

Beliefs about Emotions, Depression, Anxiety and Fatigue: A Mediational Analysis (Extended Report)

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Abstract

Background

The belief that it is unacceptable to experience or express negative emotions has been found to be associated with various difficulties, including low mood, anxiety and chronic fatigue. However, it is unclear how this belief, which could be viewed as a form of unhelpful perfectionism about emotional experience, may contribute to symptomatology.

Aims

This study investigated two hypotheses a) greater endorsement of beliefs about the unacceptability of negative emotions will be associated with greater emotional avoidance and lower levels of support seeking and self-compassion and b) such beliefs about emotions will be associated with higher levels of symptoms of depression, anxiety and fatigue, and that this relationship will be mediated by social support seeking, emotional avoidance and self-compassion.

Method

Online questionnaires were completed by 451 community participants. Mediation analysis was undertaken to investigate emotional avoidance, social support-seeking and self-compassion as mediators of the relationship between beliefs about emotions and symptoms of depression, anxiety and fatigue.

Results

Beliefs about the unacceptability of experience or expressing negative emotions were significantly associated with greater emotional avoidance and less self-compassion and support-seeking. The relationships between beliefs about emotions and symptoms of depression, anxiety and fatigue were significantly mediated by self-compassion and emotional avoidance but not by social support seeking.

Conclusions

Future research should investigate whether interventions which pay particular attention to emotional avoidance and self-compassion, such as mindfulness-based interventions or modified forms of CBT, may be beneficial in reducing distress and fatigue associated with beliefs about the unacceptability of experiencing or expressing negative emotions.

Keywords: emotional avoidance, emotion processing, help-seeking, perfectionism, self-compassion, social support.

Introduction

Beliefs that it is unacceptable to experience or express negative emotions have been reported to be elevated in a range of clinical problems, including post-traumatic stress disorder (Ehlers & Clark, 2000), eating disorders (Corstorphine, 2006), chronic fatigue syndrome (Rimes and Chalder, 2010; Surawy, Hackmann, Hawton & Sharpe, 1995), anxiety (Campbell-Sills, Barlow, Brown & Hofmann, 2006) and depression (Cramer, Gallant & Langlois, 2005). Although it is possible that the experience of such problems may result in these beliefs becoming more negative, it is also possible that they contribute to the development or maintenance of such problems. Previous research has demonstrated a link between these beliefs about emotions and clinical problems, however very little research has looked in depth into the means by which this association occurs.

One reason why people believe that it is unacceptable to experience or express negative emotions is that they view negative emotions as a form of weakness, and that expressing negative emotions will be negatively evaluated by others as a sign of lack of strength or control. It could be argued that such beliefs about the unacceptability of experiencing or expressing negative emotions are a form of maladaptive perfectionism which is characterised by the setting of goals or standards that are unattainably or excessively high, a lack of satisfaction in one's own performance and worry about expectations and criticism from others (Di Schiena et al., 2012; Enns, Cox & Clara, 2002). Thus, beliefs regarding the unacceptability of negative emotions can be considered as excessively high standards or perfectionism relating to one's own emotional experience and expression (James, Verplanken & Rimes, 2015; Rimes & Chalder, 2010) where individuals place great importance on psychological strength and on hiding their negative feelings in order to avoid perceived failure and negative evaluation from others (Rimes & Chalder, 2010; Surawy et al., 1995). Indeed, previous research indicates a moderately strong association (Pearson correlation $r=0.59$) between such beliefs about emotions and negative perfectionism (Rimes and Chalder, 2010).

Since those who have perfectionist beliefs about emotions fear that expressing their negative emotions will have adverse interpersonal consequences (Hambrook et al., 2011), cognitive behavioural approaches would suggest they may engage in safety-seeking or avoidance behaviours in order to prevent this outcome from occurring (Shafran & Mansell, 2001; Rimes & Chalder, 2010). However, such behaviours may have the unintended consequence of contributing to increased levels of depression, anxiety or fatigue. One such behaviour could be an avoidance of social support seeking in order to prevent negative evaluation from others. Consequently, individuals may fail to receive support that will help to alleviate their distress. Prior research has shown that perceptions of low social support are associated with higher levels of self-reported depressive symptoms in patients with major depression (Gladstone, Parker, Malhi, & Wilhelm, 2007), and can lead to a poorer sense of wellbeing (Clara, Cox, Enns, Murray & Torgrude, 2003). However, previous research has not investigated whether perfectionist beliefs about emotions are associated with reduced support-seeking.

