



## Resilience and Mental Health: A Study among Students at the State University of Yasuj City

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### Authors' contributions

*This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.*

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### ABSTRACT

**Background and Aims:** Dealing with academic issues and subsequent stress among university students will probably result in less adaptation to society and gradually mental health problems. The aim of this study was to determine the relationship between resilience and mental health among students of the State University of Yasuj in 2015.

**Methods:** A total of 338 students were randomly selected to participate in this cross sectional study. Data collection instruments were a demographic checklist, General Health Questionnaire GHQ-28, and Conner-Davidson Resilience Scale (CD-RIS). All statistical Analysis was performed using STATA 12.

**Results:** The average age of students was 24±3.8 years (boys: 24.9±4.6 / girls: 23.3±2.8). According to GHQ scale, students scored highest and lowest on the subscales of social

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dysfunction (11.2±4.1) and depression (5.6±1.8), respectively. We observed significant inverse correlation between resilience and all subscales of general health ( $P<0.001$ ). Results show that resilience can significantly determine general health ( $P<0.001$ ).

**Conclusion:** Higher resilience may reduce Somatization symptoms, anxiety, social dysfunction and depression. Therefore, we may conclude that training to promote resilience skills of university students can lead to improve their mental and Somatization health.

*Keywords: Resilience; mental health; university students.*

## 1. INTRODUCTION

Since the dawn of humankind, health has always been a concern for human being. However, generally its Somatization aspect is considered more than mental aspect [1]. According to WHO, prevalence of mental disorders in industrialized and developing countries is growing. Nevertheless, it is less of a priority for social and economic development plans. Undoubtedly, society's mental health is an important issue and a major problem of today's world. Maintaining a mentally healthy society is a fundamental and serious issue around the world [2]. Mental health is a determinant of public health, and is defined as emotional well-being, self-efficacy, self-sufficiency, competition capacity, intergenerational attachment, self-actualization of intellectual and emotional potentials [3]. Mental health has an important role in dynamism and efficiency of the community [4]. Youth is significant life event and young people experience emotional, behavioral, Somatization and socio-economic changes [5].

As more and more attention rises towards higher education system, universities are trying to provide quality education and improve academic performance. So higher education researchers are investigating different factors associating to academic success and effective strategies to meet the educational needs of the students along with psychosocial matters [6]. University life is very stress-full and can lead to depression and decrease quality of life. Prevention and early detection of mental disorders can always control the adverse outcomes to some extent. Untreated mental disorders have devastating consequences, which can be permanent [7]. Resilience is an approach to prevent mental disorders and promote mental health. Over the last decade, resilience has gained attention as a fundamental structure in developmental psychology, family psychology and mental health. As a result, an increasing number of studies are addressing this concept recently [8].

Resilience is defined as self-esteem, emotional stability, ability to cope with stress, and individual features to receive social support. These concepts are all effective factors to keep young people mentally safe and help them avoid mental disorders [9]. Resilience is known to facilitate coping strategies, help individuals overcome stress and eliminate emotional effects of traumas and tragedies [10]. Davydov et al. [11] a control level consistent with the environmental conditions. Due to this consistent adaptation, a resilient individual be would more likely to experience positive emotions, be confident and be psychologically more adaptable. Resilience can promote learning cognitive-behavioral skills, which will help to overcome stressful situations, especially in interpersonal relations [12]. Resilience improves one's not only ability to influence in anxious situation, but also flexibility in dealing with critical situations [13]. Resilience has critical mental, emotional, social effects in interpersonal relationships [14]. Experts believe that a resilient individual would exhibit stable and normal reactions in stressful situations [15]. To this end, in human behavior experts consider three components for resilience; 1. Psychological Resiliency that is one's ability to withstand stress in critical circumstances such as mental illness or stressful situations [16]. In other words, Psychological Resilience implies psychological tolerance, which reduces the risks for mental disorders [17]. 3. Emotional resiliency that is an individuals' tolerance in difficult affective and emotional circumstances to reduce internal conflict. In difficult emotional situations, people with high emotional resilience would control their emotional distress instead of adopting an emotion-focused approach [18]. 3. Social Resilience that shows stability and resistance to social threats and damages such as poverty, poor family disputes and social conflicts. This way, a person would adopt reasonable solutions and cooperative spirit to control social stress, and shift the situation to a positive direction [19]. Resilience is a fairly new topic in psychological literature. However, since its introduction as a

personality trait, many studies have investigated its effects on various psychological variables, particularly mental health [20].

