The role of perfectionism, cognitive styles, attitudes and daily stressors in predicting mood in university students

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ABSTRACT

The current study investigated the extent to which depression can be predicted by Beck's theory, the hopelessness theory and the perfectionism model of depression, using a correlational design. Self report measures of cognitive styles, dysfunctional attitudes, perfectionism, stress and depression were completed by 30 university students, which were analysed using a series of multiple regressions. The results revealed perfectionism was not significantly correlated with depression. Both negative cognitive styles and dysfunctional attitudes were found to predict high depression scores, however neither appeared to be a more accurate predictor than the other. It was found that both stress and dysfunctional attitudes contributed significantly to the prediction of high depression scores. However, when combining cognitive styles and stress, only negative cognitive styles made a significant contribution to the prediction of high depression scores. Therefore, the results do not provide support for the perfectionism model of depression. The findings however, do support the cognitive vulnerability proposed by both the hopelessness theory and Beck's theory, although were only found to support the diathesis-stress component of Beck's theory of depression. Implications for the treatment of depression and future directions are also discussed.

KEY WORDS:	BECK'S THEORY	HOPELESSNESS THEORY	PERFECTIONISM MODEL	DEPRESSION	STRESS

Introduction

Depression is a psychological disorder that affects many individuals, statistics show that depression affects 9% of individuals in any given year and approximately 16% of adults will experience depression at some point in their life (Kessler et al, 2003). As well as being a common disorder, it is also a debilitating one, with suffers experiencing multiple episodes across their life time, with the risk of recurrence increasing with each successive episode (Solomon et al, 2000). Therefore it is important to fully understand the causes of depression, which thus gives rise to the formation of appropriate treatments for individuals experiencing depression.

Over the years numerous models have been developed to explain the aetiology of depression. More recent conceptualisations have implemented a diathesis-stress framework for explaining the cause of depression (e.g. Abramson, Seligman & Teasdale, 1978). Here it is suggested that some individuals possess vulnerability or diathesis for depression, depression can then be activated in vulnerable individuals in the presence of stressful life events. The following section will discuss three theories which follow a diathesis- stress conceptualisation and how these theories have been used to explain the aetiology of depression.

The first of these theories is Beck's (e.g. 1979) theory of depression. This theory has been very influential in its field and is consequently the theoretical underpinning of cognitive therapy for depression. Beck explains that negative early experiences in an individual's life can lead to the development of negative schema or dysfunctional attitudes about the self, world and future. Negative views of the self include feelings of inadequacy and deprivation which lead to an individual feeling undesirable, worthless and critical of themselves. The person may also believe that they lack the attributes to achieve happiness. Negative views of the future represent individuals making long range projections with the assumption that current difficulties will continue indefinitely and the expectation of failing in all future tasks. Negative views of experiences involve an individual perceiving the world as making demands on them, providing obstacles to reaching life goals and the negative misinterpretation of interactions when more plausible, realistic explanations are available. These three cognitive patterns form a cognitive triad which cause an individual to regard them self, the future and experiences in an idiosyncratic manner. The schema or dysfunctional attitudes therefore constitute a vulnerability an individual may possess for depression. They can be latent for long periods of time but can be triggered by stressful situations. As these schemas become more active the individual is said to lose control over thinking processes and unable to invoke more appropriate schemas. The schemas are activated by specific circumstances which are related to the experiences responsible for the development of the schema earlier in life. For example a disruption of a marriage may activate a schema related to loss, developed in childhood due to the death of parent. When these schemas are activated later in life, they validate a person's negative concepts and create negative automatic thoughts which are characterised as negative self-statements or internal verbalisations. Negative automatic thoughts include overgeneralization, magnification of negative events, minimisation of positive events, and personalisation. Individuals have no control over these automatic thoughts, which they believe to be true and which consequently lead to the symptoms experienced in depression. In short, negative life events interact with dysfunctional attitudes/schemas developed early in

life, to increase the frequency of automatic thoughts, which in turn leads to the development of depression.

Support provided for this theory of depression has been somewhat mixed. Abela and D'Alessandro's (2002) findings support Beck's theory (e.g. 1979) of depression. They carried out a longitudinal study in which depression and dysfunctional attitudes were measured at three time points. Students applying to university were tested before an admissions decision, just after receiving an admissions result, and then four days later. It was found that individuals with dysfunctional attitudes are more likely to show increases in depressed mood following the occurrence of negative events. Joiner, Metalsky, Lew and Kloeck (1999) also provide support for Beck's theory in a prospective investigation. The authors measured university students' dysfunctional attitudes and depressive symptoms before and after examinations. Results show that students high in dysfunctional attitudes experienced increases in depressive symptoms, but only in the presence of a low exam grade. However students with high levels of dysfunctional attitudes but a high examination grade did not experience symptom increases, along with students low in dysfunctional attitudes. In a third investigation Olinger, Kuiper and Shaw (1987) carried out a cross-sectional study in which the results indicated that the combination of high negative events and high dysfunctional attitudes successfully predicted high depression scores. This therefore also supports the predictions of Beck's theory of depression. Robins, Block and Peselow (1990) provide further support for Beck's theory, they report that depressed patients reported more dysfunctional attitudes and a greater number of recent negative events. However some researchers have been unable to provide support for the diathesis-stress aspect of Beck's theory. Barnett and Gotlib (1990) reported that dysfunctional attitudes did not interact with negative events to predict increases in depressive symptoms. Therefore it still remains undecided in the literature whether Becks theory can provide an accurate account for the aetiology of depression.

