# The relationship between hardiness and exam anxiety in students

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**Abstract**: The main objective of the present paper is to examine the relationship between hardiness and exam anxiety in high school students. The population consisted of 100 male students of Sadra private high school of Sar-e-Pol-e-Zahab city who were selected by random sampling and filled religious orientation questionnaire of Alport and Ross (1962), questionnaire of demographics, hardiness questionnaire of Polty, Bartenon, Robert, Youground, Kathleen, Gary and Ingram (1989), and Spilberger's questionnaire of exam anxiety (1980). Results of correlation test showed that there is a negative and significant relationship between hardiness components (commitment, control, challenge and the overall hardiness) and exam anxiety. This means that an increase in students' hardiness decreases their exam anxiety. Correlation analysis results also indicated a positive and significant relationship between hardiness components and educational performance. This means that and increase in students' hardiness enhances their educational performance ($p < 0.05$).

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## Introduction

Anxiety is a cognitive – emotional alarm which warns an imminent danger. Hence, it is considered as a reaction which prepares an individual to face a kind of danger or threat. During their growth children and adolescents experience a wide variety of anxiety. These experiences are sometimes so severe that harden their daily and educational life. Exam anxiety is one of these anxiety types (Hill, 1984). In 1940 researchers found that a type of inquietude results in severe anxiety and absence from school in children and they can't express their fear. This was not understandable for both teachers and students. A great deal of research was accomplished in this field since then and Sarason and Mandle began exam anxiety research since 1952 (Abolghasemi, 2004). According to researchers' estimations, annually around 10 million pre-university and 15% of university students in the US experience exam anxiety (Dendato and Dinner, 1986). Different studies have reported the prevalence of students' exam anxiety as 10 – 15% (Mc Reynolds, 1987; quoted from Abolghasemi, 2003).

Sarason identifies exam anxiety as an intellectual struggle with oneself which is specified by a doubt on oneself capabilities and often leads to a negative cognitive evaluation, lack of concentration, undesired physiologic reactions and degradation of educational performance (Hughes, 1988). No integrated and compatible research is done on the relationship between hardiness and exam anxiety. Hence, the present paper examines the correlation between psychological hardiness and exam anxiety and educational performance of students.

## Research Hypotheses

1. There is a significant relationship between psychological hardiness (commitment, challenge and control) and exam anxiety.
2. There is a relationship between psychological hardiness (commitment, challenge and control) and educational performance.

## Method Population, Sample and Sampling Method

The study of research is correlationed.The research population is composed of all male students of Sadra private high school (Kermanshah province) in the year 2011 – 2012. 100 students were selected by random sampling to represent the research sample.

## Survey Tools

A). Hardiness questionnaire: the hardiness questionnaire developed by Polty, Bartenon, Robert, Youground, Kathleen, Larry and Ingram (1989) was used to evaluate students' hardiness. This is a self-report, pencil-paper scale having 45 items and the individual chooses form options: "completely wrong", "partly correct", "correct" and "completely correct". Gaining high scores in this test indicates high hardiness. The test evaluates commitment, challenge and control (aspects of psychological hardiness). Kiamarsi (1997) examined the reliability of this scale using test-retest and internal consistency methods. The correlation coefficient of tested individuals in test and retest was $r = 0.84$. Besides, the correlation coefficient of test and retest of scores for tested females was $r = 0.85$ and that of males was $r = 0.84$. For internal consistency the Cronbach's Alpha coefficient from

normative data was (n=253 females and n=257 males were tested) and that of the whole tested individuals was 0.76, for females was 0.74 and for males was 0.76. The validity coefficient of psychological hardiness was 0.48 for commitment, 0.35 for control and 0.38 for challenge. Moreover, internal consistency coefficients of psychological hardiness for control, commitment and challenge was 0.82, 0.66 and 0.62, respectively and 0.85 for the whole measure (quoted from Kiamarsi, 1997). Validity of hardiness questionnaire was 0.68 in the present paper (using Cronbach's Alpha).

