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The factors affecting academic burnout in medical students of Mashahd University of Medical Sciences in 2013-2015

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Abstract:

INTRODUCTION: Academic burnout is one of the issues involving the educational systems at all levels, which wastes the human resources and expenditures. Academic burnout refers to the sense of exhaustion due to educational requirements, the sense of cynicism and indifference, and the sense of lack of competence. Considering the fact that burnout has already been studied in different professions and in cultures different from that of ours, there is a need to identify these factors among the Iranian medical students and accordingly propose some strategies to reduce burnout symptoms among these students. With this end, this study aimed to identify and quantify the importance of possible factors causing burnout among medical students in the 2nd and 4th years of their studies in Mashahd University of Medical Sciences and provide some suggestions.

METHODS: The present research is a cross-sectional study conducted in 2017. The participants included medical students who had entered Mashahd University of Medical Sciences in Iran in 2013 and 2015 and were in their 4th and 2nd year of their studies in the university. A questionnaire prepared and validated by Maslach *et al.* was used to collect the data and distributed among 195 participants who were selected randomly as the sample.

RESULTS: The results showed that the mean scores given by 195 selected respondents regarding emotional exhaustion, indifference, and inefficiency were respectively 3.89, 3.87 and 4.12 out of 7.

CONCLUSION: Based on the results, students had the highest level of academic burnout in personal inefficiency or incompetence component and the lowest level was observed in indifference. Therefore, burnout and its components were explicitly seen among medical students; the authorities are recommended to take measures to reduce academic burnout among the students.

Keywords:

Academic burnout, emotional exhaustion, indifference, inefficiency

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Introduction

In our society, students are worth being paid more attention from two aspects. First, they are in the most powerful and prepared stage of their whole life; second, they are distinguished individuals in terms of mental capabilities and academic talents. Students are thus expected to act as the symbol of success in society. In some cases, however, they are faced with challenges during their academic studies, which lead to failure in achieving their goals; therefore,

they get disappointed. If these challenges are continued, academic burnout occurs. Academic burnout is considered as one of the most important factors of mental health among students and a heavy burden on their academic achievement.^[1] The symptoms include indifference toward studying the lessons, the sense of exhaustion and incompetence.^[1]

Educational settings are considered to be the learners' workplace. Although learners do not work as a staff member at the educational settings, from a psychological

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point of view, their teaching and learning activities can be considered as a task.^[2]

Educational burnout is defined as a feeling of tiredness due to the demands and requirements of studying, having a pessimistic feeling with no interest in the content of the coursework, as well as the feeling of poor personal development in curriculum and education.^[3] Academic burnout is one of the issues that affect the educational system at all levels and leads to waste of human resources and increase in costs. In addition to the negative effects that occur during education, exhaustion also has other long-term effects. Students who are bored during education are less likely to assume job responsibilities in the future, are less likely to use the results of research done on occupation, and are more likely to quit their jobs after employment.^[4]

On the other hand, attention to psychological empowerment, in the case of academic burnout, can be an effective measure in achieving the goals of higher education, so that a small step may be taken to explain strategic plans in revising higher education policies.^[5]

Moreover, due to the consequences of academic burnout, especially in the case of medical students during their clinical activities, it is considered a stressful period. Studies have shown that students who are suffering from academic burnout do not have a good performance after entering the clinical setting and even when they are employed.^[1-6] In recent years, implementation of the plans for the development of the health system on the one hand, and the geographical location of the city of Mashhad on the other hand, have made Mashhad University of Medical Sciences a resort for health tourism for many domestic and foreign patients. Hence, due to the importance of medical students' performance in hospitals and the conditions for academic burnout, the present research aimed to study the status quo of academic burnout among the students.

All in all, the mental health of medical students has been a cause for concern on the part of medical schools in several countries, and studies conducted in other countries have shown that burnout is a multi-factorial syndrome, characterized by various symptoms involving especially medical students. To the authors' experience, there is a substantial prevalence of this syndrome among medical students in Iranian universities. Considering the fact that burnout has already been studied in different professions and in cultures different from that of ours, there is a need to identify these factors among the Iranian medical students and accordingly propose some strategies to reduce burnout symptoms among these students. With this end, this study aimed to identify and quantify the

importance of possible factors causing burnout among medical students in the 2nd and 4th years of their studies in Mashhad University of Medical Sciences and provide some suggestions.

Methods

This research is an applied analytical study conducted in the year 2017. The target population of the study included the medical students of Mashhad University of Medical Sciences entering in the years 2013 and 2015 ($n = 400$ students). In this research, random sampling was used and 195 students were selected as the participants, using the following formula:

$$n = \frac{Nz^2s^2}{NB + z^2s^2}$$

As to the instrument and the conceptual framework used, Maslach *et al.*'s model and questionnaire^[6] were used to determine the status of academic burnout among the research community in the present study.^[6] The validity of the questionnaire was confirmed by a panel of experts and its reliability coefficient was estimated 76.7 using Cronbach alpha.

