for mental health difficulties. Each of these areas will be explored in relation to differences between the two groups.

Age and gender

Ages of participants across both groups were similar, both with a mean age of 28 years. Both groups comprised more females than males, with the percentage of females in the experimental group slightly higher than that of the control group (85% and 81% respectively).

Ethnicity

The majority of participants in both groups identified as White or Mixed British (73% in both groups), with the remainder of participants in both groups identifying as being a variety of different ethnicities.

Table 1. Demographic data for participants in the self-compassion and control groups

Demographic	Self-compassion group (n=48)	Control group (n=48)
Gender		
Male, n (%)	7 (15)	9 (19)
Female, n (%)	41 (85)	39 (81)
Age		
Mean age, years (SD)	28.37 (11.06)	28.40 (10.98)
Age range, years	18-60	18-58
Ethnicity, n (%)		
White British or mixed British	35 (73)	35 (73)
Other White background	1 (2)	1 (2)
White and Black Caribbean	-	1 (2)
White and Asian	1 (2)	-
Asian	9 (19)	7 (15)
African	1 (2)	-
Other	-	3 (6)
Prefer not to say	1 (2)	1 (2)
Occupation, n (%)		
Member of staff	20 (42)	12 (25)
Student	28 (58)	36 (75)
Alcohol Consumption, n (%)		
Never	7 (15)	10 (21)
<Once a month	15 (31)	4 (8)
Once a month	2 (4)	4 (8)
2-3 times a month	6 (12)	8 (17)
Once a week	9 (19)	11 (23)
2-3 times a week	7 (15)	10 (21)
Daily	2 (4)	1 (2)
Illicit Substance Use, n (%)		
Have taken	6 (13)	7 (15)
Have not taken	42 (87)	37 (77)
Prefer not to say	-	4 (8)
Receiving care from MH services, n (%)		
Yes	1 (2)	2 (4)
No	46 (96)	44 (92)
Prefer not to say	1 (2)	2 (4)
Prescribed medication for mental health difficulties, n (%)		
Yes	3 (6)	4 (8)
No	45 (94)	43 (89)
Prefer not to say	-	1 (2)

Occupational status

The control group contained a higher ratio of students to staff (3:1) than the experimental group (7:5).

Drug & alcohol consumption

The majority of participants in both groups consumed alcohol at least once a month, though the self-compassion group had a higher proportion of individuals who either never consumed alcohol or who did so less frequently than once per month. The majority of participants in both groups reported to have never taken illicit substances.

Receiving treatment for mental health

The large majority of participants in both groups were neither receiving care from mental health services nor were they prescribed medication for mental health difficulties.

Overall, participants in both groups were comparable in relation to demographics, with the main difference being that the control group contained a higher student to staff ratio than the self-compassion group.

Staff and student subgroup.

A series of independent t-tests were conducted to investigate differences in demographic data and baseline scores between members of staff and students. The members of staff were statistically significantly older than the students (mean ages of 39 and 23, respectively), $t(93) = 8.83$, $p < 0.001$. These two groups did not statistically significantly differ on any other demographic variable or on any baseline scores. Given that no significant differences were found in baseline scores between staff and students, within each of the two conditions staff and student responses were combined for the main analyses.

Corrupted and non-corrupted subgroup.

Due to human error, 13 participants randomised to the self-compassion intervention were emailed a link to the control intervention on one day over the course of the week. Each of these participants listened to the control exercise. A series of independent t-tests revealed no significant differences in post-intervention scores between participants who had mistakenly listened to the control exercise on one day and the rest of the experimental group. Therefore, data from these subgroups were combined and analysed together as experimental group data.

Data checks

Missing data.

As reported above, 23 participants completed baseline measures but did not listen to the audio clip on the minimum required number of days and did not complete the follow up measures. Conducting intention to treat (ITT) analyses was considered, but as 74% of those who dropped out were randomised to the control condition, it did not appear that those who dropped out were missing at random, thus meaning that imputation would then become more biased than conducting per protocol analyses with just individuals who had completed all aspects of the project (Sterne, White, Carlin, Spratt, Royston et al., 2009).

For participants who completed the project, missing data on the outcome measures accounted for 0.6 % of all data captured, which is within the 5% acceptable limit according to Tabachink & Fidell (2013). The missing data were scanned by eye and it was deemed that there were no patterns within the missing data as there were no items that were missing more than once (i.e. the data was missing completely at random (MCAR)). All missing data were coded as such and total scores were adjusted for missing items.

Outliers.

No multivariate outliers were identified using Mahalanobis Distance within either the experimental or control conditions (Mahalanobis, 1936). The data were checked for univariate outliers within each group, assessed by visual inspection of box plots (as suggested by both Field, 2013 and Tabachnick & Fidell, 2013), which revealed 9 outliers across the measures. These were checked for data entry and measurement errors, but were considered to be genuine unusual values and it was therefore not an option to simply remove them from the data. Instead, the data were winsorized so that outliers still reflected high or low scores, but that their influence on the distribution of the data was less extreme (Field, 2013).

Normality.

After winsorizing the data, skewness and kurtosis fell within acceptable parameters (-2.0 to +2.0; George & Mallery, 2010) for all outcome measures except baseline SSPS scores for both experimental (skewness 2.40; kurtosis 5.94) and control (skewness 3.39; kurtosis 13.35) groups. Data transformation was considered, but no transformations brought the scale within acceptable skewness and kurtosis parameters. However, as a violation of the normality assumption should not affect statistical analyses in samples of more than 40 participants (Pallant, 2007), parametric statistical analyses were conducted as planned.

Descriptive statistics

The means and standard deviations for scores on the Community Assessment of Psychic Experiences, Self-Compassion Scale, State Social Paranoia Scale, Experience of Shame Scale, Clinical Outcome in Routine Evaluation-10 and Bead Experiment for both experimental and control groups at both baseline and follow up are illustrated in Table

2. Where not specified, the number of participants who completed each of the scores in Table 2 is 48 from each condition.

Similarly to exploring the differences in demographic data at baseline, it is also important to note any differences in baseline scores between the two groups. The control group reported higher baseline levels of lifetime experiences of psychosis, state paranoia, shame and psychological distress compared to the self-compassion group. Conversely, the control group reported slightly higher levels of baseline self-compassion compared to the self-compassion group. The average number of beads that participants requested before making their decision was equal across both groups at baseline.

Separate univariate ANCOVAs were conducted on each of the outcome measures to investigate any impact of the intervention on the measures individually. Bland & Altman (2015) recommend that randomised groups should be compared using ANCOVAs with baseline measures as the covariate rather than analysing change scores. Furthermore, ANCOVAs do not require groups to be equal at baseline (Senn, 2006).

Assumption testing was performed for the ANCOVAs following guidance outlined by Tabachnick & Fidell (2013). Although the homogeneity of regression slopes assumption was violated for CORE-10 ($F(1, 92) = 9.78$, $p = 0.002$) suggesting that the influence of CORE-10 pre-test scores on post-test CORE-10 scores was not equal for both conditions, as the sample sizes across groups are equal and the slopes differ by less than 0.4, an ANCOVA is still considered significantly robust enough to be conducted (Wu, 1984). Therefore, to investigate each of the hypotheses, ANCOVAs were conducted for each of the outcome measures individually, with baseline measures as the covariate.

Table 2. Means and standard deviations of scores on outcome measures at baseline and post-intervention

Measure (scale range)	Self-compassion group mean (SD) at baseline	Control group mean (SD) at baseline	Self-compassion group mean (SD) post-intervention	Control group mean (SD) post-intervention
Community Assessment of Psychic Experience (CAPE)				
CAPE total (1-4)	1.49 (0.32)	1.65 (0.30)	-	-
CAPE total distress (1-4) (n=46, 48)	1.72 (0.54)	1.78 (0.50)	-	-
Positive dimension subscale (1-4)	1.21 (0.19)	1.34 (0.22)	-	-
Positive dimension distress subscale (1-4)	1.59 (0.54)	1.85 (0.44)	-	-
Depressive dimension subscale (1-4)	1.69 (0.48)	1.85 (0.44)	-	-
Depressive dimension distress subscale (1-4) (n=42, 47)	1.84 (0.71)	2.04 (0.64)	-	-
Negative dimension subscale (1-4) (n= 45, 48)	1.58 (0.42)	1.75 (0.42)	-	-
Negative dimension distress subscale (1-4)	1.76 (0.57)	1.76 (0.55)	-	-
Self-Compassion Scale (SCS)				
SCS total scale (5-30)	17.57 (2.61)	18.36 (2.25)	16.89 (3.63)	17.51 (3.90)
Self-Kindness subscale (1-5)	2.87 (0.88)	2.74 (0.98)	3.08 (0.73)	3.04 (0.86)
Self-Judgement subscale (1-5)	2.81 (0.87)	3.13 (0.95)	2.80 (1.03)	2.90 (1.23)
Common Humanity subscale (1-5)	2.97 (0.90)	3.09 (1.09)	2.79 (1.06)	2.93 (1.24)
Isolation subscale (1-5)	2.81 (0.93)	3.08 (1.14)	2.58 (1.05)	2.81 (1.15)
Mindfulness subscale (1-5)	3.06 (0.86)	3.18 (0.99)	3.10 (0.94)	3.20 (1.12)
Over Identified subscale (1-5)	3.06 (1.00)	3.14 (1.08)	2.79 (1.11)	2.90 (1.20)
State Social Paranoia Scale (SSPS)				
SSPS total (10-40)	11.83 (3.06)	14.19 (7.31)	12.52 (5.48)	13.21 (6.45)
SSPS distress (1-4) (n respectively =25, 34, 31, 32)	2.08 (0.84)	2.34 (1.21)	2.04 (0.77)	2.30 (0.88)
Experience of Shame Scale (ESS)				
ESS total (25-100)	44.65 (14.55)	48.52 (15.10)	40.96 (16.30)	46.63 (15.34)
Characterological shame subscale (12-48)	19.44 (7.20)	21.10 (8.20)	18.88 (8.02)	21.06 (8.26)
Behavioural shame subscale (9-36)	17.65 (6.14)	18.71 (5.78)	15.10 (6.21)	17.63 (6.16)
Bodily shame subscale (4-16)	7.56 (3.09)	8.71 (3.24)	6.98 (3.09)	7.94 (2.96)
Clinical Outcomes in Routine Evaluation-10 (CORE-10)				
CORE-10 total (0-50)	9.69 (6.59)	11.42 (7.09)	7.96 (5.45)	11.50 (9.07)
Bead Experiment				
Number of beads shown before decision (1-20)	8.06 (4.88)	7.96 (4.29)	7.46 (4.16)	7.13 (4.43)

The influence of the intervention on participant responses to the SCS

In order to investigate the first hypothesis, that participants who are randomised to receive the self-compassion intervention will show increased levels of self-compassion following the intervention compared to participants randomised to the control condition whose self-compassion levels will remain the same following the intervention, an ANCOVA was run with follow up SCS scores as the dependent variable and baseline SCS scores as the covariate.