Another cognitive theory of depression, the hopelessness theory, developed by Abramson, Metalsky and Alloy (1989) also provides an account for depression following a diathesis-stress framework. The theory specifies a cognitive vulnerability to depression, which in the presence, but not the absence of negative life events causes hopelessness; this in turn leads to the development of depressive symptoms. However, in contrast to Beck's (e.g. 1979) theory, the hopelessness theory (Abramson et al.) explains a cognitive vulnerability in terms of negative inferential styles as opposed to the formation of schema early in life. It is hypothesised that an individual may possess three depressogenic inferential styles which make them vulnerable to depression. These styles include inferences about why a negative event occurred, inferences about the consequences that will result from the occurrence of the event, and inferences about the self given the occurrence of the event. If an individual attributes internal, stable and global causes to a negative life event, infers negative consequences and negative characteristics about the self, this increases the likelihood an individual will develop hopelessness. Hopelessness is said to be the proximal cause of depression, and therefore leads to the development of depression. Furthermore, if an individual does not hold a general tendency to infer global and stable causes, negative consequences and negative characteristics about the self to the negative events then it is less likely the individual will develop hopelessness in the presence of negative events.

Metalsky and Joiner (1992) tested the hopelessness theory (Abramson et al. 1989) of depression using a prospective design. Students completed measures of depressive symptoms, anxious symptoms and hopelessness, and then again five weeks later, measures of naturally occurring stressors were also taken. Consistent with the theory, cognitive vulnerability and stress interacted to predict the onset of depressive symptoms. Furthermore this interaction was not provided for the prediction of anxious symptoms, suggesting the theories specificity to depression. Also using a prospective methodology, Metalsky, Joiner, Hardin and Abramson (1993) provided further evidence for the theory. It was found that exam failure interacted with attribution style to predict later depression. More recent evidence (Hankin, Abramson & Siler, 2001) has shown that in adolescents, the cognitive styles and stress interaction featured in the hopelessness theory, could predict an increase in depressive symptoms between initial assessment and five weeks later. Although these investigations provide support for this theory of depression, some studies in which the hopelessness theory (Abramson et al.) and Beck's (e.g. 1979) theory have been compared, have concluded that Beck's theory provides a better account for predicting depressive symptoms. For example, Lewinsohn, Rohde and Joiner (2001) found support for the diathesis-stress component of Beck's theory, but not the diathesis-stress component of the hopelessness theory (Abramson et al.). However on the other hand, others have concluded that the hopelessness theory (Abramson et al.) serves as a more accurate explanation. For example, Haeffel et al (2003) report that negative cognitive styles were more accurately and consistently associated with depressive symptoms than dysfunctional attitudes.

The third model conceptualises a vulnerability to depression in terms of perfectionistic personality styles as opposed to a cognitive vulnerability. In 1991a, Hewitt and Flett introduced the idea that perfectionism is a multidimensional construct displaying three dimensions, not simply a unitary cognitive process directed at oneself. Instead perfectionism also constitutes motivational behaviours and interpersonal components too. In Beck's (e.g. 1979) theory of depression perfectionistic cognitions are identified as a set of dysfunctional attitudes, however only self directed cognitions are taken into account. Hewitt and Flett (1991a) propose three distinct personality traits or dimensions that constitute perfectionism; self oriented perfectionism, other oriented perfectionism and socially prescribed perfectionism. Self-oriented perfectionism involves self- directed perfectionistic behaviours, such as setting unrealistic standards for oneself and strictly evaluating and criticising ones behaviour. This also involves a motivational component in which an individual strives to attain perfection across all situations. Other-oriented perfectionism involves the expectations and beliefs about the capabilities of others, involving unrealistic standards for others and evaluating others performances stringently. Therefore similar to self oriented, but instead directed at others rather than the self. Socially prescribed perfectionism is directed at oneself however based on the perceived ideals of others. This involves the need for an individual to attain standards and expectations prescribed by significant others. Individuals hold the perception that others hold unrealistic standards for them, are critical and put pressure on them to be perfect. The authors also suggested that these three dimensions of perfectionism may be differentially related to various forms psychopathology.

