

# An assessment of the stressors and ways of coping in Iranian medical sciences students

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## ABSTRACT

**Background:** Several studies have reported that medical sciences students are usually dealing with severe stress. However, no study is available on ways of coping in medical sciences students in Iran. As socio-cultural factors may affect the students' responses toward stress, this study aimed to investigate the stressors and ways of coping among students of Guilan University of Medical Sciences (GUMS).

**Materials and Methods:** A cross-sectional study was conducted on 487 randomly selected students in GUMS in 2012. The student stress scale and Lazarus ways of coping scale were used for data collection. Descriptive statistics were calculated. Also, Chi-square and Fisher's exact tests, Kruskal–Wallis and Mann–Whitney U tests, and logistic regression analysis were utilized for data analysis.

**Results:** In the majority of students (61.4%), interpersonal factors were the dominant stressor. Most of the students used problem-focused ways of coping (79.7%). Chi-square test showed a significant relationship between gender and ways of coping ( $P = 0.03$ ).

**Conclusions:** Interpersonal sources of stress were the most common stressors among the medical sciences students. Establishing workshops on communication skills and effective counseling system are suggested.

**Key words:** Coping, Iran, psychological stress, students

## INTRODUCTION

Medical sciences students are under considerable psychological pressures as they are dealing with patients' suffering. High levels of stress may not only affect the students' thought processes, but also would lead to lower levels of physical and mental health, impaired social and family relations, loss of job skills, and increased absenteeism.<sup>[1]</sup>

Studies conducted in Rafsanjan and Mashhad universities have shown that medical sciences students experience high levels of stress.<sup>[2,3]</sup> Kumar and Nancy have also reported that 32.8% of nursing students experienced high levels of stress.<sup>[4]</sup>

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Submitted: 25-Dec-13; Accepted: 21-Jan-15

Though entering the university is a positive experience for many students, demands of academic life may put students under pressure. Stressing experiences may negatively affect the students' motivation, academic performance, and their physical and psychological well-being.<sup>[5]</sup>

Positive responses to stress will enhance people's internal equilibrium. This is possible only through appropriate coping strategies. There are two categories of coping strategies, including problem-oriented strategies (based on one's ability to manage the environmental event) and emotion-focused strategies (that focus on changing the emotions caused by a stressful situation).<sup>[6]</sup> A number of factors such as personality traits, gender differences, age, childhood experiences, and threat appraisal affect the individual's responses toward stress.<sup>[7]</sup> Due to the negative impact of stress on students' health and learning, it is important to investigate the coping strategies that university

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**Website:**  
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**DOI:**  
10.4103/1735-9066.161009

students use toward stressors. Nonetheless, while several studies are available on stressors the medical sciences students are usually dealing with, few studies are available on ways of coping (WOC) stress among medical sciences students in Iran<sup>[8-10]</sup> and no study is available in this regard in Rasht city. As socio-cultural and environmental factors may affect the students' responses toward stress, this study aimed to investigate the stressors and coping strategies among students of GUMS.

## MATERIALS AND METHODS

A cross-sectional study was conducted on the students of GUMS in the fall of 2012. Sample size was estimated based on a previous study<sup>[11]</sup> that reported the prevalence of stress among Iranian nursing students to be 76%. Then, 487 samples were estimated to be needed based on the formula given in equation 1 ( $\alpha = 0.05$ ,  $\beta = 0.80$ , sampling error of 0.05%, and a possible attrition rate of 10%):

$$\frac{z1 - \alpha / 2^2 \times p(1 - p)}{d^2} \quad (1)$$

A stratified random sampling method was used to select the required samples from a total of 2787 students. To calculate the number of samples needed in each school, the number of students in each school was divided by the total number of students in the university. Then, the resulting number was multiplied by the calculated sample size. Finally, a systematic random sampling method ( $K = 6$ ) was used to select the required samples from a list of students in each school. Not being employed in clinical practice and passing at least one educational semester were the inclusion criteria.

