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Social Anxiety and Self-Compassion in Adolescents

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Abstract

Introduction

Social anxiety disorder is a prevalent mental illness with a young onset age. Preliminary evidence suggested that low self-compassion may contribute to adult social anxiety, but research with youth has lagged far behind. This study investigated the relationship between self-compassion and social anxiety in adolescents. It also examined the mediating role of three cognitive mechanisms: fear of negative evaluation, self-focused attention, and cognitive avoidance.

Methods

A total of 316 adolescents (age 14-18, 54% male) recruited in Scotland, UK, completed 7 questionnaires.

Results

Self-compassion was inversely correlated with social anxiety with a large effect size ($r = -.551$). This was partially mediated by fear of negative evaluation and cognitive avoidance, but not self-focused attention. Self-compassion also predicted social anxiety above depression and anxiety symptoms.

Conclusions

Our findings suggested that self-compassion could be an important factor in the development of social anxiety, and hence therapeutic techniques targeting self-compassion could potentially be beneficial in preventing or treating adolescent social anxiety.

Key words: self-compassion; social anxiety; depression; anxiety; mood disorders; adolescence

Social Anxiety and Self-Compassion in Adolescents

Social Anxiety in Children and Adolescents

Social Anxiety Disorder (SAD), is prevalent in youths with a mean onset age of 15.5 years (Schneier et al., 1992). Adolescents with SAD tend to have poorer social networks, underachieve at school and have poorer adjustment (Masia-Warner et al., 2003). SAD has also been associated with increased vulnerability to depression, suicidal ideation, other anxiety disorders, and alcohol and drug abuse (Albano et al., 1995; Beidel, 1998; Turk et al., 1998). When it persists into adulthood, SAD is thought to be a chronic unremitting disorder with the lowest probability of recovery among anxiety disorders (Bruce et al., 2005).

Recent studies suggest that Cognitive Behavioural Therapy (CBT) is an effective treatment for children and adolescents with SAD (Beidel et al., 2000; Segool & Carlson, 2008). However, a study exploring long term outcomes after CBT (Kerns et al., 2013) found that, although initially responsive to CBT, children with *any* degree of social anxiety maintained less improvement after seven years in comparison to those with non-social anxiety disorders at pre-treatment. Thus, children with elevated symptoms of social anxiety may require an enhanced or extended treatment to maintain their gains into adulthood, whether or not social anxiety is considered their primary childhood difficulty. This is consistent with previous studies where adolescents with a principal diagnosis of SAD were found to retain their diagnosis post-treatment (Crawley et al., 2008, Herbert et al., 2009). Indeed, national clinical guidelines in the UK (National Institute for Health and Clinical Excellence, 2013) have identified social anxiety as an area in need of further research and that possible add-ons or alternatives to CBT should be explored.

Role of Self-Compassion in Social Anxiety

Self-compassion has been highlighted as an important construct in mental health (Gilbert, 2014; Neff, 2003a). Based on a meta-analysis, MacBeth & Gumley (2012) found that self-compassion is associated with psychopathology with a large effect size. Associations were robust regardless of clinical status, gender or age. Furthermore, a recent systematic review of 14 studies has provided initial support that Compassion Focused Therapy (CFT) is more effective than no treatment (Leaviss & Uttley, 2014).

As self-compassion may act as a buffer to psychological distress, it is possible that enhancing self-compassion may benefit those with social anxiety. However, to date only two studies have explored this relationship. In Werner et al. (2012), adults with a diagnosis of SAD reported lower levels of self-compassion than healthy controls; this remained significant even after controlling for depression and general anxiety. The link between self-compassion and social anxiety has been a further exploratory finding (Potter et al., 2014).

Although only minimal research has explored the direct relationship between self-compassion and social anxiety, research suggests that self-compassion may be related to a number of factors and processes known to be associated with social anxiety. One such process is *fear of negative evaluation* whereby individuals with SAD are more likely to believe that everyone will notice them and judge them negatively (Werner et al., 2012). These fears tend to be based on past experiences and core beliefs (Clark & Wells, 1995) and can seriously impact an individuals' ability to cope with everyday situations. Individuals with higher levels of self-compassion have been found to be better able to keep negative situations in perspective and achieve more accurate self-evaluations, indicating that self-compassion is an important coping style when faced with negative interpersonal events (Leary et al., 2007). Similarly, Neff (2003a) found that those high in self-compassion were less likely to ruminate about past failings or to become overwhelmed by feelings of inadequacy. These findings suggest that individuals with higher self-compassion may be less likely to develop or be more able to cope with fears of negative evaluation, a hypothesis that has yet to be directly tested.