It was then demonstrated by Hewitt and Flett (1991b) that depressed psychiatric patients had higher levels of self-oriented perfectionism and socially prescribed perfectionism in comparison to a matched group of non-psychiatric controls. However it was also found that anxiety patients also reported higher levels of socially prescribed perfectionism than the control group. This was taken to perhaps suggest that self-oriented perfectionism may be specific to depression, where as socially prescribed perfectionism may be more related to general psychopathology. Hewitt and Flett (1993) then went on to propose a model of perfectionism for the aetiology of depression, following a diathesis-stress framework. In this model perfectionistic styles are referred to as a vulnerability factor for depression. Stressors which are congruent with a perfectionistic style then trigger depression in vulnerable individuals. It was suggested that an individual with this vulnerability is more likely to develop depression if the stressor is congruent as the individual is more likely to interpret this as distressing. For example, individuals with high self oriented perfectionism may develop depression after experiencing achievement or self-related stressors as this is congruent with the characteristics of the perfectionistic style. Where as an individual with high socially prescribed perfectionism is more likely to develop depression in the presence of social stressors disrupting a person's ability to meet others expectations. The authors also provided support for this hypothesis, in demonstrating the interaction of self oriented and socially prescribed perfectionism with congruent stressors to predict depression in a patient sample.

Furthermore Chang and Sanna (2001) found that all three perfectionism dimensions predicted depressive symptoms in university students across a two month period. However although support for the idea that perfectionistic styles may cause depression has been recorded, some researchers have not been able to provide support as strong for the perfectionism model (Hewitt & Flett, 1993). For example, Hewitt and Flett (1996) tested the model measuring depression in an initial assessment and again four months later. It was found that self-oriented perfectionism interacted with congruent stressors to predict depression over time. However, although socially-prescribed perfectionism predicted depression over time it did not interact with stressors to predict depression as the model would suggest. Therefore although these findings do provide some support for the notion that perfectionism is involved in causing depression, the findings are still somewhat inconsistent. Similarly, Sherry, Hewitt, Flett and Haney (2003) also report inconsistent findings for the model.

It appears to date these three theories have not yet been tested against one another within a single investigation to compare the extent to which they can predict depression. Abramson et al. (2006) state that further research is needed in order to establish whether Beck's (e.g. 1979) or the hopelessness theory (Abramson et al. 1989) can best predict depression. This is due to the fact that research has been unable to consistently establish which of these theories best predicts depression (e.g. Haeffel et al 2003; Lewinsohn et al., 2001). Furthermore (Hankin, Abramson, Miller & Haeffel, 2004) found that these theories were equal in the extent to which they could predict depression and neither uniquely predicted depression over the other. Although these theories both detail a cognitive vulnerability to depression, the correlation between negative cognitive styles and dysfunctional attitudes is relatively small (Lewinsohn et al., 2001). Therefore suggesting these theories are distinctly different, thus it is possible that one theory may be a better predictor of depression than the other. With regards to the perfectionism model of depression (Hewitt & Flett,

1993), it also seems support is somewhat inconsistent (e.g. Hewitt & Flett, 1996; Sherry et al., 2003). However Sherry et al. (2003) suggest that the model of perfectionism may provide a more accurate account for depression than Beck's cognitive theory. The author's demonstrate that Beck's theory could not predict depressive symptoms when controlling for perfectionistic attitudes. Therefore, suggesting that perfectionism is an important factor contributing to depression, which may be better explained through a multidimensional model, such as that by Hewitt and Flett (1993).

It is important to understand or identify the causes of depression in order to successfully develop treatments which address these factors that lead to depression. In considering this, the current investigation will therefore compare these three theories, to investigate the extent to which they can each predict depression. Due to the fact that that all three theories follow a diathesis- stress framework it is important to also measure the contribution of stress in predicting depressive symptoms. Therefore the aims of the investigation are to determine the extent to which Beck's (e.g. 1979) theory, the hopelessness theory (Abramson et al., 1989), and the perfectionism model (Hewitt & Flett, 1993) can predict depression and how stress contributes to this prediction. This therefore leads to the research question; what is the role of perfectionism, cognitive styles, dysfunctional attitudes and stress in predicting depression in university students?

Method

Design

A correlational research design was used to determine if any of the predictor variables could predict the criterion variable. The criterion variable was participants' scores on the Beck Depression Inventory (BDI-II). The predictor variables were participant's scores on the Multidimensional Perfectionism Scale (MPS), Dysfunctional Attitudes Scale- Form A (DAS-A), Cognitive Styles Questionnaire (CSQ) and Hassles Assessment Scale for Students in College (HASS/col). This design was chosen as it would allow an interpretation of the extent to which Beck's (e.g. 1979) theory, the hopelessness theory (Abramson et al., 1989), and the perfectionism model (Hewitt & Flett, 1993) could predict high depression scores.

