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'Weakest Link' as a Cognitive Vulnerability Within the Hopelessness Theory of Depression in Chinese University Students

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Abstract

The current study tested the cognitive vulnerability–stress component of hopelessness theory using a 'weakest link' approach (e.g. an individual is as cognitively vulnerable to depression as his or her most depressogenic attributional style makes him or her) in a sample of Chinese university students. Participants included 520 students in Changsha. During an initial assessment, participants completed measures assessing weakest link, depressive symptoms and occurrence of negative events once a month for 6 months. Results from hierarchical linear modelling analyses showed that higher levels of weakest link scores were associated with greater increases in depressive symptoms following the occurrence of negative events. Higher weakest link level was associated with greater increases in depressive symptoms over time. These results provide support for the applicability of the 'weakest link' approach to the hopelessness theory to Chinese university students.

Keywords

depression; cognitive vulnerability; weakest link; stress; hopelessness

Introduction

Previous studies conducted in mainland China have documented a dramatic increase in the prevalence rate of depressive disorders over the past two decades (Chen, Chen, Kaspar, &

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Conflict of interest

The authors have declared that they have no conflict of interest.

Noh, 2000; Dennis, 2004). An epidemiological study of depression in a sample of 1597 undergraduates suggested that the prevalence rates of mild and severe depression among this population were 42.1% and 2.1%, respectively (Du & Wang, 1999). Preliminary findings suggest that the prevalence rate of depression in Chinese youth may exceed those observed in adults. Therefore, etiological models of depression in Chinese university students should arouse increased interest considering the alarming nature of such statistics.

Cognitive vulnerability to depression

One theory that has proven to be useful in understanding the development of depression in Western youth is the cognitive vulnerability–stress theory (Abela & Hankin, 2008). Cognitive theories of depression define vulnerability as an internal and stable feature of an individual that predisposes him/her to develop depression following the occurrence of negative life events (Ingram, Miranda, & Segal, 1998). Such models posit that depression is produced by the interaction between cognitive vulnerability factors (the diatheses) and certain environmental conditions (the stressors) that trigger the occurrence of stress (Ingram et al., 1998). Previous research has suggested that under usual conditions, individuals who are vulnerable to depression are indistinguishable from the general population. Vulnerable individuals will have a negative interpretation of life events only when they are confronted with certain stressors, which places them at high risk for depression and a wide range of other negative outcomes (Ingram & Luxton, 2005; Monroe & Simons, 1991).

One of the most prominent cognitive vulnerability–stress models of depression is the hopelessness theory (Abramson, Metalsky, & Alloy, 1989). According to this theory, the idea of cognitive vulnerability pertains to having a negative cognitive style. This cognitive style is operationalized as exhibiting the following tendencies: (1) to attribute negative events to stable and global causes; (2) to perceive negative events as having many disastrous consequences; and (3) to infer negative characteristics about the self after negative events. According to the hopelessness theory, individuals who possess a negative cognitive style are more likely than others to make depressogenic inferences following negative events. Such inferences, in turn, increase the likelihood that hopelessness will develop. Moreover, hopelessness has also been consistently demonstrated as a predictor of suicide ideation, suicide attempts and suicide completion (Beck, Kovacs, & Weissman, 1975; Chochinov, Wilson, Enns, & Lander, 1998).

Researchers have since developed several tools for the assessment of hopelessness. For example, the Hopelessness Scale (BHS) developed by Beck and colleagues to quantify hopelessness (Pompili, Tatarelli, Rogers, & Lester, 2007) has become one of the most widely used instruments. However, despite evidence of its predictive validity, the BHS has endured criticism over the last 20 years because a number of studies examining its factor structure have revealed mixed results. Consequently, it has been suggested that the structure of the BHS may be different for clinical and non-clinical samples (Pompili et al., 2007).

Abramson and Metalsky (1989) created the Cognitive Style Questionnaire (CSQ). The CSQ was developed for use with undergraduate populations and measures the three components that compose the cognitive vulnerability factor featured in the hopelessness theory of depression (causal attributions, consequences and self-worth characteristics). Past studies

that have used the CSQ have provided support for the hopelessness theory (Abramson, Metalsky, & Alloy, 1989) in Western youth (Abela & Hankin, 2008; Robinson & Alloy, 2003; Romens, Abramson, & Alloy, 2009).

