



## Medical students' occupational burnout and its relationship with professionalism

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### Abstract

**Introduction:** Occupational burnout is a prevalent syndrome among medical students as well as other health professionals. It may be an important factor contributing to professional conducts. The aim of this study was to determine the prevalence of burnout among medical students of Shiraz University of Medical Sciences at clinical level and its relationship with professionalism.

**Methods:** In this cross-sectional study, all medical clinical students who had spent a minimum of six months of the first year of clinical level and who were in their final year, in 2015-16 were examined (using the census method). Data were gathered using demographics, educational background, and the dimensions of professionalism questionnaires and Maslach Job Burnout Inventory. Data analysis was performed using descriptive statistics, ANOVA and Pearson correlation test by SPSS, version 14. A p-value of <0.05 was considered statistically significant.

**Results:** The total mean score of burnout was 61.37±20.44 (moderate). In this study, 54.3% of the students had low, 35.2% moderate and 10.4% high job burnout. There was a negative correlation between job burnout and professional ethics with Pearson correlation test ( $p < 0.000$ ,  $r = 0.23$ ). There was no significant relationship between the increase in academic years and burnout.

**Conclusion:** Regarding the high prevalence of burnout and its adverse effects among medical students, developing a workplace assistance program and adequate facilities to help them is necessary. Also, due to the negative correlation between professionalism and burnout, continuous training of professional ethics should be taken into consideration by educational authorities.

**Keywords:** Burnout, Professional ethics, Medical students

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### Introduction

Occupation is the flourishing manifestation of the goals and desires of every human being. It can provide the grounds of excellence and evolution of individuals, and its requirement is that a person's occupation should be in accordance with the individual's spirits and capabilities. Various occupational distresses such as burnout can cause inefficiency of an

individual and organization. Occupational burnout is the most important inevitable consequence of long stress and exposure to high workload for a long time that leads to a feeling of incompetence and mental fatigue (1-3). Burnout has three dimensional concepts of emotional exhaustion, depersonalization and low personal accomplishment (1).

The medical profession is exposed to the risk

of burnout due to the inherent characteristics and numerous pressures the medical community is internally and externally facing with. Various factors, such as expecting not to make mistakes, being perfect, and sacrificing for service providing and accountability expose the physicians at the risk of burnout (3, 4).

Recent social, defense medicine evolutions, and the reduction of occupational safety in medicine in some countries have also contributed to the growth of occupational burnout in the medical community (5). Previous studies suggested an inverse relationship between burnout and physician's productivity (6); some have suggested that it is associated with a decrement in medical professionalism (1, 2). A series of previous studies indicated that burnout could induce negative attitude regarding the physicians' professional commitment and responsibility to the society and decreased quality of care (1, 2). It increases the medical errors and, moreover, imposes a lot of costs on patients and health organizations (7).

Burnout has an important role in the adherence to the principles of professionalism and the performance of individuals (8). Also, the moralization of medical community and medical students can prevent the emergence of occupational burnout (9, 10).

Based on both previous studies in Iran and other countries, burnout has a high prevalence among medical students (11-15). These studies have identified numerous factors associated with burnout among medical students, such as prolonged engagement in clinical practical work, number of years of the education, performance pressure, concern about academic grades, future worries, low levels of support and less satisfaction with the balance between work and personal life. (11, 14, 15).

Despite its importance, the relationship between burnout and professionalism is unexplored. However, surveys, such as those conducted by Dyrbye et al., have shown that burnout is associated with engagement in more unprofessional behaviors in medical students (9, 12).

The present study investigated burnout among clinical level students at Shiraz University of Medical Sciences and also its relationship with professionalism. The results of this study will possibly be used for planning for professionalism training.

## Methods

In this cross-sectional study, occupational burnout among medical students in clinical level and its relationship with professional ethics was investigated. All clinical medical students in

various educational hospitals at Shiraz University of Medical Sciences, who had passed at least 6 months of their clinical period, and at least one year or less had remained until the end of their internship period were eligible to participate in the study by the census method (n=260). The students who were reluctant to participate in the study were excluded.

The questionnaires consisted of demographics, educational background, followed by the Maslach job burnout Inventory (MBI) and professionalism questionnaire. The reliability and validity of the above-mentioned questionnaires, both in foreign and national researches have been confirmed by experts.