Participants

Thirty university students were recruited from the North East via opportunity sampling to participate in the investigation. The sample consisted of 21 females and 7 males (sex not known for 2 participants) with a mean age of 22 (age ranging from 18-39). All participants were asked to complete the five self report measures detailed below.

Materials

The Beck Depression Inventory (BDI-II; Beck, Steer & Garbin 1988)

The BDI-II was used to measure the severity of depressive symptoms participants may be experiencing. The inventory is comprised of 21 items, each one assessing the intensity of a symptom or attitude associated with depression, which are rated on a scale of 0 to 3. The inventory is scored by summing the ratings given for each item on the scale. Scores on the inventory can range from 0-63 with higher scores

representing a higher level of depressive symptoms. A score of <10 is said to show no or minimal depression, 10-18 mild to moderate depression, 19-29 moderate to severe depression and 30-63 severe depression. This scale has been validated in clinical and non clinical samples. In a meta-analysis (Beck et al., 1988) it was reported that its internal consistency yielded a mean coefficient alpha of 0.86 for psychiatric patients and 0.81 for non-psychiatric subjects. The concurrent validities of the BDI for psychiatric patients with clinical ratings were 0. 72. for non-psychiatric participants, the mean correlations of the BDI with clinical ratings was 0.60.

The Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991a)

The MPS was used to measure participant's levels of perfectionism. This measure was chosen as it was developed specifically to assess an individual's perfectionism levels based upon Hewitt and Fletts (1991a) perfectionism styles. The scale contains 45 items, with a subscale for each dimension of perfectionism (self oriented, socially prescribed and other oriented perfectionism) containing 15 items each. Participants rate there level of agreement with the items on a scale of 1 to 7 (1= strongly disagree, 7= strongly agree). An individual score is computed for self-oriented perfectionism, socially prescribed perfectionism and other oriented perfectionism each ranging from 7-105, with higher scores representing higher levels of perfectionism. For the purpose of this investigation these scores were totalled to provide an overall perfectionism score, ranging from 45- 315. Hewitt and Flett (1991a) provide evidence that the scale is a reliable measure in assessing perfectionism levels in university students. They provide internal consistency coefficients of .86 for self-oriented perfectionism, .82 for other oriented perfectionism, and .87 for socially prescribed perfectionism, showing adequate levels of internal consistency. Test–retest reliabilities were .88 for self-oriented perfectionism, .85 for other-oriented perfectionism, and .75 for socially prescribed perfectionism. The scale was also found to be valid in terms of its convergent validity.

Cognitive Styles Questionnaire (CSQ; Haeffel et al., 2008)

The CSQ was chosen as it was developed specifically to measure negative cognitive styles based on the hopelessness theory of depression (Abramson et al., 1989). The CSQ assesses all three components of the cognitive vulnerability factor featured in the theory (i.e., causal attributions, consequences, and self-worth characteristics). The CSQ has 24-items, 12 items are negative event scenarios and 12 items are positive event scenarios. Participants rate items on a scale ranging from 1 to 7 (1 strongly disagree, 7 strongly agree). An individual's CSQ score is their average rating across the scales relevant to the cognitive vulnerability factor featured in the theory (stability, globality, consequences, and self-worth characteristics) for the 12 negative event items. Thus, to calculate a person's vulnerability score you calculate their average score for items C, D, E, and F for the 12 negative event scenarios (numbers 2, 4, 6, 7, 9, 10, 14, 16, 17, 18, 21, and 23). This composite score can range from 1 to 7, with higher scores reflecting greater levels of cognitive vulnerability to depression. The authors conclude that the CSQ has strong internal consistency and test–retest reliability with an impressive level of construct validity. Haeffel et al. (2008) report that across studies internal consistency for the CSQ composite score is excellent with alpha coefficients ranging from .88 to .96. They also provide evidence

of the CSQ having construct validity, as it behaves as cognitive vulnerability is theorized to behave in the theory.

Dysfunctional Attitudes Questionnaire Form A (DAS- A; Weissman & Beck, 1978)

The Dysfunctional Attitude Scale was chosen to assess the level of an individual's dysfunctional attitudes as featured as a vulnerability to depression in Beck's theory (e.g. 1979) for depression. The DAS-A contains 40 items, each statement is rated on a scale ranging from 1 (totally disagree) to 7 (totally agree). Items 2,6,12,17,25,29,30,35,37 and 40 require reverse scoring. An individual's score is calculated by simply totalling their scores for each item, higher scores represent a higher level of dysfunctional attitudes. Weisman and Beck (1978) report a coefficient of .86 for the internal consistency of the DAS-A. The scale also produces a test-re-test reliability of .71. The authors also demonstrate a high correlation between the DAS-A and the BDI with of .65, suggesting a significant relationship between an individual's score on the DAS and the intensity of their depression.