The participants' informed consent was obtained; then, the questionnaires were distributed among them. After collecting the questionnaires, the data were analyzed using descriptive statistics and inferential statistics. In the descriptive statistics section, we described how age, gender, history, and position were described in the sample and in the inferential part, using *t*-tests; the differences in the effect of variables were investigated.

Results

Descriptive statistics of demographic variables

Based on the results, 36.9% of the respondents were male and 63.1% female. Their mean age was 23.19 years. 87.2% of them were single and 12.8% married. Of 195 respondents, 11.8% were employed and 88.2% unemployed; 67.7% of the subjects were indigenous and 32.3% were from other cities in Iran. Other features are shown in Table 1.

The results showed that the mean score of emotional exhaustion was 3.89 out of 7, with a standard deviation of 0.40. Moreover, the mean score of indifference was 3.87 out of 7, with a standard deviation of 0.46. The mean

Table 1: Descriptive statistics of burnout components

Variable	n	Minimum	Maximum	Mean±SD
Emotional exhaustion	195	2.80	5.00	3.89±0.40
Indifference	195	2.50	5.00	3.87±0.46
Inefficiency	195	3	5.33	4.12±0.38
Burnout	195	3.47	4.40	3.98±0.16

SD=Standard deviation

score of inefficiency was 4.12 out of 7, with a standard deviation of 0.38, indicating the dispersion level of the students' opinions about inefficiency variable. Therefore, according to the above results, students had the highest level of academic burnout in personal inefficiency or incompetence component and the lowest level was observed in indifference.

The mean scores of academic burnout among the participants who had entered the university in the years 2013 and 2015, we performed the Pearson correlation test. The results are shown in Table 2.

As shown in Table 2, the year of entry was not correlated with academic burnout in the two groups who had entered the university in the years 2013 and 2015.

To determine whether there is a relationship between academic burnout and entering the university in the first semester and second semester of the academic year, Pearson correlation test was used. The results are summarized in Table 3.

Half-year entrance is supposed to be a factor influencing academic burnout among the students. As to the mean values of the first half year entrance (=4.02) and the second half year entrance (=3.92) as well as the significance level ($t = -4.44$, $P = 0.000$), there was a significant difference between the students' burnout rate. Furthermore, in the components of academic burnout in the two components of emotional exhaustion ($t = -7.3$, $P = 0.000$) and indifference ($t = -6.3$, $P = 0.000$), the figure in the second half-year entry was significantly higher, but in terms of inefficiency component of the first semester entries ($t = 6.4$, $P = 0.000$), they were more inefficient.

To compare the rate of academic burnout among the students based on gender, we also performed a Pearson correlation test. The results are shown in Table 4.

Based on the results shown in Table 4, we found that there was a significant difference between the rate of academic burnout in male and female students. In other words, gender affects the students' academic burnout. Therefore, given the mean score of male ($\bar{X} = 3.93$) and female students ($\bar{X} = 4.00$) as well as their significance level ($P = 0.007$; $t = 2.713$), it can be seen that there is a significant difference between academic burnout of

male and female students. As a result, the research hypothesis is confirmed and the null hypothesis rejected [Table 4].

Furthermore, the test results indicated that there was a significant difference between the average rate of all three burnout components (emotional exhaustion $P = 0.009$, $t = 2.639$; indifference $P = 0.001$, $t = 3.791$; and personal inefficiency $P = 0.015$, $t = 2.454$) in male and female students. According to the results, female students, compared to the male ones, suffered from more academic burnout in terms of emotional exhaustion and indifference, while male students, compared to the female ones, were more inefficient in terms of inefficiency component. Overall, it can be stated that, in this research, female students suffered from more academic burnout than male ones.

To find if there is a correlation between the rates of burnout in medical students with respect to age, we performed Pearson correlation test. The results are shown in Table 5.

The test results showed that given the low correlation coefficients, none of the academic burnout components (emotional exhaustion $P = 0.105$, $r = -0.116$; indifference $P = 0.233$, $r = -0.086$; and personal inefficiency $P = 0.264$, $r = 0.080$) had a significant correlation with the age variable. However, it should be noted that correlation coefficients were negative in all variables except for inefficiency; this indicates that younger students are more susceptible to academic burnout.

The results of the test run to compare the mean of the students' academic burnout according to marital status are shown in Table 6.

The test results showed that there was no significant difference between burnout components (emotional exhaustion $P = 0.234$, $t = 1.194$; indifference $P = 0.265$, $t = 1.117$; and personal inefficiency $P = 0.247$, $t = 1.160$) and the students' marital status. According to the results, the mentioned hypothesis is rejected and the null hypothesis confirmed.

We also Compared the mean of the students' academic burnout based on employment status. The results are shown in Table 7.