Individuals may further try to hide their negative feelings by avoiding their emotions (Hambrook et al., 2011). Previous research with individuals suffering from anxiety, mood disorders and chronic fatigue syndrome has shown that emotional avoidance is associated with greater perfectionist beliefs about emotions, and is also associated with increased levels of negative emotion and fatigue (Campbell-Sills et al., 2006; Rimes, Ashcroft, Bryan & Chalder, in press; Spokas et al., 2009). Emotional avoidance can include suppression of the behavioural expression of an emotion (Campbell-Sills et al., 2006), which individuals may undertake in order to avoid negative evaluation. Emotional avoidance strategies such as attempting to suppress emotions or distressing thoughts can have unintended consequences such as increasing associated sympathetic arousal, the intensity of distress and the frequency of distressing thoughts (Campbell-Sills et al., 2006; Gross & Levenson, 1997; Trinder & Salkovskis, 1994). Indeed, greater emotional avoidance is significantly

associated with elevated symptoms of depression and anxiety (Aldao, Nolen-Hoeksema & Schweizer, 2010) and a more negative sense of wellbeing (Gross and John, 2003).

Another factor that may play an important role in the relationship between perfectionist beliefs about emotions and clinical problems is self-compassion. Perfectionists often evaluate their self-worth in relation to meeting their high standards. In facing situations where they cannot meet their high standards, they may experience psychological distress (Flett, Besser, Davis & Hewitt, 2003). Self-compassion may act as a buffer in such situations, as self-compassionate individuals are more accepting when they fail to meet these standards and thus experience less distress (Neff, 2003). Indeed, maladaptive perfectionism is negatively associated with self-compassion, and low self-compassion is associated with a range of clinical difficulties, including depression and anxiety (Neff, 2003). Furthermore, those scoring highly in self-compassion experience less anxiety when faced with an ego-threatening situation (Neff, Kirkpatrick and Rude, 2007). However, no previous research has examined whether beliefs about the unacceptability of expressing or experiencing negative emotions are associated with lower self-compassion, and whether this mediates the relationship with distress or fatigue.

In the present study it is hypothesised that individuals with stronger beliefs about the unacceptability of expressing or experiencing negative emotions will seek less social support and report greater emotional avoidance and lower levels of self-compassion. Secondly it is hypothesised that such beliefs about emotions will be associated with higher levels of symptoms of depression, anxiety and fatigue and that this relationship will be mediated by social support-seeking, emotional avoidance and self-compassion.

Method

Design

A cross-sectional, questionnaire-based design via an online survey was used. Ethical approval for the study was gained from King's College London (KCL) College Research Ethics Committees (CREC) (PNM/13/14-50).

Participants

The sample (n=451) consisted of 330 females and 116 males (5 respondents did not provide their gender), with an age range of 17 to 69 years (M = 27.3, SD = 11.0; 11 respondents did not provide their age).

Measures

Respondents completed seven questionnaires which made up the online survey.

Beliefs about Emotions Scale (BES)

The BES (Rimes & Chalder, 2010) is a 12-item scale assessing beliefs about the unacceptability of experiencing and expressing negative emotions. Sample questions include 'I should be able to control my emotions', 'If I show signs of weakness then others will reject me', 'It is stupid to have miserable thoughts'. Higher scores indicated greater endorsement of beliefs about the unacceptability of negative emotions. Research has shown the scale to be highly reliable with a Cronbach's alpha score of .91 (Rimes and Chalder, 2009) and .89 in the current study.

Berlin Support Seeking Scale (BSSS)

The BSSS is a five-item subscale from the Berlin Social Support Scale (Schwarzer & Schulz, 2000). It assesses cognitive and behavioural aspects of social support seeking, with higher

scores indicating higher levels of social support seeking. Items include 'Whenever I am down I look for someone to cheer me up again' and 'Whenever I need help I ask'. The BSSS has shown to have relatively high internal consistency with Cronbach's alpha of .81 (Schwarzer & Schulz, 2000) and .82 in the present study.