Hassles Assessment Scale for students in college (HASS/col; Sarafino & Ewing, 1999)

The HASS/col was used to measure the degree to which participants experience stressful life hassles. The HASS/col contains 54 items with three subscales per item, each item consist of a stressful hassle that may be experienced. The subscales are frequency of events, the unpleasantness of these events, and the amount of time an individual dwells upon them. An individual rates the stressful hassles for each subscale on a scale of 0-5, 0-4 and 1-5 respectively. The ratings on each subscale for each item are multiplied and the products are summed. This provides a total score which can range between 0 and 5,400 with higher scores representing higher overall stress levels. Sarafino and Ewing (1999) report substantial internal consistency for the HASS/col with a student population, with coefficients alphas for the three subscales being .90 for frequency, .92 for unpleasantness and .93 for dwelling.

Procedure

The following procedure was granted ethical approval by the Undergraduate Ethics Committee. Participants were asked to arrange an appropriate time and location to participate in the study. First participants were provided with an information sheet explaining what the study involved and detailing any necessary information. Participants were then provided with a consent form to read and sign before participating. Participants were then asked to complete five self report questionnaires, detailed above, and advised this would take around forty five minutes. Upon completing the study participants were provided with a debrief sheet informing them about the nature of the study. The questionnaires were scored according to the instructions above and analysed using PASW statistics 18. Finally, the results were made available to participants via a participant feedback form.

Ethical considerations

In order to protect participants against psychological distress or embarrassment some terminology was amended for the purpose of the participant information and debrief sheet. Firstly, the title of the investigation referred to attitudes rather than dysfunctional attitudes and mood rather than depression. Similarly, regarding the description of the self report questionnaires, the BDI-II was said to measure mood rather than depression and the DAS-A was said to measure attitudes as opposed to dysfunctional attitudes.

Results

First, a correlation analysis was carried out, in order to examine the relationships between the predictor variables (CSQ, MPS, DAS and HASS/col scores) and the criterion variable (BDI scores), and to also record any correlations between the predictor variables. Descriptive statistics including means and standard deviations were also computed for all predictor variables and the criterion variable.

Table 1

Means, standard deviations and correlations between measures of cognitive styles, dysfunctional attitudes, perfectionism, stressful hassles and depressive symptoms (N=30)

	BDI	**CSQ**	**DAS**	**MPS**	**HASS/col**
BDI	_				
CSQ	.630**	_			
DAS	.573**	.553**	_		
MPS	.329	.380*	.717**	_	
HASS/col	.541**	.627**	.447**	.446*	_
Mean	11.46	4.13	132.93	184.00	594.83
SD	8.53	.89	37.15	38.56	459.03

Note. * p< .05 ** p< .01. BDI= Beck Depression Inventory. CSQ= Cognitive Styles Questionnaire. DAS= Dysfunctional Attitudes Scale. MPS= Multidimensional Perfectionism Scale. HASS/col= Hassles Assessment Scale.

Table 1 shows the mean BDI score was 11.46 (SD=8.53), the mean CSQ score was 4.13 (SD=.89), the mean DAS score was 132.93 (SD=37.15), the mean MPS score was 184.00 (SD=38.56), and the mean HASS/col score was 594.83 (SD=459.03). Table 1 also shows that CSQ, r(28)=.630, p<.001, DAS, r(28)=.573, p=.001 and HASS/col ,r(28)=.541, p=.002 scores were significantly related to BDI scores. However MPS scores were not significantly related to BDI scores, r(28)=.329,

p=.076, therefore MPS scores were removed from any further analysis. The predictor variables were also significantly related to one another. CSQ scores were significantly related to DAS scores (r(28)=.553, p=.002), CSQ scores were also significantly related to HASS/col scores (r(28)=.627, p<.001) and DAS scores were significantly related to HASS/col scores (r(28)=.447, p= .008).

Next multiple regression analysis were run (enter method) to investigate whether negative cognitive styles and stressful hassles (hopelessness theory; Abramson et al., 1989) or dysfunctional attitudes and stressful hassles (Beck's theory e.g. 1979) could predict depressive symptoms. Here, two separate regressions were carried out, one with cognitive styles and stressful hassles as predictors of depression scores, and one with dysfunctional attitudes and stressful hassles as predictors of depression scores.

Cognitive styles and stressful hassles as predictors of depression scores

Table 2

Multiple regression analysis with cognitive styles and stressful hassles as predictors of depression scores (N=30)

	B	Standard Error B	β	t	R^2
BDI					.431**
Constant	-9.961	6.342			
CSQ	4.541	6.342	.479	2.569*	
HASS/col	.004	.003	.240	1.290	

Note. *p<.05. **p<.01. BDI= Beck Depression Inventory. CSQ= Cognitive Styles Questionnaire. HASS/col= Hassles Assessment Scale.