Nevertheless, the majority of studies addressing the diathesis–stress component of the hopelessness theory (Abela & Alexander, 2007) have revealed mixed results. Although several investigations have provided full support for the attributional vulnerability hypothesis of the hopelessness theory, support from studies of its other aspects has only been partial or nonexistent (Abela, Aydin, & Auerbach, 2006). One possible reason for the inconsistency is that many researchers have examined each of the three inferential styles in isolation, without considering the possible relationships among them.

Weakest link approach

One approach that attempts to conceptualize the relationship among multiple vulnerability factors is the weakest link approach (Abela & Sarin, 2002). This approach (Abela & Sarin, 2002) was originally developed from the hopelessness theory of depression. Within the framework of this theory, the weakest link hypothesis posits that an individual is as cognitively vulnerable to depression as his or her most depressogenic attributional style makes him or her (Abela & Sarin, 2002). Therefore, according to this hypothesis, when testing the hopelessness theory, researchers should assess all three depressogenic attributional styles together and then determine each participant's degree of vulnerability on the basis of his or her most depressogenic attributional style. Abela and Sarin (2002) noted that the weakest link hypothesis might have important implications for research examining the vulnerability hypothesis of the hopelessness theory. Their study indicated that participants' 'weakest links' interacted with the occurrence of negative events to predict increases in depressive symptoms. In contrast, none of the three individual depressogenic inferential styles individually interacted with negative events to predict such increases (Abela & Sarin, 2002). Subsequent research has provided equally strong support for this hypothesis in youth (Abela & McGirr, 2007; Abela & Scheffler, 2008) and adults (Abela, Aydin et al., 2006), providing support for the weakest link theory in Western samples.

Although far less research has examined the applicability of the weakest link theory to Chinese youth, preliminary research has yielded findings that are consistent with the vulnerability–stress hypothesis of cognitive theories of depression in China (Abela et al., 2011; Cui, Shi, & Oei, 2013).

Goals of the current study

The primary objective of the current study was to examine the applicability of the weakest link theory of depression (Abela & Sarin, 2002) to undergraduate students in mainland China. The procedure involved an initial assessment, during which undergraduate students completed measures assessing their weakest link, daily hassles and symptoms of depression. This initial assessment was followed by a series of six monthly follow-up assessments, at which times symptoms of depression and the occurrence of negative events were evaluated. The use of a multi-wave longitudinal design allowed us to take an idiographic approach towards examining the diathesis–stress hypotheses of the weakest link theory. More

specifically, we examined whether the slope of the relationship between negative events and depressive symptoms within participants varied across participants as a function of their levels of cognitive vulnerability. In line with the vulnerability–stress hypothesis of the weakest link theory (Abela & Sarin, 2002), we then hypothesized that a higher weakest link score would be associated with greater increases in depressive symptoms after the occurrence of negative events. Moreover, on the basis of the existing literature, we expected that the weakest link, as a cognitive vulnerability, would moderate the relationship between stress and depressive symptoms.

Methods

Participants

Participants were recruited at two universities in Changsha, China. Both universities are ranked as average academically. Consent forms were sent to all of the participating students, and the response rate was greater than 95%. In terms of the annual gross domestic product, Hunan province (with 10,336 RMB) ranks 23rd out of the 34 provinces in China, placing it well below the national provincial average [*M* = 29,719 RMB, standard deviation (*SD*) = 47,462 RMB; National Bureau of Statistics of China, 2006].

The final sample consisted of 520 students (290 women and 230 men) ranging in age from 18 to 23 years (*M* = 20.08, *SD* = 1.06). The sample consisted of 26.2% freshmen, 40.2% sophomores and 33.6% juniors. In terms of nationality, most participants were Han (93.1%); 6.9% reported ‘other’.