Emotional Avoidance Questionnaire (EAQ)

The EAQ (Taylor et al., 2004) is a 20-item scale measuring cognitive and behavioural expressions of emotional avoidance for both positive and negative emotions. Sample items are 'If sad thoughts cross my mind, I try to push them away as much as possible' and 'If I start feeling strong positive emotions, I prefer to leave the situation'. Higher scores indicate higher levels of emotional avoidance. Three items in the questionnaire ('I try to keep feelings of anxiety or worry to myself so that other people don't think less of me', 'I don't let other people see me when I'm sad, because I don't want them to think that I'm weak' and 'I don't like expressing anger in front of others because I don't want them to think badly of me') were removed during analysis as it was deemed that these items overlapped with constructs being measured in the BES (Rimes & Chalder, 2010). In the present study the scale had a Cronbach's alpha score of .90, demonstrating high internal consistency.

Self-Compassion Scale (short form) (SCS)

The SCS (Raes, Pommier, Neff & Van Gucht, 2011) consists of 12 items measuring six components of self-compassion: Self-kindness (e.g. 'I try to be understanding and patient towards those aspects of my personality I don't like'), Common Humanity (e.g. 'I try to see my failings as part of the human condition'), Mindfulness (e.g. 'When something upsets me I try to keep my emotions in balance'), Self-Judgement (e.g. 'I'm disapproving and judgmental about my own flaws and inadequacies'), Isolation (e.g. 'When I fail at something that's important to me, I tend to feel alone in my failure') and Over-identification (e.g. 'When I'm feeling down I tend to obsess and fixate on everything that's wrong'). Higher scores indicate higher levels of self-compassion. Research has shown the SCS (short form) to have good internal reliability, with a Cronbach's alpha of .86 (Raes, Pommier, Neff & Van Gucht, 2011), and .85 in the present study.

Patient Health Questionnaire (PHQ-9)

The PHQ-9 (Kroenke, Spitzer, & Williams, 2001) is a 9-item scale used to assess depressive symptoms and depression severity over the past two weeks. Higher scores indicate higher levels of depressive symptoms. Research has shown the PHQ-9 to have both high test-retest and internal reliability (Kroenke, Spitzer, & Williams, 2001) and in the present study, the scale had a Cronbach's alpha of .90.

Generalized Anxiety Disorder Questionnaire (GAD-7)

The GAD-7 (Spitzer, Kroenke, Williams, Lowe, 2006) is a 7-item scale used to measure symptoms of generalised anxiety disorder and symptom severity over the past two weeks. Higher scores indicate higher levels of anxiety. Research has shown the GAD-7 to demonstrate high test-retest and internal reliability (Spitzer, Kroenke, Williams & Lowe, 2006). The scale had a Cronbach's alpha of .90 in the present study.

Chalder Fatigue Scale (CFS) (Chalder et al., 1993)

The CFS is an 11-item scale consisting of two subscales which measure physical and mental fatigue. Only the 7-item physical fatigue subscale was used in the current study. Items are scored using four response options 'Less than usual', 'No more than usual', 'More than usual' and 'Much more than usual', scored 0 to 3 respectively. Sample items include 'Do you feel sleepy or drowsy?' and 'Do you feel weak?'. Higher scores on items indicate higher levels of fatigue. The scale demonstrates very good internal consistency, having a Cronbach's alpha score of .91 in the present study.

Procedure

Participants were recruited via opportunity sampling through the use of university emails, online research recruitment sites and social networking sites. The study was conducted online before completing the anonymous questionnaire. Respondents were given information about the study and provided with the researcher's details if they had any further questions.

Statistical Analysis

Data Preparation

Before statistical analyses were carried out, data were treated for missing items. Missing items within a scale were replaced via pro-rating, with the missing item being replaced by the mean score based on other items answered in the scale. If more than 25% of data was missing for a scale for a particular respondent, the respondent's data was excluded from the analyses, as this was deemed insufficient data for mean substitution. In total, 80 respondents were excluded from analyses which left a final sample size of 451. Data were analysed using IBM SPSS Statistics Version 22.

