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ABSTRACT

Two studies have reported that low self-esteem is related to the holding of four specific irrational beliefs; further studies have suggested that these and other irrational beliefs are associated with different client problems. This study attempted to replicate the self-esteem findings with a younger population and improved controls and to explore whether other client problems derive from similar or different irrational beliefs. High school students (N=90) completed self-report measures of irrational beliefs, self-esteem, depression, facilitative anxiety, debilitative anxiety, neuroticism and extraversion. Teacher ratings of self-esteem behaviors and cumulative grade-point-averages were also obtained. Regression analyses indicated that: (1) demand for approval and anxious overconcern were again found to predict low self-esteem; (2) theoretically-appropriate divergent relationships occurred on the control measures; and (3) low self-esteem and other client problems are characterized by both common and unique sources of irrationality. Overall, these findings seem to indicate that certain irrational beliefs are discriminantly predictive of a variety of clinical problems, including low self-esteem, depression, anxiety and neuroticism. A practical application of these findings would be to tailor a structured cognitive therapy intervention program to target the specific irrationalities associated with the client problem. (Author/ABL)

On Thinking and Feeling Bad: Do Client Problems Derive From a Common Irrationality Or Specific Irrational Beliefs?

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Abstract

Two studies have reported that low self-esteem is related to the holding of four specific irrational beliefs; further studies have suggested that these and other irrational beliefs are associated with different client problems. The present study attempted 1) to replicate the self-esteem findings with a younger population and improved controls, and 2) to explore whether other client problems derive from similar or different irrational beliefs. High school students (n =102) completed self-report measures of irrational beliefs, self-esteem, depression, facilitative anxiety, debilitative anxiety, neuroticism and extraversion. Teacher ratings of self-esteem behaviors and cumulative grade-point-averages were also obtained. Regression analyses indicated that a) two of the four previously identified irrational beliefs again predicted low self-esteem; b) theoretically-appropriate divergent relationships occurred on the control measures; and c) low self-esteem and other client problems are characterized by both common and unique sources of irrationality.

On Thinking and Feeling Bad: Do Client Problems Derive From a Common Irrationality Or Specific Irrational Beliefs?

Many authors representing various classical schools of psychotherapy have focused on the role of irrational beliefs in the etiology of psychological dysfunction (e.g., Angyal, 1951; Ellis, 1962; Horney, 1950; Kelly, 1951; Raimy, 1955). In more recent years these seminal speculations have been corroborated by myriad studies reporting significant relationships between general measures of irrationality and a wide array of psychological problems including anger (Zwemer & Deffenbacher, 1984; Rohsenow & Smith, 1982), anxiety (Tobacyk & Downs, 1986; Zwemer & Deffenbacher, 1984), depression (Cash, 1984; Cook & Peterson, 1986; Hyer, Jacobsen, & Harrison, 1985; Rohsenow & Smith, 1982; Van Den Bout, 1986; Vestre, 1984), low self-esteem (Daly & Burton, 1983), nonassertiveness (Cash, 1984), poor problem-solving (Heppner, Reeder, & Larson, 1983; Tobacyk & Milford, 1982) and schizophrenia (Newmark & Whitt, 1983).

A number of studies have examined the effects of specific irrational beliefs on several of these problems. Daly and Burton (1983), for example, used

the Irrational Beliefs Test (IBT, Jones, 1969) and the Janis-Field Feelings of Inadequacy Scale (J-F, Eagly, 1967) to chronicle the kinds of irrationality related to the development of low self-esteem. The IBT is a widely known device consisting of 10 subscales corresponding to 10 common irrational beliefs articulated by Ellis (1962). Daly and Burton found that four of these subscales (namely, demand for approval, high self-expectations, anxious overconcern, and problem avoidance) were the best predictors of low self-esteem; none of the other scales significantly enhanced the utility of the regression equation. In effect, Daly and Burton provided a direct empirical link between four specific beliefs and self-esteem.