Secondly, individuals with SAD engage in more *self-focused attention*, in which they monitor their somatic, cognitive and internal processes in an attempt to eliminate the risk of negative social evaluation (Spurr & Stopa, 2002). This process reduces attention to external stimuli, resulting in a disconnection with the environment and a reliance on internal information to infer how one appears (Rapee & Heimberg, 1997). This then leads to self-critical ruminations, which are perceived as a failing of the self and reinforced by a lack of access to external disconfirmatory information (Cox et al., 2004; Padesky, 1997). A large study (N=2187) found that those with high self-compassion engage in less self-focused processes, and that high self-compassion is a stronger predictor of lower social comparison, public self-consciousness and self-rumination than self-esteem (Neff & Vonk, 2009).

Finally, SAD is also characterised by a reliance on *cognitive and behavioural avoidance* strategies (McManus et al., 2008; Rao et al., 2007). It may be that self-compassion could alter this relationship as it has been evidenced that increased self-compassion when facing difficulties is associated with a reduced need to engage in cognitive avoidance. For example, Neff, Kirkpatrick & Rude (2007) found that those with high self-compassion experienced less self-evaluation anxiety than those with low self-compassion when completing a mock interview. Importantly, this study noted a negative relationship between self-compassion and thought suppression even when general anxiety was controlled for. Similarly, individuals with low self-compassion have been observed to function in a more avoiding manner (Krieger, Altenstein et al., 2013; Thompson & Waltz, 2008).

Taken together, the above findings suggest that low self-compassion may play a role in developing and / or maintaining social anxiety and that the processes outlined above may mediate the relationship between these two constructs.

Aims and Hypotheses

While the above research illustrate a relationship between self-compassion and social anxiety, the specific pathway of effects and possible mediating roles of cognitive factors have yet to be fully elucidated. Notably, research with youths has lagged far behind that with adults. While our recent meta-analysis has replicated an association between self-compassion and psychopathology in adolescents (Marsh et al., under review), to date no research has examined the role of self-compassion in social anxiety in the adolescent population. This study therefore aimed to address the following hypotheses:

1. Social anxiety symptoms will be negatively correlated with self-compassion.
2. The above correlation will remain significant after controlling for symptoms of depression and generalised anxiety disorder.
3. Self-compassion will be negatively associated with three cognitive maintaining factors of social anxiety i) fear of negative evaluation, ii) cognitive avoidance and iii) self-focused attention.
4. The relationship between self-compassion and social anxiety will be mediated by the three above cognitive maintaining factors of social anxiety.

Methods

Participants

Participants were recruited across four secondary schools in Lanarkshire, Scotland, UK. Inclusion criteria included an age range of 14-18 and self-reporting as fluent in English. There were no other inclusion or exclusion criteria. A total of 414 students gave informed consent to the study. For participants under 16 years, parental consent was obtained by an opt-out approach (David et al., 2001). After discounting missing data (see below), the final sample consisted of 316 adolescents with a mean age of 14.77 (SD = 0.89; range 14-18). There was a good representation of both genders (53.8% male) and the majority self-reported to be 'White' (n=302, 95.6%) and have no prior experience of seeking professional support for emotional difficulties (n=278, 88%). This sample size was well above our target sample size estimated by *a priori* power calculation (see below).

Ethical Considerations

Ethical approval was obtained from university research ethics committee and two local educational authorities. To address any possible psychological distress or emotional discomfort participants may experience during the study, participants were made aware that they are free to withdraw from the study at any time without having to give a reason. In addition, participants were provided with a debriefing form which gave them contact information of the research team and local support services for young people, as well as encouraged them to speak to their parents, teachers or GP if they were concerned about their wellbeing. A trainee clinical psychologist was present throughout the data collection sessions to answer participants' questions.

Measures

All measures were self-report and age appropriate. Reliability of each measure was further verified in this sample (see Table 1).

Self-Compassion Scale (SCS; Neff, 2003b). This 26-item measure consists of six subscales: self-kindness, self-judgement, common humanity, isolation, mindfulness and over-identification. Individuals respond to the scale on a five point

Likert scale from 1 (almost never) to 5 (almost always). This scale has been shown to have satisfactory reliability and validity (Neff, 2003b, Neff et al., 2007).

Social Phobia Inventory (SPIN; Connor et al., 2000). This 17-item questionnaire measures fear, avoidance and physiological symptoms in social phobia. Responses are scored from 0 to 4. A score of >19 indicates difficulties with social phobia while > 40 indicates severe social anxiety. This scale was chosen due to its demonstrated sensitivity to detect subclinical levels of social anxiety (Ranta et al., 2007) good reliability and validity (Antony et al., 2006).

Fear of Negative Evaluation (FNE) (subscale SAS-A; LaGreca, 1998). Using the 8-item FNE subscale of the Social Anxiety Scale for Adolescents (La Greca, 1998), participants rated their responses on a scale from 1 (Not at all) to 5 (All the time). Good reliability and validity have been reported (Inderbitzen-Nolan & Walters, 2000 Storch et al., 2004).