Mediation Analysis

In order to establish that mediation has occurred, Baron and Kenny (1986) suggest a 'causal steps approach' where (a) the independent variable must be significantly associated with the outcome variable (i.e. a significant total effect is observed), (b) the independent variable must be significantly associated with the mediator variable, (c) the mediator variable must be significantly associated with the outcome variable, and (d) a previously significant total effect of the independent variable on the outcome variable becomes non-significant when controlling for all mediator variables (i.e. a non-significant direct effect is observed). However, more recently it has been argued that there are advantages to using alternative methods to directly test the indirect effects. Preacher and Hayes' (2008) mediation method uses bootstrapping to repeatedly sample from the data and estimate the indirect effect in each sample. Looking at the confidence intervals for the indirect effects of the mediator variables, if zero is not found within the lower and upper bounds of a given mediator, then the specific indirect effect for that mediator on the outcome variable is significant, thus mediation has occurred (Hayes, 2009). Preacher and Hayes (2009) recommend the bootstrapping method because it is more powerful, quantifies the size of the mediation effects and does not require that the sampling distribution for the indirect effect is normally distributed.

Using the SPSS macro PROCESS developed by Hayes (2014), the variables self-compassion, emotional avoidance and social support seeking were entered simultaneously into the mediation model allowing the total and specific indirect effects of these variables on the outcome variables to be investigated. Mediation analysis was carried out separately for each of the outcome variables (depression, anxiety, and fatigue). Scores on the Beliefs about Emotions Scale were the independent variable. For the present study, 95% confidence intervals were computed and results are based on 5000 bootstrapped samples.

Results

Depression, anxiety and fatigue in the sample

Regarding PHQ-9 scores within the sample, 198 participants (43.9%) had minimal depression, 125 mild (27.7%), 63 moderate (14%), 33 moderately-severe (7.3%) and 32 severe (7.1%). On the

GAD-7, 180 had minimal anxiety (39.9%), 142 mild (31.5%), 71 moderate (15.7%) and 58 severe (12.9%). For the Chalder Fatigue Scale, 49 participants (8.9%) exceeded the cut-off score for fatigue.

Correlational findings

As predicted, Pearson correlations indicated that unhelpful beliefs about emotions were associated with greater emotional avoidance, lower social support seeking and lower self-compassion, as well as with greater symptoms of depression, anxiety and fatigue (see Table 1). Emotional avoidance was also significantly associated with higher levels of depression, anxiety and fatigue symptoms, and self-compassion was correlated with lower levels of these symptoms. In contrast, social support seeking was only significantly associated with lower levels of depressive symptoms.

Table 1. Pearson correlations between the study variables (n=451)

	Self-compassion	Emotional avoidance	Social support-seeking	Depression	Anxiety	Fatigue
Beliefs about emotions	-.451***	.514***	-.412***	.330***	.321***	.155**
Self-compassion	-	-.490***	.196***	-.526***	-.480***	-.357***
Emotional avoidance		-	-.145***	.538***	.576***	.321***
Social support-seeking			-	-.150***	-.068	-.047

** p<0.005 *** p<0.0005

Mediation model for depression

For the mediation model, beliefs about emotions were significantly associated with self-compassion, emotional avoidance and social support seeking and there was a significant total effect of beliefs about emotions on depression. The direct effect of beliefs about emotions on depression was non-significant when controlling for the mediator variables. Emotional avoidance and self-compassion were shown to significantly predict depression. The 95% confidence intervals for the indirect effects do not include zero, therefore emotional avoidance and self-compassion significantly mediated the relationship between beliefs about emotions and depression. Social support seeking did not significantly predict depression and zero was included within confidence intervals for the indirect effect, thus did not mediate the relationship between beliefs about emotion and depression. The specific indirect effect sizes (ab) calculated by multiplying the first path (a) of the mediation diagram by the second path (b) for self-compassion, emotional avoidance and social support-seeking on depression were .08, .09 and .01 respectively. The results are summarised in Figure 1 (overleaf).