The Daly and Burton study raises two important theoretical questions: 1. Are their findings replicable with alternative measures and methods for assessing self-esteem, a younger population, and improved control procedures? 2. Are these same specific irrational beliefs associated with other client problems, or are other client problems characterized by their own unique constellation of irrational thoughts?

Replicability

The question of replicability was partly answered by McLennan (1987) who confirmed that these same four irrational beliefs were associated with low self-esteem assessed with a different self-report device (i.e., the Self-Esteem Scale, Rosenberg, 1965). However, both the McLennan and the Daly and Burton investigations suffer from mono-method bias (Cook & Campbell, 1979), that is, the use of a single assessment method (self-report) to represent the self-esteem construct. It is not known, for example, to what extent the obtained relationships are an artifact of common method variance. Different methods as well as measures of self-esteem are essential to better "triangulate on the referent" (Cook & Campbell, 1979, p. 65).

Although the measurement of self-esteem using alternative methods poses a thorny assessment task in adult populations, Chiu (1987) reportedly achieved some degree of psychometric success in doing so using teacher ratings of school children. The use of a younger population in the present study has both advantages and disadvantages. Should the relationships hold, the external validity of the Daly-Burton and McLennan findings would be enhanced, and the

consistency of the psychological phenomena over a longer age span would be established. A failure to replicate, however, would not seriously challenge the Daly-Burton and McLennan conclusions which derive from an older population.

Furthermore, although the Daly-Burton and McLennan studies provide confirmatory evidence in favor of the relationship between specific irrational beliefs and low self-esteem, the opportunity for disconfirmatory evidence to appear was negligible. Therefore, the present study used additional control measures having little or no theoretical relevance. These were the Extraversion Subtest of The Eysenck Neuroticism-Extraversion Scale (Eysenck, 1958), the Facilitative Anxiety Subscale of the Achievement Anxiety Test Scale (Alpert & Haber, 1960), and grade-point-average, which on an a priori basis would presumably fail to correlate at all.

Specific Irrationality and Other Client Problems

The issue of disconfirmatory evidence also suggests that it would be appropriate to examine the relationships between irrational beliefs and other client problems. Depression, debilitative anxiety, and neuroticism, for example, would presumably be less

related to the four specific irrational beliefs, than those beliefs are related to self-esteem. If not, then these specific irrational beliefs would appear to play a much greater role in psychological dysfunction than is now assumed. If so, then one might more efficiently tailor cognitive restructuring interventions to specific client problems.

Several studies have shed indirect light on this question, but the total picture remains cloudy. McLennan (1987), for example, reported that one of the irrational beliefs involved with low self-esteem (anxious overconcern), along with two additional uninvolved beliefs (helplessness and frustration reactivity) were predictive of depression as measured by the Zung Depression Inventory (Zung, 1965).

Earlier, Cash (1984) found that two of these beliefs (anxious overconcern and perfectionism) predicted depression as measured by the Beck Depression inventory (BDI, Beck, 1970); however, high self-expectations and problem-avoidance, linked previously by Daly and Burton and McLennan to low self-esteem, were also involved with depression. It thus might be argued that insofar as specific irrationality is concerned, depression measured by the BDI has more in

common with self-esteem than it does with depression measured by the Zung.

Moreover, Deffenbacher and his colleagues (Deffenbacher, Zwemer, Whisman, Hill, & Sloan, 1986) examined the relationship between the IBT and a large battery of self-report anxiety measures. In general, they found four specific irrational beliefs to be predictive of anxiety; these were frustration reactivity, helplessness, and perfectionism (all previously associated with depression), and anxious overconcern (previously associated with both low self-esteem and depression),.

Given that self-esteem, depression, and anxiety have been conceptually and psychometrically linked in the literature (Beck, 1990a; Beck, 1990b), it should come as no surprise to observe that in the foregoing studies these client problems are characterized by common and unique sources of irrationality. Nevertheless, these collated data do not speak well to the issue of disconfirmatory evidence. Only demand for approval appears uniquely related to low self-esteem. Anxious overconcern, on the other hand, characterizes all three client problems. The other irrational beliefs, if involved with any client problem, are

involved with two: High self-expectations and problem avoidance contribute to low self-esteem and depression; frustration-reactivity, helplessness and perfectionism predict both depression and anxiety.