Several researchers have reported inverse correlation of resilience with different mental disorders. They consider resilience as a mediating factor, and mention that building resilience is a solution to many mental disorders [21]. According to the literature, resilient students face with the difficulties more effectively and they experience less tension and/or psychological conflicts. In one particular study of students in Kermanshah resilience was positively correlated with mental health; where mentally healthy individuals, experienced higher levels of resilience [22]. In another study, factors such as religion and spirituality which could improve mental health, would improve resilience, too [23]. An inverse correlation between resilience and distress, depression, anxiety and general health problems was reported in a study by Besharat [24]. Furthermore, a study of medical students of /Tehran and Iran universities in 2008, resilience was associated with psychological well-being. The results reflected that an unstable family or environment could decrease student's resilience whereas resilience creates optimism [21]. Finally, in another study social support, Problem-focused coping and resilience were negatively correlated with both stress and distress [25]. Although several studies have been conducted on resilience, considering its importance, further study is required, especially among more vulnerable populations.

This case study is focused on Yasuj because it is the most deprived province in Iran, with an unfavorable socio-economic development and QOL [26]. Considering the stressful conditions of student life in this city, lack of resilience could result in mental disorders. Therefore, as there are no other studies of mental health and resilience in this city, the aims of the present piece of work is to "evaluate mental health and determine the contributing factors" and "address the association between mental health and resilience" among Yasuj state university students.

## 2. METHODS

This is a cross-sectional analytical-descriptive study, which took 9 months to complete. The study population was all students of Yasuj state university in the 2014-2015 school year, which was about 6000. A sample size of 361 was

calculated based on Cochran's formula with a type I error of 0.05 and  $p=q=0.5$ . 23 subjects did not complete the questions fully and were discarded for the rest of analysis procedure.

Sampling method: Multi-stage cluster sampling was implemented. First, 3 faculties were chosen among 6 faculties at Yasuj university, namely: engineering, basic sciences and humanities. Next, 3 majors were chosen from each faculty at random. Last, one class was selected and all the students were asked to complete the questionnaires.

Data collection instruments were:

1. Demographics information check-list. It included several personal variables: age, gender, marital status (single, married, divorced or widowed), degree (Associate's, bachelor's, master's degree or PhD), years of study, current accommodation (dormitory or non-dormitory), employment status (self-employed, employed, unemployed), average income (monthly), average family income (monthly), area of residence (residential infrastructure), the current number of family members, housing status (owner, rental, other), number of rooms available, length of stay in current house, first language (Persian, Luri, Other), health insurance (yes, no), type of health insurance (health care, social security, armed forces, petroleum and gas company, health), current chronic disease (yes, no).
2. Connor-Davidson Resilience Scale (CD-RISC). This is a 25-item questionnaire designed to measure resilience. The answers are in five-point Likert (completely wrong, almost wrong, no idea, almost right, completely right) and scored zero to four. Total resilience score is the sum of all 25 questions, ranging from zero to 125. A higher score indicates higher resilience level and vice versa. A pilot study of the psychometric properties has confirmed both reliability and validity of the scale [27]. Mohammadi et al. developed the Persian version in 2015. Cronbach's alpha and Spearman-brown split-half reliability coefficient for Iranian version are 0.669 and 0.665, respectively [28]. Validity was tested based on correlation of each item with total score and then Factor analysis was performed. All items, except for item 3 had a correlation coefficient of 41- 64%. At

first, assumptions of factor analysis were tested using Bartlett's sphericity test and the KMO index, which both were at satisfactory levels of 5556.28 and 0.87, respectively. Then factors were extracted based on the correlation matrix. Cronbach's alpha for Iranian version is 89% as confirms reliability [29].

3. General Health Questionnaire (GHQ-28): This questionnaire is used to evaluate general health status. It is a well-known psychiatric screening tool and is widely used to identify non-psychotic mental disorders. There are 28 questions in four subscales: Somatization subscale (items 1-7), anxiety symptoms (items 8-14), social functioning (items 15-21), and depression symptoms (items 22-28). A higher score indicates a higher probability of psychiatric distress. According to Noorbala [30] and Alijaniha et al. [31], the cut-off points of the questionnaire is as follows: "The cut-off point was 23 out of the total score and 6 in every subscale; thus, patients with the equal or higher than cut-off point scores were deemed as having a psychological disorder. Sensitivity, specificity, and overall misclassification rate for a GHQ-28 cut-off score of 6 were 84.7, 93.8, and 8.2%, respectively, was 0.85 "

Cronbach's alpha coefficient and test-retest reliability is 88%. The questionnaire includes simple questions regarding mental status. For instance, "Have you felt distracted recently?" The answers range from not at all (scored zero) to a lot (scored 3) [21]. Several studies around the world have approved reliability and validity of this instrument for screening mental health disorders [32]. It is worth noting that the Cronbach's alpha was 88% for this study, too.