Mediation model for anxiety

The mediation model showed that beliefs about emotions were significantly associated with self-compassion, emotional avoidance and social support seeking. The total effect of beliefs about emotions on anxiety was significant and the direct effect was non-significant. Emotional avoidance and self-compassion significantly predicted anxiety and the indirect effects did not contain zero within confidence intervals, thus significantly mediating the relationship between beliefs about emotions and anxiety. The model showed that social support seeking contained zero within its confidence intervals and did not significantly predict anxiety therefore is not a significant mediator. The specific indirect effect sizes for self-compassion, emotional avoidance and social support-seeking on anxiety were .05, .10 and -.01 respectively. The results are summarised in Figure 2 (overleaf).

Figure 1 – The relationship between beliefs about emotions and depression through the mediator variables self-compassion, emotional avoidance and social support seeking (n=451).

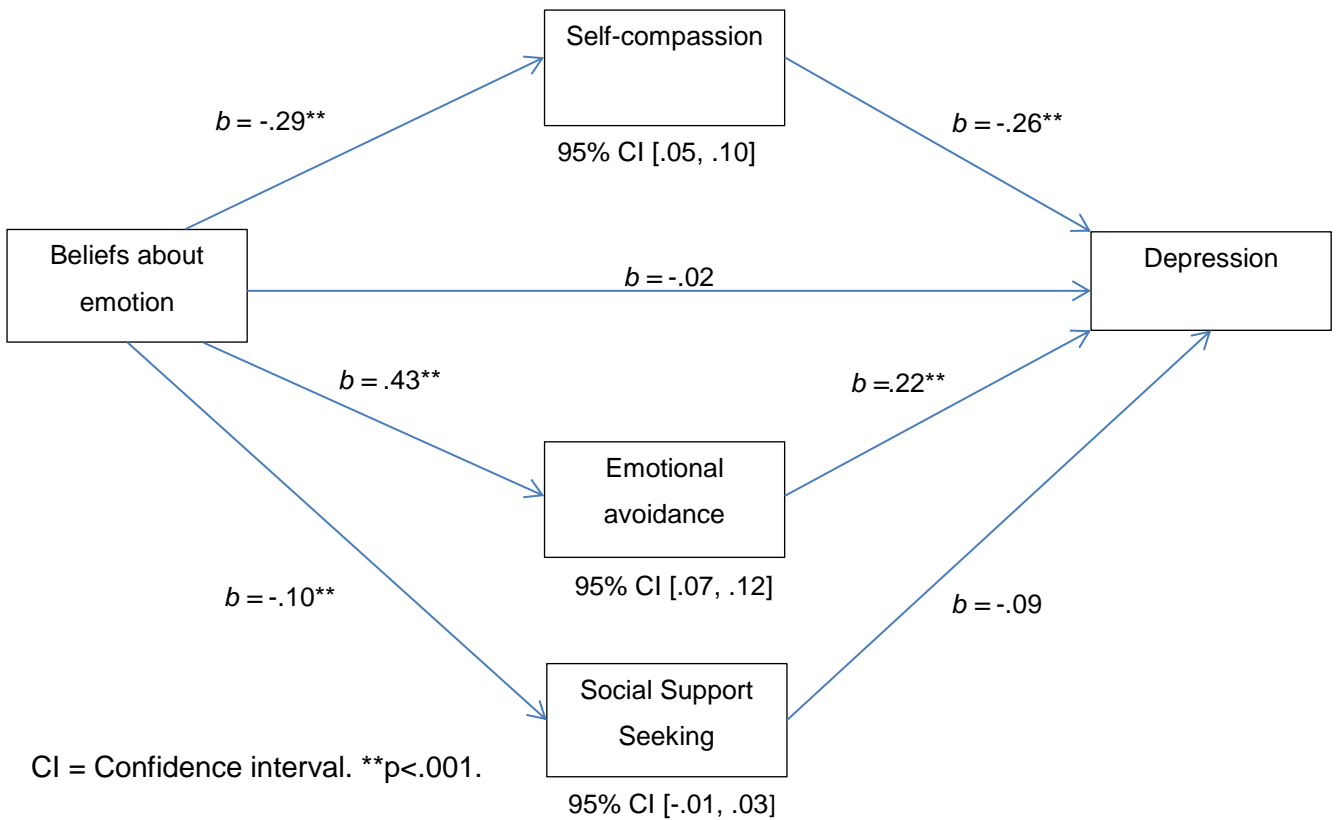
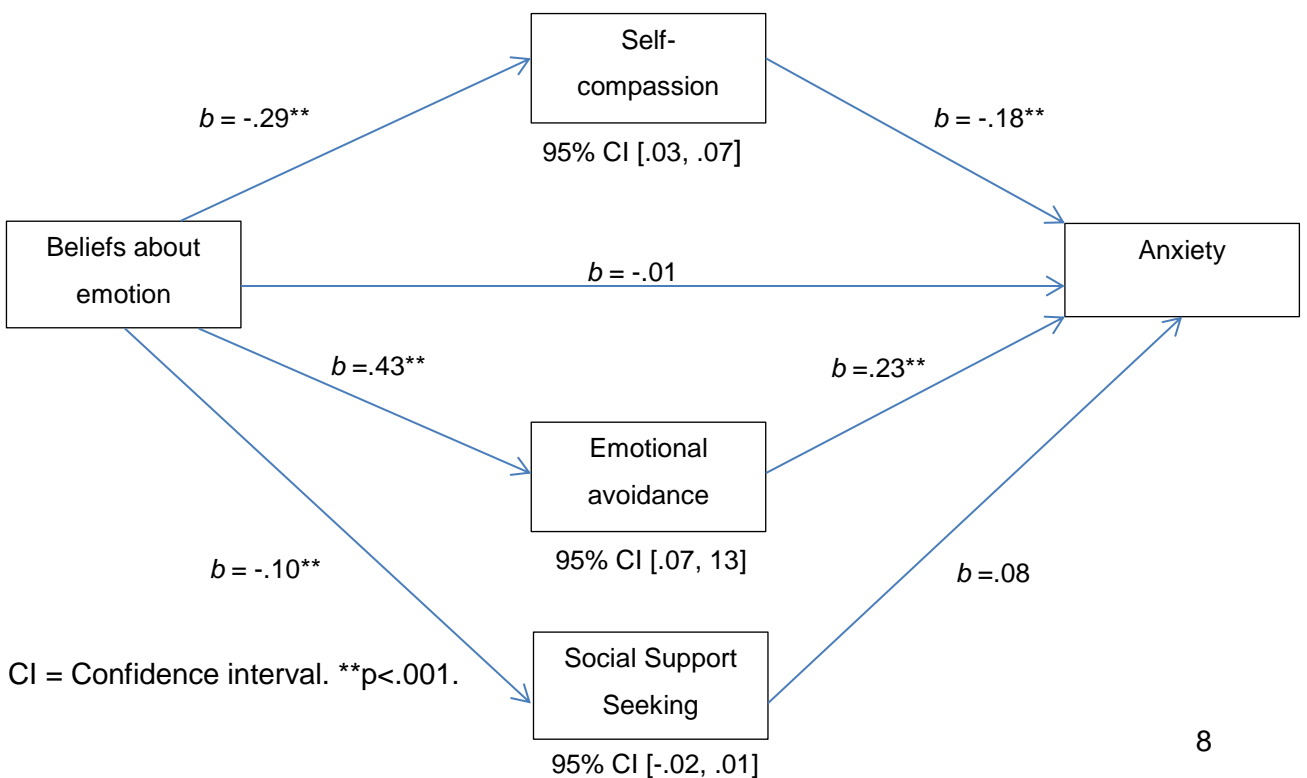