A three-part questionnaire was used. The first part consisted of 12 questions about socio-demographic factors (i.e. the student's age, gender, marital status, program of study, academic year in college, history of academic probation, parents' education level, parents' job, family income, type of abode, inhabitation status, and having another family member in healthcare jobs). The second part of the instrument was the student stress scale (SSS) that consists of 40 yes or no items on four common sources of stress including interpersonal sources (6 items), intrapersonal sources (16 items), academic sources (8 items), and environmental sources (10 items). To obtain the magnitude of stress sources, the sum score for each category was divided by the maximum score in the categories and then its percentage was calculated. Third part of the questionnaire was the Lazarus Ways of Coping Questionnaire (WOCQ). This is a 66-item questionnaire and all items are scored on a 4-point Likert scale (0 = never used, 1 = rarely, 2 = most of the time, and 3 = always). The WOCQ items can be

categorized into two large categories of problem-focused and emotion-focused coping strategies.<sup>[12]</sup>

The SSS scale was previously translated into Persian language by Seyefatemi *et al.* and showed appropriate psychometric properties.<sup>[11]</sup> They also confirmed the instrument's content validity [content validity index (CVI): 1–0.82, content validity ratio (CVR): 1–0.71] and internal consistency (KR 20 = 0.92). The WOCQ questionnaire was previously translated into Persian by Mousavinassab and showed appropriate psychometric properties.<sup>[12]</sup> He also confirmed the instrument's content validity (CVI: 1–0.85, CVR: 1–0.71) and internal consistency ( $\alpha = 0.70$ ).

The study was approved by the research ethics committee of GUMS. Permission was obtained from the authorities in the nursing school. All of the participants were briefed on the study aims, were assured of the confidentiality of their personal information, and asked to sign a written informed consent. After obtaining permission from the schools' authorities, the instrument was passed to the selected students in their breaks between classes. They responded to the questionnaires at a private environment and returned them back to the researcher on the same day.

Data analysis was performed using SPSS v. 18 software. Descriptive statistics were calculated. Also Chi-square and Fisher's exact tests were used to examine the relationship between socio-demographic variables and sources of stress and also the WOC. Kruskal–Wallis test was used to examine the relationship between sources of stress and the students' academic year. Mann–Whitney U test was also used to examine the relationship between WOC and the students' academic year. Logistic regression analysis was also used to determine the factors associated with WOC. The level of significance considered was less than 0.05.

## Ethical consideration

All of the participants assured about confidentiality of reporting the results and agreed to answer to the questionnaire.

## RESULTS

From a total of 528 questionnaires, 487 questionnaires were returned. Overall, 71.9% of the subjects were female and 92.2% were single. Also, 25.9% were studying in nursing, 61.4% were at undergraduate level, and 73.1% were inhabitants at the Guilan province. Only 4.7% of the students had a history of academic probation. Also, 37.6% of the students' fathers had academic education, while 39.8% of their mothers were at high school level.

For the majority of students (61.4%), interpersonal sources of stress were the dominant stressor [Table 1]. Getting new friends (72.7%), conflict with friends (64.3%), and working with unknown people (58.1%) were the students' most common sources of stress [Table 2]. Most of the students used problem-focused WOC (79.7%) [Table 1]. Among the problem-focused WOC, seeking social support (34%), positive reappraisal (29.9%), accountability (19.8%), and thoughtful problem solving (16.2%) were most prevalent among the students. A significant relationship was observed between gender and using emotion-focused WOC ( $P = 0.03$ ) [Table 3]. However, no significant relationship was observed between other socio-demographic characteristics and sources of stress.

## DISCUSSION

Findings showed that interpersonal sources of stress (i.e. acquainting with new friends, conflicts with friends, and working with unknown people) were the most prevalent stressors among the students while educational, environmental, and intrapersonal factors were less stressful, respectively. However, conflicting results have been reported in other studies. For instance, educational matters were found to be the most important sources of stress for the students in several studies,<sup>[13-15]</sup> and financial problems, lack of adequate sleep, and family problems were the most important sources of stress in another study.<sup>[16]</sup> The variation in the sources of stress in different studies may be attributed to the cultural, educational, and environmental factors as well as the personality differences among students. Thus, students may be affected differently by different factors inside and outside academia.

In the present study, most of the students used problem-focused WOC (i.e. seeking social support, positive reappraisal, accountability, and thoughtful problem solving). This finding was consistent with the findings of Zeighami and Zarandi<sup>[17]</sup> and Inanlu *et al.*<sup>[18]</sup> and inconsistent with two other studies in which most of the students used emotion-focused WOC.<sup>[19,20]</sup> Medical sciences students are frequently encountering new academic and clinical challenges. It seems that such issues work as new opportunities for the students and lead them toward learning and using problem-focused coping methods such as reappraisal and seeking support from friends and peers. Such strategies reduce the negative effects of life events and result in more effective adaptation.

