



Psychological Hardiness Level at Tafila Technical University Students

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

Article Information

DOI: 10.9734/BJESBS/2016/25515

Editor(s):

(1) Alina Georgeta Mag, Department of Private Law and Educational Science, University of Sibiu, Romania.

Reviewers:

- (1) Abdelaziz M. Thabet, Alquds University, Israel.
(2) Leehu Zysberg, Gordon College of Education, Haifa, Israel.
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Complete Peer review History: <http://sciencedomain.org/review-history/15120>

Original Research Article

Received 7th March 2016
Accepted 20th May 2016
Published 22nd June 2016

ABSTRACT

Aims: This study aimed to investigate factors associated with psychological hardiness in a sample of University students in Jordan (TTU).

Study Design: This study used descriptive-correlational design.

Place and Duration of Study: This study was conducted at TTU during the 2nd semester, 2015.

Methodology: The study sample consisted of 379 students (177 male and 180 female students). In order to collect the data, the researcher used a questionnaire consisted of 47 items, and 3 domains: commitment (16 items), challenge (16 items), and control (15 items).

Analysis: SPSS was used to analyze the data; means, standard derivations, t-tests and regression analyses to test the main study questions.

Results: The results indicated significant differences in PHL, and its components were attributed to gender in favor of males in control and challenge components and in favor of females in the commitment domain. There are significant differences that may be attributed to the field of study variable in the commitment domain for the favor of humanity field of study. Concerning the academic year, the result showed significant differences in PHL attributed to the academic year, in

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favor of the 4th year students. Finally, the results indicate a positive relationship between the high GPA and PHL.

Conclusion: The results of the study shed light on some of the antecedents and consequences of PHL in a normative, young, and educated sample. Directions for future studies are indicated and discussed.

Keywords: Psychological hardiness; commitment; challenge; control; students; accumulative average.

1. INTRODUCTION

Psychological hardiness PH is a relatively new concept in personality psychology; it is one of the personal characteristics that enable the individual to effectively cope with stress [1]. Kobasa is one of the first authors who established the foundations of the PH concept depending on existential philosophy. She noticed that certain individuals achieved their goals in spite of hurdles, stress and frustrations [2]. Majde [3] defined the PH as believes belief in one's ability to use all resources (personal, environmental, psychological, and social) to realize, and cope with stress effectively. Hardiness is one popular concept in a group of concepts relevant to our understanding to coping with stress; for example psychological resilience, which is considered to be an indicator of the extent to which individuals are capable of using coping resources to meet challenges of stress and crisis, psychologically [4]. Ong, Bergeman, Bisconti, Wallace [5] define it as the individual internal and external abilities to cope successfully with stress. As Kobasa indicated that individuals who are characterized by PH are more able to cope with stress, have higher commitment to their work, families, friends, and also have a sense of control and the ability to meet challenges [6,7]. Alsayed [8] realized that individuals high in PH are optimistic; and are more likely to effectively cope with stress and convert stressful situations opportunities for growth and success.

Allred and Smith [9] realized that PH individuals were more resistance against diseases stemming from psychological stress, and they were characterized by high positive self-concept compared to less PH individuals.

The concept of PH has three domains: 1- Commitment: Which means a psychological contract that makes the person committed to himself, his objectives, values, other people and his beliefs about the work [10]. 2- Control: The individual believes in his ability to cope with stressful situations and the ability to make decisions, effectively choose between

alternatives, and recruit coping resources more effectively [11]. 3- Challenge: The ability of the individual to adapt to changes and embrace challenges effectively [12].

Academic studies are one of the most popular settings in modern societies in which young individuals cope with stress: Students typically find themselves away from home and their natural support systems, they are faced with cognitive, social and emotional challenges that many of them have not met before [13]. Many have to recruit resources for coping with economic hardships, teaching and learning challenges and social involvement in a new, demanding environment. It is therefore of value to assess coping resources and personal factors that underlie students' effective coping with stress in academic settings. Al-Kasabi [14] conducted a study to assess the PHL of the art college students in Arabic and English departments at Alzawieh University. The study sample consisted of 127 students. The study results indicated high PHL levels among the students, and that there were not any significant differences in PH attributed to gender and academic year. Another study by Joda [15] aimed to investigate the effect of handicap and socio-economic level up on locus of control, psychological hardiness and the performance motivation of male students. The sample consisted of 150 male students; visually and aurally handicapped. The results indicated that there is marginally significant difference attributed to the handicap type and socio economic level on the control center, and the performance motivation.

To sum up – not enough is known about the antecedents and consequences of PH in students. It is therefore of added value to examine PH levels and factors associated with them in this target population.

2. PROBLEM STATEMENT

This study aimed to investigate the level of PH of the TTU students; more specifically, the study aimed to answer the following questions:

- i. Are there any statistically significant differences in PHL attributed to the gender of students?
- ii. Are there any statistically significant differences in PHL attributed to field of study?
- iii. Are there any statistically significant differences between 1st and 4th year students in PHL?
- iv. Is there statistically significant relationship between PHL and academic achievement (academic GPA)?