The ANCOVA revealed that after adjustment for baseline self-compassion, there was no statistically significant difference in post-intervention self-compassion between the interventions, $F(1,93) = 0.002$, $p = 0.97$, partial $\eta^2 <0.001$. Figure 7 illustrates the mean self-compassion scores for each condition over time.
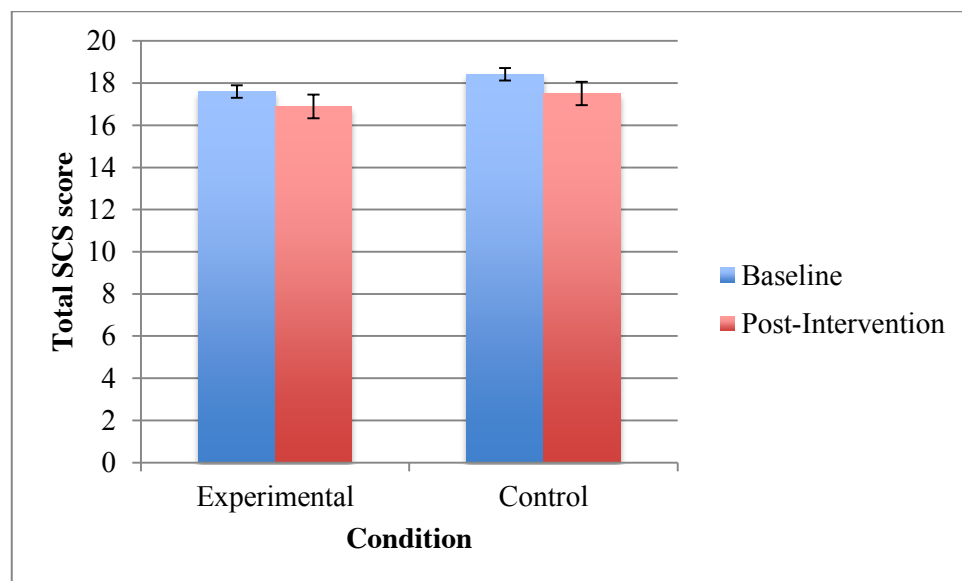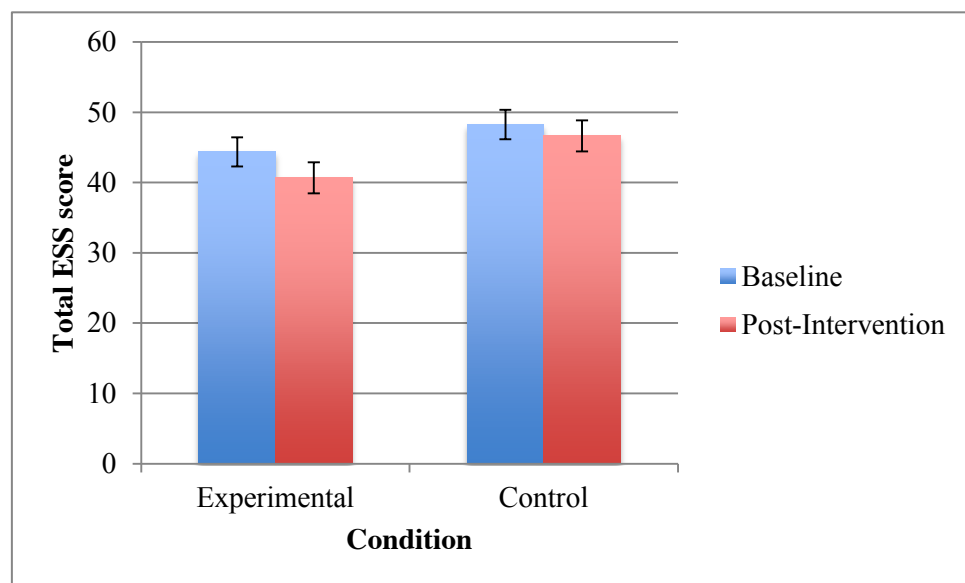

Figure 7. Bar chart of mean (+ SE) total SCS scores for each condition over time

The influence of the intervention on participant responses to the ESS

To investigate the second hypothesis that participants who are randomised to receive the self-compassion intervention will show decreased levels of shame following the

intervention compared to participants randomised to the control condition, whose shame levels will remain the same following the intervention, an ANCOVA was run with follow up shame scores as the dependent variable and baseline shame scores as the covariate.

The ANCOVA revealed that after adjustment for baseline shame, there was no statistically significant difference in post-intervention shame between the interventions, $F(1,93) = 1.74$, $p = 0.19$, partial $\eta^2 < 0.018$. Figure 8 illustrates the mean shame scores for each condition over time.

Figure 8. Bar chart of mean (+ SE) total ESS scores for each condition over time

The influence of the intervention on participant responses to the SSPS

To investigate the third hypothesis that participants who are randomised to receive the self-compassion intervention will show decreased levels of paranoia following the intervention compared to participants randomised to the control condition, whose paranoia levels will remain the same following the intervention, an ANCOVA was run with follow up paranoia scores as the dependent variable and baseline paranoia scores as the covariate.

After adjustment for baseline paranoia, there was no statistically significant difference in post-intervention paranoia between the interventions, $F(1,93) = 0.05$, $p = 0.82$, partial $\eta^2 < 0.001$. Figure 9 illustrates the mean paranoia scores for each condition over time.
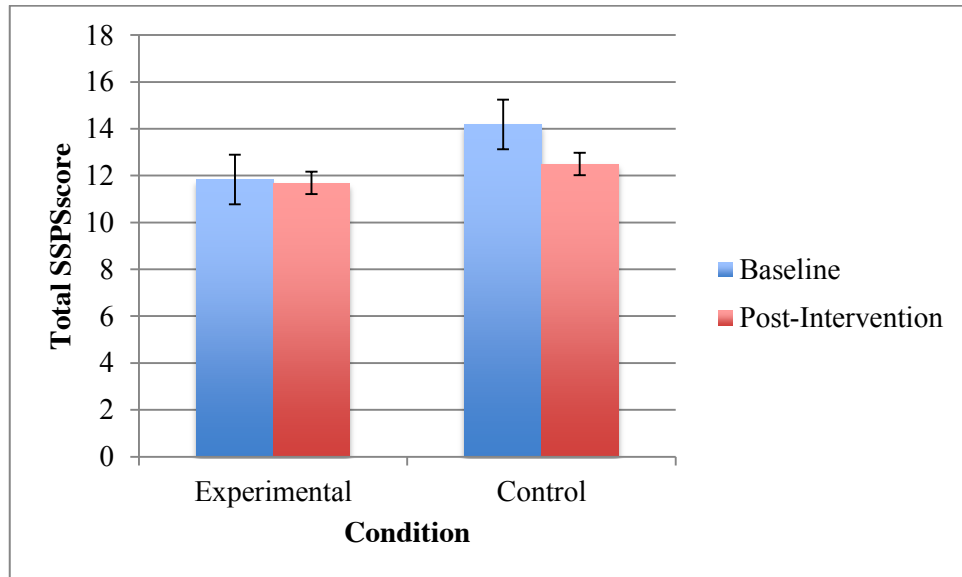

Figure 9. Bar chart of mean (+ SE) total SSPS scores for each condition over time

To investigate the impact that the intervention had on distress associated with paranoia, another ANCOVA was run with follow up paranoia distress scores as the dependent variable and baseline paranoia distress scores as the covariate.

After adjustment for baseline paranoia distress, there was no statistically significant difference in post-intervention paranoia distress between the interventions, $F(1,45) = 0.31$, $p = 0.58$, partial $\eta^2 = 0.007$. Figure 10 illustrates the mean paranoia distress scores for each condition over time.
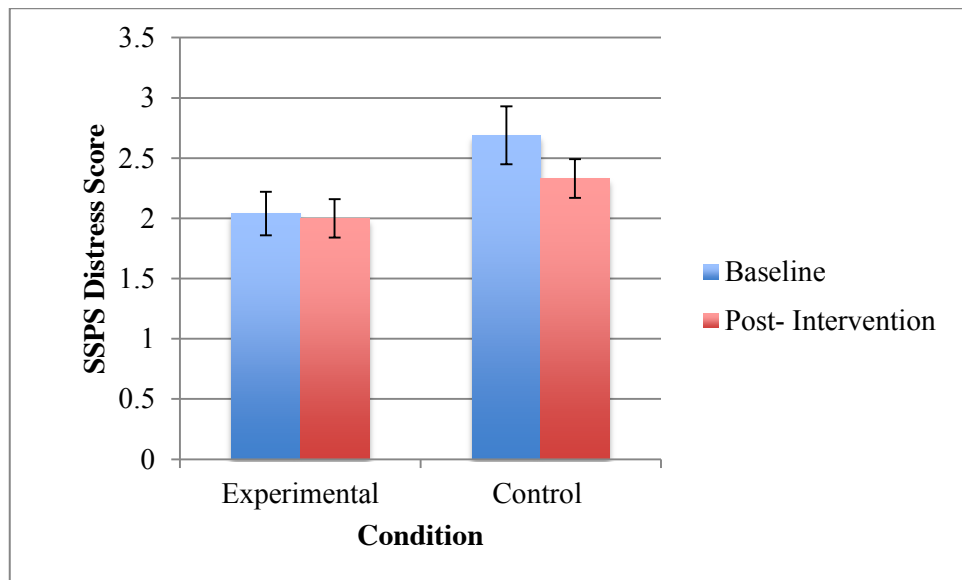
Figure 10. Bar chart of mean (+ SE) total SSPS Distress scores for each condition over time

The influence of the intervention on participant responses to the CORE-10

To investigate the fourth hypothesis that participants who are randomised to receive the self-compassion intervention will show decreased levels of psychological distress following the intervention compared to participants randomised to the control condition, whose psychological distress levels will remain the same following the intervention, an ANCOVA was run with follow up psychological distress scores as the dependent variable and baseline psychological distress scores as the covariate.