Of course it is not known to what extent common method variance, psychometric inadequacies, sample vaguries and so forth contribute to or detract from the stability of the foregoing pattern. A simultaneous assessment of all variables on the same sample might help clarify the relationships between these constructs.

In the present study, the following client problems were concurrently measured: Depression (using the Beck Depression Inventory), debilitative anxiety (through the Achievement Anxiety Test Scale), and neuroticism (via the Eysenck Neuroticism-Extraversion Scale). Resource limitations precluded the use of alternative methods for assessing these problems. The logic of disconfirmatory evidence would suggest that the specific beliefs predictive of diminished self-esteem should yield weaker relationships with measures of other client problems (that is, unless all of these problems derive from a common irrationality).

In sum, the present study attempted to replicate

the self-esteem findings of Daly-Burton and McLennan with a different population and improved controls, and to explore whether other client problems derive from similar or different irrational beliefs. Essentially, the outcome pattern was expected to reflect that the relationships between measures of irrationality, low self-esteem, control variables, and other client problems would all converge and diverge in the appropriate theoretical directions.

Method

Subjects

Subjects were 102 tenth and eleventh grade students enrolled in six high-school social-science courses taught by two teachers in both semesters of the 1989-1990 academic year.

Measures

The Irrational Beliefs Test (IBT), developed by Jones (1969), is designed to measure the amount of agreement respondents have with each of Ellis' (1962) ten irrational beliefs. The test consists of 100 Likert-type items, ten per belief. Sample items are: "I hate to fail at anything" and "I want everyone to like me." Jones named the 10 subscales as follows: demand for approval, high self-expectations, blame

proneness, frustration reactivity, emotional irresponsibility, anxious overconcern, problem avoidance, dependency, helplessness, and perfectionism. Jones (1969) reported internal consistency estimates for the individual scales ranging from .66 to .80, a test-retest reliability coefficient of .92, and a concurrent validity coefficient of .61 obtained with ratings of psychiatric problems.

The Janis-Field Feelings of Inadequacy Scale (J-F, Eagly, 1967) is a twenty item measure which includes questions such as: "How often do you have the feeling that there is nothing you can do well?". The items are answered on a five-point Likert scale and are balanced for response set. The J-F has been found to have adequate validity and reliability (see Hamilton, 1971).

The Self-Esteem Scale (SES, Rosenberg, 1965) consists of 10 statements such as "I certainly feel useless at times" to which subjects indicate their agreement or disagreement. Silber and Tippett (1965) found a two week test-retest reliability coefficient of .85, and concurrent validity coefficients ranging from .56 to .83. The SES was developed specifically for use with high school students, hence it was chosen to complement the J-F.

The Self-Esteem Rating Scale for Children (SERSC, Chiu, 1987) attempts to measure self-esteem through teacher ratings. The SERSC contains 12 statements, such as "Hesitates to speak up in class", which are rated on five point scales from "never" to "always." Chiu (1987) reported a one-month test-retest reliability coefficient of .93 and interrater reliability coefficients of .82, .83 and .86 for three classes of students. Chiu also found concurrent validity coefficients of .56 and .54 using sociometric measures and popularity rankings by teachers.

The Beck Depression Inventory (BDI, Beck, 1970) is a 21-item measure of depression in a multiple-choice format. Each item derives from a specific symptom of depression identified in the psychiatric literature such as sadness, insomnia, and guilt (Stehouwer, 1985). Respondents choose one of four descriptors regarding the severity of their symptom. (Given the age of the population and the sensitivity of the setting, the item pertaining to "sex" was changed to "dating.") Beck (1970) reported a test-retest reliability of .90 and concurrent validity coefficients of.65 and .67 obtained using psychiatric ratings and the MMPI-D Scale.