Cognitive Avoidance Questionnaire (CAQ; Gosselin et al., 2002; Sexton & Dugas, 2008). This 25-item questionnaire was used to assess five cognitive avoidance strategies: thought substitution, transformation of images into verbal thoughts, distraction, avoidance of stimuli that trigger unpleasant thoughts, and thought suppression. Adolescents responded on a Likert scale from 1 (not at all typical) to 5 (completely typical), with higher scores indicating a greater tendency for cognitive avoidance. This measure has demonstrated satisfactory reliability and validity (Gosselin et al., 2002).

Self-Focused Attention (SFA) (Fenigstein et al., 1975). SFA was measured using both the private (PrSC) and public (PuSC) subscales of the Self-Consciousness Scales (Fenigstein et al., 1975). Private self-consciousness is the tendency to pay attention to private internal aspects of the self whereas public self-consciousness is the tendency to be aware of and concerned about aspects of the self that others can perceive. Responses are based on a 0 (extremely uncharacteristic) to 4 (extremely characteristic) Likert scale. These subscales are the most widely adopted measures of self-focused attention (Mor & Winquist, 2002). Research has shown satisfactory reliability and validity (Smith & Greenberg, 1981; Turner et al., 1978).

Generalised anxiety symptoms (subscale SCARED; Birmaher et al., 1999). GAD symptoms were assessed by the 9-item subscale of the Screen for Child Anxiety Related Emotional Disorders – Child Version: SCARED (Birmaher et al., 1999). Adolescents responded on a 3 point Likert scale from 0 (not true or hardly ever true) to 2 (very true or often true). Satisfactory construct validity, internal consistency and test-retest reliability have been reported (Essau et al., 2002; Hale-III et al., 2005).

Short Mood and Feeling Questionnaire (S-MFQ; Angold et al., 1995). This measure asked participants to rate each of the 13 items on 0 (never), 1 (sometimes) or 2 (always). The scale was designed for the rapid evaluation of depressive symptoms with higher scores indicating higher severity. This measure has demonstrated good criterion validity and reliability (Sharp et al., 2006).

Procedure

Participants completed all measures within a single seating in groups (ranging from 15 to 50 participants per group) with the primary researcher present to answer any questions. In order to ensure confidentiality adolescents were seated with a minimum of one desk space between one another. On completion of the study, feedback was collected and a raffle for online vouchers was conducted.

Power Calculation

Power calculations were conducted to guide recruitment. As the relationship between self-compassion and social anxiety had not previously been investigated in this population, a medium effect size was assumed (conservatively), based on previous studies between self-compassion and general psychopathology in adults ($r = -0.54$; MacBeth & Gumley, 2012) and adolescents (r 's = -0.43 to -0.73 ; Neff & McGehee, 2010; Vettese et al., 2011). Similarly a medium effect size was assumed for mediation analyses. In order to have .8 power to detect a medium effect size at an alpha level of .05 with 9 independent variables, a sample of 118 was required (G*Power Version 3.1.5). In addition Fritz & MacKinnon (2007)'s equations for determining sample size for mediation models were consulted, which proposed a

sample size of 71 if adopting a power level of 0.8 and a medium effect size for all paths.

Statistical Analyses

All analyses were conducted using IBM SPSS Statistics Version 21. The computational and modelling tool PROCESS (Hayes, 2013) for SPSS was used for mediation analyses.

Missing data. A number of steps were taken to address missing data. Firstly, Chi Square tests (χ^2) and independent sample t-tests were carried out to verify that participants with missing data ($n = 137$) did not differ from those without ($n = 277$) in terms of gender, age, or primary psychometric scores of interest i.e. SCS and SPIN (all p 's $> .07$). In addition, Little's Missing Completely at Random (MCAR) Test was found to be non-significant ($\chi^2 (11057)=11217.731, p<.14$) (Little, 1988). For all participants who had $< 10\%$ items missing with missing data not greater than 10% for any one scale, individual mean substitution was adopted. All participants ($n=98$) who had $> 10\%$ missing data or 10% missing data from either SCS or SPIN were removed through listwise deletion. As no significant differences arose in mean values prior to and post imputation, it was deemed appropriate to include imputed figures in all further analyses (Hawthorne & Elliott, 2005; Shrive et al., 2006). Of note, a technical error resulted in Q26 of the SCS not being administered. However, as can be seen in Table 1, the scale maintained a high reliability. In addition, the scale author was contacted for guidance on how to manage resultant missing data as outlined above.