Table 2 shows the regression equation was significant; R^2= .431, F(2,27)=10.242, p<.001, therefore a combination of cognitive styles and stressful hassles significantly predicted high depression scores. CSQ scores made a significant contribution to the regression equation (t(27)= 2.569, p=.016). However HASS/col scores did not make a significant contribution (t(27)= 1.290, p=.208). Therefore the regression shows that negative cognitive styles and stressful hassles together significantly predicted high depression scores, however only negative cognitive styles made an independently significant contribution in predicting high depression scores.

Dysfunctional attitudes and stressful hassles as predictors of depression scores

Table 3

Multiple regression analysis with dysfunctional attitudes and stressful hassles as predictors of depression scores (N=30)

	B	Standard Error B	β	t	R^2
BDI					.421**
Constant	-4.825	4.673			
DAS	.094	.038	.346	2.451*	
HASS/col	.006	.003	.408	2.076*	

Note. * p<.05. ** p<.01. BDI= Beck Depression Inventory. DAS= Dysfunctional Attitudes Scale. HASS/col= Hassles Assessment Scale.

Table 3 shows the regression equation was significant; R^2= .421, F(2,27)= 9.823, p=.001, therefore a combination of dysfunctional attitudes and stressful hassles significantly predicted high depression scores. DAS scores (t(27)= 2.451, p=.021) and HASS/col scores (t(27)= 2.076, p= .048) both made a significant contribution to the regression equation. Therefore the regression shows that dysfunctional attitudes and stressful hassles together significantly predicted high depression scores, furthermore both dysfunctional attitudes and stressful hassles independently made a significant contribution in predicting high depression scores.

Cognitive styles, dysfunctional attitudes and stressful hassles as predictors of depression scores

A further multiple regression analysis (enter method) was carried out to see if one theory may be a stronger predictor of high depression scores than the other. Therefore cognitive styles (hopelessness theory; Abramson et al., 1989), dysfunctional attitudes (Beck's theory e.g. 1979) and stressful hassles were entered as predictors of depression scores.

Table 4

Multiple regression analysis with cognitive styles, dysfunctional attitudes and stressful hassles as predictors of depression scores (N=30)

	B	Standard Error B	β	t	R^2
BDI	-13.376	6.458			.488**
Constant					
CSQ	3.385	1.841	.357	1.838	
DAS	.067	.040	.291	1.691	
Hass/col	.003	.003	.178	.968	

Note. * p< .05. ** p<.01. BDI= Beck Depression Inventory. CSQ= Cognitive Styles Questionnaire. DAS= Dysfunctional Attitudes Scale. HASS/col= Hassles Assessment Scale.

Table 4 shows the regression equation was significant; R^2= .488, F (2,26)= 8.252, p=.001, therefore a combination of cognitive styles, dysfunctional attitudes and stressful hassles significantly predicted high depression scores. However, neither CSQ (t(27)=1.838, p=.077), DAS (t(27)=1.691, p=.103) or HASS/col scores (t(27)=.968, p=342) made an independently significant contribution to the regression equation. Therefore the regression shows that negative cognitive styles dysfunctional attitudes and hassles together significantly predicted depressive symptoms; however no one independently made a significant contribution to predicting high depression scores.

Discussion

The investigation was interested in the role of perfectionism, cognitive styles, dysfunctional attitudes and stress in predicting depression. The results revealed that perfectionism was not significantly correlated with depression. Negative cognitive styles and stressful hassles were found to significantly predict high depression scores, however only negative cognitive styles made a significant contribution to this prediction. It was also found that dysfunctional attitudes and stressful hassles significantly predicted high depression scores, both making a significant contribution to this prediction. Lastly, high depression scores were also predicted by the combination of negative cognitive styles, dysfunctional attitudes and stressful hassles. However here, dysfunctional attitudes, negative cognitive styles nor stressful hassles made an independently significant contribution to this prediction, suggesting no one is stronger than the others in predicting high depression scores. These findings will be discussed in relation to the extent to which the hopelessness theory (Abramson, et al., 1989), Beck's theory (e.g. 1979) and the perfectionism model (Hewtitt & Flett, 1993) can predict depression, in order to address the aims of the current study.

The perfectionism model (Hewitt & Flett, 1993) proposes that an individual may hold a set of perfectionist dimensions or styles that may make them vulnerable to developing depression. Specifically it is thought that self-oriented and socially-prescribed perfectionistic styles may act as a vulnerability factor for depression. If an individual holds these perfectionistic styles then they may develop depression after experiencing stressors which are congruent with these styles. The current findings do not support the perfectionism model of depression (Hewitt & Flett) as no relationship between perfectionism and depression was found.

