

# Predictors of Mental Health in a Sample of Iranian Health and Paramedical Students

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**Abstract:** Introduction and Aims: Attention to students' mental health is important in promoting their learning and academic achievement. This study aims to determine mental health and its predicting factors on paramedical and public health students in Qazvin university of medical sciences, Qazvin, Iran.

**Methods:** In this descriptive-analytical study, a sample of 110 paramedical and public health students of Qazvin university of medical sciences was selected. Data were gathered by General Health Questionnaire (GHQ-28) and demographic and educational related researcher-made questionnaire. Data were also entered into SPSS-v16 and analyzed with Chi-square and McNemar tests, and regression analysis was used for determining predicting factors. The significant level was considered as  $p < 0.05$ .

**Results:** The mean general health scores of students participating in the study were  $31.05 \pm 9.24$  and 79.6% of them had impaired mental health. The highest mean was belonged to social function subscale ( $12.33 \pm 3.78$ ) and the lowest to depression ( $4.59 \pm 4.55$ ). Between age, gender, faculty, birth order, parental status, university entrance semester, and mental health of students, there were not significant differences ( $P \geq 0.05$ ), but the variables "marital status" ( $P < 0.02$ ), "interest in the field of study" ( $P < 0.02$ ), and "last semester average" of students ( $P < 0.000$ ) were related to mental health. Finally regression analysis showed that "interest in the field of study" ( $P < 0.003$ ) was the predicting factor of mental health in this students.

**Conclusion:** Considering the high prevalence of mental disorders in these students, it is essential to activate student counseling centers in the field of mental health promotion plans. Specifically, life skills training, is needed to enhance their skills, abilities and mental capacity.

**Keywords:** mental health, students, General Health Questionnaire.

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## I. INTRODUCTION

Mental health is one of the important components of public health (1) and plays an important role in ensuring the dynamics and efficiency of individuals in each community (2). According to researches conducted by the Harvard School of Health and also statistics published by the World Health Organization, mental disorders are considered as one of the most important and significant components of the overall burden of the disease, which accounts for 10.5-11% of the total burden of diseases related to mental illness (3).

Since that students are from the selected sectors of society and future forces of each country, their mental health is considered important in learning and raising scientific knowledge (4). However, entering university as a critical section in life is often associated with student stress and concern (2), far away from the family, the lack of welfare facilities, economic problems, the desire for multiple social amusements, the tendency to study and the need for progress in lessons against the sense of inadequacy of a period of psychological stress (2 and 4), are the conditions that can cause or exacerbate mental illness or problems and lead to loss of function (2). As the studies indicate that the incidence of mental illness in students is increasing and this concern is important for universities to consider respectively. The results of a longitudinal study of 13 years showed that today's, students refer to Academic counseling centers more than past and their problems have become more complicated (5). On the other hand, in the context of vocational training and stressful educational environments, this is an important problem for students of medical science universities. For example, a study by Johnson and Jones in Scotland on nursing students determined stress on education, including dissatisfaction with discipline, lack of coordination in theoretical and clinical trainings, exams, inappropriate methods of studying, high class work, lack of time and fear of failure to pass the course unit, etc. (6). Mahat's study in United States on nursing students shows that the stresses of clinical environment and medical centers, including lack of clinical knowledge and experience to perform the duties of care, inability to take responsibility, fear of failure in the delivery of care, and so on (7). Also studies have shown that in recent years in Iran, the rate of referral to psychiatric counseling units has increased in universities (8). On the other hand, students with mental health problems have problems such as absence in class, impairment of logical thinking and academic failure (2). Hence, many researchers have studied the mental health of students and assessed factors affecting on it (2 and 9, 10, 11, 12). The results of many of these studies indicate a significant outbreak of this disorder in students of medical universities across the country. As the results of these studies indicate that the prevalence of the disorder among students in universities in Iran such as Shahed 28.6%, Ardabil 22.7, Ilam 17%, Qom 38.7%, Shiraz 24.8%, Tabriz 38.6%, Mazandaran 52.2%, Zabol 56.26 %, Kerman 28% and Tehran 16.3% (13,14, 11, 15, 16, 2, 17, 10, 9, 18). Studies that examine factors influencing this situation have also reported different results. For example, in many studies, there is a contradiction between the demographic factors affecting mental health (2, 4, 17, and 19). Also, there are some contradictions between the educational factors such as the average mean of students with mental health. In the study of Arteshab and colleagues and Anbari and colleagues between the mean scores of students (as an indicator of academic achievement) associated with mental health, significant relationship has been reported (2, 20), while Farah bakhsh and colleagues and Jadidi and colleagues did not find significant relationship between these variables (19 and 4). This contradiction is also seen in the relationship between mental health and other variables such as the semester (2, 19, and 17), interest in the field of study (2 and 17), and the study period (daily / nightly) (2, 19, 15 and 17). On the other hand, referring to various studies on mental health of students in the universities of medical sciences, studies that focus on the mental health of students in health and paramedics are less. Despite the fact that the disciplines of these faculties (such as medical emergency, operating room, anesthesiology, etc.), like other medical sciences, have stressful environments and require forces with good mental health and well-informed and well-functioning to deal with Stressful conditions. Therefore, this study was conducted with the aim of determining mental health and its predictive factors in students of health and paramedical faculties of Qazvin province, with the hope that the results of this study by providing knowledge about the mental health status of these students and its different dimensions, as well as identifying its predictive factors can be a step in the direction of future planning to provide health and to balance the influential factors.