Data screening. Data was initially screened to verify statistical assumptions. Histograms, boxplots, and scatterplots were used to ensure no outliers were present and that the assumptions of linearity and homoscedasticity were met. Pearson correlations were calculated between all predictor variables of the planned mediation analysis to test for multicollinearity. No extremely high correlations i.e. > 0.9 , were identified, suggesting that all items were suitable for inclusion in further analyses (Field, 2013; Preacher & Hayes, 2008). Tests of normality showed that data was positively skewed across all measures and their subscales. To account for the non-normal distribution of data, the bootstrapping method, with $n=2000$ bootstrap resamples, was applied for further analyses with the exception of mediation analysis

where $n=5000$ bootstrap samples was chosen (Hayes, 2013). All 95% confidence intervals reported in this study were (BCa) bias corrected and accelerated (Efron, 1987; Field, 2013). Point estimates of indirect effects were considered significant when zero did not fall between identified confidence intervals. Statistical significance was defined as $p < 0.05$, two tailed. A lower level of p value (<0.0005) was adopted to control for type 1 errors arising from multiple analyses in the correlation matrix (Field, 2013).

Hypothesis testing. Pearson product moment correlations with bootstrapping were used to explore the relationship between self-compassion and social anxiety and to explore the relationships between subscales and possible mediators i.e. FNE, CAQ and SFA. A three stage hierarchical regression was conducted with social anxiety as the dependent (predicted) variable to explore the independent effect of self-compassion on social anxiety, over and above variance explained by depression (stage 1) and generalised anxiety (stage 2). Data met the assumption of independent errors (Durbin-Watson = 1.9) and multi-collinearity was not deemed to be a concern, due to the finding of tolerance scores ranging from (0.51 –1) and VIF from (1-1.968). Finally, a product of coefficients mediation linked with bootstrapping analysis (Preacher & Hayes, 2008; Hayes, 2009) was used to explore possible mediating relationships. Self-compassion was entered as the independent variable, social anxiety as the dependent variable while measures of a) FNE, b) CAQ and c) SFA (PrSC and PuSC) were entered as the four potential mediators. Measures of depression and generalised anxiety were entered as covariates due to previous research demonstrating both variables to be related to self-compassion and social anxiety (Hoge et al., 2013; Raes, 2010; & Roelofs et al., 2008). This mediation method has been chosen as it conducts all possible pairwise contrasts between indirect effects that will allow for comparison of the role of each mediator.

Results

Descriptive Data

Table 1 shows the descriptive data. On SPIN, 46.2% of participants scored below clinical levels of social anxiety (0-19), 22.2% in the mild range (20-30), 19.6% in the moderate range (31-40) and 12% in the severe category (> 40). Independent

sample t-tests were run to explore the effect of demographic variables. Responses were found to vary significantly across gender on all measures (see Appendix). Age was not correlated to either self-compassion ($r = .025$, $p = .743$, $CI[-0.12, 0.17]$) or social anxiety ($r = .067$, $p = .388$, $CI[-0.09, 0.23]$).

[Insert Table 1]

Correlational Analyses

As seen in Table 2, all variables were significantly correlated in the predicted directions. Consistent with Hypothesis 1, a significant negative correlation was found between self-compassion and social anxiety, $r = -.551$, $p < .0001$, 95% $CI[-0.62, -0.48]$. Furthermore, those with *Low* social anxiety ($SPIN < 19$) were found to have higher self-compassion ($M = 3.23$, $SD = 0.55$) than those with *High* social anxiety ($SPIN > 30$) ($M = 2.58$, $SD = 0.55$), $t(244) = 9.17$, $p < .0001$, 95% $CI [0.5, 0.81]$. Consistent with Hypothesis 3, Self-compassion had large significant negative correlations with each of the cognitive maintaining factors. Due to the findings of significant gender differences, additional correlations were run separately for male and female participants (see Appendix). The pattern of results reported was similar between the two genders, although larger effect sizes were found for females than males.

[Insert Table 2]

Regression Analysis

Results suggest that depression contributed significantly, $F(1,303) = 83.750$, $p < .0001$, accounting for 21.7% of the variance in social anxiety. The introduction of generalised anxiety accounted for an additional 18.4% of variance, $F(2,302) = 100.859$, $p < .0001$, while self-compassion contributed a further 3.9% to the model, $F(3,301) = 78.613$, $p < .0001$. Combining the three predictors accounted for 43.9% of the variance in social anxiety. β values identified generalised anxiety to be the strongest predictor of social anxiety, followed by self-compassion. Depression was not a significant predictor when other variables were included. See Table 3.