There was a significant effect of intervention on post-intervention CORE-10 scores after controlling for the effect of CORE-10 baseline score, $F(1,93) = 4.24$, $p = 0.04$, partial $\eta^2 = 0.04$. Post-intervention psychological distress was statistically significantly lower in the experimental condition compared to control condition (mean difference of -2.14 (95% CI, -4.21 to 0.08), $p=0.04$). Figure 11 illustrates the mean psychological distress scores for each condition over time.
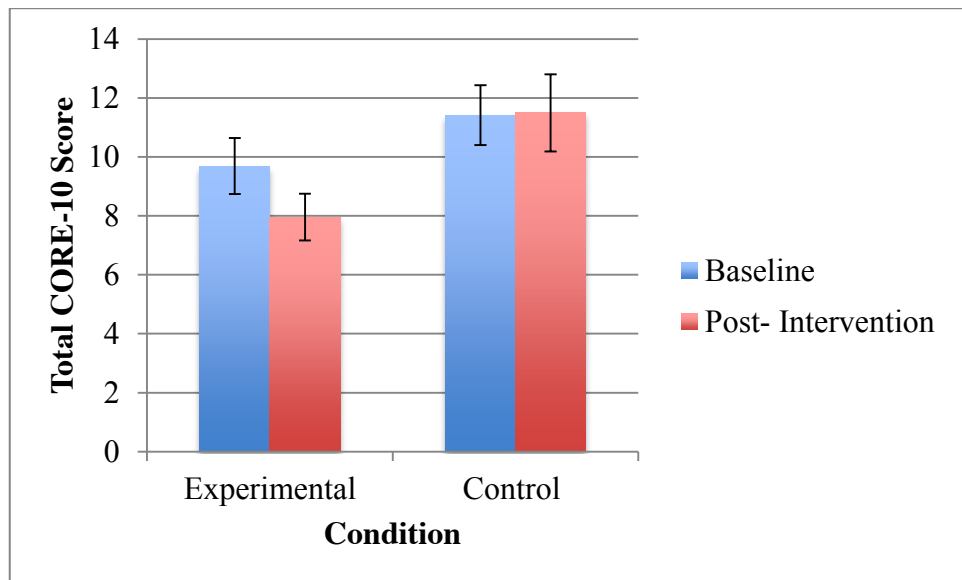
Figure 11. Bar chart of mean (+ SE) total CORE-10 scores for each condition over time

The influence of the intervention on participant responses to the Bead Experiment

To investigate the hypothesis that participants who are randomised to receive the self-compassion intervention will be less likely to jump to conclusions following the intervention compared to participants randomised to the control condition, whose tendency to jump to conclusions will remain the same following the intervention, an ANCOVA was conducted with post-intervention scores on the bead experiment as the dependent variable and baseline scores on the bead experiment as the covariate.

The ANCOVA revealed no significant effect of intervention on post-intervention Bead Experiment scores after controlling for the effect of Bead Experiment baseline score, $F(1,93) = 0.15$, $p = 0.70$, partial $\eta^2 = 0.002$. Figure 12 illustrates the mean jumping to conclusions scores for each condition over time.
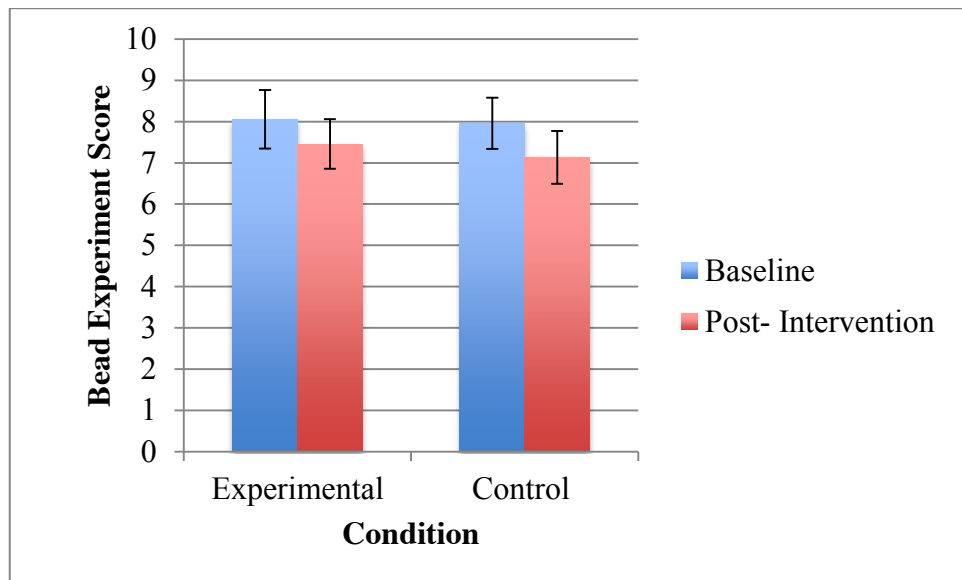
Figure 12. Bar chart of mean (+ SE) Bead Experiment scores for each condition over time

The number of participants who were deemed to 'jump to conclusions' (i.e. request two or fewer beads before making their decision) at baseline was 8 in both groups. Following the intervention, this number rose to 10 participants in each of the groups, suggesting that all participants were more likely to jump to conclusions at follow up.

The role of shame as a mediator

The hypothesis that any reductions in paranoia following the self-compassion intervention were mediated by reductions in shame was not addressed as it was contingent on individuals randomised to the self-compassion intervention showing reduced levels of paranoia following the intervention.

The influence of the intervention on individuals with highest baseline lifetime unusual experiences

To investigate the hypothesis that the self-compassion intervention would be most effective at reducing paranoia for participants who report the highest baseline levels of lifetime unusual experiences, participants were divided into three groups (as in Lincoln, 2013); those whose CAPE scores fell within the top (n=24), medium (n=48) and bottom (n=24) quartiles.

The effect of the intervention on paranoia remained non-significant for those who scored in the top quartile, $F(1,21) = 0.922$, $p = 0.35$, partial $\eta^2 = 0.042$.

Additional analyses

Correlation analyses were conducted to explore relationships between each of the variables measured at baseline. Table 3 outlines the relationships between the participants' scores on the CAPE, SCS, ESS, SSPS, CORE-10 and Bead Experiment at baseline.

Table 3. Pearson's r correlation coefficents for CAPE, CAPE Distress, SCS, ESS, SSPS, SSPS Distress, CORE-10 & JTC Bead Experiment.

Measure	1	2	3	4	5	6	7
1) CAPE Total							
2) CAPE Total Distress	.688**						
3) SCS Total	-.676**	-.651**					
4) ESS Total	.720**	.694**	-.765**				
5) SSPS Total	.434**	.357**	-.353**	.497**			
6) SSPS Distress	.551**	.662**	-.581**	.623**	.663**		
7) CORE-10 Total	.737**	.618**	-.644**	.658**	.449**	.596**	
8) Bead Experiment	.001	.042	.087	-.057	-.133	-.03	.044

** Correlation is significant at the 0.01 level (2-tailed).

The correlational analyses revealed that participants with higher self-compassion scores were more likely to report lower levels of lifetime unusual experiences, shame, paranoia, and general psychological distress, although as with all correlational analyses no conclusions can be drawn as to the direction of these relationships. Interestingly, the size of the correlation between self-compassion and distress associated with paranoid thoughts was larger than the correlation between self-compassion and frequency of paranoid thoughts. Similarly, the size of the correlation between shame and distress associated with paranoid thoughts was larger than the correlation between shame and frequency of paranoid thoughts. Performance on the bead task was not significantly correlated with an individual's score on any other measure.

Summary of key findings

The main findings of the study can be summarised as follows:

- Following the self-compassion intervention, participants showed no difference in levels of self-compassion, shame, paranoia or a tendency to jump to conclusions when compared to the control condition.

- Following the self-compassion intervention, participants reported reduced levels of psychological distress when compared to participants who underwent the control intervention. The magnitude of this effect was small-medium in size (Cohen, 1988).

- Correlation analyses revealed that participants with higher self-compassion scores were more likely to report lower levels of lifetime experiences of psychosis, shame, paranoia and psychological distress.

DISCUSSION

Overview

This study set out to examine whether an intervention designed to increase self-compassion would influence levels of paranoia, shame, general psychological distress and a tendency to jump to conclusions. The main question the research sought to address was whether an increase in self-compassion would lead to a reduction in an individual's level of paranoia, mediated by a reduction in the level of shame experienced by that individual. A randomised experimental design was employed during which participants were asked to listen to an audio clip either designed to increase self-compassion or to act as a control each day over the course of a week. Measures of self-compassion, shame, paranoia, general psychological functioning and a tendency to jump to conclusions were administered before and after the intervention.

The main findings of the study were threefold. Firstly, participants who underwent the self-compassion intervention were no more self-compassionate following the intervention and did not show reduced levels of either shame, paranoia or a tendency to jump to conclusions after the intervention compared to individuals who underwent the control intervention. Secondly, participants who underwent the self-compassion intervention reported reduced levels of psychological distress following the intervention when compared to individuals randomised to the control condition. Finally, cross-sectional analyses revealed that self-compassion is negatively correlated with lifetime unusual experiences, shame, paranoia and psychological distress. Each of the findings will be discussed in more detail below in relation to the existing literature.

Main Findings

The influence of a self-compassion versus control intervention on participants'

levels of self-compassion.

The finding that individuals who underwent an intervention designed to increase self-compassion were no more self-compassionate following the intervention is not consistent with existing literature illustrating that self-compassion can be increased through an intervention designed to do so (e.g. Neff & Germer, 2013; Richards & Martin, 2012; Smeets, Neff, Alberts & Peters, 2014). There are a number of possible explanations for this finding that will be discussed in further detail below.