The regional standardization and reliability evidence of MBI scale have been supported by national (regional standardization) and international published studies (1, 16-19).

MBI consisted of 22 questions about personal feelings or attitudes answered on a 7-point Likert scale which assessed three domains of burnout including depersonalization (score range 0-30), emotional exhaustion (score range 0-54), and low personal accomplishment (score range 0-48). The minimum and maximum possible total scores were 22 and 154, respectively. Scores for each of the three burnout domains were calculated and then grouped into "low," "moderate," and "high" categories according to MBI scoring guidelines. The total scores of burnout were: low [22-59], moderate [59-88], and high [>88], as recommended by the scoring developers (1).

The standard questionnaire of professionalism used in this research was American Board of Internal Medicine (AIBM) questionnaire, the validity and reliability of which were confirmed by Aramesh et al. after being translated into Persian language (20). It consists of 3 sub-groups for measuring various dimensions of professional ethics, including: 1- excellence and privilege, 2-honesty, 3- respect and altruism. The validity of the translated questionnaire and its content validity have been confirmed by the experts. By using Cronbach's alpha coefficient, its reliability was measured as 0.75. Each one of the questionnaire options has a spectrum (always-9... never-0). The scores of three dimensions are added and the final ethics score will ultimately be 170.

Questionnaires were distributed between 250 medical students with regard to the entry and exit criteria; the first group were the students of clinical level; with 6 months having passed from their entrance to the hospital (n=110). The second group were in their last year of internship (n=150).

The statistical analysis was done by SPSS

14.0 software. Descriptive statistics, such as mean, standard deviation, and percentage were calculated. To investigate the relationship between burnout and professional ethics, we used Pearson correlation test, one-way ANOVA, and correlation coefficient test. T-test was also used to investigate the relationship between demographic variables and various dimensions of burnout and also professionalism. The statistical significance level was considered as 0.05 or less.

#### Ethical considerations

After explaining about the study goals, the students provided oral informed consent and then self-administered anonymous questionnaires were distributed among them to be completed. They were assured that the information they provide will be kept confidential.

#### Results

A total of 260 questionnaires were distributed, and 230 (88%) of them which consisted of 103 (44.8%) first year clinical students and 127 (55.2%) last year interns returned.

In terms of demographics of the respondents, we received 163 (70.9%) questionnaires from females and 67 (29%) from males. Also, 166 of them were single (72%) and 64 (27.8%) were married.

Table 1 shows the mean scores of burnout and professionalism components. The overall mean score of burnout (61.378) and also the score in all dimensions of burnout were at a moderate level.

In the case of professionalism, the mean scores were 99.7 out of the total score of 170.

Based on the classification of burnout and its dimensions (Table 1), in respect of the scoring system mentioned in the method section, it seems that burnout is common among medical students of clinical level at Shiraz University of Medical Sciences.

To investigate the relationship between burnout and professionalism, we used Pearson correlation coefficient, based on which a weak reverse relationship ( $r=0.235$ ,  $p<0.001$ ) was observed between burnout and professionalism; the increase in one of them resulted in the reduction of another. Later, the relationship between three levels of burnout and professionalism was investigated, using one-way analysis of variance (ANOVA) test. The mean scores of the correlation between professionalism and burnout were 104.32, 95.45 and 93.37 for low, moderate and high burnout, respectively. In this test, a significant relationship was observed between professionalism and all levels of burnout ( $p=0.003$ ).

Tukey's test was used for multiple comparisons between the mean score of burnout and professionalism, which showed a significant difference between low level compared with medium ( $p=0.009$ ) and high levels of burnout ( $p=0.047$ ) and professionalism. However, there was no significant difference between medium and high level of burnout and the mean score of professionalism ( $p=0.89$ ).