[Insert Table 3]

Mediation Analysis

Table 4 presents the direct and indirect effects of the proposed mediators on the relationship between self-compassion and social anxiety. Figure 1 depicts the hypothesised model alongside results from regression analyses. As gender was found to be related to the dependant variable, it was added as an additional covariate alongside depression and generalised anxiety. The direct effect from self-compassion to social anxiety reduces with inclusion of the mediators and covariates. However, a direct effect continued to exist suggesting that the mediators resulted in partial mediations only. The inclusion of four mediators and three covariates allowed for 57% of the variance in social anxiety to be explained ($F(8,283)=46.99$, $p<.0001$, $R^2=.57$). Self-compassion indirectly influenced social anxiety, to a significant level, through its effect on fear of negative evaluation and separately through cognitive avoidance. Neither measure of self-focused attention was found to uniquely mediate this relationship when considered in the multiple mediator model. Pairwise contrasts compared the magnitudes of indirect effects to one another in which the indirect effect through fear of negative evaluation (FNE) was found to be significantly larger than all other indirect effects (see Table 5).

[Insert Table 4, Figure 1, Table 5]

Participant Feedback

The study was well received by participants with 90% ($n = 373$) completing the feedback form. The majority (83.1%) reported that they enjoyed taking part in the study, 86.9% believed the content of the study was important, while 74% indicated that they would ask a friend to take part.

Discussion

Our findings support the hypothesis that self-compassion is negatively related to social anxiety, with a large effect size, in an adolescent community sample. The strength of association is consistent with that identified in meta-analyses on the relationship between self-compassion and general psychopathology in adults (MacBeth and Gumley, 2012) and in adolescents (Marsh et al., under review). A

similar significant group difference in self-compassion between those with high vs. low social anxiety replicates previous findings in a clinical adult sample (Werner et al., 2012). The present study further illustrated that self-compassion is a unique predictor of social anxiety after controlling for both generalised anxiety and depression, consistent with previous research (Werner et al., 2012). Although the increased variance as a result of self-compassion was small ($R^2=.039$), the significant overlap between generalised anxiety and social anxiety may not have allowed for much additional variance to be accounted for.

Our results indicate that self-compassion is negatively associated with each of the proposed mediators. Although no specific hypotheses were set on the individual subscales of SCS, our data suggest that each of the proposed mediators was more strongly related to the negative subscales than the positive subscales (see Table 2); this pattern of results is consistent with previous research which found self-judgment and isolation to be the most significant predictors of mixed anxiety and depression (Van Dam et al., 2011) and that associations between the positive subscales, in particular Common Humanity, of the SCS and depressive symptoms tend to be weaker than those with the negative subscales (Barnard & Curry, 2011).

The multiple mediation analyses indicate that the combined mediators did not fully mediate/explain the relationship of interest as a direct contribution of self-compassion on social anxiety continued to exist. Fear of Negative Evaluation was the strongest mediator although Cognitive Avoidance was also found to be significant but to a lesser degree. These findings are consistent with previous suggestions that self-compassion may be more strongly linked to cognitive aspects of social anxiety (Werner et al., 2012). The identified patterns suggest that higher self-compassion may support adolescents to be less fearful of evaluations and less avoidant, in turn leading to reduced symptoms of social anxiety. This appears to be in line with theoretical prediction that a self-compassionate stance will increase willingness to engage with painful thoughts and emotions, therefore reducing a need to avoid these experiences (Leary et al., 2007). Thus, it is not only the presence of negative events/ thoughts relating to social situations, but the way in which a person relates to themselves when they occur which is of relevance to coping and distress. Therefore it may be advantageous to not only aim to change cognitive appraisal, as many cognitive therapy approaches do, but to change the individual's relationships with their thoughts.

Contrary to our hypothesis, neither measures of self-focused attention mediated the relationship of interest. There was not supportive evidence to suggest that self-compassion influences social anxiety through self-focused attention independent of other included variables.

In this study, adolescent males had higher levels of self-compassion and lower levels of psychopathology in comparison to adolescent females, replicating findings in previous research (Neff, 2003b; Neff & Vonk 2009; Neff et al., 2005; Raes, 2010). However, it should be noted that a recent meta-analysis did not confirm a significant role of gender in adults (MacBeth & Gumley, 2012). In contrast, the finding of higher social anxiety in adolescent females appears consistent with the wider literature (DeWit et al., 2005). Our additional analyses replicated the findings of Bluth & Blanton (2014) which identified that gender differences in self-compassion exist on negative subscales only, with females reporting higher scores on items relating to self-judgement, over-identification and isolation. This may suggest differences in the ways in which male and female adolescents relate to the self, with females more prone to the negative components of self-compassion, in keeping with previous findings that they are more likely to be self-critical (Neff, 2003a).