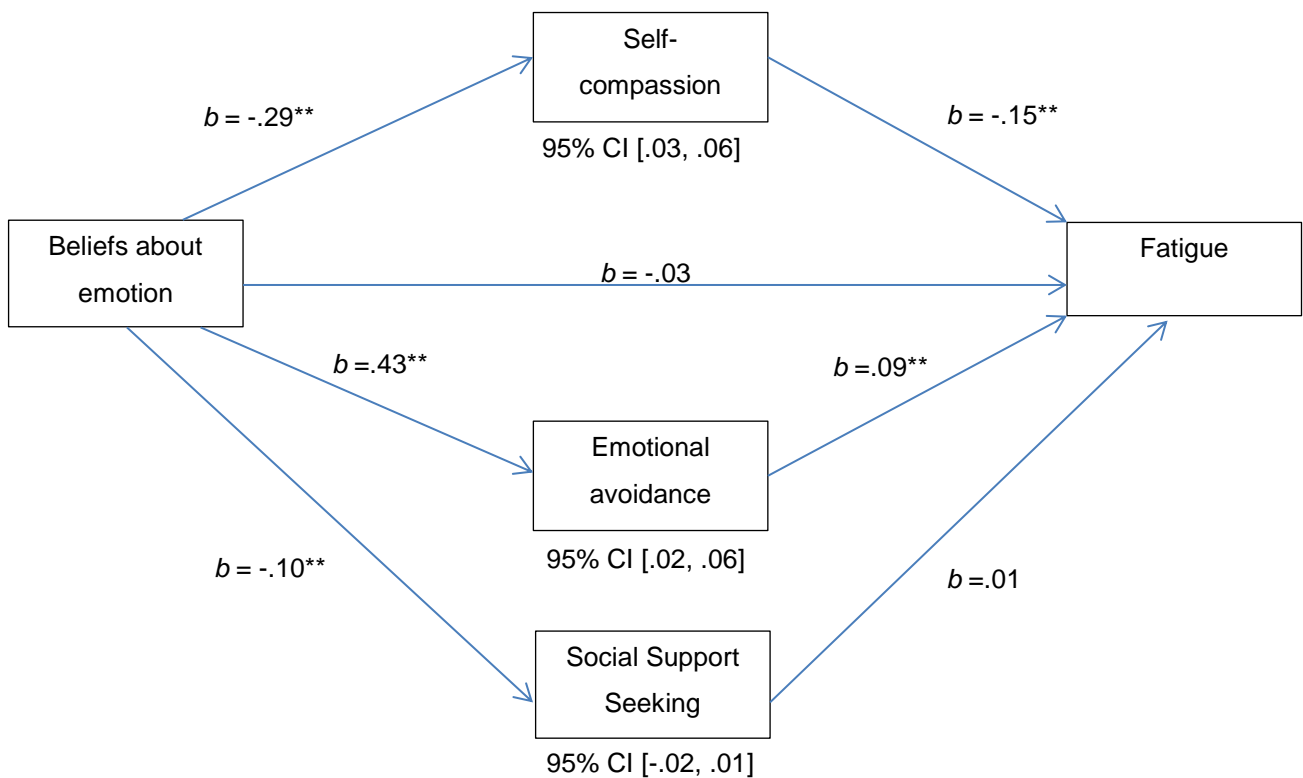
Figure 2 – The relationship between beliefs about emotions and anxiety through the mediator variables self-compassion, emotional avoidance and social support seeking (n=451).



