



Effectiveness of the Impact of Hardiness on Increased Happiness and Academic Achievement of Students in Kermanshah City (High School of Medical Sciences) for the Academic Year 2016 - 2017

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Abstract

Background: One of the most important topics in positive psychology that is highly regarded is hardiness. This study aimed to investigate the role of hardiness training in increasing happiness and academic achievement of students in Kermanshah city (high school of medical science) for the academic year 2016 - 2017.

Methods: This was an experimental study. The study population included all 17 to 20-year-old female students, about 120 in total, who were referred to the High School of Medical Science to prepare for the university entrance exam in the academic year 2016 in the city of Kermanshah. Thirty Minecraft students were randomly chosen and divided into the experimental and control group, each consisting of 15 participants. The experimental group received just under hardiness training programs, and the control group received no intervention. The data obtained from the Oxford happiness questionnaire scores and percentage scores earned for the monthly course tests held as per the school curriculum were used. SPSS statistical software for was used for data analysis. Analysis of covariance and test research hypotheses for repeated measures were used.

Results: The effect size of the hardiness training on increasing happiness of students was 51 percent, and the effect size of hardiness training on students' academic achievement in Minecraft was 34 percent ($P < 0.01$).

Conclusions: The results showed that hardiness training increases the happiness and academic achievement of Minecraft students.

Keywords: Happiness, Achievement, Students

1. Background

Academic achievement means to increase the level of learning of students, increase their scores, and students' acceptance in courses with good grades. The factors affecting academic achievement are classified into three levels: individual, family, and education (1). In today's society, education and, consequently, achievement have become the main concerns of parents for their children. During the past century, academic achievement has been one of the most important issues in psychology and allied sciences (2).

Achievement motivation is one of the important factors which affects academic achievement. Achievement motivation is defined as a desire to lead or internal force that causes people to want to be successful (3). Achievement motivation has been created from achievement goals and it includes approaching the progress goals that focus on competence relative to peers. Human motivation in-

cluding three dominant needs: the need to progress, the need for power, and the need for attachment. The importance of these needs varies from one person to another (4).

One of the important variables that are closely linked with academic achievement is happiness. Happiness is defined as a set of emotions and cognitive evaluation of life and is the degree of the quality of people's lives that is positive, generally (5). There are two main schools of thought that explain happiness: hedonism and cognitive theory. Cognitive theory sees happiness as what is experienced on the way to reach the goal whereas the theory of hedonism sees happiness as the end or purpose (6).

Happiness indicators are 1) the facial expressions: The main seat of emotions is the face; face can show a number of emotions, including happiness; 2) express happy feelings by individuals themselves: Paying attention to what the person says about his/her feelings can be an indicator of an individual's happiness too; 3) according to the speech content: When the content of a word is more optimistic, we

can say that a person's inner sense is happiness, and when the content of a word is more cynical, we can say that a person's inner sense is not happiness (7).

Hardiness is a belief in change or transformation and the dynamics of life and an attitude that every event does not necessarily mean a threat to the safety and security of humans. Hardiness can be practiced by cognitive flexibility and patience in the face of stressful and difficult events and ambiguous situations (8). People who have hardiness have three features: commitment, in order to engage deeply with the activities and events of life; control, the person believes that he/she can have control over his/her life events and can have an impact on them; challenges, means that despite the changes he/she faced a lot in one's life, he/she can always continue to grow. The educational benefits of this feature cause their development (9).

The correlates of hardiness include 1) stress: psychological hardiness moderates the relationship between the negative effects of stress, life, and mental health (10); 2) self-esteem. These two psychological correlates are aligned, and those with high psychological hardiness typically have high self-esteem too (11). 3) Self-actualization: individuals who have a mission or focus on their outside problems (commitment). They have a sense of control over events; they are excited to welcome change and find it challenging. 4) THE locus of control: psychological hardiness has a positive correlation with an internal locus of control, and it has a negative correlation with an external locus of control (12). 5) Gender: because men are less emotional and more rational, they have more hardiness than women. 6) Disease: psychological hardiness is negatively associated with mental illness. 6) Social protection: when psychological hardiness is high, social support is more effective in maintaining health (13).

Researchers who investigated the relationship between stress, hardiness, and academic achievement in nursing students in Hong Kong concluded that there is a positive relationship between stress and academic burnout (14). Research results also showed that there is a positive relationship between happiness with academic achievement and hardiness (15). The results showed that hardiness and general self-efficacy are associated with academic engagement and depression. Also, by controlling these variables, they showed that happiness could be used as a predictor of academic burnout (16). Another study examined the impact of the training on academic achievement and concluded that the dynamic educational system leads to no drop in the morale of students (17).

The results of a research conducted in 40 high-school students of Shirkooh showed that positive thinking training is effective in reducing burnout and its components

(academic fatigue, apathy educational, academic failure) (18). The results showed that the hope therapy program reduced the amount of academic burnout, in general, and academic fatigue and academic failure in the students; the assumption that related to reducing the amount of educational apathy was rejected (19). The results of another study suggest that there is a significant difference between academic burnout and tenacity perception of the learning environment between boys and girls. Also, other results showed that there is a significant negative relationship between the perception of the learning environment and academic burnout (20).