In the present study, female students expressed the highest frequency of using emotion-focused WOC while males

**Table 1: The distribution of sources of stress and ways of coping among the students**

Variables assessed	Number	Percent
Sources of stress		
Interpersonal	299	61.4
Intrapersonal	33	6.8
Environmental	62	12.7
Academic	93	19.1
Ways of coping		
Emotion focused	99	20.3
Problem focused	388	79.7

**Table 2: The distribution of interpersonal sources of stress among the students**

Interpersonal sources of stress	Yes		No	
	Number	Percent	Number	Percent
Changes in social activities	273	56.1	214	43.9
Conflicts with friends	313	64.3	174	35.7
Working with unknown people	283	58.1	204	41.9
Fighting with friends	192	39.4	295	60.6
Acquainting with new friends	354	72.7	133	27.3

**Table 3: The distribution of ways of coping in terms of gender among the students**

Ways of coping gender	Emotion focused		Problem focused		Test results
	Number	Percent	Number	Percent	
Male	62	17.7	288	82.3	$\chi^2: 4.66$ df: 1 $P=0.03$
Female	36	26.5	100	73.5	
Total	98	20.2	388	79.8	

mostly used problem-focused ways. Moreover, logistic regression analyses showed that gender is a predictor for using emotion-focused WOC. Saadati and Lashni<sup>[21]</sup> and Krypel and Henderson-king<sup>[22]</sup> have also reported a significant relationship between gender and using coping strategies.<sup>[21,22]</sup> On the contrary, Shaban *et al.* could not find any gender difference in using coping strategies.<sup>[23]</sup> Perhaps, social expectations of the gender's role, family and parenting style, personality traits, and cultural factors all play a role in explaining these findings.

The current study showed that interpersonal sources of stress were the most common stressors among medical sciences students. Results of the present study may help managers both in the clinical and educational setting to get a better understanding of the medical sciences students' sources of stress and take appropriate steps in identifying and resolving these stressors. As the interpersonal issues were the most important stressors for the medical sciences students, establishing some training programs

on communication skills, interpersonal and organizational relationships, problem solving, and stress management for the students (especially the freshmen) may help them in better confrontation with the challenges in academic and clinical settings. Holding similar programs and also workshop on the student sources of stress for faculty members and staff in academic and clinical setting may also help them in better communication and dealing with the medical sciences students.

In the present study, female students used emotion-focused WOC more than male students. Then they would be more apt to emotional reactions such as depression, isolation, and confusion in life and education. Appropriate and effective counseling and advisory system may be helpful in prevention of such consequences. The present study was conducted using self-report questionnaires which might have caused bias in the students' responses. Also, the students' psychological condition, their individual differences, personality traits, family characteristics, and their differences in experiences and perceptions may affect their responses and these limitations were beyond the researchers' control. The results of this study revealed some differences with the findings of previous studies conducted both in Iran and overseas. Moreover, this study was conducted only in one university and on a limited number of students. The number of students in each school was limited. Given the effects of environmental and socio-cultural variables on the students' ways of coping, and considering the effects of stress in health and learning of the students, a large-scale, multicenter study is suggested to identify the medical sciences students' stressors and their ways of coping and implement effective ways to manage their stress.

## CONCLUSION

Interpersonal sources of stress were the most common stressors among medical sciences students; therefore, managers can help students to stop these stressors by conducting appropriate programs.

Also, effective counseling and advisory system may be helpful in prevention of incompatible consequences in female students.

## ACKNOWLEDGMENTS

This study is the result of a research project approved by GUMS with grant number 89205. The authors would like to acknowledge all officials and students who assisted and supported them in this study.

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**How to cite:** Niknami M, Dehghani F, Bouraki S, Kazemnejad E, Soleimani R. An assessment of the stressors and ways of coping in Iranian medical sciences students. *Iranian J Nursing Midwifery Res* 2015;20:521-5.

**Source of Support:** The study was supported by Guilan University of Medical Sciences. **Conflict of Interest:** We declare that there are no conflicts of interest to be disclosed.