In addition to investigating the relationship

**Table 1:** Descriptive statistics of job burnout and professional ethics and its components

Variables	Total number	Min	Max	Mean±SD
Burnout	230 (%100)	29.00	127.00	61.378±20.444
Low (22-59)	125 (%54.3)			
Moderate (59.1-88)	81 (%35.2)			
High (88.1-157)	24 (%10.5)			
Emotional exhaustion	230 (%100)	0.00	51.00	20.222±10.181
Low (<18)	114 (%49.6)			
Moderate (18-30)	70 (%30.4)			
High (>30)	46 (%20.0)			
Depersonalization	230 (%100)	0.00	28.00	6.652±5.262
Low (<5)	122 (%53.0)			
Moderate (6-11)	72 (%31.3)			
High (>12)	36 (%15.7)			
Low personal accomplishment	230 (%100)	9.00	48.00	34.943±8.587
Low (>40)	77 (%33.5)			
Moderate (34-40)	63 (%27.4)			
High (<34)	90 (%39.1)			
Professionalism	230	19.00	145.00	99.743±19.913
Excellence	229	3.00	52.00	28.729±9.475
Honesty	230	0.00	49.00	29.409±7.341
Respect	230	0.00	136.00	42.000±14.590

**Table 2:** The relationship between burnout and demographic variables

Demographic variables		Number	Mean	SE	Sig.*
Sex	Female	163	61.687	1.612	0.72
	Male	67	60.627	2.475	
Marital status	Single	166	60.398	1.552	0.242
	Married	64	63.922	2.689	
Clinical level	Student	103	60.582	2.013	0.59
	Intern	127	62.024	1.821	

\*Significance level of 0.05

between overall occupational burnout ratio and professionalism, the relationship between each one of the components with professionalism was examined. The relationship between emotional exhaustion, depersonalization and personal incompetence with professionalism was investigated by Pearson correlation test and its results showed that there was a relationship between burnout and professionalism in two dimensions of depersonalization ( $r=0.315$ ,  $p<0.001$ ) and personal incompetence ( $r=0.274$ ,  $p<0.001$ ), but no significant relationship was observed between emotional exhaustion and professionalism ( $r=0.092$ ,  $p=0.164$ ). Using T-test, we observed no significant differences between the burnout and demographic variables (Table 2).

Also, the relationship between each one of the components of burnout and clinical level was investigated by a separate t-test and no significant difference was found.

## Discussion

In the present study, according to the classification of burnout, 54.3% of the students had low, and 45.7% had medium to high level of burnout. The total mean score, as well as the mean scores in all three dimensions of burnout, were in moderate intensity.

Considering these rates of moderate burnout that students experienced, it can be expected that this situation will provoke some consequences of burnout including attitudinal (pessimism and distrust towards others); behavioral (aggressiveness, reduced job performance, engaged in unprofessional behaviors, increased problems with colleagues, etc.); psychological (feeling tired, headaches), organizational (reduction in the response to the patients' needs and), and emotional aspects (no interest in the job, depression, feeling trapped in a job, a sense of helplessness, feelings of indifference, loss of empathy). These consequences can affect their commitment to professionalism as future physicians.

The findings of the present study are consistent with those of numerous studies. These findings

are largely consistent with the results of a similar study performed in Kashan on the senior students of medicine, showing that 52.9% of the students had low and 38.6% had medium to high burnout (15).

A study by Cecil et al. in the United Kingdom showed that more medical students were located at high levels of burnout in all three dimensions, especially in the emotional dimensions; the reasons for this difference can be the fundamental differences in the student's educational and working system and the different personality and cultural characteristics of individuals in the two exhaustion and depersonalization compared with the present study (14). One of the studies was about the factors impacting burnout.

In the study of Dyrbye et al., 45% of the participants had burnout, which increased with years of education. Based on the mean scores of burnout, 35% of the participants had high emotional exhaustion, 26% had high depersonalization, and 31% had low personal competence (13); the results of this study are consistent with those of the present study.

In another study by Mehdizadeh et al., the mean scores of burnout were at the medium level in the dimensions of depersonalization and personal competence and at high level in the emotional exhaustion. In fact, in the emotional exhaustion dimension, the mean score of burnout was higher than that of the present research, and in the other two dimensions it was similar to it (21).

In general, according to the mentioned studies and also the results of the present study, it seems that burnout is a common problem in medical students with various rates between the countries and regions. The differences between the results of the studies is expected because burnout is related to stressors arising from work environment which in turn is influenced by numerous factors including cultural settings, organizational factors, the amount of training on coping strategies and the difference in the studied population, such as the educational level or work experience, etc. (3, 10, 11, 22, 23).

