

## The Effectiveness of Hardiness Training on Test Anxiety

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**Objectives:** The purpose of this study was to investigate the effect of hardiness training on test anxiety of first-grade female students of high schools in Tehran. **Method:** for this purpose sixty students, were selected by multistep cluster sampling method. Tools of study were Sarason Test Anxiety Scale (S.TAS) and Hardiness Training. **Results:** The results indicated that the test anxiety rate of students who received hardiness training was significantly lower than test anxiety of students who did not. **Discussion:** Hardiness training is effective in decreasing student test anxiety.

**Keywords:** Test Anxiety, Hardiness Training, Student.

Kobasa (1979) defined "hardiness" as a personality structure consisting of three main attitudes include commitment, control, and challenge. Individuals high in the commitment attitude become involved in a situation rather than withdrawing from it; they are able to turn stressful circumstances with disastrous potential into growth opportunities instead. They don't easily blucked under pressure due to investments made to self and the environment (Judkins et al, 2005). Those high in the control attitudes think that they can influence outcomes, rather than seeing themselves as powerless in the face of circumstances. They thought to be able to manage their studies; such as, time management, increasing their activities leading to academic achievement, and taking responsibility for their own learning and development (Sheard&Golby, 2007).

Those had higher negative attitudes, believe that fulfilment can be found in acquiring wisdom through the ongoing growth of learning from the negative and positive experiences of an active life, rather than in easy comfort, security, and routines (Maddi, 2007; Maddi et al, 2002).

Hardy individuals consider the stressful situations as less dangerous and more controllable (Zakin et al, 2003), additionally, hardiness attitude enhances stress

resistance in various life situations (Kobasa, Maddi& Kahn, 1982). Individuals who feel less threatened by the stressful situations and feel more control over the environment are able to confront challenging situations with calmness and self-confidence (Maddi& Hightower, 1999). Hardy individual, compared with no hardy individuals, have less physiologic responses in response to stressful situations due to their calmness. Hardiness (Kobasa, 1982) is one such moderator variable related to personality factors in psychological health including anxiety.

Students face many challenges as they pursue their educational goals. They associate with several identifiable stressors such as energy, time, and learning or enhancing new knowledge and skills. Research has demonstrated that taking examinations is one of the most stressful of these challenges students face, and poor educational performance was reported as an important consequence (Patterson &Arnetz, 2001). Test Anxiety Disorder, is a condition marked by persistent fear of exam or performance situations (American Psychiatric Association, 1994). Eysenck (1973) argued that test anxiety is thought to reflect a state of worry in which the individual generates off-task cognitions and negative self-evaluations which divert cognitive resources away from test performance.

When students impress negative meaning to such experiences, so their motivations and performances are suffering (Amirkhan, 1998; Covington, 1993; Struthers et al, 2000). Students who continue to have

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high anxiety during exams over a period of time without learning to control it often begin to feel helpless and even more stressed (Struthers et al, 2000; and Abramson et al, 1980). This stress—which can take the form of anxiety, an inability to make decisions, and distress (Nonis et al, 1998)—can endanger their academic and professional future. Despite the acknowledged importance of the anxiety and stress for students, there are few experimental studies that have examined approaches schools can use to help students decrease their stress and anxiety when taking tests (Nonis et al, 1998). Research shows that there is a negative and significant relationship between hardiness and anxiety and also with test anxiety (Glaser and Glaser, 1990). Kobasahas argued that hardy persons are less disturbed in facing stressful conditions, since they face these situations better (Sarafino, 2008). It makes sense that those who have effective methods for coping with and controlling anxiety would perform better under stressful conditions (such as important tests). Studies have shown a positive relationship between hardiness and Commitment with university academic achievement (Sheard&Golby, 2007). In addition, researchers have found the positive influence of hardiness on undergraduates coping with university stress (Maddi, Wadhwa, & Haier, 1996), and student adjustment to university life (Mathis & Lecce, 1999). Two studies demonstrated that in stressful conditions, individuals with hardy attitudes had the courage, strength, and motivation to do the hard work of transformational coping, developing supportive social interactions, and facilitating self-care (Maddi, 2007; Maddi&Kobasa 1984). According to one view (Sappington, 1989) the capacity to resist mental pressure can be learned. Based on this idea, Khoshaba and Maddi (2001) suggested a hardiness training program to managers. They found that this program led to higher job satisfaction and lower levels of depression and anxiety. Although these changes are not easy, it is possible through comprehensive and continuous effort (Janda, 2001). Maddi, Kan, and Maddi (1998) demonstrated the effectiveness of hardiness training as compared to relaxation training and meditation. Hardiness training was effective in increasing job satisfaction and social support, and in decreasing anxiety, sense of pressure, and disease intensity. Hardiness can also decrease stress, mental diseases, functional and behavioral weaknesses, and anxiety by activating approaches of transformational coping (active, determining) with stressful conditions instead of approaches of regressive coping (denying, avoiding) (Maddi, 2007). MohamadiHasel et al., (2011) have reported that hardiness can be taught and suggested that the use of a hardiness training program can be effective in increasing hardiness and decreasing perceived stress levels in students and may have a positive impact