Firstly, it is possible that the self-compassion intervention designed for use in this study was not fit for purpose despite the script for the self-compassion intervention being based on Gilbert's suggestions for exercises designed specifically to increase compassion. Both self-compassion and control interventions were adapted from the exercises used by Lincoln et al. (2013), who found reduced levels of paranoia following the intervention. However, although Lincoln et al. (2013) report that their findings are the result of the intervention, levels of self-compassion before and after the intervention were not formally measured. Therefore, it is possible that the experimental intervention in Lincoln et al.'s (2013) study was effective at reducing paranoid thoughts through other means, and not necessarily due to an increase in self-compassion.

Secondly, the majority of studies that have shown self-compassion interventions to be effective have involved more intensive interventions than the one examined in the current study, such as attendance at groups over the course of a number of weeks (Neff & Germer, 2013; Richards & Martin, 2012; Smeets et al., 2014). It is therefore possible that the intervention employed in this project was not intensive enough to have resulted in a significant increase in levels of self-compassion. Indeed, although Smeets el al. (2014) concluded that their 'brief' intervention, which consisted of attendance at three

groups over the course of three weeks, showed that brief interventions could be effective at increasing self-compassion, they suggest that they may not be as effective as longer interventions that take place over the course of eight weeks (e.g. Neff & Germer, 2013). Furthermore, each of the interventions mentioned above that have proved to be effective in increasing self-compassion have involved participants undertaking a number of different exercises rather than only one, as was the case in this study. Although from Lincoln et al.'s (2013) study it seemed that participants undergoing one compassionate image exercise could be an effective intervention, as has been discussed above, it may be the case that this was an effective intervention for paranoia, but not necessarily for increasing levels of self-compassion. In summary, taking the results of this study with existing literature, it is possible that very brief interventions where participants are subject to one exercise may be useful in having some sort of effect (i.e. reducing paranoia as in Lincoln et al. (2013) or reducing psychological distress as in the current study), but that they are not intensive enough to produce an increase in how self-compassionate an individual is. This is supported by the existing literature which has revealed that the most intensive interventions designed to increase self-compassion produce the largest increases (Smeets et al., 2014).

Thirdly, it is possible that in order to develop self-compassion, interaction with others is necessary. This study is the first to investigate the impact of an entirely online intervention designed to increase self-compassion, whereas almost all of the existing literature on such interventions has involved participants having to interact with others as part of the intervention to increase self-compassion (e.g. Gilbert & Procter, 2006; Neff & Germer, 2013; Richards & Martin, 2012; Smeets et al., 2014). Thus, it is possible that being part of a group may confound any increases in self-compassion reported in the existing literature. However, although many of the studies looking at the effectiveness of self-compassion interventions have not controlled for the possible

benefits involved in being part of a group, two studies that did found that increases in self-compassion were only shown in the self-compassion group and not in the control group (Neff & Germer, 2013; Smeets et al., 2014). Furthermore, Lincoln et al. (2013) reported decreases in levels of paranoia in participants randomised to the compassion intervention only. Although these findings suggest that increases in self-compassion are not a result of being part of a group alone, they do suggest that it is possible that being part of a group or having some interaction with a clinician or researcher may help to facilitate an increase in self-compassion, regardless of the length of the intervention.

Finally, it is possible that the literature on self-compassion interventions is subject to publication bias, and as such studies that have not found self-compassion interventions to be effective in increasing levels of self-compassion are underrepresented within the literature. Implications drawn from a review on effect sizes, sample sizes and the distribution of p values in psychological research suggest that publication bias is pervasive within the entire field of psychology (Kuhberger, Fritz & Scherndl, 2014).

Overall, these findings suggest that more intensive interventions where participants receive some contact with others may be more useful than brief computerised interventions in increasing levels of self-compassion. The clinical implications of this are discussed in more detail in the clinical implications section below.

The influence of a self-compassion versus control intervention on participants' levels of shame.

The finding that participants randomised to the self-compassion intervention did not report reduced levels of shame following the intervention was again considered to be influenced by the failure of the self-compassion intervention to increase levels of self-

compassion, and as such it would not be expected that the intervention would have any impact on levels of overall shame.

The influence of a self-compassion versus control intervention on participants' levels of paranoia.

The finding that participants randomised to the self-compassion intervention did not report a reduction in either the frequency or distress caused by paranoid thoughts following the intervention is inconsistent with previous literature showing that interventions designed to increase self-compassion can reduce levels of paranoia (e.g. Lincoln et al., 2013; Mayhew & Gilbert, 2008). However, based on the hypothesises, this finding was anticipated given the initial finding that the intervention did not increase levels of self-compassion.

Conversely, the failing of this study to observe increased self-compassion in individuals who underwent the experimental intervention does not necessarily mean that it should not still produce a decrease in paranoia, as it is possible that Lincoln et al.'s (2013) findings were not a result of increased self-compassion. However, it is possible that the reason that this study did not demonstrate a reduction in paranoia following the self-compassion intervention as was found by Lincoln et al. (2013) is that it did not ask participants to conjure up the self-compassionate image after priming them to think of a personally relevant distressing situation. Thus, in Lincoln et al.'s study, paranoia was measured in relation to considering a specific situation whereas it was not in this study. When designing the project, this was considered as an option, but it was felt that considering the entirely online nature of the intervention that it would not be ethically sound to prime participants to think of personally relevant distressing situations.

Overall, as the study sought to investigate the relationship between self-compassion, shame and paranoia through an intervention designed to increase levels of

self-compassion, the implications that can be drawn from the findings discussed here are somewhat limited.

The influence of a self-compassion versus control intervention on participants' levels of general psychological distress.

The results demonstrate that individuals randomised to the self-compassion intervention reported reduced levels of general psychological distress following the intervention compared to individuals randomised to the control condition whose level of general psychological distress remained unchanged. This was found to be the case even though participants randomised to the self-compassion condition displayed lower levels of baseline psychological distress than those in the control group.

A possible explanation of this finding is that it is the result of an increase in type 1 errors as a consequence of multiple testing. There is considerable debate as to whether corrections for multiple testing should be used at all (Streiner & Norman, 2011). Whilst a number of statisticians argue that type 1 errors must be controlled for by the investigators (e.g. Ottenbacher, 1998), Rothman (1990) argues that it is more beneficial to tolerate findings that may later prove to be false than to prematurely disregard potentially useful observations because of type 2 errors caused by corrections for multiplicity and to prematurely close off potentially fruitful areas of research. In support of this idea, Streiner & Norman (2011) suggest that it may be better to not use corrections as long as the significant findings are viewed as a hypothesis for the next study (i.e. hypothesis generating), rather than as definitive findings. Thus, as this research was conducted as a randomised group comparison design study with implications for the feasibility of future research, rather than an investigation into an intervention that would be used within clinical settings, corrections for multiple testing were not conducted. As the research suggests that brief online interventions may be of

use in reducing psychological distress, this opens up future research questions that may be of use. The findings suggest that brief online interventions may be of use in reducing general psychological distress, but that more intensive interventions may be more effective in increasing self-compassion and reducing shame and paranoia.

The influence of a self-compassion versus control intervention on participants' tendency to jump to conclusions.

Although the results demonstrated no main effect of intervention on the bead task testing for a tendency to jump to conclusions, on average participants in both groups made their decision after fewer beads were shown to them following the intervention, suggestive of a learning effect. A learning effect is also supported by the finding that in both groups the number of participants deemed to 'jump to conclusions' increased following the interventions. Though this finding may be due to using the same task on both occasions, a general trend of participants decreasing in their conservatism over two time points when beads are presented in a different order has also been shown (Woodward, Munz, LeClerc & Lecomte, 2009). These authors suggest that this finding may be due to a repeated testing effect as participants become more familiar with the testing protocol and thus request fewer pieces of information when tested on subsequent occasions.

An alternative explanation for this finding is that as this task was presented to participants at the end of the set of questionnaires they were asked to complete, it may be the case that participants responded that they had made their decision early on in the task due to questionnaire fatigue rather than as an accurate representation of how quickly they had made their decision.

The influence of a self-compassion intervention on participants with higher levels of lifetime unusual experiences.

The findings demonstrate that the impact of the self-compassion intervention on paranoia did not differ depending on baseline levels of lifetime experiences of psychosis. This finding is contrary to Lincoln et al.'s (2013) finding that compassion interventions are more effective at reducing paranoia for individuals with higher levels of lifetime unusual experiences. It is possible that this finding is also due to either the fact that the experimental intervention was not sufficiently intensive enough to increase self-compassion, or that paranoia was not measured in relation to a specific distressing event as in Lincoln et al. (2013).

The relationship between shame, self-compassion and paranoia.

As a number of hypotheses were contingent on the intervention increasing levels of self-compassion, the finding that the experimental intervention did not increase levels of self-compassion means that it is difficult to address a number of questions that the study planned to address. In order to attempt to partially answer some of the questions posed by the literature review, correlation analyses were undertaken to explore the relationship between shame, self-compassion and paranoia.

These analyses revealed that there were significant relationships between levels of shame, self-compassion and paranoia reported by participants. In particular, the results showed that there was a positive correlation between levels of shame and paranoia, consistent with existing literature. This is supported by Tangey and Dearing's (2002) finding that feelings of shame significantly correlate with experiences of paranoia in a student population and by Matos et al.'s (2012) finding that external shame and paranoia are strongly correlated. Furthermore, this finding is also consistent

with the conclusion that shame is influential in the development of paranoia (Johnson et al., 2014).

The correlational analyses also indicated that there was a significant inverse relationship between shame and self-compassion, which is consistent with the CFT literature.

These analyses also revealed a significant inverse relationship between self-compassion and paranoia, consistent with the literature review above that hypothesises that individuals who are more self-compassionate are less likely to exhibit paranoid thinking. This finding is supported by previous literature that has concluded that paranoia is significantly correlated with negative factors on the self-compassion scale in a clinical population (Mills et al., 2007), and that higher levels of self-compassion are correlated with lower scores on the positive symptoms subscale of the PANSS in a clinical population (Eicher, Davis & Lysaker, 2013). Interestingly, the correlation between self-compassion and distress caused by paranoid thoughts was larger than the correlation between self-compassion and the frequency of paranoid thoughts, which suggests that developing self-compassion may be of use in decreasing the distress caused by paranoid thoughts, although it is important to note that the direction of these relationships cannot be inferred. Nevertheless, this finding suggests that the level of distress associated with these experiences is an important factor that ought to be measured when investigating the effectiveness of interventions for these experiences.