Procedure

The Ethics Committee of the Second Xiangya Hospital, Central South University, approved the procedure for this study. Each participant provided written informed consent to the project coordinator prior to the initial assessment. After the consent forms were collected from all of the participants, researchers went to each school to meet with the participating students. Participants were not screened for psychiatric disorders. More than 95% of all the eligible students agreed to participate and did so. During the initial assessment at the schools, students completed each of the following questionnaires: (1) Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977); (2) CSQ (Abramson et al., 1989); and (3) General Social and Academic Hassles Scale (SHS; Blankstein, Flett, & Koledin, 1991). After the initial assessment, researchers returned to each school once a month for the following 6 months, whereupon students were reassessed using the CES-D and SHS questionnaires. No student had missing data during follow-up assessments.

Measures

The Chinese version of all self-report measures was developed using the back-translation method. Details of and rationale for the measures’ translation procedure are delineated elsewhere (Abela et al., 2011).

Cognitive Style Questionnaire

Abramson and Metalsky (1989) created the CSQ. The CSQ is based on hopelessness theory and was designed to assess negative inferential style. It is a 24-item measure related to causes, consequences and the self. Each item score ranges from 1 to 7, with higher scores corresponding to a more depressogenic cognitive style. In the present study, Cronbach's alpha for the CSQ subscales ranged from 0.90 to 0.91, suggesting strong internal consistency. Previous studies have documented the ability of the CSQ to assess negative inferential style in Western countries (Abela & Sarin, 2002; Alloy et al., 2000) and in mainland China (Auerbach, Webb, Gardiner, & Pechtel, 2013; Xiao, He, Jin, & Bai, 2013).

To compute the weakest link composite score for each participant, we standardized participants' scores for each of the three inferential styles. We utilized the weakest link approach (Abela & Sarin, 2002) to calculate participants' CSQ scores. Scores for the three components were standardized [standardized score = (data score – mean)/SD] prior to selecting the highest vulnerability component score. The highest of the three standardized scores was designated as the individual's weakest link score (Abela, Skitch, Adams, & Hankin, 2006).

Centre for Epidemiological Studies Depression Scale

The CES-D is a 20-item measure designed to assess depressive symptoms in the general population. Each item consists of a symptom and a response scale ranging from 1 (*rarely*) to 4 (*most of the time*). Participants reported how often they had experienced the symptom during the past week using the following scale: rarely (<1 day), some or a little of the time (1–2 days), occasionally or a moderate amount of the time (3–4 days) or most or all of the time (5–7 days). Total raw scores can range from 20 to 80, with higher scores indicating greater levels of depressive symptoms. More specifically, scores between 36 and 44 indicate mild levels of depressive symptoms, and scores above 44 suggest moderate to severe clinical levels of depressive symptoms (Radloff, 1977). The Chinese version of the CES-D has been shown to exhibit a high degree of reliability and validity (Yang, Soong, Kuo, Chang, & Chen, 2004), demonstrating strong reliability and validity in both Western samples (Radloff, 1977) and Chinese samples (Zhang & Norvilitis, 2002). Furthermore, Zhang *et al*. found that the factorial structure of the CES-D was consistent across Dutch and Chinese samples and provided evidence of a valid factorial structure that could be applied in China (Zhang et al., 2011). In the present study, we obtained a Cronbach's alpha of 0.91 for the total scale, indicating strong internal consistency.

General Social and Academic Hassles Scale

The SHS was used to assess students' daily hassles associated with family, work and studying that were experienced during the preceding month. In this study, we used the short form of the scale, which comprises 30 items. The items can be categorized into social, academic and perceived general hassles. Each item score ranges from 0 to 6, with higher scores corresponding to a higher frequency of daily hassles. Past studies have documented the ability of the SHS to assess students' daily hassles in both Western countries (Blankstein et al., 1991) and mainland China (Xiao et al., 2013). In the present study, Cronbach's alpha was 0.91 for the total scale, indicating strong internal consistency.