on them. Tierney and Lavelle (1997) examined whether a training module could increase hardiness levels among nurses. Rowe (1999) reported sustained increased hardiness over 6 to 24 months following periodic training sessions. Similar results have been also found by Judkins and Ingram (2002). The present study is the first to investigate the efficacy of hardiness training on test anxiety. It was motivated by the realization that stress is in large part self-created; that is, persons can control their anxiety, that one person may feel a tremendous amount of stress in a given situation, whereas another person in the same situation simply feel excited about meeting a challenge. Hardiness training helps individuals use hardness and overcome the potential energy within anxiety and use it to effectively meet a challenge. The current study proposes and investigates three hypotheses in an experimental design:

**Hypothesis 1:** Hardiness training can decrease affects of students' test anxiety.

**Hypothesis 2:** Hardiness training can change the meaning of students assign to the excitation often experienced during testing.

**Hypothesis 3:** Hardiness training can decrease students' worry about testing.

## Method

### Study design and participants

In present study, a pretest – post test design with experimental and control groups were applied. The population consisted of female first-grade girl students in high schools of Tehran educational area 2. The sample were selected randomly by cluster sampling method among high schools of District 2 from which one high school was selected randomly. Sixty students were selected and divided into two groups of 30 and one group was randomly defined as the case group and the other as control group.

### Measures

In this research two tools were used: the Sarason Test Anxiety Scale (STAS) and Hardiness Training package. Firstly, participants of two groups filled the STAS and test anxiety, then the experimental group received the Hardiness Training. After intervention subjects were asked to fill STAS and test anxiety again.

**Hardiness Training Tool:**The Hardiness training tool is an educational package which was compiled on the basis of Kobasa and Maddi hardiness principles by Demateis (Demateis, 1999). This package includes 10 sessions of, 1.5 hours each.

**Sarason Test Analysis Scale (S.TAS):** This scale has a total 25 questions which participants mark as either

“true” or “false.” The scale has two elements of Excitation and Worrying (Sarason, 1961). Reliability of scale estimated 0.89 in this study via calculating Cronbach’s alpha.

### Results

The data of all 60 students within two groups to the Sarason Test Anxiety Scale, in pre-test and post-test, before and after receiving the hardiness training, were gathered and scored. Table 1 shows the means and standard deviations of the Test Anxiety (TA) and its components for 2 groups in pre-test and post-tests. As

table 1 shows the TA mean of the case group was 0.59 in the pre-test and 0.33 in the post-test, which showed a decrease in TA. Also for the TA components, Excitation and Worrying, the means of the case group decreased in the post-test. whereas, the control group did not show such a change.

The results of table 1 indicated that the Excitation component of test anxiety was more reduced by hardiness training (mean difference = -0.28) than the worry component (mean difference = -0.23).

The effects of pre-test and the hardiness training were analysed based on the analysis of covariance and reported in Table 3.

**Table 1**

*Means and standard deviation of the Test Anxiety and its components*

Variables	Pre-test		Post-test	
	M	SD	M	SD
<b>Case (N=30)</b>				
Test Anxiety	0.59	0.103	0.33	0.186
Excitation	0.57	0.168	0.29	0.213
Worrying	0.59	0.117	0.36	0.199
<b>Control (N=30)</b>				
Test Anxiety	0.58	0.109	0.59	0.116
Excitation	0.54	0.173	0.56	0.179
Worrying	0.61	0.148	0.61	0.137

**Table 2**

*Summary results of the t-test for comparing means in 2 groups in pre-test*

Variables	Mean diff.	t	df	P
Test Anxiety	0.003	0.098	58	0.923
Excitation	0.037	0.832	58	0.409
Worrying	-0.020	-0.582	58	0.563

The results of ANCOVA indicated that there was a significant ( $p < 0.001$ ) linear relationship between the pre-test and the post-test scores for Test Anxiety and its components. On the other hand, the main effect of the group was significant on the Test Anxiety in the post-test after controlling the effect of the pre-test

( $F = 58.36$ ,  $df = 1, 57$ ,  $P < 0.001$ ). This implies that Test Anxiety differed significantly between groups (controlling for the pre-test effect). The same results were obtained for the Excitation and Worrying components as well.

