The relationship between mental health and self-esteem in students of medical sciences

Abdullah Mahdavi1, Maryam Ahmadi1, Mehrdad Nadermohamadi2, Davoud Adham3

1 School of Health Management and Information Sciences, Tehran University of Medical Sciences, Tehran, Iran,
2 Institute of Tehran Psychology, Tehran University of Medical Sciences, Tehran, Iran,
3 Public Health Department, School of Health, Ardabil University of Medical Sciences, Ardabil, Iran.

Abstract

Background objective: Being informed about the mental health and self-esteem of university students is a matter of significance for this information is the base of holding training and interventional courses in order to improve their mental health and self-esteem which improves other aspects of their lives such as educational condition as well. In this research, the quality of mental health and its relationship with the rate of self-esteem have been investigated on the students who have entered Ardabil University of Medical Science in 2009-2010 educational years.

Methods: A total of 383 individuals including all of the students who have been accepted in this university to participate the first semester of 2009-2010 educational years in different fields. Students answered general health (GHQ28), and Rosenberg self-esteem questionnaire, afterward the data was statistically analyzed by SPSS software after being entered to the computer.

Results: The obtained information indicates that the average score of GHQ28 for the university students is $\bar{x}=16.08$ and the distribution of these scores has a positive skew, and the majority of the students got low scores which generally shows a rather good mental condition among them. Among the sub-scales of GHQ28, social dysfunction with an average of $\bar{x}=6.98$ was close to cut-off line. In this scale, more scores crossed the cut-off line. The total average score of students in self-esteem questionnaire was $\bar{x}=32.25$. The relationship between scores of GHQ and Rosenberg self-esteem test was $r=0.547$ and its significance level was $\alpha=0.01$. There was a significant difference between the scores of male and female students in GHQ.

Conclusion: The condition of Mental Health of the university students is in a medium rate and the evaluated prevalence rate of mental disorder among the investigated students was in coordination with the rate in the whole society. The general rate of self-esteem between the university students is almost good but not ideal. This prevalence rate clears the necessity of top level preventing plans for all of the university students aiming to improve their self-confidence and mental health, planning programs aiming to improve their motivation and interest in various fields, preparation of second-level preventing therapeutic services, and informing the exposed individuals all in order to improve the mental health of these students.

Key words: Mental health, general health questionnaire (GHQ28), self-esteem, Rosenberg self-esteem questionnaire.

Introduction

Freshmen students do not usually convey to university any sort of information and profile on their health in terms of both physical and psychological wellbeing in their high school and thus different universities investigate freshmen students from different aspects. Studies on character and its relationship with health and psychological problems have attracted the attention of many researchers. Numerous empirical evidences can be found on whether personality traits can play a significant role in treatment of psychological problems (1). The vulnerability of university students with regard to different situations and problems such as exams, class activities, lack of leisure time, prolonged hours of studies, and concern about exam scores will lead to development of different kinds of psychological problems and will thus threat psychological wellbeing (2). Different studies have been conducted on psychological wellbeing of university students in a number of Iranian universities (3). Unfamiliarity of many students with university environment when they enter the university, being away from family,
lack of interest in field of study, incompatibility with people in their new environment, insufficiency of economic and welfare facilities and the like are among the factors that can create psychological problems and eventually may result in students’ academic failure (4). Tobes and Cohen demonstrated in their studies that most students and particularly the freshmen experience difficulties in their relationships with others and have differences with different people including their peers, teachers and university staff (5). The results of the study by Leps Lee et al. (cited by Hosseini) indicate that emotional and psychological problems are more common in the first years of universities and the freshmen students expose more problems in their emotional compatibility. Among freshman university students being away from family and insufficiency of financial resources as well as the problems associated with their accommodation and living in dormitories are parts the factors that will disrupt students’ spirits and will lead to anxiety and a number of psychological problems. Leps Lee et al. are strongly of the conviction that such problems as shortage of welfare and economic facilities can lead to psychological problems and thus academic failure (6).

Based on different studies conducted on this issue, psychological problems and particularly depression are common among Iranian students (7),(8). Yaghoobi (cited by Izadi) demonstrates that more than 18% of medical students at Gilan University were susceptible to psychological problems (9). Kafi et al. examined the students at Tehran University and concluded that approximately 10% of students have a history of family problems, 9% have a history of academic problems, and 3% have a history of psychological problems (10). Mohammadi Aria (cited by Izadi) used SCL-90-R and concluded that the tendency to develop psychological problems among students is 12.1% (9). Saki and Keikhavani (cited by Izadi) reported that the occurrence of psychological problems among medical students at Ilam University was 53 and 37% (9).