Among the demographic factors proposed in relation to burnout, gender, age and marital status

have been mentioned. It has also been shown that burnout has a relationship with years of study (14), empathy and optimism (10, 22), personal life events, and especially unpleasant life incidents such as an individual's sickness or the loss of family members (8, 23) professionalism (9, 10), employed coping methods (24), perfectionism (25), specialty in medicine (7), and workplace indices (3, 21).

In the present study, the result of T-test showed that gender and marital status were not a major contributing factor to differences in burnout (Table 2). These findings are in line with those of the study in Kashan, in which no significant relationship was found between age, marital status and gender and burnout (15). In the study of Mehdizadeh, the ratio of burnout in the emotional exhaustion dimension was higher in women than in men. However, there was no significant difference between the two sexes in the dimensions of depersonalization and personal competence and also marital status (21). In the study of Cecil et al., there was no relationship between emotional exhaustion and gender and marital status, but the ratio of depersonalization and personal incompetence have been significantly higher in men than in women (14).

It seems that different results about the relationship between gender and marital status and burnout have been obtained in other studies, which could be due to the difference in the culture and the educational environment status.

Investigating the relationship between burnout and professionalism in the present study by using Pearson correlation test showed a negative correlation ( $r=0.23$  and  $p=0.00$ ). Accordingly, with increasing occupational burnout, commitment to professionalism reduced.

A large scale study conducted by Dyrbye et al. on the students of 7 great American medical schools revealed that about 52% of the participants suffered from burnout. They showed more unprofessional behaviors among the students who had burnout. They have also reported less willingness for caring patients in students with burnout compared to those without it (9).

In the research of Brazeau et al., high levels of burnout were also associated with the shortage of empathy and professional conduct. A significant reverse relationship was also obtained between the burnout and professional conduct (10). Regarding this relationship, burnout may have a great impact on the interest of physicians to promote general health and the ability to manage conflicts of interest and other values and professional behaviors. Some studies showed

that a high quality of life may increase empathy, which indicates that unique movement and reaching a high degree of welfare can increase professionalism.

In the present study and the previous ones performed in this area, a negative relationship was obtained between burnout and professionalism. Hence, attention to medical professionalism education can be regarded by the educational authorities as a simple, acceptable and relatively low cost strategy for coping with burnout and its harmful impacts on the health system of the community, as well as the health of the students' mind and body. Also, the reduction of burnout level in a variety of ways (training coping methods, strengthening organizational support) can promote professionalism among students and increase the quality of patients care and respecting the patient.

In this study, no statistically significant relationship was found between burnout and the years of study ( $p=0.59$ ). The study by Sepehrmanesh et al. (15) showed similar result. The most important reason for the diminution of the impact of years of study in burnout can be the role of other more powerful factors, such as organizational factors, lack of systematic organizational support, role ambiguity and the lack of adequate training on coping skills during the years of study.

In the study of Cecil, a significant relationship was found between the years of study and the dimensions of burnout: emotional exhaustion dimension ( $p=0.02$ ), depersonalization ( $p=0.001$ ), and personal competence ( $p=0.01$ ), that was not consistent with the result obtained from the present study (14).

## Conclusion

Medical students might be affected by burnout in different ways. Therefore, an assistance program, with access to counseling and therapy, should be made available to all students providing needed support during stressful problem situations. Training in general life skills, dealing with conflict and stress management interventions to deal with burnout must be developed in medical schools. Regarding the results of this study about the association of burnout with professionalism, further research is suggested to determine whether interventions designed to prevent the development of burnout and life skills education helps the students cultivate professional characteristics and behaviors.

## Limitations and Strengths

One of the limitations of the present study

is its cross-sectional nature. This type of study has no dimension of time, so it cannot establish a definitive statement about causal relationships of variables with burnout. Also, due to the study design, the findings are useful at the population level, which may limit the generalizability of the results to all medical students. Therefore, longitudinal and prospective studies are needed to gain more insight into dimensions of burnout, the impact of burnout on the well-being, and its relationship to professionalism over the course of the students' education. The strengths of our study are its relative novelty and practicality.

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**Conflict of Interest:** None declared.

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