Results

Descriptive data

Means and SDs for time 1 (initial assessment) measures are presented in Table I. Several findings warrant attention. Firstly, approximately 20.2% (N = 105) of the overall sample (N = 520) reported significant levels of depressive symptoms on the CES-D (score of 36 or higher) (Zhang et al., 2011). Of these respondents, 15.3% (N = 80) endorsed a borderline elevation of depressive symptoms (CES-D score between 36 and 44), whereas 4.9% (N = 25) reported depressive symptoms indicative of a clinical diagnosis of depression (CES-D score above 44). Secondly, in examining the effect of age, analysis of variance of students' CES-D and weakest link scores indicated no significant differences in either depressive symptoms (F = 0.854, p >0.05) or weakest link (F = 1.07, p >0.05) across different ages. Thirdly, an independent-samples t-test on CES-D scores indicated that women reported higher depressive symptoms (t = 2.69, p <0.01) than men.

Inter-correlations among all time 1 measures are presented in Table II. Results show that higher levels of stress, cognitive style scores and weakest link scores were each associated with higher levels of depressive symptoms (r = 0.29–0.44, p <0.01). In addition, stress levels and cognitive style scores were positively related to weakest link scores (r = 0.25–0.84, p <0.01).

Means and SDs for all follow-up measures are presented in Table III. Firstly, the results of the independent-samples t-test on CES-D scores indicated that women reported higher depressive symptoms (F = 4.30, p <0.05) than men at the sixth follow-up. Secondly, the independent-samples t-test for SHS scores indicated that women reported higher levels of stress than men at follow-ups 2, 3, 4, 5 and 6.

'Weakest link' as a cognitive vulnerability to depressive symptoms

To test our hypothesis that higher levels of weakest link are associated with greater increases in depressive symptoms following daily (negative) events, we used multilevel modelling. Analyses were performed using the SAS (version 9.1) MIXED procedure with maximum likelihood estimation. Our dependent variable was within-subject fluctuations in CES-D scores during the follow-up interval (DEPRESSION). Our primary predictors of DEPRESSION included weakest link, fluctuations in SHS scores during the follow-up interval (STRESS) and interaction between weakest link and stress. Because weakest link was a between-subjects variable, weakest link scores were standardized prior to the analyses. In contrast, as STRESS was a within-subject predictor, SHS scores were centred at each participant's mean prior to analyses, such that STRESS reflected upward or downward fluctuations in a student's stress level compared with his or her mean level of stress.

When fitting hierarchical linear models, one must specify appropriate mean and covariance structures. It is important to note that mean and covariance structures are not independent of one another. Rather, an appropriate covariance structure is essential to obtain valid inferences for the parameters of the mean structure. Over-parameterization of the covariance structure can lead to inefficient estimation and poor assessment of standard errors (Altham,

1984). However, excessive restriction of the covariance structure can lead to invalid inferences when the assumed structure does not hold (Altham, 1984).

In particular, we were interested in examining the effects of weakest link and within-subject fluctuations in stress on students' CES-D scores during the follow-up interval. Consequently, and in line with Diggle, Liang and Zeger's (1994) recommendation that one should use a 'saturated' model for the mean structure while searching for an appropriate covariance structure, we chose a mean structure that included WEAKEST LINK, STRESS and the WEAKEST LINK × STRESS interaction. Firstly, as different students are likely to experience different levels of depressive symptoms when experiencing their own average level of stress, a random intercept was included in the model. Secondly, given that STRESS is a within-subjects predictor whose effect is expected to vary from participant to participant, a random effect for slope was included. Thirdly, to control for individual differences in baseline depressive symptoms, time 1 CES-D scores were included in the model. Finally, to account for possible gender effects, students' gender was also entered.

Commonly used covariance structures in studies where multiple responses are obtained from the same individual over time (and consequently within-subject residuals over time are likely to be correlated) include compound symmetry, first-order autoregressive, heterogeneous autoregressive and banded Toeplitz. To select one of these covariance structures for our analyses, we fitted models utilizing each structure and then chose the 'best fit' on the basis of the Akaike information criterion and the Schwarz Bayesian criterion. The best fit was a first-order heterogeneous autoregressive structure (ARH[1]). This type of covariance structure indicated two general patterns in CES-D scores during the follow-up interval (Littell, Pendergast, & Natarajan, 2000). Firstly, as the interval between any two follow-up assessments increased, the degree of inter-correlation between adolescents' CES-D scores at said time points decreased. Secondly, the variance in CES-D scores across administrations was variable.