Taken together, our results suggest that higher self-compassion may be protective against the development/ experience of social anxiety symptomology. Specifically, higher self-compassion may alter adolescents' relationships with the self in turn impacting relationships with their own and other's evaluations, real or imagined, and the ways in which they cope with actual or imagined social situations, in turn impacting on their experience of social anxiety. Increased self-compassion may aid adolescents to direct fewer attentional resources towards worrying about other people's view of them whilst providing abilities to keep worries or fear of negative evaluations in perspective, resulting in the drawing of more balanced conclusions. It is likely that an ability to recognise and accept that social awkwardness and mishaps are a normal part of life may bolster adolescents against self-criticism and engagement in avoidance strategies. It is also worth highlighting that the stronger associations between the negative subscales of self-compassion and social anxiety indicate that reduced tendencies to be judgemental, to isolate or to over-identify may be stronger protective factors against social anxiety.

Results support the proposition that self-compassion is relevant to adolescents and in particular adolescents who experience social anxiety. Adolescence is a period

of development associated with continuous self-evaluation and a time of identity formation (Harter, 1990) alongside a period of heightened social comparison and experiences of bullying, with social failure and error a realistic and probable possibility (Gilbert & Irons, 2009). The significant role of fear of negative evaluation may be specific to adolescence as FNE has been found to increase at this time (Baumeister & Leary, 1995; Weems & Costa, 2005). Indeed, amongst adults with social anxiety, age was negatively associated with self-compassion, (Werner et al., 2012), suggesting that therapeutic approaches designed to boost self-compassion may be more effective if started at a younger age.

Clinical Implications

Our findings suggest that self-compassion and compassion focused interventions may be worthwhile lines of investigation in the development of enhanced treatments for social anxiety in adolescents. To date, a number of techniques/interventions have been found effective in raising self-compassion including compassionate mind training (CMT) (Gilbert & Irons, 2005); cognitive based compassion training (CBCT) (Reddy et al., 2013); imagery building (Gilbert & Irons, 2004; Lee, 2005), the Gestalt two chair technique (Gilbert & Irons, 2005; Neff et al., 2007) and mindfulness based stress reduction (MBSR) (Shapiro et al., 2005; Shapiro et al., 2007).

In addition, Compassion Focused Therapy (CFT) provides a framework with which to focus other psychological interventions to encourage activation of the affiliative system (Gilbert, 2014). This is important clinically as widely adopted interventions, such as Cognitive Behavioural Therapy (CBT), may be enhanced by the adoption of a compassionate stance and the addition of compassion focused techniques, in particular for those with lower levels of self-compassion. Similarly, there is initial evidence that other third wave interventions such as Dialectical Behaviour Therapy (DBT) and Acceptance and Commitment Therapy (ACT) may also lead to improvements in self-compassion (Barnard & Curry, 2011).

In keeping with recent government strategies which state that “good mental health is not potentiated solely by the absence of mental ill health but the presence of positive mental health factors” (Nowell, 2014), it is suggested that increased knowledge on the role of self-compassion in adolescent mental health, in particular in

social anxiety, may provide and promote an alternative way to conceptualise adolescent difficulties. It is proposed that the specific consideration or inclusion of the concept of self-compassion in currently available active inclusion campaigns (see SeeMeScotland.org) or in school based psycho-educational interventions may be helpful. Such brief interventions could educate adolescents and staff on alternative coping strategies i.e. those that expand self-compassion such as loving-kindness meditation (Hutcherson et al., 2008) and mindfulness. The placing of such interventions within a school setting further normalises adolescents' experiences. Similarly, with specific consideration of those with social anxiety, such interventions would provide support in an effective and currently accessed environment which may aid engagement, as it is recognised that those with social anxiety often fail to seek treatment (NICE, 2013). Such interventions may reduce social anxiety symptoms impacting on day to day functioning, whilst also creating a compassionate environment for those who may be in need of treatment in mental health services.

Limitations

The current study was well-powered and the sample was balanced across genders. The sample was also representative of the range of social anxiety symptoms prevalent in the community. In addition the study used standardised validated scales with satisfactory psychometric properties replicated within the current sample, although some SCS subscales fell below the threshold for acceptable internal reliability (Kline, 1999) suggesting that interpretations based on subscale scores should be treated as preliminary. It should be acknowledged that the cross-sectional design does not allow for conclusions to be made regarding causation. Whilst the directions of relationships have been proposed based on previous theory and research, it is possible that constructs effect each other in alternative ways. For example, frequent negative evaluations and use of cognitive avoidance strategies may alter the ways in which a person relates to themselves which in turn impacts on social anxiety, or that the continued experience of social anxiety may result in decreased kindness towards the self, resulting in increased cognitive avoidance and fear of negative evaluations. The causal relationship should be clarified in future studies using an experimental or longitudinal design. Furthermore, this study relied solely on the use of self-report measures, which may be influenced by biases due to, for example, social desirability or demand characteristics. In particular, the assessment of social

anxiety may have benefited from more objective measurement tools such as clinical interviews. Finally, it is possible that the relationship between self-compassion and social anxiety may have been further explained by factors which were not included in this study, such as shame, which is a central factor in relation to both social anxiety and self-compassion but not currently assessed.