## II. MATERIALS AND METHODS

In this descriptive-analytic cross-sectional study conducted in the academic year of 2014-2015, the mental health level and its predictive factors were studied in 110 students of the Faculty of Health and Para-medicine of Qazvin University of Medical Sciences using classified sampling (each faculty as a one class) and from each class in a randomized manner and based on the size of the sample. The criteria for entering this study related to students of the Faculty of Health and Paramedical Sciences of Qazvin University of Medical Sciences were oral satisfaction achievement of samples, passing a minimum of one semester, non-acute or chronic physical problems according to one's own words, the absence of acute stress during a recent month (divorce, Death of relatives and ...) and the lack of coincidence in completing the questionnaires with the time of the end of the exams. Study instrument included Goldberg Mental Health (GHQ-28) questionnaire with 28 questions and a demographic questionnaire (gender, age, marital status, residency, family status, parental education) and education (field of study, course (daily / night) , Semester, grade, term, or academic year, and

interest in the field and the grade of the whole of the past semester (as a criterion of the academic status). The GHQ-28 standard questionnaire has four areas of physical symptoms, anxiety symptoms, social function, and depression symptoms. Each field has 7 items. The scale of the four-level questionnaire is completely (zero), at the usual level (score 1), is more than usual (score 2) and much more than usual (grade 3). The range of scores in each field is 0-21 and the total score of the questionnaire is 0-84. For this test, the cutting point was considered 23. Those people with scores less than or equal to 23 have a good mental health and those with a score of 24 and above have an undesirable mental health (2). Noorbala and colleagues obtained the sensitivity and specificity of the questionnaire at the best cutting point of 92.3% and 70.5% (21), and Taghavi halved its reliability through three methods of test re-test, halving and Cronbach's alpha were reported as 70%, 93.03 and 90% respectively (22).

The collection of data was done after providing explanations about the research objectives, with complete satisfaction of the samples and maintaining the confidentiality of the information. Data were analyzed by SPSS version 16 and descriptive statistics and Chi-square and Mc Nemar statistical tests. To determine the predictors of mental health, the variables were entered into the regression test and the extracted variables with a significant level of less than 0.05 were considered as predictors.

### III. FINDINGS

The results of data analysis showed that from 110 distributed questionnaires, 69 people were girls (62.7%) and 41 boys (37.2%). The minimum age for students was 19 years and their maximum age was 40 years ( $21.42 \pm 3.15$ ). For the average score, the students' minimum score was 14 and their maximum average was 19 ( $16.34 \pm 1.26$ ). The largest number of participants was also single students with 88 people (80%). All students were educating on a daily basis. Other demographic and educational specifications are presented in Tables 1 and 2.

The average of mental health level of the students participating in the study was  $31.05 \pm 9.24$ . Based on the findings, 79.6% of students (87 cases) had mental disorders. The highest mean of mental health (less mental health) was related to impaired social function level ( $12.33 \pm 3.78$ ) and lowest mean (better mental health) related to depression was  $4.59 \pm 4.55$ .