The Achievement Anxiety Test Scale (AATS, Alpert & Haber, 1960) contains two Likert-type subscales assessing the degree to which anxiety facilitates or debilitates performance. The Facilitative subscale has nine items such as "Nervousness while taking a test helps me do better." The Debilitative subscale contains 10 items including "The more important the exam, the less well I seem to do." Alpert and Haber (1960) obtained test-retest reliabilities of .83 and .87 over a ten week period; concurrent validity coefficients of .38 and -.38 were found with general anxiety scales.

The Eysenck Neuroticism/Extraversion Scale (N/E, Eysenck, 1958) is a 12-item, paper-and-pencil inventory measuring the traits of neuroticism and extraversion. Respondents answer "yes" or "no" to items such as "Would you rate yourself as a lively individual?" Eysenck (1958) reported split-half reliabilities for the Extraversion and Neuroticism subscales of .71 and .79 respectively; test-retest reliabilities were slightly higher.

Grade Point Average Cumulative high school grade point averages (GPAs) were obtained from student files.

Analysis Plan

The ten subscales of the IBT served as predictor variables; the remaining devices functioned as criteria. Self-esteem was a primary criterion operationally defined by three measures representing two different methods of assessment (the J-F and the SES vs the SERSC). Presumably, the four designated subscales of the IBT should strongly predict self esteem, and fail to predict scores on control devices, namely the Extraversion subscale of the N/E, the Facilitative Anxiety subscale of the AATS, and GPA. The remaining dependant variables (the BDI, the Debilitative Anxiety subscale of the AATS, and the Neuroticism subscale of the N/E) were cast in the role of exploratory criteria to address the question of whether or not the specific thoughts that account for lowered self-esteem are associated with other clinical concerns as well.

Procedures

Informed consent was obtained from both parents and students. The students were told simply that they were taking part in a "Survey of Student Beliefs." Students completed the IBT, J-F, SES, N/E, AATS, and the BDI during their social science classes. Less than

one hour was required to finish all six measures. The two social science teachers concurrently completed the SERSC on their own students in the six classes. Since individual student course-schedules were highly variable, an additional group of six teachers of other courses were needed to secure an independant SERSC rating on a sample of 40 of these students. GPA data was obtained from student records.

Results

Preliminary Analyses

Of the 102 students who participated, 12 were dropped from the analysis because of incomplete data. All results reported below pertain to the remaining 90 subjects.

The attempt to assess self-esteem via an alternative method (the SERSC) yielded unreliable, and hence unusable data. An insignificant inter-rater reliability coefficient of .29 was obtained between the two sets of teachers; hence these data were not considered further.

Inter-correlations between all measures are presented in Table 1. Forward stepwise regressions were run in which the ten irrational beliefs were regressed on each criterion variable in order to

isolate the unique variance attributable to each belief. These regression analyses are summarized in Table 2; only those predictors contributing significantly to the regression equation are shown.

Insert Tables 1 and 2 about here.

Regression Analyses Pertaining to the Question of Replicability

Question 1 concerned whether the findings of Daly and Burton (1983) and McLennan (1987) were replicable with alternative measures and methods for assessing self-esteem, a younger population, and improved control procedures. Both Daly/Burton and McLennan identified four specific irrational beliefs as precursors to low self-esteem, namely, demand for approval, high self-expectations, anxious overconcern, and problem avoidance.

In the present study (see Table 2) the specific irrational beliefs most predictive of low self-esteem as measured by the Janis Field Feelings of Inadequacy Scale (J-F) were: demand for approval ($F = 16.51$, $p < .0001$), anxious overconcern ($F = 6.72$, $p < .01$), and helplessness ($F = 6.46$, $p < .01$). Curiously,

perfectionism was found to predict high self-esteem ($F = 5.34$, $p < .05$). This stepwise regression model accounted for 40 percent of the variance ($p < .0001$).