Conclusions

This was the first study to illustrate the relationship between self-compassion and social anxiety in an adolescent sample. Results expand the current literature by demonstrating both a direct relationship between self-compassion and social anxiety alongside indirect relationships through fear of negative evaluation and cognitive avoidance. In addition, self-compassion was identified as a unique predictor of social anxiety, above and beyond depression and generalised anxiety. Results provide preliminary evidence that the way in which adolescents treat themselves at times of social distress or when faced with social situations is an important factor in the development and maintenance of social anxiety. The cross sectional design of this study does not allow for causation to be inferred but indicates that further investigation in this area would contribute to the development of better treatments for adolescent social anxiety.

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Table 1. Descriptive Statistics and Reliability of Measures

Variable	Mean	SD	Chronbach's α
Self- Compassion (SCS)*	2.95	0.63	.88
<i>Self-Kindness</i>	2.49	0.84	.71
<i>Self-Judgement</i>	2.87	0.99	.82
<i>Common Humanity</i>	2.77	0.89	.73
<i>Isolation</i>	2.85	1.02	.78
<i>Mindfulness</i>	2.8	0.80	.64
<i>OverIdentified</i>	2.78	1.02	.77
Social Anxiety (SPIN)*	22.22	13.84	.92
Fear of Negative Evaluation (FNE subscale of SAS-A)	20.76	8.98	.94
Cognitive Avoidance (CAQ)	57.46	21.66	.95
Self-Focused Attention (SFA)	34.11	12.97	.87
<i>Private Self- Consciousness (PrSC)</i>	19.34	6.79	.70
<i>Public Self-Consciousness (PuSC)</i>	14.77	7.39	.87
Depression (MFQ)	6.66	6.68	.92
Generalised Anxiety (GAD subscale of SCARED)	8.21	5.50	.91

*calculations based on n=316, all other analyses based on n=294 (lowered as a result of missing data).

Table 2. Pearson's correlation coefficients for correlations of key variables, proposed mediators and subscales.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Self-Compassion (Total)	1	-.635*	-.448*	-.425*	-.503*	-.554 ^a	.647*	-.795*	.463*	-.76*	.558*	-.787*
2. Fear of Negative Evaluation		1	.599	.537*	-.675*	.732*	-.255*	.665*	-.052	.626*	-.167	.664*
3. Cognitive Avoidance			1	.531*	.259*	.558*	-.103	.508*	.094	.535*	-.093	.535*
4. Private Self-Consciousness				1	.668*	.471*	-.092	.532*	.09	.518*	.012	.526*
5. Public Self-Consciousness					1	.529*	-.152	.616*	.008	.516*	-.04	.552*
6. Social Anxiety (SPIN Total)						1	-.262*	.559*	-.114	.482*	-.233*	.515*
7. SCS: Self-Kindness							1	-.311*	.482*	-.23*	.528*	-.253*
8. SCS: Self-Judgement								1	-.017	.727*	-.15	.773*
9. SCS: Common Humanity									1	-.043	.545*	-.033
10. SCS: Isolation										1	-.125	.754*
11. SCS: Mindfulness											1	-.17
12. SCS: Over-Identified												1

Based on 2000 bootstrap samples

a denotes reduced sample size (n=298) due to missing data *denotes significant correlations after Bonferroni correction ($p < .0005$)

Table 3. Summary of Hierarchical Regression to Predict Social Anxiety

<i>Variable</i>	<i>β</i>	<i>95% BCa CI</i>		<i>β</i>	<i>t</i>	<i>p</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		<i>Lower</i>	<i>Upper</i>						
Step 1							.465	.217	.217
Depression	0.965	0.76	1.17	.465	9.152	<.001			
Step 2							.633	.400	.184
Depression	0.262	0.03	0.49	.127	2.228	.027			
Generalised Anxiety	1.380	1.1	1.66	.547	9.625	<.001			
Step 3							.663	.439	.039
Depression	0.121	-0.11	0.35	.058	1.021	.308			
Generalised Anxiety	1.088	0.79	1.39	.431	7.116	<.001			
Self-Compassion	-5.669	-8.11	-3.23	-.258	-4.567	<.001			

95% bias corrected and accelerated confidence intervals, based on 2000 bootstrap samples

Table 4. Total, Direct and Indirect Mediation effects on the relationship between Self-Compassion and Social Anxiety