The results showed that there are no significant differences between the happiness of boys and girls, and there is a positive difference between happiness and health variables in all people (21). The investigation showed that emphasis on the important aspects of one's personality leads him/her to happiness, and cultural differences emerge in various aspects of the character (22). Other findings suggest that schools have three basic components to be a happy school. Schools are the places where children can communicate with friends, the students learn new knowledge, and they acquire the skills of dreaming, growing up, and planning. To build a vibrant school, a pleasant and desirable physical environment is very important (23). Another study reached these conclusions based on the principles such as extra dynamic work of the students, making time to play, building attractive school space, having good books to read, and having sports and art classes; these add more happiness to students for going to the school (24). The other findings found that the happiness of students had a significant positive effect on academic achievement. Also, boys have higher levels of happiness than girls (25). Studies of over 490 teachers have shown that there is a negative relationship between self-efficacy depersonalized and emotional exhaustion and positive relationship between depersonalized and reduced personal accomplishment. These studies also showed that those who scored higher on self-efficacy and resilience incurred less fatigue syndrome and more happiness (26).

The results of the studies showed that there is a significant negative relationship between neuroticism personality characteristics and content of the school (extraversion, openness to experience, conscientiousness, and agreeableness) (27). The study was conducted among 400 graduate students from the Arts, Science, and Engineering faculties from the Ferdowsi University of Mashhad. The resulting hypotheses about the relationship between hardiness and happiness were positive and significant (28). The results of another research showed that there is a significant relationship between social support, hardiness and happiness, and personality characteristics with the magnitude

of academic burnout (29). A study showed that some aspects of the interaction between teachers and students and the teachers' expectations directly have the power of forecast of happiness, as well as some of these aspects can forecast efficacy directly (30).

The main hypothesis of this study was that hardiness training increases the level of happiness of Minecraft students.

Hypotheses of this study are:

1. Hardiness training increases the level of happiness of Minecraft students.
2. Hardiness training increases the level of academic achievement of Minecraft students.

2. Methods

This was a quasi-experimental, applied research using control and experimental groups, with a pre-test and post-test. The study population included all 17 to 20-year-old female students, about 120 in total, who were referred to the high school of medical science to prepare for the university entrance exam in the academic year 2016 in the city of Kermanshah. Thirty Minecraft students were chosen randomly and divided into the experimental and control group, each consisting of 15 participants. In the present study, the academic achievement was measured using raw scale scores obtained in the comprehensive and standard tests of cultural center of training that were held for the exam candidates regularly and periodically. These tests were held monthly from the beginning of the hardiness training course, and the questions were from all the courses for the students. The scores used for the academic achievement were solely on the basis of the percentage earned for the specialized course questions, for example, mathematics, physics, chemistry, and biology. A questionnaire was used for the data collection. Oxford happiness questionnaire (OHI) has 29 articles and measures personal happiness. The theoretical basis of the questionnaire is the definition of happiness by Argyle and Crossland (they provide an operational definition of happiness, that it is the structure that has three major parts which include the frequency and degree of positive affect, the average level of satisfaction during a period, and lack of negative emotion).

This test was developed in 1989 by Michael Argyle and based on the Beck depression inventory (BDI, 1976). In the questionnaire, 21 items of statements were taken from the BDI and then reversed, and 11 questions have been added to the questionnaire to cover the other aspects of mental health. Like the BDI, each item of the Happiness Inventory has four options, and the participants have to choose one of them according to their current status. The test has been widely used in researches related to happiness. Argyle et al.

reported the reliability of the Oxford questionnaire with a Cronbach's alpha coefficient of 0.90 and test-retest reliability in seven weeks of 0.78. The concurrent validity of the questionnaire was reported to be 0.43, using the evaluation of friendship on people. This questionnaire correlation was calculated with Bradburn positive affect (0.32), Argyle life satisfaction index (0.57), and the BDI (-0.52). Hardiness was an independent variable in this study, a training course to which the test subjects underwent.

To achieve the purpose of the research, the researcher coordinated with the target population after dividing them into the experimental and control group, and administered the Happiness Questionnaire to both the groups during the first test session of training at the cultural center on 23 October 2016. Then, the experimental group was exposed to the experimental variable in 12 sessions of 90 minutes. The training sessions were held with a focus on creating a feeling of empowerment in the participants using the hardiness training protocol. A comprehensive test was held for each group every month. At the end of the training sessions of the experimental group, the Happiness Inventory was placed at the disposal of the two groups, and the results were collected, and the data analysis was performed.

Data analysis was performed using SPSS software. Analysis of covariance (ANCOVA) and the repeated measures test were used for measuring the data and testing the statistical assumptions.