All the participants signed an informed consent form. Data were analyzed with STATA version 12. Data are summarized using descriptive statistics such as frequency, mean and standard deviation. To test study hypotheses, Pearson's correlation coefficient and linear regression are employed. A 95% confidence interval is selected and a p-value smaller than 0.05 is considered significant.

### 3. RESULTS

Mean age of the participants was 24±3.8 (boys: 24.9±4.6; girls: 23.3±2.8). Most participants were

female (55.3%), single (89.1), living with their family (not at a dorm) (83.7%), unemployed (87.6%), owner of their houses (87.6) and covered by health insurance (80.8%). 89.9% were undergraduate students. The average income for the employed students was 13085710 IRRs (SD=10996310). Average size of students' houses was 228.4 m<sup>2</sup> (SD=123.7). Family sizes ranged from 2 to 9 with an average of 5.6 people. On average participants have lived in their current house for 14.5 years (SD=12.3). Regarding language, 5.6% talked in Persian, 92.9% talked in Luri, and 1.5 talked in other languages (Table 1).

**Table 1. Descriptive statistics for demographic variables (n=338)**

Variable	Frequency	
	Number	Percent
<b>Sex</b>		
Male	151	44.7
Female	187	55.3
<b>Marital status</b>		
Married	31	9.2
Single	301	89.1
Divorced	1	0.3
Widow	5	1.5
<b>Education level</b>		
Associate Degree	22	6.5
Bachelor's degree	304	89.9
Masters	12	3.6
<b>The current accommodation situation</b>		
Residential	55	16.3
Non-residential	283	83.7
<b>Employment status</b>		
Employed	42	12.4
Non-employed	296	87.6
<b>Residential property status</b>		
Owner	296	87.6
Tenant	28	8.3
Other	14	4.1
<b>Current chronic illness</b>		
Yes	65	19.2
No	273	80.8
<b>Health insurance coverage</b>		
Yes	273	80.8
No	65	19.2

Of the four mental health subscales, depression symptoms (5.6±1.8) and social functioning (11.2±4.1) received the lowest and highest scores, respectively. For our sample, average scores of resilience and total mental health were 66.8±17.1 and 32.7±12.8, respectively (Table 2).

As per Table 2, with a cut-off point of 23 for total mental health, 248 (76.8%) students in this study were in an undesirable range of mental health score (Table 2).

As illustrated in Table 3 resilience is negatively correlated with total mental health and all the subscales (P<0.001). In other words, it seems with the increase of resilience score, reduced depression, anxiety, somatization and social dysfunction disorders, and vice versa.

In order to estimate total mental health and its four dimensions using resilience, a linear regression method was employed. Results indicated that resilience significantly determines mental health and all four dimensions (P<0.05). About 2 to 17 percent (R<sup>2</sup>) of the variation in total mental health and its four dimensions is determined by resilience variable (Table 4).

We investigated the correlation of resilience and total mental health with several demographic and social variables such as age, gender, marital status, education level, current accommodation,

presence of a chronic disease, and health insurance status. The only significant correlation was observed between total mental health and gender (p=0.04). Female students (31.34 ±12.38) perceived their total mental health significantly lower than males (34.19 ±12.83). It may be concluded that among students, compared to boys, girls have a more desirable level of mental health.

#### 4. DISCUSSION

Determining factor that affect mental health in young population such as resilience has always been of interest for researchers. It is understood that emotional wellbeing of youth and more specifically university students is just as important as their Somatization health. They are the next generation of the society, potentially affect cultural, social and economic development and are exposed to a variety of environmental, individual and psychological hazards. Factors such as being away from home, concerns about job prospects, curriculum issues, interaction of all these with transition to adulthood and many other

**Table 2. Descriptive statistics and frequency for resilience, mental health and the subscales and cut-off point**

Variable	N	Mean (SD)	Lowest	Highest	The number of people (%) higher cut-off point *
Resilience	321	66.8(17.1)	11	100	---
Somatization	334	7.8(4)	0	21	230(68.9)
Anxiety	337	8.1(4.4)	0	21	241(71.5)
Social dysfunction	329	11.2(4.1)	0	21	310(94.2)
Depression	335	5.6(1.8)	0	21	138(41.2)
Total mental health	323	32.7(12.8)	1	76	248(76.8)