A second stepwise multiple regression using the Self-Esteem Scale (SES) produced similar results. The irrational beliefs found to be most predictive of low self-esteem were: Anxious Overconcern ($F=10.49$, $p < .01$), Demand for Approval ($F = 9.47$, $p < .01$), and helplessness ($F = 9.16$, $p < .01$). Perfectionism was again found to be predictive of high self-esteem ($F = 4.27$, $p < .05$). This model accounted for 42 percent of the variance ($p < .0001$).

In sum, the present study found that two of the four irrational beliefs identified by Daly/Burton and McLennan were predictive of low self-esteem on both self-report measures (i.e., demand for approval and anxious overconcern). However, two other irrational beliefs, not previously identified, were also linked to self-esteem: Helplessness was related to low self-esteem and perfectionism predicted high self-esteem.

The regression analyses on each of the control measures all yielded theoretically-appropriate divergent relationships. None of the irrational beliefs predicted extraversion, and those irrational

beliefs which were found to be linked to facilitative anxiety and grade point average were not associated with self-esteem.

More specifically, two irrational beliefs were found to predict facilitative anxiety, namely, frustration reactivity ($F = 6.01$, $p < .01$) and emotional irresponsibility ($F = 4.27$, $p < .05$). (The higher the irrationality, the more facilitative anxiety reported). This model accounted for 14 percent of the variance ($p < .001$).

The analysis of grade point average data revealed two beliefs as most predictive of low GPA; these were emotional irresponsibility ($F = 9.58$, $p < .01$) and blame proneness ($F = 5.82$, $p < .05$). Curiously, a third irrational belief, high self-expectations ($F = 4.92$, $p < .05$), was found to significantly predict high GPA (apparantly, having "irrational" self-expectations contributes to academic success). This model accounted for 13 percent of the variance ($p < .001$).

Regression Analyses Pertaining to the Question of These Specific Irrational Beliefs in Other Client Problems

Question 2 concerned whether the same specific irrational beliefs associated with low self-esteem were

likewise linked to other client problems, or were other client problems characterized by their own unique constellation of irrational thoughts? The logic of disconfirmatory evidence would suggest that the specific beliefs predictive of diminished self-esteem should yield weaker relationships with measures of other client problems (that is, unless all of these problems derive from a common irrationality).

The regression analysis performed on the BDI data yielded three irrational beliefs being most predictive of depression: helplessness ($F = 6.83$, $p < .01$), problem avoidance ($F = 5.13$, $p < .05$), and anxious overconcern ($F = 4.58$, $p < .05$). These three beliefs accounted for 28 percent of the variance ($p < .0001$).

The analysis of the neuroticism scale indicated that the same three beliefs which predicted depression were significantly linked to neuroticism as well, namely, anxious overconcern ($F = 10.52$, $p < .01$), problem avoidance ($F = 8.23$, $p < .01$), and helplessness ($F = 4.90$, $p < .05$). These beliefs accounted for 37 percent of the variance ($p < .0001$).

Three beliefs significantly predicted debilitative anxiety; these were helplessness ($F = 23.73$, $p < .0001$), problem avoidance ($F = 8.87$, $p < .01$), both

common to depression and neuroticism, and perfectionism ($F = 7.63$, $p < .01$). Thirty-six percent of the variance was accounted for by these beliefs ($p < .0001$).

In so far as specific irrationality is concerned, depression and neuroticism have everything in common, and much in common with debilitative anxiety, namely, helplessness and problem avoidance. However, anxious overconcern additionally characterizes depression and neuroticism, whereas perfectionism further defines debilitative anxiety.

Low self-esteem, likewise, is associated with both common and unique sources of irrationallity. Demand for approval is linked only to low self-esteem; however, diminished self-esteem shares 1) anxious overconcern with depression and neuroticism, and 2) helplessness and perfectionism with debilitating anxiety.