3. Results

Table 1 shows the descriptive indicators and ANCOVA of Happiness and academic achievement variables such as the average and standard deviation of the pre-test and post-test scores in the control and experimental groups.

Table 1. Descriptive Indicators and ANCOVA of Happiness Scores in the Control and Experimental Groups^a

Variable/Test	Control Group	Experimental Group
Happiness		
Pre-test*	71.93 ± 15.755	66.67 ± 13.730
Post-test	75.73 ± 12.453	102.47 ± 13.799
Effect Size	0.015*	0.510
P Value	0.479*	0.001

^aValues are expressed as mean ± SD.

As can be seen, the average happiness scores in the post-test of the control group did not change from pre-test scores, and in the experimental group, the scores changed significantly compared with the pre-test. Also, the average

academic achievement scores increased continuously in the experimental group during the comprehensive exams, but this was not true regarding the control group. Also, there was a significant difference between the test scores of happiness in the experimental and control groups ($P < 0.01$). Hence, the null hypothesis was rejected and the research hypothesis accepted, that the hardiness training is effective in increasing the level of happiness in Minecraft students. The effect size of hardiness training on increasing happiness of students was 51 percent.

According to the Mauchly's test of sphericity, the homogeneity of covariance of the comprehensive test scores in both control and experimental groups ($P = 0.433$), was confirmed. Table 2 shows the significance of the effect of the variables and the interactions of the groups in the comprehensive tests scores (control and experimental).

Table 2. Multivariate Analysis (Repeated Measures ANOVA) of the Comparison of the Average Progress of Education Based on Comprehensive Test Scores in both Control and Experimental Groups^a

Variable/Time of Test	Group		Group*Time
	Control	Experimental	
Academic achievement			
Pre	0.120 ± 0.0526	0.128 ± 0.0992	
First	0.113 ± 0.0746	0.155 ± 0.957	
Second	0.151 ± 0.0801	0.228 ± 0.997	
Third	0.126 ± 0.0657	0.252 ± 0.0999	
Forth	0.136 ± 0.0495	0.285 ± 0.991	
Fifth	0.127 ± 0.0409	0.330 ± 0.0871	
Effect size	-	0.343	-
P Value	0.001	0.001	0.001

^aValues are expressed as mean ± SD.

As shown in Table 2, time had a significant effect on the scores ($P < 0.01$). Also, the interaction of time and group for the comprehensive test scores had significant effects ($P = 0.001$). The table shows a comparison of the average academic achievement based on the comprehensive test scores in both the control and experimental groups. The effect size of hardiness training on students' academic achievement Minecraft was 34 percent.

4. Discussion and Conclusions

Jalilian (31) examined the effect of hardiness on the academic achievement of students. The results showed that there is a negative and direct relationship between hardiness and academic achievement. The results of Rahmati

(32) showed that there is a significant and positive relationship between happiness, tenacity, and academic burnout in students with low self-efficacy. Studies of Brouwers and Tomic (33), Salanova et al. (34) suggest that happiness can predict academic achievement. In this regard, Grau et al. (35) in a study titled as self-happiness as mediate effects of self-happiness on the academic achievement of 140 students found that students who had low self-efficacy showed lower academic achievement. Jafari and Talebzade (36) in a model examined happiness and joy in elementary schools of Tehran. According to the results obtained from the perspective of the teachers and administrators in the order of importance, physical, emotional, social, personal, and educational factors were effective on the happiness of girls' primary schools in Tehran.

About the first hypothesis in explaining these findings, we can say that because of Minecraft students spend the early stages of their life, as a rule, issues and problems effects on their mind; Based on previous research, it can be concluded that people who have more hardiness have more problem-solving skills. So, students who have learned hardiness, or have this feature, can solve their problems. Total covariance analysis showed that hardiness is effective in increasing Minecraft students' happiness. The results of this hypothesis are consistent and in line with those of similar studies by Mahon et al. (21), Oishi et al. (22), Miller (37), Wolk (24), Brouwers and Tomic (33), Salanova et al. (34), Grau et al. (35), Young et al. (25), Khorshidi Nazloo (27), and Rackkhah (29). In the meantime, according to the definitions of happiness, we express that the students who can be self-sufficient in solving their problems and resolving these issues with hardiness feel that their conditions are satisfied, and this represents a factor in their happiness.

About the second hypothesis, according to the results of covariance analysis, we can conclude that the hardiness training is effective on students' academic achievement Minecraft. The results of this hypothesis are in agreement with the results of the studies by Kozma (17), Duran et al. (16), Zhang (15), Watson et al. (14), Mirzaei (18), Esmaeili Dizaji (19), and Zeinali (20).

In explaining the findings of this hypothesis, it can be said that since the methods used by people with high hardiness increase their ability to deal with barriers to achieve their goals constructively and effectively, this research, like other researches, we can be due to the academic achievement of students. Students who have the personality traits of hardiness, versus students who do not have this trait, are more resistant to negative emotions, stress, and anxiety, and they have the better academic achievement.

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