This also counters research that has shown that perfectionism styles predict depression. Such research includes that by Hewitt and Flett (1191b) who found that depressed patients had high levels of self-oriented and socially-prescribed perfectionism. Hewitt and Flett (1993) also provide evidence that self oriented and socially prescribed perfectionism interact with congruent stressors to predict depression. Chang and Sanna (2001) also found that all three perfectionism dimensions predicted depressive symptoms in university students. Hewitt and Flett (1996) reported inconsistent support for the perfectionism model (Hewitt & Flett,

1993), as self-oriented but not socially prescribed perfectionism interacted with congruent stressors to predict depressive symptoms. However these perfectionism dimensions were still shown to predict depression and therefore conflicts with what was found in the current investigation. Furthermore the findings are not in agreement with Sherry et al. (2003) conclusions, as they state the perfectionism model may serve as a better explanation for depression than Beck's theory (e.g. 1979). However the current findings oppose this idea as support has been shown for Beck's theory as dysfunctional attitudes were found to predict high depression scores, but not the perfectionism model (Hewitt & Flett, 1993). A possible reason that a relationship was not found between perfectionism and depression may be due to the fact that overall perfectionism was measured rather than looking at the relationship between each individual dimension and depression. Specifically because the model proposes that self-oriented and socially prescribed perfectionism interacts with stressors to cause depression. Therefore, possible lower scores for other-oriented perfectionism may have masked potentially higher scores in self- oriented and socially prescribed perfectionism. However Chang and Sanna, as stated above, report that all three dimensions were shown to predict depressive symptoms, so perhaps measuring overall perfectionism would not affect its relationship to depression.

The hopelessness theory of depression (Abramson et al. 1989) explains that individuals may hold a cognitive vulnerability to depression; this vulnerability is referred to as a negative cognitive style. An individual may hold a set of negative cognitive styles, where they attribute stable and global causes, negative consequences and negative characteristics about the self to negative life events. When individuals with negative cognitive styles experience negative life events, this increases the likelihood an individual will develop hopelessness, which in turn leads to depression. The current study provides support for the idea that negative cognitive styles, may lead to hopelessness and thus cause depression, as negative cognitive styles were found to predict high depression scores. However, the findings do seem to be inconsistent with the theories diathesis-stress hypothesis. The theory explains that in cognitively vulnerable individuals, depression may occur in the presence but not the absence of negative life events. Therefore, when combining stressful hassles and cognitive styles, both should have made a significant contribution to the prediction of depression. However, only negative cognitive styles were found to make an independently significant contribution to the prediction of high depression scores.

The results revealing that cognitive styles predicted high depression scores also supports previous research, such as that by Haeffel et al. (2003). Haefell et al. report that negative cognitive styles were accurately and consistently associated with depressive symptoms. Findings also support that by Metalsky and Joiner (1992) as they found cognitive styles were mediated by hopelessness to predict depression. However the authors report that cognitive styles and stress interacted to predict depressive symptoms, which is inconsistent with what was found in the current study. Similarly, Hankin et al. (2001) also found that the cognitive styles and stress interaction predicted an increase in depressive symptoms. On the other hand Lewinsohn et al. (2001) also failed to show an interaction of cognitive styles and stress in predicting depression.

It is possible that stress did not significantly predict depressive depression in the current study because the HASS/col (Sarafino & Ewing, 1999) requires participants

to rate levels of stress experienced within the past month. It may be that levels of stress experienced in the past month may not have been sufficient enough to cause depression. It may be that the etiological chain of the hopelessness theory requires a longer period of time between experiencing stress and developing depression. This is because the interaction of negative cognitive styles and negative events is said to first activate hopelessness, which then consequently leads to the development of depression (Abramson at al., 1989). Alternatively, depression may have been triggered in individuals who experienced a stressful event occurring before the past month; however it was not reported as it occurred before the specified time period. Furthermore the mean score (see results, Table 1) for the HASS/col in the current study was lower than that reported in the development of the scale (Sarafino & Ewing, 1999). So it is possible that participants generally did not report high enough stress levels to enable stress to predict high depression scores.

Beck's (e.g. 1979) theory explains that individual may develop negative schemata early in life after experiencing a negative life event. These schemas are made up of a set of dysfunctional attitudes, which later in life, are triggered when the individual experiences negative life events congruent with these dysfunctional attitudes. When these dysfunctional attitudes are triggered they cause negative automatic thoughts, which leads to the development of depression. Findings were consistent with Beck's theory as dysfunctional attitudes and stressful hassles together predicted high depression scores, both making a significant contribution to this prediction. The current findings therefore also support previous research that provides evidence for Beck's theory of depression, some of which include the following investigations. Abela and D'Alesandro (2002) reported individuals with dysfunctional attitudes are likely to show increases in depressive mood, following the occurrence of negative life events. Joiner, et al. (1999) found students high in dysfunctional attitudes experienced increases in depressive symptoms in the presence of a low exam grade. Olinger et al. (1987) also found that a combination of dysfunctional attitudes and negative life events predicted high depression scores. However these findings seem to contradict some previous research, such as that carried out by Barnett and Gotlib (1990). They report that dysfunctional attitudes did not interact with negative life events to predict an increase in depressive symptoms. Although the current investigation did not study the interaction per se, it was shown that together, both stress and dysfunctional attitudes contributed to the prediction of depressive symptoms.