The relationship between demographic factors and mental health is shown in Table 1. The results of this table indicate that there is a significant relationship between marital status ( $p < 0.02$ ) and mental health. Married had lower grades (better mental health). However, there was no significant relationship between other variables (age, sex, place of residence, economic status and parental education level) and mental health.

**TABLE 1. Relationship between mental health and demographic factors**

Variable		Frequency	Percent	p-value	$k^2$	df
age	19-25	105	95.45	0.48	0.5	1
	26-32	3	2.72			
	33-40	4	3.62			
gender	female	69	62.7	0.32	19	17
	male	41	37.2			
marital status	single	88	80	0.02	23	12
	married	22	20			
place of residence	Dormitory	72	65.3	0.09	28	84
	Non-dormitory	38	34.7			
economic status	Satisfied	77	70	0.8	4.04	9
	Dissatisfied	33	31			
parental education level	Illiterate or elementary	27	24.5	0.4	1.2	77
	Diploma or sub-diploma	56	51			
	College education	27	24.5			

The relationship between academic factors and mental health is presented in Table 2. This table shows that mental health has a significant relationship with last semester average ( $p < 0.000$ ) and the interest in the field of study ( $p < 0.02$ ) factors. So that, people with higher grade and those who are interested in their disciplines had lower scores in mental health (more

desirable). Other educational variables such as discipline, term, and semester did not have a significant relationship with mental health.

**TABLE 2. Relationship between mental health and academic factors**

Variable		Frequency	Percent	p-value	$k^2$	df
Field of Study	Operating room	24	21.8	0.5	3.3	1
	Laboratory sciences	14	13.3			
	Anesthesiology	28	25.5			
	Medical	2	1			
	Emergency Hospital	11	10.2			
	Management	11	10.2			
	Environmental Health	14	13.3			
	Health Professional	6	48			
semester	2	18	16.4	0.85	145	204
	3	2	2			
	4	43	38.8			
	6	17	15.3			
	7	2	2			
	8	28	25.5			
Entrance semester	first	91	82.72	0.5	33	34
	second	19	17.27			
Last semester average	14	8	7.27	0.000	3	204
	15	25	22.72			
	16	25	22.72			
	17	26	23.69			
	18	23	20.90			
	19	3	0.90			
Interest in the field of study	yes	79	72.4	0.02	36	34
	no	31	27.6			

Table 3 shows the predictors of mental health. After entering the variables in the regression model, the results of the test showed that the interest in the field of study ( $p < 0.003$ ) is the only predictor of mental health in these students.

**TABLE3. Estimation of regression coefficient of predictive factors of mental health based on generalized linear model**

The remaining variables in the model	Predictive factors	Coefficient of regression	standard error	95% confidence interval	t	p-value
	marital status	0.81	2.88	0.28	0.28	0.77
	Last semester average	0.086	0.72	-0.01	-0.11	0.90
	Interest in the field of study	6.17	2.02	-0.012	3.04	0.003
	place of residence	-0.07	1.93	-0.055	-0.55	0.58

#### IV. DISCUSSION

The results of this study showed that the average level of mental health of the students participating in the study was  $31.05 \pm 9.24$  and 97.6% of the students did not report mental health satisfactorily. Compared to other studies, such as Arteshab et al. (2), Naser Yosefi et al. (23), Parviz rad et al. (17) and Sadeghi et al. (15) have reported the percentage of students with poor mental health as 38.6% 41%, 37.3% and 34.33% and a large number of students in this study do not have a mental health criterion, and the lack of coordination of the results of various studies can indicate that mental health is subject to factors that should be considered from the point of view of psychological and sociological researches because the cultural,

economic, and social characteristics of each region differ from one another. On the other hand, maybe, the reason for the observed difference between the present study and the mentioned studies is in the research community of the study. In comparison with medical students and nursing and midwifery students, according to this study, health and paramedical students have low satisfaction and interest in their own disciplines. However, the limited number of examples of this study needs to evaluate a larger community for judging the mental health of these students.

In studying mental health dimensions in this study, the highest mental health scores (undesirable mental health) were observed in students' social performance, which is similar to many other studies (2, 10, 15 and 17), indicating that going to university creates many changes in the social, family, and personal life of the student, also expectations and new roles should be considered perfectly. Being in such a situation has been stressed and worried and the student is disturbed by social function.