Contrary to expectations, studies do not confirm a significant correlation between demographic data and self-esteem and psychological wellbeing (11). In the study conducted by Arasteh, the prevalence of psychological problems was significantly higher in girls (12). The results of the study by Esfandiari did not show any significant relationship between GHQ28 scores and general health in girls and boys (13). The study by Joodaki revealed that there is a difference between female and male students with regard to psychological wellbeing variable, however there is no difference with regard to self-esteem (7). Izadi and Yaghoobi examined the psychological wellbeing of students at Faculty of Humanities of Mazandaran University and found out that with regard to somatic problems, obsession, anxiety, depression, and total rate of symptoms of paranoid thoughts girls indicate higher means. With regard to psychological problems there was not a significant difference between girls and boys (9).

The correlation between being local student and psychological wellbeing has been different in different studies. Some studies indicate that there is no difference between local and non-local students with regard to their psychological wellbeing. Meanwhile, the findings of Kafi and Donaldson (cited by Kafi) propose the existence of problems in students from other cities due to being away from family, financial difficulties, and concerns about accommodation (10). The study by Naemi on 182 Paramedics students in Sari, including 116 girls and 66 boys, revealed a significant correlation between self-esteem and motivation and responsibility. He used the self-esteem questionnaire by Cooper Smith and Hermans achievement motivation in his study (14). Based on Ericson theory (cited by Zare), academic achievement is significant for younger ages, but loses its significance for adults (4).

The study by Soofiani at Tabriz University on 370 students revealed a positive and significant correlation between neurosis and general health. In addition, this study indicated negative and significant relationship between personality traits (extraversion and conscientiousness) and general health. Amongst the results of this study is that 69% of changes in general health can be explained by personality traits and perfectionism (1).

The results of the study by Sadeghi confirm the previous studies with regard to the correlation between psychological wellbeing and religious attitudes. Numerous studies have been conducted on psychological wellbeing and religious beliefs as well as spirituality and all have reported positive significant correlations (15).

A study on the correlation between self-esteem and psychological wellbeing in teenagers indica-
ted that the most important psychological need in 87.4% of case studies is the need of self-esteem (16). A study at Shiraz Medical University indicated that there is no significant correlation between academic status and general health and self-esteem. However, general health is correlated with self-esteem. In this study Cooper’s self-esteem questionnaire and Goldberg general health questionnaire were used (4).

This study is in line with initial evaluation of students and determination and correlation of their psychological wellbeing and self-esteem in Medicine students of Ardebil University in 2009-2010 academic calendars. It is axiomatic that awareness of general health or vulnerability and at risk status of students, particularly from psychological aspects and provision of data on their psychological wellbeing and self-esteem are the first steps to pathological studies. In other words, if the results of this study indicate the existence of problems with regard to psychological wellbeing and self-esteem, it can be the beginning of further studies on the causes and factors of such problems and will be the prerequisite of other pathological studies.

Materials and Methodology

This study is a descriptive-correlation research. It describes the characteristics of case studies with regard to self-esteem and psychological wellbeing and will then investigate their correlation. The statistical population of this study includes the freshmen students in the 2009-2010 academic years. Since there are 400 students, all these students were questioned using the census method, which is a proper method for small populations (17).

Different materials have been designed to measure people’s psychological wellbeing. GHQ28 general health questionnaire is one of the proper tools designed by Goldberg and Hiller in 1972 (18). This study makes use of GHQ28 and self-esteem Questionnaire by Rosenberg. GHQ28 includes 28 questions. It was designed by Goldberg to assess four domains of physical wellbeing, depression, anxiety, and social performance. Each domain consists of seven questions. In order to score the questions, Linkert method is used. The maximum score of the questionnaire is 84. Studies in Iran have usually calculated the validity of the questionnaire as 84% to 91%. The cutting point score for distinguishing the problematic students is 23. Noorbala et al. demonstrated that the best cutting score using Linkert scoring method is 23. The validity and validity of the questionnaire were also confirmed in epidemiologic studies using screening tools(19). Ibrahimi et al. investigated the validity of GHQ and obtained the cutting point of 24 and validity of 97 (20).

Rosenberg’s self-esteem Questionnaire includes 10 questions and each question is scored on the scale of four from totally agree to totally disagree. The minimum and maximum scores are 10 and 40. High scores are indicative of high self-esteem and low scores show low self-esteem. Greenburger et al. studied 197 students and concluded the internal reliability of the score at 0.84 and reported the validity coefficient of retest in Rosenberg self-esteem score at 0.84 on 78 students (with a two-week interval), 0.67 on 82 students (with a five month interval) and 0.62 on 81 students (with one year interval), which were all significant (21). Cronbach alpha has been calculated at 74% for Rosenberg Self-Esteem Questionnaire (22).