After choosing the appropriate covariance structure, we next examined the random-effects component of our model. Non-significant random effects were deleted from the model prior to examining the fixed-effects component. With respect to random effects, the ARH[1] parameter (p <0.001), RE_INTERCEPT (p <0.001) and RE_SLOPE (p <0.001) were significant and thus were retained in the model.

When examining the fixed-effects component of the model, we used a process called backwards deletion, in which non-significant higher-order interactions were deleted from the model prior to examining lower-order interactions. Reported effect sizes represent $r_{\text{effect size}}$. General guidelines for interpreting the size of $r_{effect\ size}$ are as follows: 0.10 = small, 0.30 = medium and 0.50 = large (Rosnow, Rosenthal, & Rubin, 2000). The final results with respect to the fixed-effects component of the model are presented in Table IV. Of primary importance, the WEAKEST LINK × STRESS interaction was a significant predictor of depressive symptoms during the follow-up interval [$F(1,2295) = 12.03$, p <0.001], although the effect size ($r_{effect\ size} = 0.15$) was small.

To examine the form of the WEAKEST LINK × STRESS interaction, the model was used to calculate predicted CES-D scores for students possessing high or low levels of weakest link (±1.5 SD), who were also experiencing high or low levels of stress (in comparison with their own average level of stress, ±1.5 SD). The results of these calculations are presented in Figure 1. Because both DEPRESSION and STRESS were within-subject variables, slopes in the high weakest link group were interpreted as the increase in a student's CES-D score that would be expected given that he/she scored one point higher on the SHS [slope = 0.09; t (2287) = 7.43, p <0.001]. In the low weakest link group, however, slopes were not interpreted in this manner [slope = 0.02; t (2287) = 1.39, p >0.05]. Planned comparisons of the slopes of the relationship between stress and depressive symptoms revealed that the slope was significantly greater in students exhibiting high weakest link scores than in students exhibiting low weakest link scores [t (2287) = 3.45, p <0.001].

Discussion

The current study examined whether weakest link moderates the impact of stress on depressive symptoms in undergraduate students, and several findings were revealed that warrant particular attention. Firstly, the results of the independent-samples t-test on CES-D scores at time 1 indicated that women reported higher depressive symptoms than men. Such findings are consistent with past research examining gender differences in depression (Hankin & Abramson, 2002). Explanations for these gender differences in depression have emerged from the biological, psychological and social sciences including women's greater genetic vulnerability, greater cognitive vulnerability, gender intensification and adherence to traditional gender roles, and interactions among these factors (Hankin, Abramson, & Siler, 2001; Hyde, Mezulis, & Abramson, 2008; Nolen-Hoeksema, 1987). In addition, research has suggested that young adult women use emotion-focused coping (i.e. rumination) more than their male peers do. Rumination has also been cited in past studies as a potential explanation of a greater propensity to develop depression (Abela & Hankin, 2011; Nolen-Hoeksema, 1987).

Secondly, the current findings indicated that cognitive factors contributed greatly to the depressive symptoms in Chinese undergraduate students. At the same time, the structural relations observed among our cognitive, environmental and clinical variables appeared to vary. The contribution of these individual factors to the development of depressive symptoms is most likely different. More specifically, the results suggest that cognitive vulnerability factors interact with negative events to predict change in depressive symptoms.

Thirdly, consistent with past research, the results of the current study provide support for operationalizing cognitive vulnerability to depression by utilizing a weakest link approach (Abela & Sarin, 2002). The results of hierarchical linear modelling analyses indicated that, in Chinese undergraduate students, higher weakest link scores were associated with greater increases in depressive symptoms following the occurrence of negative events. In addition, although we found statistical significance for our findings, the effect size for weakest link × stress interaction was small ($r_{effect\ size}$ = 0.15). However, it should be noted that small effect sizes should be expected when conducting non-experimental field research (McClelland &

Judd, 1993). Nevertheless, future research should replicate these findings before exploring this issue further.