Higher reported levels of self-compassion were also significantly positively correlated with greater general psychological functioning, consistent with the literature on the psychological benefits of self-compassion, which has demonstrated a significant inverse relationship between compassion and psychological distress (MacBeth & Gumley, 2012).

Overall, although the results of these correlation analyses offer some insights into the relationships between various psychological factors that were being investigated, it is not possible to determine the direction of any relationships between these variables. The experimental design of the study intended to offer some insight into the direction of these relationships, but as the intervention designed to increase levels of self-compassion did not do so, this had a knock-on effect for the research questions that could be addressed with the data.

Limitations

There are a number of limitations with the design, sample and measures employed in this study which will be discussed below in more detail.

Design.

Firstly, as the project was administered entirely online, one cannot be totally sure as to how much participants really engaged with the exercises. Although steps were taken to try to ensure that participants did listen to the audio clip on a minimum number of days throughout the course of the week (by requiring participants to rate their mood and the ease with which they engaged with the exercise after doing so, which were only made available after enough time had elapsed for individuals to have listened to the clip), there was no way to ensure that participants had listened to and engaged with the exercise rather than just allowing the audio clip to play. However, this may also have been an issue if the study had been conducted face to face.

Secondly, due to the online nature of the project, this meant that it was difficult to know exactly who was participating in the project. Four sets of data had to be deleted from the analysis as it was not possible to ensure that these participants were members of staff or students from the University of Leeds. Once this issue had been identified, steps were put in place to ensure that future participants signed up to the

project using a University email address, and thus it was then possible to ensure that participants were affiliated with the University and that an individual could only complete the project once. Again however, it is possible that individuals who are not affiliated with the University may have signed up to the project even if the study had been conducted face-to-face.

Finally, although pre-test-post-test designs are commonly used in studies investigating psychological interventions, this design is sometimes criticised due to the lack of response data captured (Salim, Mackinnon, Christensen, Griffiths, 2008).

Sample and Measures.

The methodological limitations involved in recruiting from a student population are well established, and include issues about both the validity and generalisability of results. As Foot & Sanford (2004, p.256) highlight, student samples are "inherently biased in age, experience, intellectual ability, ethnicity and social class". There is less written about recruiting from a University staff population, although it is likely that this population is similarly biased in intellectual ability, ethnicity and social class. However, the inclusion of staff meant that the results were more generalisable to people of different ages. Despite these limitations, a decision was made to recruit from a University population due to the likelihood of being able to recruit enough participants from this population to conduct a well-powered study.

The average baseline level of paranoia for participants in the experimental group was lower than scores previously reported in a University population (Freeman et al., 2007). Thus, although the measure was designed to capture levels of paranoia within the general population, it is possible that any impact on levels of paranoia were unable to be captured due to a floor effect.

Theoretical and Clinical Implications

This study was the first to attempt to experimentally examine the relationship between levels of self-compassion, shame, paranoia and general psychological distress. Although the self-compassion intervention did not increase levels of self-compassion as it was designed to do, a number of implications can still be made about the feasibility of online interventions and conclusions drawn from the analysis of cross-sectional data.

One implication that can be drawn from the project is that online studies are feasible for recruiting participants from a non-clinical population. The number of participants recruited to the project exceeded expectations both in terms of the number of interested participants and in the length of time it took to recruit the required number of participants. The majority of students were recruited through an email advertising the project, and majority of staff members were recruited through the project being advertised on a University website. Online interventions are considered to be particularly susceptible to participants dropping out, with rates of attrition in interventions for anxiety and depression reported as being up to 50% (Christensen, Griffiths & Farrer, 2009). In this study, however, the attrition rate following randomisation was 19%. Nearly three quarters of those who dropped out were randomised to the control intervention, suggesting that participants were more willing to engage with the self-compassion intervention. It is also possible that those who were randomised to the control condition were aware that they were part of a control group due to the nature of the exercise, and as such did not wish to continue. The finding that the attrition rate for this project was lower than reported elsewhere may be due to the financial incentive for completing the project. This is in line with the finding that a £10 Amazon gift voucher can increase follow-up rates on online trials when compared to lower incentives (Khadjesari, Murray, Kalaitzaki, White, McCambridge et al., 2011).

Although online interventions may be useful methods of recruiting participants to investigate a research question from a practical viewpoint, it seems that it was not an effective way of delivering self-compassion intervention but that more intensive interventions may be of more use instead. As computerised interventions are being used more frequently in the treatment of psychological distress (Musiat, Goldstone & Tarrier, 2014), it is important to note that the findings of this study suggest that whilst brief online interventions may be of use in reducing general psychological distress, more intensive interventions that involve interaction with others may be more effective in producing more specific outcomes such as increasing self-compassion and reducing shame and paranoia. From the literature it is not possible to determine whether it is the intensity of the intervention, interacting with others or a combination of the two that seem to produce an effective self-compassion intervention. However, available evidence suggests that any contact with a clinician may improve outcomes (Andersson & Titov, 2014), with a systematic review revealing a linear relationship between the amount of contact with a clinician and effect size of the intervention (Johansson & Andersson, 2012). This is supported by Gilbert & Procter's (2006) finding that individuals who underwent compassionate image training reported that support from others was required to practice developing the compassionate image, and by the finding that levels of contact significantly moderates the effect of self-help interventions on 'positive symptoms' of psychosis (Scott, Webb & Rowse, 2015). Thus, the implication of this is that rather than services offering computerised interventions that do not require contact with a clinician to individuals on a waiting list for psychological therapy, offering those individuals an opportunity to take part in a group where more contact is had with a clinician may be more beneficial and is still cheaper for services to provide than individual therapy. This seems to particularly be the case for individuals with high

levels of shame, although an online intervention may be of some use to individuals with higher levels of general psychological distress.

The results of the cross-sectional analysis suggest that there does seem to be some promise in self-compassion interventions reducing levels of paranoia through the impact of these interventions on levels of shame. The relationship between self-compassion, shame and paranoia found by this study potentially has significant implications for the possible impact of self-compassion interventions for individuals with experiences of paranoia. Furthermore, the fact that self-compassion was found to not only be associated with lower levels of shame and paranoia but also with decreased general psychological distress provides further evidence for the role of self-compassion in psychological wellbeing. These findings suggest that self-compassion may be an important factor in maintaining psychological wellbeing and in reducing levels of shame and paranoid thinking. Although still in its early stages, interventions that aim to develop self-compassion such as compassion-focused therapy have shown some promise in terms of reducing experiences of psychosis and increasing psychological wellbeing. To date however, there have not been any published studies documenting the effects of a self-compassion focused intervention in individuals specifically with experiences of clinically significant paranoia. The results of this study suggest that compassion focused therapeutic interventions as described by Gilbert and Neff (Gilbert, 2009; Neff & Germer, 2013) as a means to decrease levels of paranoia and enhance general psychological wellbeing may be of benefit.

Future Research

The study sought to address the impact of a self-compassion intervention on levels of shame, paranoia and general psychological functioning. However, as the self-compassion intervention did not lead to an increase in self-compassion, it may be of

benefit for future research on interventions that have been shown to increase self-compassion to capture data on levels of shame and paranoia before and after the intervention to allow for the questions that this study sought to address to be tackled. This would allow for more clarity about the nature of the relationship between these factors, and in particular the direction of the relationship. This would provide insight into both the psychological processes involved in the development of paranoia, and into the effectiveness of self-compassion interventions for individuals with experiences of paranoia.

The findings of the study add to existing literature on shame as an important emotion in paranoia following stressful life events. An area of future research could be to investigate the relationship between stressful life events, shame, self-compassion and paranoia within one study in order to again clarify the relationships between each of these variables. It would be most useful if shame were considered in relation to the context within which it arises, as Leeming & Boyle (2004) point out that shame arises about something and in response to something or someone, and as such is inseparable from its context.

Conclusion

This study sought to investigate the impact of a self-compassion intervention on levels of shame, paranoia and general psychological functioning. Although the self-compassion intervention did not lead to an increase in levels of self-compassion, it did result in a decrease in general psychological distress following the intervention, suggesting that brief online interventions may be of use in reducing general psychological distress. Cross-sectional analyses revealed significant relationships between levels of self-compassion, shame and paranoia. This study provides promise for the effectiveness of self-compassion interventions in reducing experiences of

paranoia through the impact they have on shame, though further research is needed to confirm this.

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APPENDICES

Table of contents for appendices

Appendix A: Email to students advertising the project

Dear fellow students,

I am writing to invite you to take part in an internet-based research project looking at visualisation-based coping strategies. Psychological wellbeing is linked to effective coping strategies. This study aims to determine whether particular approaches to coping are more beneficial than others.

This study will involve:

· Listening to a brief audio clip each day over the course of a week
· Completing a number of questionnaires at the beginning and end of the week

As all the resources needed to participate in the project are online, you can participate from a location of your choice. Once you complete the project you will be offered a **£10 LOVE2SHOP** voucher as a thank you for taking part in the project.

If you are interested in taking part in this project, more information can be found in the information sheet (attached) or by clicking on the following link: www.tinyurl.com/leedscoping

With best wishes,

Emma Waters
Psychologist in Clinical Training

The University of Leeds
Leeds Institute of Health Sciences
Doctorate in Clinical Psychology
Charles Thackrah Building, Room G.04
101 Clarendon Road
Leeds
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Js06ew@leeds.ac.uk

Supervisors: Dr Gary Latchford: g.latchford@leeds.ac.uk, Dr Jude Johnson: j.johnson@leeds.ac.uk, Dr Anjula Gupta: anjula.gupta@nhs.net

This project has been reviewed by the Institute of Psychological Sciences Research Ethics Committee at the University of Leeds.
Ethics approval date: 9-Nov-2015
Ethics approval number: 15-0307

Appendix B: Poster 1

Are you interested in learning about new coping strategies?

We are conducting an online study investigating the effectiveness of visualisation-based coping strategies.