Rosenberg Self-esteem Questionnaire (1965) and Cooper Smith Self-Esteem Questionnaire are two common scales for measuring self-esteem(23). The data in the questionnaires were analyzed in SPSS-16 and descriptive and inferential statistics in order to find answers to research questions. The mean and standard deviation, skewness, kurtosis, normality of scores distribution, and ratio of variables were also calculated. Coefficient and coefficient significance test, t-test were used to show that the differences of means are significant.

Results

Among 383 people who participated in the study, 126 (32.9%) were men and 257 people (67.1%) were women. 366 were single and 17 were married. 138 people were local and 245 were non-local. The average age of students who took part in this study was 21.23, with standard deviation of 2.84. The youngest participant was 18 and the oldest was 37. The high school grade point average (GDP) for participants was 17.34 with standard deviation of 1.88.
General Health
With regard to the results obtained from GHQ28, the main indices (mean and median), distribution indices (standard deviation, variance) and sub-scales of somatic problem A, insomnia anxiety B, social dysfunction C, depression D, total score GHQ28 have been presented in Table 1. Skewness and kurtosis of each of the sub-scales in GHQ28 indicated that none of the sub-scales have normal distribution. The sub-scale of social dysfunction, although not having a normal distribution, is close to normal.

In addition, for each of the subscales and total test, the Npor test (Kolmogorov–Smirnov) was used to evaluate the normality of distribution. The results obtained from Kolmogorov–Smirnov test and skewness and kurtosis analysis as well as the distribution of scores in GHQ28 with the probability of α=0.05, distribution of each of the subscales and total score of GHQ28 is not normal. Table 1 illustrates the number and percentage of people suffering from a problem in each of the subscales with a score of higher than 7. The number of people whose total score is higher than 23 was 76.

Self-Esteem
Based on Kolmogorov–Smirnov test, it can be stated that self-esteem in students taking part in the study does not have a normal distribution.

Correlation between General Health and Self-Esteem
The relationship between general health and self-esteem was obtained using Pearson Correlation Coefficient at -0.547. The results are presented in Table 4. Based on the correlation obtained between the subscale scores of GHQ28 and the scores in Rosenberg Self-Esteem Questionnaire, it can be stated with α=0.01 confidence that there is a significant correlation between general health scores and self-esteem scores. The increase in the scores of GHQ28 imply being at risk, and if it goes above 23 the possibility of disorder will increase. The relationship between any of the GHQ28 subscales, i.e. somatic problems (a), anxiety and insomnia (b), social dysfunction (c), and depression (d) - with self-esteem score has been presented in Table 3. In addition, it can be seen that all the correlations are significant. The increase in the score of somatic problem, which is indicative of

Table 1. Main and distribution indices of sub-scales of GHQ28

<table>
<thead>
<tr>
<th>Statistical Indicator</th>
<th>Subscale</th>
<th>A somatic problem</th>
<th>B insomnia anxiety</th>
<th>C social dysfunction</th>
<th>D depression</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td>383</td>
<td>381</td>
<td>383</td>
<td>383</td>
<td>383</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>3/8</td>
<td>3/6</td>
<td>6/98</td>
<td>1/7</td>
<td>16/08</td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Variance</td>
<td></td>
<td>11/20</td>
<td>13/63</td>
<td>8/9</td>
<td>8/6</td>
<td>112/58</td>
</tr>
</tbody>
</table>

Table 2. Number and percentage of people with problems in any of the subscales

<table>
<thead>
<tr>
<th>Having Problem</th>
<th>A somatic problem</th>
<th>B insomnia anxiety</th>
<th>C social dysfunction</th>
<th>D depression</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8/2/12</td>
<td>9/2/31</td>
<td>15/3/99</td>
<td>8/2/12</td>
<td>76/19/82</td>
</tr>
<tr>
<td>No</td>
<td>375</td>
<td>372</td>
<td>368</td>
<td>375</td>
<td>307</td>
</tr>
<tr>
<td>Total</td>
<td>383</td>
<td>383</td>
<td>383</td>
<td>383</td>
<td>383</td>
</tr>
</tbody>
</table>

Table 3. Correlation between subscales of GHQ28 and self-esteem

<table>
<thead>
<tr>
<th>Subscales of GHQ28</th>
<th>A somatic problem</th>
<th>B insomnia anxiety</th>
<th>C social dysfunction</th>
<th>D depression</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation coefficient with self-esteem</td>
<td>-0/423</td>
<td>-0/458</td>
<td>-0/418</td>
<td>-0/485</td>
<td>-0/547</td>
</tr>
</tbody>
</table>
vulnerability in this area, decreases the score of self-esteem. The increase in the score of depression, anxiety and insomnia, and social dysfunction too decrease the score of self-esteem.