The results also suggest that neither Beck's theory (e.g. 1979) or the hopelessness theory (Abramson et al., 1989) may be better than the other at predicting depression. Although together, with stress they significantly predicted high depression scores, neither was shown to make an independently significant contribution to this prediction when controlling for the other. This supports findings by Hankin et al. (2001), who report that the theories were equal in the extent to which they could predict depression and neither uniquely predicted depression when controlling for the other. Although, this does conflict with research such as that by Haeffel et al. (2003), where it was reported that negative cognitive styles were more accurate than dysfunctional attitudes in predicting depression. However, cognitive styles and dysfunctional attitudes were significantly correlated with one another in the current study. This may explain why neither was shown to make an independently significant contribution in predicting depression. This however, was not found by Lewinsohn et al. (2001) who

explain that within research the correlation between dysfunctional attitudes and cognitive styles seems to be relatively small. Therefore, in future research, where a different sample is used, a difference in their ability to predict depression may be found.

The findings of this investigation have implications for the psychological treatment of depression. Although the diathesis-stress component of the hopelessness theory (Abramson, et al., 1989) was not supported, it is important to realise that in relation to therapy it may be more important to identify the cognitive vulnerability an individual may possess, as this can be addressed during therapy. It is important to note that both negative cognitive styles and dysfunctional attitudes were shown to predict high depression scores, however neither seemed to be better than the other at predicting depression. Currently cognitive therapy involves identifying dysfunctional attitudes and challenging these cognitions (Beck, 1979) and therefore Beck's theory (e.g. 1979) of depression is applied to therapy. Although this has shown to be an effective therapy for treating individuals with depression (e.g. Rupke, Blecke & Renfrow, 2006), perhaps practitioners should also be aware of the impact of negative cognitive styles when delivering cognitive therapy. However to identify and address both dysfunctional attitudes and cognitive styles during treatment would be time consuming, and relatively taxing for clients. It may be more beneficial to find out which of the two better explains the cause of depression, hence the one that's possibly more appropriate to address in therapy.

An area for future research could therefore be, to further investigate whether cognitive styles or dysfunctional attitudes can better explain the cause of depression. This seems appropriate due to the fact that cognitive styles and dysfunctional attitudes were significantly correlated with one another in the current study. Therefore the possible reason one was not found to be a stronger predictor of depression. This would provide an incite in to which theory may be a more appropriate application during cognitive therapy, providing a more efficient model, as opposed to addressing both cognitive styles and dysfunctional attitudes. Future research should also use a prospective design, where depressive symptoms and cognitions are measured across various time points. This would ensure that the cognitions could account for the cause of depression rather than a consequence of depression. The current investigation did not use a prospective design and therefore the results only provide a prediction of depression rather than measuring whether negative cognitive styles or dysfunctional attitudes are causes of depression (Lewinsohn et al., 2001). This may then lead to further research; if it emerges that negative cognitive styles may better explain the cause of depression. For example, research could look into comparing the effectiveness of two forms of cognitive therapy in treating depression. One form identifying and challenging negative cognitive styles, and the other identifying and challenging dysfunctional attitudes. This would allow a direct comparison between the two to determine whether actually changing or modifying cognitive therapy would be beneficial, and lead to better treatment outcomes for clients with depression.

In conclusion, the current study appears to be the first to compare Beck's (e.g. 1979) theory, the hopelessness theory (Abramson et al. 1989), and the perfectionism model (Hewitt & Flett, 1993) within a single investigation. Therefore it has expanded upon previous research investigating whether these theories can explain the cause of depression, and extended knowledge relating to the extent to which each theory can

predict depression. Evidence was provided that perfectionism was not related to depression, contradictory of the perfectionism model (Hewitt & Flett) of depression. Both negative cognitive styles and dysfunctional attitudes were found to predict high depression scores, however neither appeared to be a more accurate predictor of depression than the other. This therefore provides support for the cognitive vulnerability proposed by both Beck's theory and the hopelessness theory (Abramson et al.) of depression. The findings also seem to support the diathesis-stress hypothesis of Beck's theory of depression, but not the hopelessness theory (Abramson et al.). It is suggested that future research should further investigate whether Beck's theory or the hopelessness theory (Abramson et al.) can better explain the cause of depression using a prospective design.

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