(disagree, 2= agree, 3= strongly agree). The following table represents the descriptions of the scale scores according to Jordanian norms.

Table 1. Study sample

Academic years gender	Field of study		Total
	Science	Humanity	
First			
Male	30	24	54
Female	24	20	44
Total	54	44	98
Second			
Male	28	28	56
Female	25	23	48
Total	53	51	104
Third			
Male	25	20	45
Female	24	25	49
Total	49	45	94
Fourth			
Male	22	23	45
Female	20	18	38
Total	42	41	83

3. METHODOLOGY

3.1 Design

A Descriptive-correlational method was used in this study, which involves studying the phenomenon and assessing it in tools yielding quantitative scores, thus allowing the examination of potential association and differences between variables and sub groups in the selected sample.

3.2 Population and Sampling

The population of the study consisted of all Tafila Technical University students in Jordan (TTU) (N=5400) during the year 2015. TTU is a state University established 11 years ago in Jordan, and is an academic home to more than 6500 students in the faculties of education, business, engineering, science and arts.

Participants were chosen from the university general subject classes; 8 out of 16 sections were chosen randomly; all students in these sections participated in the study; the researcher used this method to ensure the representation of students from different fields of study and from all academic years. The sample consisted of 379 (200 males and 179 females) from five fields of study (Engineering, Science, Business, Educational Sciences, and Arts). The sample represented 7% of the study population: Table 1 summarizes the main demographics of the study sample.

3.3 Instruments

The researcher used Mekamer's [16] scale; it consists of 47 items in 3 domains: commitment (16 items), challenge (16 items) and control (15 items). The students were asked to respond to each item using Likert scale (1= strongly

3.4 Validity

The researcher used the following methods to ensure the scale validity:

- 1- Content Validity: The questionnaire was sent to eight experts from educational colleges at Jordanian universities. Three of them are specialized in psychological counseling, two in assessment, and three in educational psychology. They were asked to review the instrument, using the following criteria: Clarity of items, relevance of the items to the domains, and clarity of instructions. The experts reported that the instrument was good and the items belonged to domains; according, to that the researcher realized that the instrument was valid.
- 2- Validity coefficient: As a square root of reliability was derived using Cronbach (α) and split halves. The values were (0.98-0.99). Table 3 represents these values of the scale and its domains.

3.5 Reliability

Reliability was checked by using two methods:

Test retest; Pilot sample (30 students) was used to check the reliability; the period, separating the two scale applications was two days.

Table 2. Description of scale scores

Scale descriptions	PHL	Commitment	Challenge	Control
High	110-141	38-48	38-48	36-45
Mid	79-109	27-37	27-37	25-35
Low	47-78	16-26	16-26	15-24

Table 3. Validity

Domain	Cronbach alpha	Spearman-brown coefficient
Commitment	0.94	0.95
Challenge	0.97	0.99
Control	0.98	0.98
Scale	0.98	0.99

Internal consistency was checked by using split halves and Cronbach (α) equitation. Table 4 represents the findings of reliability.

Table 4. Reliability

Domain	Cronbach alpha	Spearman-brown coefficient	Test-retest
Commitment	0.90	0.92	0.91
Challenge	0.95	0.99	0.94
Control	0.97	0.97	0.97
Scale	0.97	0.99	0.98

3.6 Procedures

The researcher obtained the university's approval for the study procedure. Students were recruited using flyers distributed on campus; they were informed that answering the questionnaire would not be compulsory, although their commitment, accuracy and completion of all items would be important for the study purposes. It took about 25 minutes to complete responding to the questionnaire. No identifying information was gathered at any point in the study.

3.7 Analysis

Descriptive statistics, zero-order correlations, t-tests and regression analyses were used to test the study's questions, using SPSS version 16, (<http://www.ibm.com/analytics/us/en/technology/spss/>)

4. RESULTS

4.1 Descriptive Statistics

Table 5 represents the descriptive statistics for PHL and its domains.

4.2 Gender and PHL

Are there any statistically significant differences in PHL attributed to the gender of students?

To answer this question, T-test for independent samples was used; Table 6 represents the findings. As shown in the table, there are significant differences in PH and its domains attributed to gender in favor of males in the total degree of PH, control and challenge; and in favor of females in the commitment domain. Accordingly, male students have a higher ability to cope with obstacles and more efficiency in planning their future, but females are more committed in doing jobs, duties and more committed in society values and principles.

4.3 Field of Studies and PH

Are there any statistically significant differences in PHL attributed to field of study?

To answer the second question, T-test for independent samples was used; Table 7 represents the findings. According to these results, the results suggest that although on the general measure of PHL there were only marginally significant differences.