B). Spilberger's questionnaire of exam anxiety: this questionnaire was developed by Spilberger in 1980 and includes 20 items which describe reactions before, during and after e certain exam. The exam anxiety questionnaire contains two micro tests of "worrying" and "emotionality" to evaluate individuals' differences in anxiety. Some items of the questionnaire are based on exam anxiety scale and the others are provided by developers. This is a self-report questionnaire and every individual must select and answer from 4 possible choices: "almost never", "sometimes", "most often" and "almost always". These choices are scored as 1, 2, 3 and 4, respectively. Marking high scores in this test indicates high exam anxiety. Moreover, minimum and maximum scores here are 20 and 80, respectively. Items 1, 3, 5, 7, 9, 12, 14, 16, 14 and 19 evaluate "worrying" and items 2, 4, 6, 8, 10, 11, 13, 15, 18, 20 examine "emotionality" in this questionnaire. Spilberger has developed and validated the questionnaire in a research on school and university students. Based on the "state – adjective" theory, "worrying" is the adjective and "emotionality" is the state. Anastazi (1988) believes that the questionnaire of exam anxiety examines the adjective first and is constrained to a certain class of states around exam time. Despite traditional and conventional exam anxiety scales, this questionnaire suggests that worrying is not a more important component intervening the exam performance but is a combination of high emotionality and worrying scores which influences the exam performance. The Cronbach's Alpha was reported to be higher than 0.92 for male and female samples. Besides, retest reliability coefficients were 0.80 after three weeks and one month (Register et al, 1991). Al Zahr (1991), Anton et al (1991) and Bandalous et al (1995) reported the Cronbach's Alpha of 0.92 – 0.97 for the questionnaire. This questionnaire is correlated with Sarason and Stop's (1978) exam anxiety scales for bys (0.82) and girls (0.83). The correlation between the "worrying" micro scale of the questionnaire and that of Morris and Libert (1967) is reported to be 0.73 and 0.69 for boys and girls, respectively. Furthermore, this correlation between the micro scale of emotionality in this questionnaire and that of Morris and Libert's was 0.77 and 0.85 for boys and girls, respectively. The overall correlation of Spilberger's questionnaire and his questionnaire of adjective – state anxiety is also reported to be 0.86 and 0.77 for boys and girls, respectively. These coefficients indicate a good and satisfactory validity of the questionnaire (Register et al, 1991).

**Data Analysis**

Descriptive statistics test such as mean, standard deviation, percentage and abundance were used to analyze descriptive properties of the research. Moreover, Pearson correlation test was used to test research hypotheses.

**Research Findings**

**Descriptive data**

**Table 1:** Mean and standard deviation of research variables

| Variable | Mean | Standard deviation |
|---|---|---|
| Exam anxiety | 31.12 | 5.46 |
| Hardiness | 73.22 | 9.21 |
| Educational average | 17.31 | 3.21 |

The above table shows the mean and standard deviation of research variables.

**Table 2**: Summary of correlation test of hardiness and its micro scales with students' exam anxiety

| Predictor variables | Correlation | Worrying | Emotionality | Exam anxiety |
|---|---|---|---|---|
| Commitment | Correlated | -0.33 | -0.305 | -0.29 |
| | P | 0.041 | 0.044 | 0.037 |
| Control | Correlated | -0.18 | -0.23 | -0.18 |
| | P | 0.05 | 0.045 | 0.05 |
| Challenge | Correlated | -0.34 | -0.27 | -0.32 |
| | P | 0.04 | 0.05 | 0.043 |
| Hardiness | Correlated | 0.375 | 0.35 | 0.34 |
| | P | 0.03 | 0.041 | 0.03 |

The table shows that there is a negative and significant relationship between hardiness components (commitment, control, challenge and overall hardiness) and exam anxiety. This means that an increase in students' hardiness decreases their exam anxiety.

The table shows that there is a positive and significant relationship between hardiness components (commitment, control, challenge and overall hardiness) and educational performance. This means that an increase in former enhances the latter.

**Table 3**: Summary of correlation test of hardiness and its micro scales with students' educational performance

| Predictor variables | Correlation | Exam anxiety |
|---|---|---|
| Commitment | Correlated | 0.245 |
| | P | 0.031 |
| Control | Correlated | 0.175 |
| | P | 0.05 |
| Challenge | Correlated | 0.27 |
| | P | 0.025 |
| Hardiness | Correlated | 0.34 |
| | P | 0.02 |

**Discussion and Conclusion**

Results of Pearson correlation test showed that there is a negative and significant relationship between hardiness components (commitment, control, challenge and overall hardiness) and exam anxiety. This means that an increase in students' hardiness decreases their exam anxiety. Therefore, the first hypothesis (there is a significant relationship between psychological hardiness and exam anxiety) is accepted. To explain this finding it can be said that hardiness creates a particular internal approach which influence the way individuals face various problems in their life and leads them toward having a realistic look at mental stresses. In other words, the challenge enables an individual to consider unpleased events as a learning possibility not a safety threat and these aspects, as a whole, prevent (or shorten) negative consequences of stressing events, decrease over-expectations leading to stress and as a result, students do not consider exam situation as a stress and never face exam anxiety.

Furthermore, results of Pearson correlation test showed that there is a positive and significant relationship between hardiness components (commitment, control, challenge and overall hardiness) and educational performance. This means that an increase in former enhances the latter.

The results of this hypothesis testing are consistent with those of Westman (1990), St. Seven (1999), Vibeh and Morgan (1999) and Verdi (2002) but inconsistent with Kiamarsi (1997).

To explain this finding it can be said that individuals with high hardiness eventually use certain guidelines to change boring task to a positive one and find a way enjoy that activity. Considering the psychological hardiness feature they are committed in education, challenge and control surrounding events. To assure the accuracy of averages mentioned by individuals the research referred to all educational histories and files and gained their real average score in this way while in other studies (such as that of Kiamarsi) they just sufficed to what individuals stated.

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