Participants will be asked to:
- Listen to a brief audio clip each day over the course of a week
- Complete a number of questionnaires at the beginning and end of the week

Once you complete the project you will receive a **£10 Love2Shop gift voucher!**

This study is being completed as part of a doctorate in clinical psychology. For more information please contact Emma Waters: js06ew@leeds.ac.uk or follow the link: www.tinyurl.com/leedscoping **Supervisors:** Dr Gary Latchford: g.latchford@leeds.ac.uk; Jude Johnson: j.johnson@leeds.ac.uk; Anjula Gupta: anjula.gupta@nhs.net

The project has been reviewed by the Institute of Psychological Sciences Research Ethics Committee at the University of Leeds
Ethics approval date: XXXX
Ethics approval number: XXXX
StudyPoster_V4_06/11/2015

Coping strategies www.tinyurl.com/ leedscoping
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Coping strategies www.tinyurl.com/ leedscoping

Appendix C: Poster 2

Appendix D: Advert for 'For Staff' website

18 APRIL 2016

School of Psychology

We are looking for staff or students from the University to participate in an online study investigating the effectiveness of visualisation-based coping strategies.

Participants will be asked to:

- listen to a brief audio clip each day over the course of a week
- complete a number of questionnaires at the beginning and end of the week.

As all the resources needed to participate in the project are online, you can participate from a location of your choice. Once you complete the project you will be offered a £10 Amazon voucher as a thank you for taking part in the project.

To take part, please go to the project webpage.

Contact: Emma Waters – js06ew@leeds.ac.uk

Ethical approval reference number: School of Psychology 15-0401 - 4/1/2016

Closing date for participants: 18 April 2016

Appendix E: Community Assessment of Psychic Experiences

1. Do you ever feel sad?

2. Do you ever feel as if people seem to drop hints about you or say things with a double meaning?

3. Do you ever feel that you are not a very animated person?

4. Do you ever feel that you are not much of a talker when you are conversing with other people?

5. Do you ever feel as if things in magazines or on TV were written especially for you?

6. Do you ever feel as if some people are not what they seem to be?

7. Do you ever feel as if you are being persecuted in some way?

8. Do you ever feel that you experience few or no emotions at important events?

9. Do you ever feel pessimistic about everything?

10. Do you ever feel as if there is a conspiracy against you?

11. Do you ever feel as if you are destined to be someone very important?

12. Do you ever feel as though there is no future for you?

13. Do you ever feel that you are a very special or unusual person?

14. Do you ever feel as if you do not want to live anymore?

15. Do you ever think that people can communicate telepathically?

16. Do you ever feel that you have no interest to be with other people?

17. Do you ever feel as if electrical devices such as computers can influence the way you think?

18. Do you ever feel that you are lacking in motivation to do things?

19. Do you ever cry about nothing?

20. Do you believe in the power of witchcraft, voodoo or the occult?

21. Do you ever feel that you are lacking in energy?

22. Do you ever feel that people look at you oddly because of your appearance?

23. Do you ever feel that your mind is empty?

24. Do you ever feel as if the thoughts in your head are being taken away from you?

25. Do you ever feel that you are spending all your days doing nothing?

26. Do you ever feel as if the thoughts in your head are not your own?

27. Do you ever feel that your feelings are lacking in intensity?

28. Have your thoughts ever been so vivid that you were worried other people would hear them?

29. Do you ever feel that you are lacking in spontaneity?

30. Do you ever hear your own thoughts being echoed back to you?

31. Do you ever feel as if you are under the control of some force or power other than yourself?

32. Do you ever feel that your emotions are blunted?

33. Do you ever hear voices when you are alone?

34. Do you ever hear voices talking to each other when you are alone?

35. Do you ever feel that you are neglecting your appearance or personal hygiene?

36. Do you ever feel that you can never get things done?

37. Do you ever feel that you have only a few hobbies or interests?

38. Do you ever feel guilty?

39. Do you ever feel like a failure?

40. Do you ever feel tense?

41. Do you ever feel as if a double has taken the place of a family member, friend, or acquaintance?

42. Do you ever see objects, people or animals that other people cannot see?

Participants are asked to rate how frequently they experience each item from the following scale:

Never   **Sometimes**   **Often**   **Nearly Always**

For each item that participants answer 'sometimes', 'often' or 'nearly always' to, they are asked how distressed they feel by this experience on the following scale.:

Not distressed   **A bit distressed**   **Quite distressed**   **Very distressed**

Appendix F: Self-Compassion Scale

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. For each item, please indicate how often you have behaved in the stated manner over the past few days, using the following scale:

Almost Never   Almost Always

1   2   3   4   5

1. I'm disapproving and judgmental about my own flaws and inadequacies.

2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

3. When things are going badly for me, I see the difficulties as part of life that everyone
   goes through.

4. When I think about my inadequacies, it tends to make me feel more separate and cut
   off from the rest of the world.

5. I try to be loving towards myself when I'm feeling emotional pain.

6. When I fail at something important to me I become consumed by feelings of
   inadequacy.

7. When I'm down and out, I remind myself that there are lots of other people in the
   world feeling like I am.

8. When times are really difficult, I tend to be tough on myself.

9. When something upsets me I try to keep my emotions in balance.

10. When I feel inadequate in some way, I try to remind myself that feelings of
    inadequacy are shared by most people.

11. I'm intolerant and impatient towards those aspects of my personality I don't like.

12. When I'm going through a very hard time, I give myself the caring and tenderness I need.

13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

14. When something painful happens I try to take a balanced view of the situation.

15. I try to see my failings as part of the human condition.

16. When I see aspects of myself that I don't like, I get down on myself.

17. When I fail at something important to me I try to keep things in perspective.

18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.

19. I'm kind to myself when I'm experiencing suffering.

20. When something upsets me I get carried away with my feelings.

21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.

22. When I'm feeling down I try to approach my feelings with curiosity and openness.

23. I'm tolerant of my own flaws and inadequacies.

24. When something painful happens I tend to blow the incident out of proportion.

25. When I fail at something that's important to me, I tend to feel alone in my failure.

26. I try to be understanding and patient towards those aspects of my personality I don't like.

Appendix G: Experiences of Shame Scale

Everybody at times can feel embarrassed, self-conscious or ashamed. These questions are about such feelings if they have occurred at any time in the past few days. There are no 'right' or 'wrong' answers. Please indicate the response which applies to you.

	not at all	a little	moderately	very much
1. Have you felt ashamed of any of your personal habits?	(1)	(2)	(3)	(4)
2. Have you worried about what other people think of any of your personal habits?	( )	( )	( )	( )
3. Have you tried to cover up or conceal any of your personal habits?	( )	( )	( )	( )
4. Have you felt ashamed of your manner with others?	( )	( )	( )	( )
5. Have you worried about what other people think of your manner with others?	( )	( )	( )	( )
6. Have you avoided people because of your manner?	( )	( )	( )	( )
7. Have you felt ashamed of the sort of person you are?	( )	( )	( )	( )
8. Have you worried about what other people think of the sort of person you are?	( )	( )	( )	( )
9. Have you tried to conceal from others the sort of person you are?	( )	( )	( )	( )
10.Have you felt ashamed of your ability to do things?	( )	( )	( )	( )
11.Have you worried about what other people think of your ability to do things?	( )	( )	( )	( )
12.Have you avoided people because of your inability to do things?	( )	( )	( )	( )

13. Do you feel ashamed when you do
something wrong?   ( )   ( )   ( ) ( )

14. Have you worried about what other people
think of you when you do something wrong?   ( )   ( )   ( ) ( )

15. Have you tried to cover up or conceal things
you felt ashamed of having done?   ( )   ( )   ( ) ( )

16. Have you felt ashamed when you said
something stupid?   ( )   ( )   ( ) ( )

17. Have you worried about what other people
think of you when you said something stupid?   ( )   ( )   ( ) ( )

18. Have you avoided contact with anyone who
knew you said something stupid?   ( )   ( )   ( ) ( )

*19. Have you felt ashamed when you failed in a
competitive situation?   ( )   ( )   ( ) ( )

*20. Have you worried about what other people
think of you when you failed in a
competitive situation?   ( )   ( )   ( ) ( )

21. Have you avoided people who have seen you
fail?   ( )   ( )   ( ) ( )

22. Have you felt ashamed of your body or any
part of it?   ( )   ( )   ( ) ( )

23. Have you worried about what other people
think of your appearance?   ( )   ( )   ( ) ( )

24. Have you avoided looking at yourself in the
mirror?   ( )   ( )   ( ) ( )

25. Have you wanted to hide or conceal your
body or any part of it?   ( )   ( )   ( ) ( )

Appendix H: State Social Paranoia Scale

Thinking about the past few days, please circle how much you agree or disagree with the following statements:

1. Someone was hostile towards me
2. Someone had bad intentions towards me
3. Someone was trying to make me distressed
4. Someone stared at me in order to upset me
5. Someone wanted me to feel threatened
6. Someone would have harmed me in some way if they could
7. Someone had it in for me
8. Someone was trying to intimidate me
9. Someone was trying to isolate me
10. Someone was trying to irritate me

All rated on the following scale:

Do not agree   Agree a little   Agree moderately   Agree very much   Totally agree

For each of the items participants respond that they agree with, they will be asked to rate how upsetting the thought is on the following scale:

Not distressing   A little   Somewhat   Moderately   Very distressing

Appendix I: Clinical Outcome in Routine Evaluation- 10

CORE - 10

Site ID [____] letters only [_____] numbers only

Age [__] Male ☐ Female ☐

Stage Completed
S Screening
R Referral
A Assessment
F First Therapy Session
P Pre-therapy (unspecified)
D During Therapy
L Last Therapy Session
X Follow up 1
Y Follow up 2

Stage [__]

Client ID

Therapist ID [____] numbers only (1) [___] numbers only (2) [___]

Episode [__]

Sub codes
D D / M M / Y Y Y Y
Date form given

IMPORTANT – PLEASE READ THIS FIRST
This form has 10 statements about how you have been OVER THE LAST WEEK.
Please read each statement and think how often you felt that way last week.
Then tick the box which is closest to this.
Please use a dark pen (not pencil) and tick clearly within the boxes.

Over the last week

		Not at all	Only Occasionally	Sometimes	Often	Most or all the time
1	I have felt tense, anxious or nervous	0	1	2	3	4
2	I have felt I have someone to turn to for support when needed	4	3	2	1	0
3	I have felt able to cope when things go wrong	4	3	2	1	0
4	Talking to people has felt too much for me	0	1	2	3	4
5	I have felt panic or terror	0	1	2	3	4
6	I made plans to end my life	0	1	2	3	4
7	I have had difficulty getting to sleep or staying asleep	0	1	2	3	4
8	I have felt despairing or hopeless	0	1	2	3	4
9	I have felt unhappy	0	1	2	3	4
10	Unwanted images or memories have been distressing me	0	1	2	3	4

Total (Clinical Score*) [____]

* **Procedure**: Add together the item scores, then divide by the number of questions completed to get the mean score, then multiply by 10 to get the Clinical Score.