\* ≥ 6 in every subscale, ≥ 23 in total score of mental health

**Table 3. Correlation matrix for resilience, mental health and the subscales (n=338)**

Variable	Resilience	Somatization	Anxiety symptoms	Social function	Depression symptoms	Mental health
Resilience	1.0					
Somatization	(P<0 .001) -0.1492	1.0				
Anxiety symptoms	(P<0 .001) -0.2902	(P<0 .001) 0.6106	1.0			
Social function	(P<0 .001) -0.3261	(P =0.1144) 0.0876	(P =0.6913) -0.0220	1.0		
Depression symptoms	(P<0 .001) -0.4061	(P<0 .001) 0.4988	(P<0 .001) 0.6668	=0.817) -0.0964(P	1.0	
Mental health	(P<0 .001) -0.2187	(P<0 .001) 0.7838	(P<0 .001) 0.8310	(P<0 .001) 0.2938	(P<0 .001) 0.8129	1.0

**Table 4. Effect of resilience on total mental health and the subscales using linear regression with enter method (N=388)**

Models		Unstandardized coefficients		Standardized coefficients	t	P-value	R <sup>2</sup>
		B	Std. error	Beta			
Somatization	[33]	10.124	.893	---	11.336	<0.001	0.02
	Total resilience	-.035	.013	-.149	-2.686	.008	
Anxiety	[33]	12.993	.938	---	13.848	<0.001	0.08
	Total resilience	-.074	.014	-.290	-5.416	<0.001	
Social dysfunction	[33]	6.009	.887	---	6.777	<0.001	0.11
	Total resilience	.079	.013	.326	6.112	<0.001	
Depression	[33]	14.834	1.213	---	12.234	<0.001	0.17
	Total resilience	-.139	.018	-.406	-7.912	<0.001	
Total mental health	[33]	43.637	2.851	----	15.305	<0.001	0.05
	Total resilience	-.163	.041	-.219	-3.946	<0.001	

factors can cause mental confusion and hence mental disorders. This influences not only the student's performance but also inversely impacts society and the future community. Students are exposed to high levels of stress, so student mental health and resilience is a well-studied topic. Here, we sought to evaluate mental health and resilience among Yasouj University students. As stated in the results, anxiety symptoms and social functioning had the lowest and highest scores among mental health subscales. That is, participants perceived themselves as not depressed but with a low social functioning. This is in accord with several studies [34-39], and [40]. There are several explanations, one being that most students are locals and do not live in a dorm; this means suitable study environment, good nutrition, familial support, and life in a familiar condition. These factors are associated with good general health, well-being and more efficiency and ultimately lower depressive symptoms. There are several reasons for low social functioning. To name just a few, Kohgiluyeh and Boyer-Ahmad is a deprived province, the economic status is undesirable, and there is high unemployment rate, low QOL and lack of job prospects even for educated individuals.

An inverse correlation of resilience with mental health and its dimensions was reported. It seems that as resilience level increases, Somatization, depressive, and anxiety disorders, and social dysfunction decrease. This is in line with previous studies of students of Tehran, Kermanshah, and Shiraz universities, teachers in Iran [22,24,41,42], and [43]. Furthermore, according to some foreign studies resilience is associated to fear and anxiety [44], mental health of students and adults [45]. According to a 1995

study, resilient people are sociable, good at problem-solving, have a sense of purpose, feel optimistic about future, and react properly to stress; all these futures improve their mental health [46]. Other studies have also reported the significant correlation of mental health and resilience among university students [47-49].

In summary, resilience is related to mental health by affecting individuals' dignity, tolerance, self-competence, self-integrity, control and spirituality.

The results therefore confirm the hypothesis that mental health is dependent on resilience level. However, it seems that the inverse holds and resilience is dependent on mental health; meaning that people with a higher level of mental health show more resilience. Thus, by providing more social support, we can promote individual's resilience level and prepare them to cope with Somatization, social and mental health problems. There were not many similar studies of the target population available to compare the results.

## 5. CONCLUSION

Results of the current study states that resilient people experience less Somatization distress, stress and depression, while experiencing higher levels of social functioning. Resilient students can maintain their mental health in a traumatic situation. In a difficult stressful situation, resilience will help the person to create a self-therapy using positive emotion and cognition, to cope well. As suggested by experts that resilience skills can be learned. So, we can greatly promote student's mental health by teaching them the necessary skills for resilience;

such as communication skills, coping skills, self-expression, and courage.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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