**Table 3**

*The ANCOVA for the effect of hardiness training on the Test Anxiety and its components*

Variables	Source	F	df1	df2	P	$\eta^2$
Test Anxiety	Pre-test	23.81**	1	57	0.000	0.295
	group	58.36**	1	57	0.000	0.506
Excitation	Pre-test	14.95**	1	57	0.000	0.208
	group	38.75**	1	57	0.000	0.405
Worrying	Pre-test	20.33**	1	57	0.000	0.263
	group	38.65**	1	57	0.000	0.404

\*\*Significant at the 0.001 level.

To compare dependent variables in different groups, the Tukey's test was used and the results are displayed in Table 4.

**Table 4**  
*Adjusted means and the Tukey's test for comparison of 2 groups*

Variables (post-test)	Experiment (1)		Control (2)	
	M	SE	M	SE
Test Anxiety	0.334	0.024	0.593	0.024
Excitation	0.284	0.032	0.570	0.032
Worrying	0.369	0.027	0.607	0.027

As seen in the Table 4, the adjusted means of Test Anxiety and its components of the case group are significantly less than the means of the control group.

### Discussion

The results of the current study showed that students who received 10 sessions hardiness training had lower levels of test anxiety. These results are consistent with previous research findings (Glaser and Glaser, 1990; MohamadiHasel et al., 2011; Maddi and Khoshaba, 2001). MohamadiHasel et al., (2011) reported decrease in perceived stress levels and increase of hardiness levels after the related training. Additionally, the effect of hardiness-promoting and stress-coping affairs on increasing hardiness levels has been approved in various studies (see Judkins and Ingram, 2002; Rowe, 1999). Hardiness training could help to increase an individual's cognitive and excitatory control; those who participated in the training were more able to control agitation, emotions, and excitement. Hardy individuals feel more capable of attaining their goals and are less likely to become emotionally exhausted. Such self-confidence enhances the capacity to control distracting thoughts and worries related to test-taking. Important changes in skills or behaviour related to all three elements of hardiness. The hardiness component of control enhance the potential to buffer stress, making the unforeseen stressors less harmful (Kobasa et al., 1982).

The fundamental sense of being in control appears to be associated with an optimistic view of stressful events; a person who feels in control has more access to internal resources for responding to stressors. persons with hardiness personality trait are better able to adjust to stressors—such as those relating to test question—as a natural part of life and to develop methods for coping with stress.

The effect of commitment on test anxiety may be illustrated by students who turn stressful circumstances by possible potential to growth opportunities instead. They become deeply involved

in their studies, feeling this as an interesting, and important activity. Students with well control should manage their studies (Sheard & Golby, 2007). Hardiness training teaches people to recognize non-functional thoughts and to address the challenges. The training offers three techniques—relaxation, deep breathing, and mental imagery—to decrease excitatory responses of anxiety (such as those that may be experienced during test-taking). Further, it promotes personal satisfaction and self-confidence so that the test anxiety will be decreased. The hardy attitudes in students can diminish stresses to grow and enhance performance via understanding and fulfilment, ultimately enhancing physical and mental health (Maddi, 2006).

Hardiness allows for the integration and effective stress resistance in various events by enhancing openness and flexibility (Kobasa et al., 1982). Hardiness could become a key disposition in health care. In brief, hardiness training affects test anxiety through cognitive system and autonomous nervous system interventions. In cognitive intervention, hardiness training decreases test anxiety improves effectiveness of coping mechanisms by teaching individuals to recognize negative thought patterns and develop more positive thoughts. Autonomous interventions (relaxation, deep breathing and mental imagery techniques) affect physiologic reactions and thus decrease test anxiety. In overall, it seems that hardiness training could be successful in providing the knowledge necessary to promote hardiness among this group. And this transformational process decrease test anxiety levels among high school students.