Discussion

With regard to question 1, the results of this study offer a partial replication and extension of the Daly/Burton and McLennan findings to a younger subject pool. Two previously identified beliefs, demand for approval and anxious overconcern, were again found to

predict low self-esteem; two other beliefs, however, did not hold up in the present study, namely, high self-expectations and problem avoidance. Instead, two new irrational beliefs were linked to the development of low self-esteem; these were helplessness and perfectionism, the latter in the opposite direction. This failure to completely replicate does not seriously challenge the findings of the earlier studies which were conducted on older samples. Perhaps the relationship between specific irrational beliefs and low self-esteem varies across the lifespan.

Moreover, although these results were consistent on both self-report measures of self-esteem, an unacceptably low inter-rater reliability on the SESRC precluded an examination of the role of monomethod bias. Chiu (1987) was able to achieve psychometric success using elementary-school teachers to rate self-esteem behaviors; perhaps the high-school teacher raters in the present study were comparatively less able to do so given their briefer daily contacts and increased student loads.

On all control measures, however, theoretically appropriate divergences occurred. None of the specific irrational beliefs related to self-esteem in this

study, (or indeed in the Daly/Burton and McLennan investigations) was linked to extraversion, facilitative anxiety or grade point average.

With regard to question 2, the results of this study are reasonably consistent with the literature review. Moreover, the attempt to address the problem of sample vagaries in the literature by simultaneously assessing all client problems on a single sample adds confidence to the conclusions. In this study, demand for approval uniquely characterizes low self-esteem, which, however, shares helplessness and anxious overconcern with depression and neuroticism, and helplessness and perfectionism with debilitating anxiety. Problem avoidance did not contribute to low self-esteem; it did, however, predict depression, anxiety and neuroticism. In sum, low self-esteem and the other client problems measured in this study appear to derive from both common and ideosyncratic irrational roots, a phenomenon which at least partially addresses the issue of discriminant validity.

The finding that demand for approval uniquely characterizes low self-esteem is fully consistent with all previous investigations. Concerning depression, the results of this study are consistent with earlier

studies. Helplessness, problem avoidance and anxious overconcern have all been previously shown to be related to depression. However, frustration reactivity, and high self-expectations, both of which have already been linked to depression, were not found to be significant predictors in this study. These results would appear to support Beck's (1979) contention that depressives tend to maintain a belief system that encourages negative self-assessments and negative affect.

With regard to anxiety, the present findings partially replicate Deffenbacher (1986). Both helplessness and perfectionism were linked to anxiety in the present study, as they were earlier. Problem avoidance, however, was also identified in relation to anxiety in this study and had not been mentioned previously. Further, anxious overconcern and frustration reactivity were not linked to anxiety in the present study, although they had been identified by Deffenbacher. One possible contribution to the differences in findings could be the use of different measures to assess anxiety in the previous study.

The results of this study concerning neuroticism seem theoretically consistent. Two of the beliefs

found to be predictive of neuroticism in this study were also predictive of anxiety (problem avoidance and helplessness). The third belief, anxious overconcern, is likewise theoretically relevant.

Overall, these findings seem to indicate that certain irrational beliefs are discriminantly predictive of a variety of clinical problems, including low self-esteem, depression, anxiety and neuroticism. The specific beliefs identified seem to imply strict demands of, and negative expectations about life events as well as a negative style of processing personally relevant information.

The results of this study have important implications for both practice and research. One of the more practical applications of these findings would be to tailor a structured cognitive therapy intervention program to target the specific irrationalities associated with the client problem. Such a program could significantly enhance the efficacy of cognitive treatments of these clinical problems. This study also serves to further illuminate the intricate interrelationships of the cognitions underlying low self-esteem and other common client problems. One possibly important research direction

could be to further clarify the specific kinds of self-statements that combine to make up the irrational beliefs identified as problematic. Such information could prove useful in gaining a better understanding of the etiological factors involved in these important client problems.