Mediation model for fatigue

For the mediation model, beliefs about emotions were significantly associated with self-compassion, emotional avoidance and social support seeking. There was a significant total effect of beliefs about emotions on fatigue and the direct effect of beliefs about emotions on fatigue was non-significant. Emotional avoidance and self-compassion were shown to significantly predict depression, and zero was not included in the confidence intervals for the indirect effects, therefore these variables significantly mediated the relationship between beliefs about emotions and fatigue. Social support seeking did not significantly predict depression and included zero within the confidence intervals for the indirect effect thus did not mediate the relationship between perfectionist beliefs about emotion and fatigue. The specific indirect effect sizes for self-compassion, emotional avoidance and social support-seeking on fatigue were .04, .04 and .001 respectively. The results are summarised in Figure 3 (below).

Figure 3 – The relationship between beliefs about emotions and fatigue through the mediator variables self-compassion, emotional avoidance and social support seeking (n=451).



CI = Confidence interval. $^{**}p < .001$.

Discussion

The current study investigated two hypotheses; firstly, that individuals with more negative beliefs about the acceptability of experiencing or expressing emotions will seek less social support, report greater emotional avoidance and less self-compassion, and secondly that these beliefs about emotions will be associated with higher levels of depression, anxiety and fatigue and that this relationship will be mediated by social support seeking, emotional avoidance and self-compassion. The first hypothesis was met; statistical analysis revealed that negative beliefs about emotions had significant negative associations with social support seeking and self-compassion and a significant positive association with emotional avoidance. The second hypothesis was partially met; negative beliefs about emotions were associated with high levels of depression, anxiety and fatigue, but this was mediated only by emotional avoidance and self-compassion, and not social support seeking.