The slope of the relationship between stress and depressive symptoms was greater in those students with lower weakest link scores. The current study was consistent with the conceptualization of an association between weakest link and depressive symptoms within a vulnerability–stress framework, wherein higher weakest link scores would be associated with greater increases in depressive symptoms following negative events (Abela & Alexander, 2007; Abela, Aydin et al., 2006; Abela & Sarin, 2002). Furthermore, researchers have used the weakest link approach to elucidate the neural mechanisms of subjects with a cognitive vulnerability to depression (Zhang et al., 2012; Zhong et al., 2011). Findings from such studies have shown that the weakest link approach can be used to provide information about the behavioural and neural mechanisms of subjects with a cognitive vulnerability to depression.

Fourthly, by utilizing a multi-wave longitudinal design in addition to idiographic, nomothetic and cross-level approaches for operationalizing high versus low levels of stress, the current study expands upon previous relevant research (which examined the diathesis–stress component of the hopelessness theory using longitudinal designs with only two time points and a nomothetic approach to analysis, e.g. Abela, 2001; Hankin et al., 2001). We can generate a relatively reliable estimate of each undergraduate student's degree of stress reactivity. Furthermore, in contrast to previous studies, stress levels for each participant in the current study were operationalized with reference to his or her own average level of stress, thereby minimizing the impact of individual difference variables, such as depressive symptoms and weakest link, on the reporting of levels of stressors (Abela, Skitch et al., 2006).

Several limitations to the current study should be noted. Firstly, self-report measures were used to measure depressive symptoms. Although the CES-D possesses high degrees of reliability and validity, one cannot draw conclusions about clinically diagnosed depression on the basis of self-report questionnaires. Secondly, self-report measures were also used to assess negative events. Although measures of negative events that only require participants to indicate whether an event occurred are less likely to be influenced by informant bias than those that ask subjects to rate the subjective impact of each event, more sophisticated methods of analysis such as interviewing procedures that assess contextual threat may provide better assessments of stress. Finally, the current study used measures that were originally developed in Western countries. Because past studies have indicated that social and cultural differences between countries may result in disagreement about the definitions of depressive symptoms and the etiology of depression (Auerbach, Eberhart, & Abela, 2010; George & Lynch, 2003), future research should aim to replicate the current findings using indigenous assessment instruments.

In conclusion, the results from the current study provide support for weakest link as a vulnerability factor for depressive symptoms in Chinese undergraduate students. Studies using multi-method and multi-informant approaches to assessment, indigenous assessment instruments, a combination of continuous and categorical approaches towards

operationalizing weakest link, and measures of symptom outcomes will likely expand upon the current results in important ways and spark insight into possible new approaches for the prevention and treatment of depression in Chinese undergraduate students.

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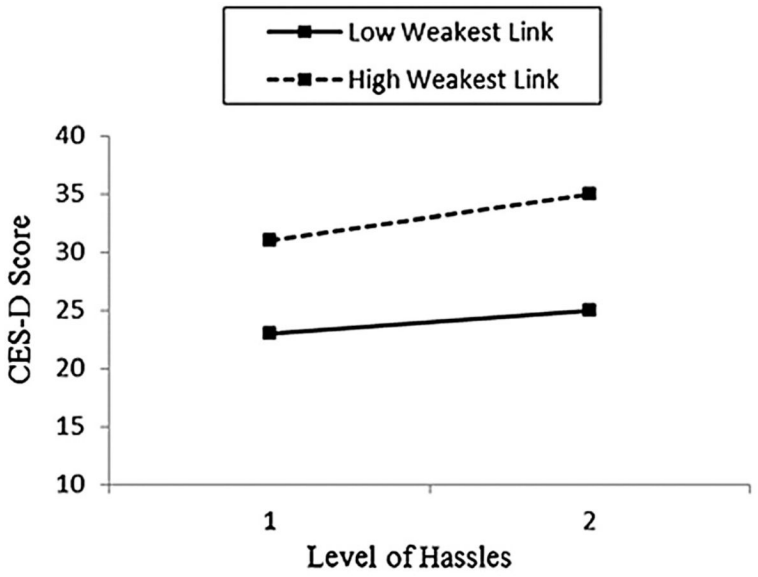

Figure 1.