Quick method for the CORE-10 (if all items completed): Add together the item scores to get the Clinical Score.

THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE

© CORE System Trust: http://www.coreims.co.uk/copyright.pdf
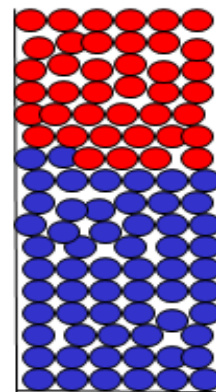Supported by www.coreims.co.uk

Appendix J: Jumping to Conclusions Bead Experiment

1.

There are two jars: A mainly red jar containing 60 red and 40 blue beads and a mainly blue jar containing 60 blue and 40 red beads
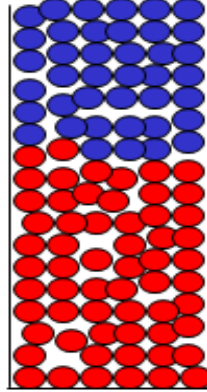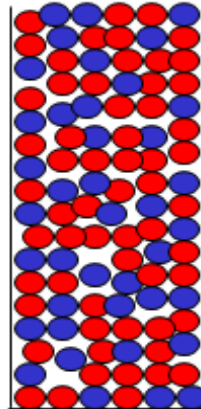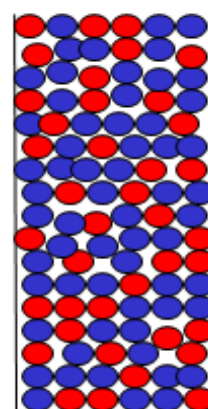

Mainly Red
Jar
(60 red; 40 blue)

Mainly Blue
Jar
(60 blue; 40 red)

2.

The beads have been mixed up in the jar.

Mainly Red
Jar
(60 red; 40 blue)

Mainly Blue
Jar
(60 blue; 40 red)

3.

One of the jars has been chosen at random. Beads will be drawn from the selected jar and shown. The beads will always come from the same jar and will be replaced afterwards so that the proportions stay the same.

It is your job to decide from which jar the beads have come. You may see as many beads as you like before making a decision. After a bead has been shown to you, you can ask for another bead or you can tell me that you know which jar has been chosen, and you can tell me whether it is the **Mainly Red Jar** or the **Mainly Blue Jar**.

Remember you can see as many beads as you like before you decide from which jar the beads are from. Only decide when you are certain.

You will now see the first bead.

4.

The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

5.

The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

6.

The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

7. The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

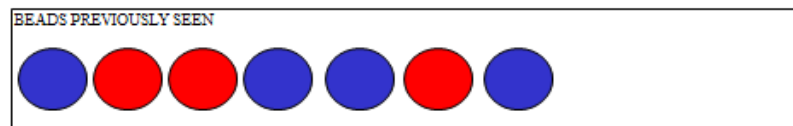8. The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

9. The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

10.
The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

11.
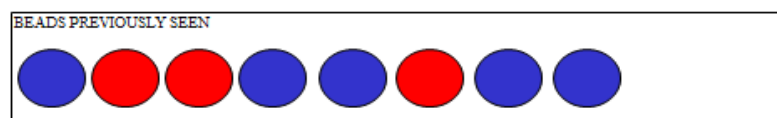The bead drawn is:

Would you like to see any more beads or have you decided now?
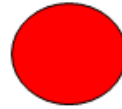
BEADS PREVIOUSLY SEEN

The bead drawn is:

12.

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

13.

The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

14.

The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

15.

The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

16. The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

17. The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

18. The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

19.   The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

20.   The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

21.   The bead drawn is:

Would you like to see any more beads or have you decided now?

BEADS PREVIOUSLY SEEN

117

22.   The bead drawn is:

Would you like to see any more beads or have you decided now?

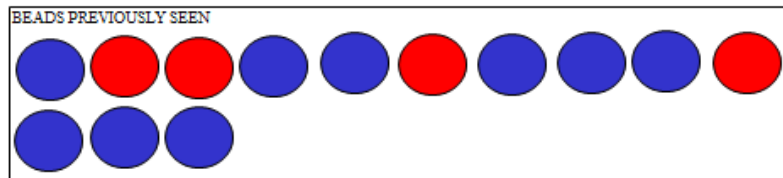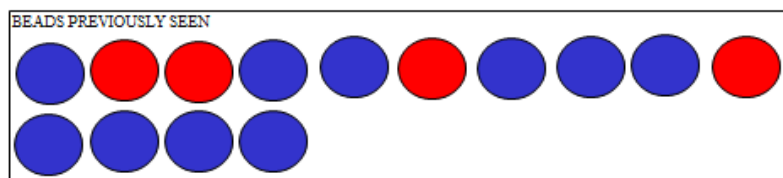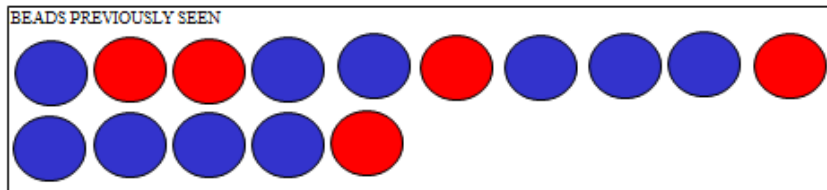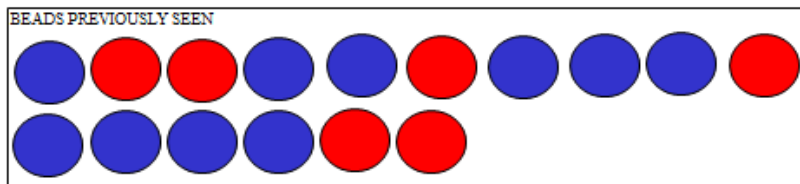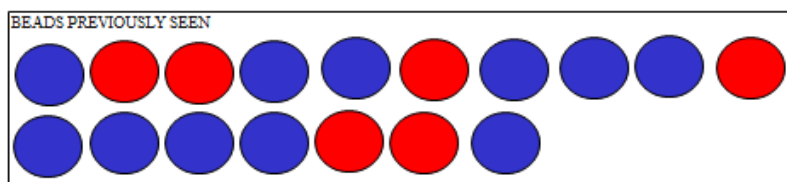23.   The bead drawn is:

You must decide now.
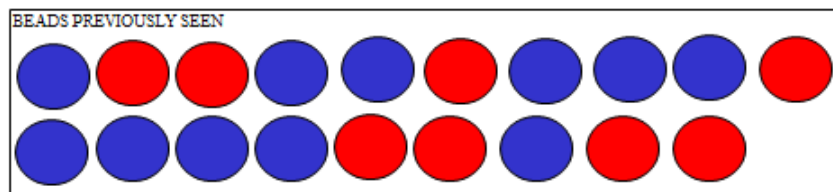
Appendix K: Visual Analogue Scales

Thank you for listening to the audio clip. Now please rate your current mood

1. **How happy are you feeling right now?**

Not at all happy   Very happy

0   10

2. **How ashamed of yourself do you feel right now?**

Not at all ashamed   Very ashamed

0   10

3. **How worried are you right now that others would harm you if given the opportunity?**

Not at all worried   Very worried

0   10
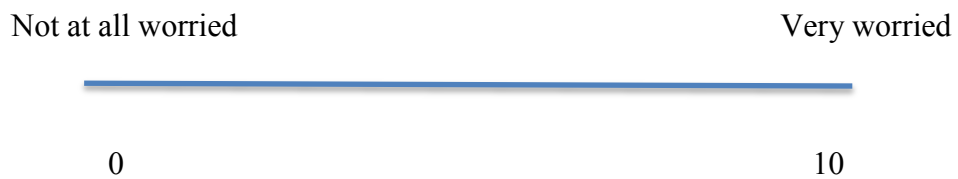
4. **How difficult did you find it to engage with the exercise?**

Not at all difficult   Very difficult

0   10

After listening to the audio clip on day 7 only:

Have you experienced any adverse life events in the past week?
Yes
No
Prefer not to say

Appendix L: Compassionate Image Exercise

Welcome to the exercise. This exercise is about creating an image for you to work with and develop. First, sit comfortably, where you are unlikely to be disturbed for a while. Now, take a straight posture and focus on your breathing with the air coming in through your nose, down gently into your diaphragm, and out through your nose again. This breathing is slightly deeper and slower than normal. Notice the feeling of your body slowing down. Now gently close your eyes. Relax your facial muscles, starting with your forehead, your cheeks, and letting your jaw drop slightly. Then, allow your mouth to turn upwards, into a slight smile until you feel it is comfortable. A warm and friendly smile. As we go through the exercise, you may find your mind wandering. Do not worry about that. Just gently and kindly bring it back to the task that we are doing.

Now, we are going to use our imagination to create an image. The image should convey compassion for you, it should care for you and want you to feel good and be without worry. The image may be a person, but it can also be something else, such as a creature, an animal or a sun. Whatever image comes to mind, or you choose to work with, remember that this is your creation.

You can have more than one compassionate image if you wish, and they can change over time. However, in this exercise it is important that you try and give your image the qualities of wisdom, strength, warmth and non-judgment. This image is all knowing. It knows you and it knows what you have been through. It is deeply committed to you, it wants to care for you so that you feel good and experience joy. It conveys warmth. You can even feel the warmth. It is completely accepting. It never judges you. It understands your difficulties and accepts you as you are. For the next 30 seconds, gently imagine your compassionate image having the qualities of wisdom…..strength…..warmth….and non-judgment.

As you develop your practice, you can imagine your compassionate image having all those qualities you've been practicing, so that when you focus on activating your compassionate image, you get a sense of the kind of image you want it to become. The more you practice slowing down, and imagine that compassionate image, the more easily you will find you can access it. Now, when you are ready, please open your eyes.