Beliefs that it is unacceptable to experiencing or express negative emotions were associated with greater emotional avoidance, supporting previous research (Campbell-Sills et al., 2006). Greater emotional avoidance was also related to higher levels of depression, anxiety and physical fatigue in line with other research demonstrating that increased emotional avoidance is associated with lower wellbeing (Gross and John, 2003). The present finding that emotional avoidance mediates the relationship between unhelpful beliefs about emotions and the clinical symptoms suggests that encouraging the allowing and accepting of negative emotions may be a helpful strategy for reducing the distress and fatigue that individuals with these beliefs face.

The finding that self-compassion was a mediator of this relationship is in line with previous research showing that self-compassion mediates the relationship between general maladaptive perfectionist beliefs and clinical problems such as anxiety and depression (e.g. Neff, 2003). It further credits the suggestion that employing self-compassion may act as a buffer against distress for individuals with perfectionist beliefs (Neff, 2003). In the current study, self-compassion also mediated the relationship between negative beliefs about the acceptability of expressing or experiencing emotions and physical fatigue, suggesting that self-compassion may also be beneficial for the physical health of individuals with such beliefs.

In terms of the specific indirect effect sizes of the mediating variables on the outcome variables, emotional avoidance had moderate effect sizes for depression and anxiety whereas those for self-compassion were small for anxiety and small to moderate for depression. As would be expected, the indirect effect sizes for these mediating variables on physical fatigue were smaller than for depression and anxiety. Nevertheless, these processes may still merit further attention in people who experience fatigue on a chronic basis, as there is already some evidence of elevated emotional suppression in chronic fatigue syndrome (e.g. Rimes, Ashcroft, Bryan, Chalder, in press).

Beliefs about the unacceptability of expressing or experiencing negative emotions were associated with lower levels of social support seeking, thus supporting the first hypothesis. Contrary to the second hypothesis, social support seeking did not mediate the relationship between these beliefs about emotions and depression, anxiety or fatigue. Although previous research has shown that perceptions of reduced social support can be associated with greater depressive symptoms in depressed patients (e.g. Gladstone et al., 2007), the current findings suggests that reduced social support seeking is not an important mechanism in the relationship between unhelpful beliefs about emotions and distress or fatigue.

Cognitive Behaviour Therapy (CBT) has shown to be successful in reducing clinical perfectionism and associated clinical outcomes such as depression and anxiety (Riley, Cooper, Fairburn and Shafran, 2007) and binge-eating in patients (Shafran, Lee and Fairburn, 2004). Future research into CBT for perfectionism should also address perfectionist beliefs about emotions. CBT for chronic fatigue syndrome is also shown to be

associated with a reduction in beliefs about the unacceptability of experiencing or expressing negative emotions (Rimes and Chalder, 2010), as has mindfulness-based cognitive behaviour therapy (MBCT; Rimes and Wingrove, 2013). MBCT involves training patients to become more aware and allowing of their thoughts, feelings and bodily sensations in the present moment, as well as incorporating elements of CBT. As MBCT has a particular focus upon self-compassion and the acceptance of emotions (Rimes & Wingrove, 2013), it may be particularly beneficial in reducing the clinical outcomes associated with beliefs that negative emotions are unacceptable to experience or express. Compassion-focused therapy has similar goals (Gilbert, 2009).

The study had a number of limitations including a female gender bias that may limit generalisability of the findings. As a cross-sectional design was used, causality between the variables cannot be established, thus mediation reflected statistical mediation only. Although use of an online methodology with community participants enabled a large sample size, it cannot be assumed that the present results will generalise to a clinical population. The study requires replication using people with clinical diagnoses of depression, anxiety and fatigue. Future research could also focus on other possible consequences of such beliefs such as excessive shame.

Conclusions

In conclusion, the present study suggests that the relationship between unhelpful beliefs about emotions and depression, anxiety and fatigue is mediated by lower levels of self-compassion and greater levels of emotional avoidance. Social support seeking was not found to be a significant mediator of this relationship. These findings have implications for the type of intervention best suited to addressing beliefs about the unacceptability of negative emotions in individuals experiencing symptoms of depression, anxiety or fatigue. Mindfulness-based interventions and compassion-focused therapy, which encourage openness to emotions and self-compassion specifically as core elements, may be particularly beneficial.

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