Three subscales showed significant differences when comparing fields of study divided into humanities and sciences – as two general categories. Generally students in the humanities showed higher levels of PHL with the exception of commitment in which students in the sciences were a little higher.

4.4 Time as Students and PHL

Are there any statistically significant differences between 1st and 4th year students in PHL?

To answer this question, T-test of independent samples was used; Table 8 represents the findings.

Table 5. Reliability scale, descriptive statistics

	Cronbach alpha	Minimum	Maximum	Mean	Std. deviation
Commitment	0.90	27.00	43.00	35.5434	4.31569
Challenge	0.95	24.00	35.00	30.0140	3.43353
Control	0.97	25.00	33.00	29.4202	2.39438
Total	0.97	87.00	102.00	94.9776	3.69703

Table 6. T-test for the effect of gender upon PHL

Domain	Gender	Mean	Standard deviation	t	Sig
Commitment	Male	31.6	2.38	-36.409-	.000
	Female	39.3	1.49		
Challenge	Male	33.3	0.88	69.223	.000
	Female	26.7	0.91		
Control	Male	31.2	1.94	22.077	.000
	Female	27.6	1.04		
Total	Male	96.2	93.6	7.086	.000
	Female	93.6	2.12		

Table 7. T-test for the effect of field of study upon PHL

Domain	Field of study	Mean	Standard deviation	t	Sig
Commitment	Science	36.0	4.53	2.504	.013
	Humanity	34.8	3.91		
Challenge	Science	29.6	3.36	-2.070-	.039
	Humanity	30.4	3.49		
Control	Science	28.9	2.08	-4.433-	.000
	Humanity	30.0	2.64		
Total	Science	94.6	3.79	-1.816-	.070
	Humanity	95.3	3.52		

4.5 PHL and Academic Achievement

Is there statistically significant relationship between PHL and academic achievement?

To answer this question, Pearson correlation were calculated. There was a positive significant correlation ($\alpha=0.05$) between PHL and cumulative average ($r=0.341$).

In order to predict the factors that affect PHL, multiple regressions were used. Table 9 represents the regression coefficients of the factors entered in the analyses.

Table 8. T-test for the effect of academic year upon PHL

Level	Mean	Standard deviation	t	sig
First	94.3	5.56	3.32	0.00
Fourth	96.4	3.09		

According to Table 9, gender and academic year show associations with PH levels while field of study did not show a significant association. Gender’s association was slightly stronger than the academic year.

Table 9. The coefficients for the regression model

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
1 (constant)	99.580	.865		115.163	.000
Gender	-2.337	.363	-0.317	-6.440	.000
Field of study	.389	.365	.052	1.066	.287
Academic year	-.717	.158	-0.222	-4.543	.000

5. DISCUSSION

The literature suggests college and university studies are trying conditions setting the individual with numerous challenges and potential sources of stress. PH can be pivotal in accounting for how well individuals perform and adapt to stress and overcome challenges effectively. It was therefore of relevance to examine PHL levels and factors associated with it in a sample of university students.

The results indicated that when compared with national norms PHL in the study sample was medium; which supports the assumption that university students represent a normative population.

The researcher then examined the role of selected factors associated as either antecedents of PHL (e.g.: Gender), environmental factors (program of study and year of studies) and consequences (GPA). The results suggest that male students reported higher levels of PH than females; many studies indicated that males were had more able in coping with and committed for new life situations, they could accept the positives and negatives, they could also use different strategies to face problems resulted in adapting to life and had the optimism feeling [17,18]. Though females were more committed, they have goals, they shared good relations with other people, and they chose highly creative objectives.

The results suggested that humanity field of study students had more PH in control and challenge domains compared to scientific college students; that being said science students were higher on commitment.

Finally, GPA positively associated with PHL. This association may suggest that student with higher levels of PH cope more effectively with the challenges of academic studies, thus obtaining higher GPA, although further research is required to ascertain this point.

6. CONCLUSION

The results of the current study highlight the relevance of PHL in academic settings and helps integrate existing evidence on the importance and relevance of the concept in academic studies. And it also indicated the differences in PHL among students from different gender and the field of study, which could be used to fill the gap between students.

7. LIMITATIONS

The study's results should be read with care while acknowledging the study's limitations: The cultural context in which the study was conducted, in a country combining eastern and western cultural elements, with specific religious and socio-economic makeup of the target population might limit the generalizability of the results to other settings. The use of self-report measures has its own issues that may undermine the validity of our main measure. Lastly – the correlational nature of our study design limits our ability to discuss the results in causal terms, requiring additional research to support our findings before implementation of resulting conclusions and programs.

CONSENT

Concerning the data gathered during qualitative and quantitative survey (questionnaire), where no personal data are collected or where personal identifiers are removed from the data, the researcher, however, did not cause the participants any physical, psychological, or ethical harm. The students had the freedom to be involved in the study, and they were informed of the study objectives.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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The peer review history for this paper can be accessed here:
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