	<i>Mediator</i>	<i>Products of Coefficients</i>		<i>95% BCa Confidence Intervals</i>	
		<i>b</i>	<i>SE</i>	<i>Lower</i>	<i>Upper</i>
<i>Total</i>		-5.67	1.27	-8.18	-3.17
<i>Direct</i>		-2.51	1.17	-4.82	-0.20
<i>Indirect (mediation)</i>	<i>FNE</i>	-2.63	0.64	-4.22	-1.59
	<i>CAQ</i>	-0.50	0.29	-1.26	-0.09
	<i>PrSC</i>	-0.12	0.19	-0.80	0.09
	<i>PuSc</i>	0.09	0.19	-0.18	0.69
	<i>Total</i>	-3.16	0.75	-4.89	-1.88

95% bias corrected and accelerated confidence intervals, based on 5000 bootstrap samples

Table 5. Mediation effects on the relationship between Self-Compassion and Social Anxiety: Pairwise comparisons of indirect effects

<i>Indirect Effect</i>	<i>Products of Coefficients</i>		<i>95% BCa Confidence Intervals</i>	
	<i>b</i>	<i>SE</i>	<i>Lower</i>	<i>Upper</i>
FNE minus CAQ	-2.13	.64	-3.63	-1.03
FNE minus SCSPriv	-2.50	.66	-4.10	-1.43
FNE minus SCSPub	-2.70	.72	-4.48	-1.58
CAQ minus SCSPriv	-.038	.37	-1.26	0.23
CAQ minus SCSPub	-.060	.34	-1.52	-0.07
SCSPriv minus SCSPub	-0.22	.32	-1.20	.017

95% bias corrected and accelerated confidence intervals, based on 5000 bootstrap samples

Figure Legends

Figure 1. Multiple Mediation Analysis of the Relationship between Self-Compassion and Social Anxiety Controlling for Depression, GAD and Gender.

Footnote to Figure 1. Unstandardised Regression Coefficients significant at: * $p < .05$, ** $p < .001$, analyses based on 5000 bootstrap samples.

Appendix: Additional Analyses on Gender Differences

Table A1. Independent t-tests exploring gender differences on key variables

	Male (n=158)		Female (n=134)		t	df	p	95% C.I.	
	Mean	SD	Mean	SD				Lower	Upper
<i>Self-Compassion</i>	3.11	.56	2.77	.68	4.593 ^a	259.2 ^a	<.001	0.19	0.48
<i>Social Anxiety</i>	18	12.88	26.73	13.49	-5.715	290	<.001	-11.88	-5.79
<i>Fear of Negative Evaluation</i>	17.1	7.8	25	8.3	-8.387	290	<.001	-9.77	-6.06
<i>Cognitive Avoidance</i>	51.95	20.05	64.44	21.46	-5.411	290	<.001	-17.92	-8.36
<i>Private Self Consciousness</i>	18.19	6.41	20.69	7.06	-3.167	290	<.001	-4.05	-0.95
<i>Public Self Consciousness</i>	12.14	7.03	17.93	6.55	-7.236	290	<.001	-7.36	-4.21
<i>Depression</i>	5.08	50.91	8.47	7.13	-4.43 ^a	258.89 ^a	<.001	-4.96	-1.91
<i>Generalised Anxiety</i>	6.15	4.85	10.63	5.2	-7.537	290	<.001	-5.6	-3.28

95% bias corrected and accelerated confidence intervals, based on 2000 bootstrap samples

^aLevene test significant

Table A2. Additional Correlation Analyses with consideration of gender

Relationship of Interest	All	Males	Females
Total Self-Compassion/ Total Social Anxiety	-.551** ^a	-.461** ^c	-.561** ^e
Total Self-Compassion/ Fear of Negative Evaluation	-.635** ^b	-.521** ^d	-.627** ^f
Total Self-Compassion/ Cognitive Avoidance	-.448** ^b	-.380** ^d	-.412** ^f
Total Self-Compassion/ Private Self Consciousness	-.425** ^b	-.284** ^d	-.511** ^f
Total Self-Compassion/ Public Self Consciousness	-.503** ^b	-.368** ^d	-.550** ^f
Total Social Anxiety/ Self Kindness	-.262** ^b	-.202* ^d	-.308** ^f
Total Social Anxiety/ Self Judgment	.559** ^b	.458** ^d	.539** ^f
Total Social Anxiety/ Common Humanity	-.114* ^b	-.070 ^d	-.249** ^f
Total Social Anxiety/ Isolation	.482** ^b	.352** ^d	.539** ^f
Total Social Anxiety/ Mindfulness	-.233** ^b	.104 ^d	-.364** ^f
Total Social Anxiety Over-Identified	.515** ^b	.429** ^d	.510** ^f

95% bias corrected and accelerated confidence intervals, based on 2000 bootstrap samples

^aSample Size=316, ^bSample Size=298, ^cSample size = 170, ^dSample size=159, ^eSample size=143, ,

^fSample Size=136 ** denotes significance $p < 0.01$ level (2-tailed), * < 0.05 level (2-tailed)