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## References

- Abramson, L. Y., Garber, J., & Seligman, M.E.P. (1980). Learned helplessness in humans: an attributional analysis. In: Garber J, Seligman MEP, editors. *Human helplessness: Theory and application*, New York: Academic Press. P. 3–34.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Amirkhan, J. H. (1998). Attributions as predictors of coping and distress. *Personality and Social Psychology Bulletin*, 24(9), 1006-1018.
- Covington, M. V. (1993). A motivational analysis of academic life in college. In: Smart J, editor. *Higher education: handbook of theory and research*, New York: Agathon Press. P. 50–93.
- Demateis, T. (1999). *Hardiness training: the hardiness personality in theory, research and practice*. Curriculum at Teachers Institute.
- Eysenck, H. J. (1973). Personality, learning, and anxiety. In H. J. Eysenck (Ed.), *Handbook of abnormal psychology*, 2nd ed. London: Pitman.
- Glaser, J. K., Glaser, R. (1990). *Stress and immune function in humans*. In: Ader R, Felten DL, Cohen N, editors. *Psychoneuroimmunology*. 2nd ed. New York: Academic Press.
- Janda, L. H. (2001). *The psychologist's book of personality tests*. New York: John Wiley and Sons.
- Judkins, S.K., Arris, L., & Keener, E. (2005). Program Evaluation in Graduate Nursing Education: Hardiness as a Predictor of Success among Nursing Administration Students. *Journal of Professional Nursing*, 21, 314-321.
- Judkins, S. K., & Ingram, M. (2002). Decreasing stress among nurse managers: A long-term solution. *Journal of Continuing Education in Nursing*, 33, 259-264.
- Kobasa, S.C. (1979). Stressful life events, personality, and health: an inquiry into hardiness. *Journal of Personality and Social Psychology*, 37, 1-11.
- Kobasa, S.C. (1982). Commitment and coping in stress resistance among lawyers. *Journal of Personality and Social Psychology*, 42, 707-717.
- Kobasa, S.C., Maddi, S.R., & Kahn, S. (1982). Hardiness and health: A perspective study. *Journal of Personality and Social Psychology*, 42, 168-177.
- Maddi, S.R. (2006). Hardiness: the courage to grow from stresses. *Journal of Positive Psychology*, 1, 160-168.
- Maddi, S.R. (2007). Relevance of hardiness assessment and training to the military context. *Military Psychology*, 19, 61–70.
- Maddi, S. R., Hightower, M. (1999). *Hardiness and optimism as expressed in coping patterns*. *Consulting Psychology Journal*, 51, 95-105.
- Maddi, S.R., Khan, & Maddi, K.L. (1998). The effectiveness of hardiness training. *Consulting Psychology Journal*, 50, 78–86.
- Maddi, S. R., & Khoshaba, D. M. (2001). *HardiSurvey III–R: test development and internet instruction manual*. Irvine, CA: Hardiness Institute.
- Maddi, S. R., & Khoshaba, D. M. (2001). *Personal Views Survey III–R: internet instruction manual*. Irvine, CA: Hardiness Institute.
- Maddi, S.R., Khoshaba, D.M., Persico, M., Lu, J., Harvey, R., & Bleecker, F. (2002). The personality construct of hardiness, II: relationships with comprehensive tests of personality and psychopathology. *Journal of Research in Personality*, 36, 72–85.
- Maddi, S.R., & Kobasa, S.C. (1984). *The hardy executive: health under stress*. Homewood, IL: Dow Jones-Irwin.
- Maddi, S.R., Wadhwa, P., & Haier, R.J. (1996). Relationship of hardiness to alcohol and drug use in adolescents. *American Journal of Drug and Alcohol Abuse*, 22, 247–257.
- Mathis, M., & Lecce, L. (1999). Hardiness and college adjustment: identifying students in need of services. *Journal of College Student Development*, 40, 305–309.
- MohamadiHasel, K., Abdolhoseini, A., & Ganji, P. (2011). Hardiness Training and Perceived Stress among College Students. *Journal of Social and Behavioral Sciences*, 30, 1354 – 1358.
- Nonis, S.A., Hudson, G.L., Logan, L.B., Ford, C.W. (1998). Influence of perceived control over time on college students' stress and stress-related outcomes. *Research in Higher Education*, 39, 587–605.
- Patterson, T., & Arnetz, D. (2001). Factor analysis and predictors of student stressors. *Psychotherapy and Psychosomatics*, 70(3), 39–49.
- Rowe, M.M. (1999). Teaching health-care providers coping: Results of a two-year study. *Journal of Behavioral Medicine*, 22(5), 511-527.
- Sappington, A. (1989). Adjustment: theory, research, and personal applications. Pacific Grove, CA: Brooks/Cole.
- Sarafino, E. (2008). *Health psychology: biopsychosocial interactions*. 6th ed. New York: John Wiley and Sons.
- Sarason, I.G. (1961). Test anxiety and the intellectual performance of college students. *Journal of Educational Psychology*, 52, 201–206.
- Sheard, M., & Golby, J. (2007). Hardiness and undergraduate academic study: The moderating role of commitment. *Journal of Personality and Individual Differences*, 43, 579–588.
- Struthers, C.W., Perry, R.P., & Menec, V.H. (2000). An examination of relationship among academic stress, coping, motivation, and performance in college. *Research in Higher Education*, 41:581–592.
- Tierney, M. J., & Lavelle, M. (1997). An investigation into modification of personality hardiness in staff nurses. *Journal of Nursing Staff Development*, 13, 212-217.
- Zakin, G. Solomon, Z., & Neriya, Y. (2003). Hardiness, attachment style, and long term psychological distress among Israeli POWs and combat veterans. *Journal of Personality and Individual Differences*, 34, 819–829.

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