In studying the relationship between demographic factors and mental health of the units under study, the results showed that there was no significant relationship between age and mental health, which it was consistent with studies of Parviz rad et al. (17), Soleimani zadeh et al. (9) and Mohammad zadeh et al. while Farah bakhsh et al (19), Nasser Yousefy et al (23) and Jadidi et al (4) in their study showed that there is a significant relationship between age and mental health. In these studies, with increase of the age, mental health level became more desirable which it related to increased adaptability of students. Perhaps this difference in outcome is due to the fact that the majority of students (95%) of the study were in an age group, and the possibility of comparison was not good enough.

The findings of this study also showed no significant relationship between gender and mental health which it is consistent with Arteshab et al. (2) and Parviz rad et al (17), Anbari et al (20), Semiyary et al (12) and Soleimani zadeh et al (9). This may be resulted due to this reason that most students (80%) of this study are single and still have no living responsibilities and gender roles that differentiate between men and women and their experiences are the same in most cases. However, the results of Afshari and colleagues showed that the fresh girl students had significantly higher scores than male students (10).

The results of this study showed a significant relationship between marital status and mental health. As a result, married people had better mental health, which is in line with the study of Parviz rad et al. (17) while in the study of Semiyari et al., Single people had better mental health than married ones (12), as well as several other studies reported no significant relationship between this variable and mental health (2, 9, 11, 16). According to researchers, married people due to more emotional support and living in the family experience less living conditions in a dormitory and away from the family, so they have a better mental health than singles.

The findings of this study showed no significant relationship between residence and mental health, which is in line with other studies (2, 9, and 19)

Findings of this study showed no significant relationship between economic status and mental health. Despite the fact that other studies reported a significant relationship between mental health and student income and economic status, students with lower income and low economic status had higher mental health scores (poor mental health) (2, 9, 15, 17). Researchers believe that economic conditions and poor income are associated with poverty and the failure to meet basic human needs and can prevent human ascent to the higher classes of Maslow's needs of the pyramid and to enjoy peace and stability and emotional and spiritual excellence and prosperity.

The results of this study, like other studies, did not show a significant relationship between parental education and mental health (17, 19).

In the study of educational factors related to mental health, the findings showed that there was no significant relationship among educational discipline, semester, academic degree and academic year with mental health. The results are consistent with the results of other studies (2, 12, 17, 19). ) In contrast, between the total grade of education as an indicator of academic achievement and mental health, significant relationship was observed. So that, students with a higher average of their last semester, they gained lower scores in mental health (better mental health). This finding, in line with other studies (2, 16, 17, 20, 23, and 24), it suggests that lack of optimal mental health prevents student progress and leads to academic failure. The existence of emotional and psychological disturbances reduces a significant part of the force of the mind and eliminates the interest and ability to perform educational activities in the student. However, the results of a number of studies have not shown a significant relationship between these two variables (15, 19).

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Also, the findings showed that there was a significant relationship between interest in the field of study and mental health. So that students who were interested in their disciplines had a better mental health than those who did not like it. This finding is consistent with other studies (2, 11, 25), while studies by Soleimani zadeh et al, Anbari et al. did not report significant relationship between these two variables (9, 20). Also, according to the results of the regression test, interest in the field Education was recognized as a mental health predictor. It seems that student's frustration after admitting in a field that is not interested causes the ambiguity of the job situation and the lack of social and economic efficiency in the future, which it can be influential in self-image, self-confidence and a sense of success and the happiness of the person and it contrasts with mental health.

### V. CONCLUSION

Considering the results of this study and the low level of mental health of students of health and paramedical sciences of Qazvin University of Medical Sciences, as well as the relationship between factors such as interest in the field of study and the degree of academic achievement of students with mental health, it is suggested to improve the level of mental health of Students and maintain the material and intellectual resources of the university in training effective forces, measures to be considered in activating student counseling centers and holding workshops to encourage students not interested in their field of study.

### VI. RESAERCH LIMITATIONS

Among the limitations of this research are the low sample size, the dispersion of the studied units, the unwillingness of students to participate in the study, the individual and family differences of the subjects, as well as the lack of consideration of the variables such as: accommodation satisfaction, cultural programs, amenities and entertainment facilities.

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