Predicted slope of the relationship between negative events and depressive symptoms for Chinese university students possessing either high or low levels of weakest link score

Table I

Means and standard deviations for time 1 measures

	Total (*N* = 520)	Women (*N* = 290)	Men (*N* = 230)
Age (years)	20.08 (1.06)	19.84 (1.00)	20.35 (1.08)
Depressive symptoms	30.25 (7.72)	31.06 (7.59)	29.24 (7.77)
Weakest link	0.47 (0.31)	0.53 (0.40)	0.40 (0.32)
SHS	92.27 (26.23)	93.97 (26.75)	90.13 (25.46)

Depressive Symptoms: time 1 Center for Epidemiological Studies Depression Scale (mean scores); SHS: General Social and Academic Hassles Scale (mean scores).

Table II

Inter-correlations among time 1 measures

	1	2	3	4	5
1 Depressive symptoms	1				
2 Stress	0.29★★★	1			
3 Weakest link	0.44★★★	0.25★★★	1		
4 CSQ–consequence	0.37★★★	0.25★★★	0.84★★★	1	
5 CSQ–internality	0.34★★★	0.22★★★	0.83★★★	0.62★★★	1
6 CSQ–stability	0.38★★★	0.26★★★	0.83★★★	0.87★★★	0.60★★★

Depressive Symptoms: time 1 Center for Epidemiological Studies Depression Scale; stress: time 1 General Social and Academic Hassles Scale; weakest link: time 1 weakest link composite score; CSQ: Cognitive Style Questionnaire.

★ p <0.05.

★★ p <0.01.

★★★ p <0.001.

Table III

Means and standard deviations for all follow-up measures

		Total	Women	Men
CES-D	Follow-up 1	30.27 (7.81)	30.48 (7.63)	29.99 (8.03)
	Follow-up 2	30.52 (8.20)	30.58 (8.22)	30.45 (8.19)
	Follow-up 3	29.92 (7.73)	29.87 (7.33)	29.99 (8.28)
	Follow-up 4	29.59 (8.62)	29.36 (7.99)	29.87 (9.37)
	Follow-UP 5	28.55 (8.26)	28.26 (7.66)	28.93 (9.01)
	Follow-up 6	29.38 (8.27)	29.73 (8.35)	28.86 (8.14)
SHS	Follow-up 1	78.03 (27.11)	80.08 (27.49)	75.38 (26.44)
	Follow-up 2	80.12 (28.41)	83.74 (28.02)	75.45 (28.28)
	Follow-up 3	76.80 (30.15)	79.85 (30.72)	72.52 (28.89)
	Follow-up 4	72.31 (30.75)	75.62 (30.80)	68.10 (30.24)
	Follow-up 5	69.23 (31.09)	72.85 (30.84)	64.41 (30.83)
	Follow-up 6	70.26 (31.95)	74.05 (33.05)	64.70 (29.48)

CES-D: Center for Epidemiological Studies Depression Scale; SHS: General Social and Academic Hassles Scale.

Table IV

‘Weakest link’ scores as predictors of fluctuations in depressive symptoms during the follow-up interval

Predictors	*β*	*SE*	*F*	*df*	$r_{effect\ size}$
Gender	−1.22	0.48	6.47★★	1516	0.11
Time 1 CES-D	3.72	0.27	194.47★★★	1516	0.52
Stress	0.06	0.01	61.77★★★	1,2295	0.33
Weakest Link	0.95	0.27	12.86★★★	1516	0.16
Weakest Link × Stress	0.03	0.01	12.03★★★	1,2295	0.15

CES-D: Center for Epidemiological Studies Depression Scale; stress: within-subject fluctuations in General Social and Academic Hassles Scale scores during the follow-up interval; weakest link: time 1 weakest link composite score.

★ p <0.05.

★★ p <0.01.

★★★ p <0.001.