Appendix M: Control Exercise

Welcome to the exercise. This exercise is about creating an image for you to work with and develop. First, sit comfortably, where you are unlikely to be disturbed for a while. Now, take a straight posture and focus on your breathing, with the air coming in through your nose, down into your diaphragm, and out through your nose again. This breathing is slightly deeper and slower than normal. Notice the feeling of your body slowing down. Now gently close your eyes. Relax your facial muscles, starting with your forehead, your cheeks, and letting your jaw drop slightly. As we go through the exercise, you may find your mind wandering. If you find this happens, try to bring your attention back to the task that we are doing.

Now, we are going to use our imagination to create an image of a chair in your mind's eye. The image may be a chair that you are familiar with, but it can also be a chair that you have not seen before. Whatever image comes to mind, or you choose to work with, remember that this is your creation.

You can have more than one image if you wish, and they can change over time. However, in this exercise it is important that you try and give your image certain qualities. Your chair should have four legs, and it should be brown in colour. Imagine all the specific features of the chair…the material it is made from…the style of the chair….the size of the chair. For the next 30 seconds, imagine the chair that you have created..remembering that it should have four legs and be brown in colour.

As you develop your practice, you can imagine your image having those particular qualities, so that when you focus on activating your image of the chair, you get a sense of the kind of image you want it to become. The more you practice slowing down, and imagine that image of a chair, the more easily you will find you can access it. Now, when you are ready, please open your eyes.

Appendix N: Information Sheet

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An investigation into the effectiveness of visualisation-based coping strategies
Participant Information Sheet

I would like to invite you to take part in a research project. Taking part in this project is completely voluntary. Before you decide whether to take part it is important that you to understand why the project is being done and what it would involve if you decide that you would like to take part. Please take time to read the following information carefully. Feel free to talk to others about the project if you wish.

What is the purpose of the project?
Individuals have different ways of dealing with fluctuations in mood, feelings and perceptions. The project seeks to investigate the effectiveness of visualisation-based coping strategies, and to determine whether particular approaches to coping are more beneficial than others.

Why have I been invited to take part?
You have been invited to take part because you are a student at the University of Leeds.

What will happen if I take part?
You will be asked to complete a set of questionnaires that will ask for your views about yourself and others, and about how you deal with distress. You will also be asked to complete a task about decision-making. In total, these will take approximately 20-30 minutes. You will then be asked to listen to an audio clip each day over the course of a week. This audio clip will encourage you to engage in a visualisation exercise. You will also be asked to rate your mood each time you listen to the clip. The audio clip and mood rating will take less than 10 minutes per day. At the end of the week you will be asked to complete a number of the same questionnaires that you completed before the intervention. It is estimated that these will take approximately 15-20 minutes. All aspects of this project are completed online, from a location of your choice. You can complete the project either through a computer or smartphone. Once you have completed the project, you will receive a £10 Amazon gift voucher (unless you should choose not to).

Do I have to take part?
It is up to you to decide whether to take part. If you agree to take part, you will be asked to answer a number of questions documenting that you consent to do so. You may choose not to respond to any of the individual questions on the questionnaires. You are free to withdraw from the project at any time without giving a reason for doing so. If you would like to withdraw your data from the project, please contact a member of the research team letting them know that you wish to do so. If you drop out of the project and do not contact a member of the research team to tell them that you wish to withdraw your data, the data that you entered up until the point that you drop out may be analysed. You are free to withdraw your data from the study up until one week after you have completed the study, as data analysis may have begun by this point.

What are the benefits of taking part?
Psychological wellbeing is linked to effective coping strategies. By taking part in this project you may benefit from discovering new coping strategies linked to psychological

wellbeing. You will also receive a £10 Amazon gift voucher once you have completed the project.

What are the possible disadvantages and risks of taking part?
The questionnaires ask about personal views and experiences, and it is therefore possible that some participants may find this distressing. You may decline to answer any of the questionnaire items or withdraw from the project without giving a reason. You will also be provided with information about sources of support after completing the questionnaires, should it be required.

What will happen to information about me collected during the study?
All information will be stored securely and in strict confidence. You will be asked to provide your email address each day so that your responses across the week can be matched up, and you can be sent daily reminder emails containing the link that you will need to use each day. Once you have completed the study, your responses will be given an anonymous code and your email address will be stored separately to responses. All information will be stored securely and in strict confidence. Your email addresses will only be accessible to the main researcher (Emma Waters), and all anonymous research material will only be accessible to members of the research team. All data collected will be disposed of securely either 2 years following publication or 3 years after the end of data collection, whichever is longer.

What will happen to the results of the study?
When the project is completed, the results will be written up as a Doctorate in Clinical Psychology thesis, and the project's findings will be disseminated (e.g. submission to academic journals/conferences). All analyses will be on a group basis, and no identifiable information about you will be published in any reports.

Who has reviewed the study?
The study has been reviewed by the University of Leeds, School of Psychology Research Ethics Committee (Approval date: 09/11/15, Approval number: 15-0307)

What if I have a query or complaint about the project?
If you have any questions about the project please contact Emma Waters using the email address below, who will attempt to answer any queries.If you are unhappy about any aspect of the way that you have been treated during the course of this study and you do not wish to discuss this with the researcher, you can contact the School of Psychology Research Ethics Committee: ips.ethics@leeds.ac.uk or members of the supervisory team (Dr Gary Latchford: g.latchford@leeds.ac.uk; Dr Jude Johnson: j.johnson@leeds.ac.uk; Dr Anjula Gupta: anjula.gupta@nhs.net).

Thank you for taking time to read this information sheet
Emma Waters (Psychologist in Clinical Training, js06ew@leeds.ac.uk)

The University of Leeds
Leeds Institute of Health Sciences
Doctorate in Clinical Psychology
Charles Thackrah Building, Room G.04
101 Clarendon Road
Leeds, LS2 9LJ

ParticipantInformationSheet_V4_9/11/2015

Appendix O: Consent Form

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An investigation into the effectiveness of visualisation-based coping strategies
Consent form

I have read and understood the Participant Information Sheet (ParticipantInformationSheet_V4_9/11/2015) provided and have had the opportunity to ask any questions regarding the project.
Yes   No

I understand that participation in this project is voluntary.
Yes   No

I understand that some of the questions asked are about personal experiences so it is possible that I may find this distressing and that I am free to not answer any of the questions asked.
Yes   No

I understand that only the main researcher (Emma Waters) will have access to email addresses, and that once participants have completed the project all data collected will be allocated an anonymous code.
Yes   No

I understand that relevant sections of the data collected during the study, may be looked at by individuals from the University of Leeds or from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.
 Yes   No

I understand that I am free to withdraw from the project at any time up until a week after I complete the study without giving a reason for doing so, and that if I decide to withdraw from the project I can choose whether I would like to withdraw data already provided or not.
Yes   No

I consent to participating in this research project.
Yes   No

The study has been reviewed by the University of Leeds, School of Psychology Research Ethics Committee (Approval date: 09/11/15, Approval number: 15-0307)

This project is being completed by Emma Waters: js06ew@leeds.ac.uk Supervisors: Dr Gary Latchford: g.latchford@leeds.ac.uk, Dr Jude Johnson: j.johnson@leeds.ac.uk, Dr Anjula Gupta: anjula.gupta@nhs.net

ConsentForm_V4_9/11//2015

Appendix P: Sources of Support Information Sheet

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As noted in the Participant Information Sheet, we hope that taking part in this study has not caused you any distress. However, if the questions asked in the study have raised any issues for you, which you would like support for, there is support available to you both from the University, and also more widely. Please find these listed below:

Leeds Nightline

Nightline is an anonymous, non-advisory telephone listening and information service run for students by trained student volunteers. They offer confidential listening and information to all students studying in Leeds. Their phone lines are open from 8pm until 8am every night of term including weekends.

Tel: 0113 380 1381 for the listening service
      0113 380 1380 for the information service
E-listening online with Instant Messaging can be accessed: www.leedsnightline.co.uk
E-mail: listening@leedsnightline.co.uk

Leeds Student Counselling Centre

The Student Counselling Centre offer free and confidential help, guidance and support to students affected by a range of emotional issues. They offer: one to one counselling, groups and workshops, self-help resources, daily 3pm drop-in sessions. They are open 8:30am-5pm Monday to Friday.

Tel: 0113 343 4107
To book a therapeutic consultation with a counsellor, you will need to fill in an online form that can be found here:
http://students.leeds.ac.uk/info/100001/counselling/957/counselling_services
Address: The Student Counselling Centre, 19 Clarendon Place, Leeds, LS2 9JY.

Wider Support

Samaritans

Samaritans are available 24 hours a day, 7 days a week to provide confidential, support on any subject. Tel: 08457 90 90 90

Your GP

Your GP is also able to advise you on issues related to stress, depression, anxiety and other emotional difficulties.

Appendix Q: Debrief Sheet

UNIVERSITY OF LEEDS

An investigation into the effectiveness of visualisation-based coping strategies
Debrief Sheet

Thank you very much for taking part in this research.

Feelings of shame have been shown to be linked to suspiciousness. Emerging evidence supports the development of self-compassion as a strategy to protect against both feelings of shame and suspiciousness. This study aims to better understand the relationship between self-compassion, experiences of shame and suspiciousness. In order to investigate these aims, we asked participants to complete a number of questionnaires before and after a week of listening to an audio clip. Participants were randomised to either receive the 'experimental' audio clip, which involved listening to an exercise aimed to develop self-compassion, or the 'control' audio clip, which involved listening to an exercise asking participants to develop an image of a chair.

If you were randomised to the control condition and would like to access the self-compassion exercise, you can do so by following this link:
www.tinyurl.com/compassionateexercise

If you would like to withdraw your data from the research project, please contact the researcher (Emma Waters: js06ew@leeds.ac.uk) who will ensure that your data is deleted. You are free to withdraw your data from the study up until one week after you have completed the study, as data analysis may have begun by this point. You may wish to print this debrief sheet to remind you of this.

Would you like to receive a £10 LOVE2SHOP gift voucher?
Yes please, I would like a voucher
No thank you, I do not want a voucher

Would you like to receive a summary of the research once the project has been completed?
Yes please, send me a summary
No thank you, I do not want a summary

We hope that taking part in this study has not caused you any distress. However, if the questions asked in the study have raised any issues for you, which you would like support for, there is support available to you both from the University, and also more widely. Please find these listed below:

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<u>Wider Support</u>

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