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Table 1

Inter-correlations Among Measures

	J-F	SES	SERSC	BDI	Facilitative Anxiety	Debilitative Anxiety	Extraversion	Neurotism	GPA
J-F	-								
Rosenberg	.83								
Self-Esteem Rating Scale(1)	.32	.28	-						
Beck	-.52	-.62	-.29	-					
Facilitative Anxiety	-.31	-.31	-.26	.19	-				
Debilitative Anxiety	-.46	-.48	-.41	.44	.61	-			
Extraversion	.18	.09	-.04	.10	.07	.07	-		
Neuroticism	-.39	-.42	-.37	.46	.30	.47	.21	-	
GPA	.07	.17	-.30	-.10	-.25	-.27	-.02	-.26	-
Demand for Approval	-.48	-.42	-.17	.32	.15	.26	.08	.33	.12

Table 1 cont.

	J-F	SES	SERSC	BDI	Facilitative Anxiety	Debilitative Anxiety	Extraversion	Neurotism	GPA
High Self-Expectations	-.39	-.27	-.30	.24	.00	.17	.03	.46	.12
Blame Proneness	-.03	-.19	.01	.14	-.18	.16	.00	.29	-.17
Frustration Reactivity	-.30	-.28	-.30	.26	-.31	.27	-.02	.33	-.04
Emotional Irresponsibility	-.19	-.21	-.16	.12	.29	.25	-.02	.13	-.26
Anxious Overconcern	-.49	-.54	-.24	.41	.26	.40	.04	.52	-.05
Problem Avoidance	-.40	-.41	-.32	.41	.20	.44	.05	.47	-.09
Dependence	.11	-.14	.00	.06	.22	.25	.01	.19	-.12
Helplessness	-.45	-.50	-.32	.44	.27	.50	.01	.46	-.23
Perfectionism	.15	-.15	-.16	-.01	.04	.19	.13	.01	-.06
IBT Total	-.53	-.55	-.36	.46	.36	.53	.05	.57	-.14

J-F: Janis-Field Feelings of Inadequacy Scale; SES: Self-Esteem Scale; SERSC: Self-Esteem Rating Scale for Children; BDI: Beck Depression Inventory; Facilitative Anxiety to Debilitative Anxiety: Subscales of the Achievement Anxiety Test Scale AATS; Neuroticism and Extraversion: Subscales of the Eysenck; Neuroticism/Extraversion Scale, NE; GPA: Grade Point Average

Table 2

Stepwise Regressions Among Irrational Beliefs and Criterion Variables

Significant Predictors	B	F	R^2	R^2(adjusted)
Feelings of Inadequacy Scale				
			.43****	.40
anxious over concern	-.24	6.27**		
demand for approval	-.37	16.51****		
helplessness	-.23	6.46**		
perfectionism	.19	5.34*		
Self-Esteem Scale				
			.44****	.42
anxious over concern	-.31	10.49**		
helplessness	-.27	9.16**		
demand for approval	-.27	9.47**		
perfectionism	.17	4.27*		
Depression Inventory				
			.30****	.28
helplessness	.26	6.33**		
problem avoidance	.22	5.13*		
anxious overconcern	.21	4.58*		

Table 2 cont.

Significant Predictors	B	F	R^2	R^2(adjusted)
Facilitative Anxiety				
			.14***	.12
frustration reactivity	-.25	6.01*		
emotional irresponsibility	.21	4.27*		
Debilitative Anxiety				
			.38****	.36
helplessness	.44	23.73****		
problem avoidance	.27	8.87**		
perfectionism	.23	7.63**		
Neuroticism				
			.39****	.37
anxious overconcern	.32	10.52**		
problem avoidance	.27	8.23**		
helplessness	.21	4.90*		
Extraversion				
no predictors				

Table 2 cont.

Significant Predictors	B	F	R^2	R^2(adjusted)
Grade Point Average				
			.16***	.13
emotional irresponsibility	-.31	9.58**		
blame proneness	-.23	5.82*		
high self-expections	.22	4.92*		

* p<.05 ** p<.01 *** p<.001 **** p<.0001

[1] Higher scores indicate more of the named variable.