**Discussion and Conclusion**

**General Health**

As it can be observed in the Results section, the responses by participants of the study to GHQ28 do not have a normal distribution and have positive skewness. This indicates that most students obtained a low score in this questionnaire. GHQ28 shows the degree of damage, thus low scores indicate little damage and high scores indicate great damage. Therefore, the fact that most students obtained low scores in this questionnaire demonstrates that most of them enjoy good health and the status of general health does not have normal distribution to the benefit of the majority. The distribution of a variable such as the damage of (psychological or general health) is not similar to a variable such as age and is not a function of normal distribution. Most studies conducted on this issue ignore the shape of GHQ28’s scores distribution, probably because assumption of lack of normal distribution is a rational hypothesis. The obtained mean for general health is not consistent with the results of the studies conducted by Meshki(11), Arasteh(12), Ahmadi(24), and Shariati(25) and is lower than them. However, it is consistent with the means obtained by Zare(4), Edhem(26), and Tavakollizadeh(27). Based on this conclusion, it can be stated that most students in this study enjoy a good general health. GHQ28 is usually used as a screening tool. It has been observed that the number of people who gain a score of higher than 23 in GHQ28 was 76 (19.84%). This is indeed not consistent with the results gained by Joodaki (7), Sadeghi(15), and Abbaspoor(37). Girls showed a significant difference with boys in the somatic problems subscales, thus being more vulnerable in this regard. Higher score for girls in GHQ28 means that girls are exposed to greater risk or they are more vulnerable, and thus are in need of more attention. Educational and preventive programs should be provided for girls and their access to specialized services needs to be easier and wider. The difference in somatic scores between girls and boys is a good instance of multivariate nature of reasons of disease. In this case, it can be stated that different environmental, psychological, cultural and social factors play roles in the difference between scores of GHQ28 as obtained for girls and boys.

**Self-Esteem**

It has been observed that scores of self-esteem questionnaire do not have a normal distribution, although it is very close to normal. The mean scores 33.25 are almost the same, but the spread of changes (large variance and scope) have not allowed this variable to remain normal. Self-esteem of most students is high and this is consistent with the results obtained by Meshki(11) and Barkhordari (22). One reason can be the fact that all participants in the study are students and on the other hand the number of students in general physician major (N=55, 14.4%) is higher than students in other majors. Students in this major usually enjoy high self-esteem (highest mean (33.96) belongs to students studying their GP, and lowest mean (30.18) belongs to students studying professional hygiene). It should be noted that there is a significant correlation between self-esteem scores and general health scores of students and their major (r=-0.547). With regard to the relationship between GHQ28 scores and self-esteem
scores and academic major, it is not possible to talk about causal relationships and to consider the reason behind high GHQ28 and self-esteem studying in a particular major of higher status. It is possible that those who feel satisfied with their academic major face fewer stress factors and feel better about their lives. Having proper plans that give students positive attitudes about their majors and show the significance and position of different majors seems necessary. In addition, the activities that can enhance individual’s feeling about a particular major can be effective. This should be done by experts in each major. For instance, presentations about successful people, holding seminars and workshops, showing scientific documentaries about each academic major, honoring days named after particular majors, visiting work fields, interviewing with professionals, publishing a journal or newspaper about a particular area, launching scientific websites and societies can be beneficial.

**Correlation between Self-Esteem and Mental Health**

The correlation between self-esteem and general health was also significant in this study, thus confirming the results of the studies by Joodaki (7), Meshki(11), Zare(4), Abbaspoor(37), Sarabadani(38), Vaikeln(39), and Goldberg(40). However, this correlation cannot be interpreted as a causal relationship between self-esteem and general health, but as we know, characteristics traits are more related to general health than demographic factors and even a mutual relationship can be imagined between them. By and large, the findings of this study imply that most of the students enjoy a good mental health. The correlation between self-esteem and mental health is high and on the whole 76 people (19.84%) in the screening stage were vulnerable.

**Acknowledgements**

This project was financed by the Research Department of Ardebel University of Medical Sciences. We hereby appreciate the honorable members of the research council of the university and the student advisory center as well as all students who by any means participated in this project.

**References**


29. Ansari, hossein, al e. Investigation of general health among students at Zahedan University of Medical Sciences and factors associated Tabib Sharq. 2007; 4(winter 2007): 295-304


35. Shamir S, Abootalib. Investigation of the relationship between personality styles of Yorozzki (informative, normal, confusion, preventive) and general health and responsibility in students of Tehran University. IRAN: Teacher Training Faculty of Tehran; 2004.


Corresponding Author
Maryam Ahmadi,
Health Information Management Department,
School of Health Management and Information Sciences,
Tehran University of Medical Sciences,
Tehran,
Iran,
E-mail: m-ahmadi@tums.ac.ir