Table 2: Comparison of the student's mean academic burnout in terms of the year of entry

Burnout	Year of entry, mean±SD		t	P
	4 th year students (entrance 2013)	2 nd year students (entrance 2015)		
Emotional exhaustion	3.86±0.43	3.92±0.36	-1.06	0.289
Indifference	3.83±0.44	3.92±0.48	-1.45	0.149
Inefficiency	4.15±0.38	4.00±0.38	1.28	0.202
Burnout	3.97±0.174	3.98±0.143	-0.784	0.434

SD=Standard deviation

Table 3: The relationship between half-year entrance to university and academic burnout

Burnout	Year of entry, mean±SD		t	P
	First half year entrance	Second half year entrance		
Emotional exhaustion	3.69±0.379	4.06±0.341	-7.3	0.000
Indifference	3.67±0.456	4.05±0.393	-6.3	0.000
Inefficiency	4.29±0.356	3.96±0.345	6.4	0.000
Burnout	3.92±0.164	4.02±0.141	-4.4	0.000

SD=Standard deviation

Table 4: Comparison of the mean rate of students' academic burnout according to gender variable

Burnout	Gender, mean±SD		t	P
	Male	Female		
Emotional exhaustion	3.79±0.433	3.94±0.377	2.639	0.009
Indifference	3.72±0.439	3.96±0.455	3.791	0.001
Inefficiency	4.21±0.394	4.07±0.373	2.454	0.015
Burnout	3.93±0.158	4.00±0.157	2.713	0.007

SD=Standard deviation

Table 5: Pearson correlation test for determining the relationship between the age and academic burnout of students

Variable	n	Mean±SD	r	P
Age	195	23.19±2.28	-0.087	0.226
Burnout	195	3.98±0.160		
Emotional exhaustion	195	3.89±0.405	-0.116	0.105
Indifference	195	3.87±0.464	-0.086	0.233
Inefficiency	195	4.12±0.386	-0.080	0.264

SD=Standard deviation

Table 6: Comparison of the mean of the students' academic burnout according to marital status

Burnout	Marital status, mean±SD		t	P
	Single	Married		
Emotional exhaustion	3.90±0.399	3.80±0.439	1.194	0.234
Indifference	3.89±0.471	3.78±0.410	1.117	0.265
Inefficiency	4.11±0.390	4.20±0.354	1.160	0.247
Burnout	3.98±0.158	3.95±0.169	0.751	0.453

SD=Standard deviation

Table 7: Comparison of the mean of the students' academic burnout according to employment variable

Burnout	Employment, mean±SD		t	P
	Employed	Unemployed		
Emotional exhaustion	3.0±0.434	3.92±0.388	3.539	0.001
Indifference	3.60±0.327	3.91±0.469	3.007	0.003
Inefficiency	4.37±0.225	4.08±0.390	3.448	0.001
Burnout	3.91±0.195	3.98±0.153	1.959	0.052

SD=Standard deviation

The test results showed that although no significant difference was observed in the total score of academic burnout in employed and unemployed participants, the means of all the three burnout components (emotional exhaustion $P = 0.001$, $t = 3.539$; indifference $P = 0.003$, $t = 3.007$; and personal inefficiency $P = 0.001$, $t = 3.448$)

were significantly different in the employed and unemployed students. According to the results of this test, unemployed students, compared to the employed ones, suffered from more academic burnout in terms of emotional exhaustion and indifference, while unemployed students were more inefficient than the employed ones in terms of inefficiency component.

As shown in Table 8, we also compared the mean of the students' academic burnout according to being indigenous or nonindigenous

The test results showed that the means of all the three burnout components (emotional exhaustion $P = 0.001$, $t = 5.002$; indifference $P = 0.001$, $t = 5.992$; and inefficiency $P = 0.001$, $t = 5.491$) were significantly different in indigenous and nonindigenous students. According to the results of this test, indigenous students, compared to the nonindigenous ones, suffered from more burnout in terms of emotional exhaustion and indifference, while nonindigenous students were more inefficient than indigenous ones in terms of inefficiency component.

We also compared the students' rate of burnout with respect to their place of residence. The results are summarized in Table 9.

There was a significant difference between the students' academic burnout in terms of the place of residence. Academic burnout was observed in residents of a shared student home, family home, dormitory and then a single home, respectively.

Discussion

The findings of this study showed that academic burnout and its components were clearly observed among the medical students and confirmed, as revealed in other researches. This finding is in the same line with the results of the studies conducted by Taghvainia *et al.*, Rahmati and Mohammadi, Sadoghi *et al.*, Zaregar *et al.*, Seo *et al.*, and Celik and Oral.^[7-12]

According to the theoretical model used in the current research,^[7] emotional exhaustion occurs first; then, its spread leads to pessimism and ultimately causes inefficiency. As Dick points out that in case one is not able to cope with the environmental pressures and stresses, will experience burnout, the manifestations of which impact him/her physically, emotionally, and cognitively.^[13]

In fact, it can be stated that academic life of students is one of the most critical parts of their life, and has extensive personal, professional, and social effects. The success and proper direction of students in their favorite pathways can guarantee their future success and eventually the

progress and purposefulness of the community. In this regard, academic burnout has a negative effect on the students' academic performance. Students in university contexts naturally encounter different challenges and situations. Therefore, they need to be supported in these situations, so that they can continue to work. However, sometimes, the conditions cannot go smoothly and there is the possibility for the students to fail.

In fact, the results of the current research also showed that academic burnout can occur due to different reasons. This change in attitudes of students towards the field of study, university, work and social conditions can sometimes be frustrating, and it naturally affects the students' communication with the university. Exhaustion in recent years has expanded into educational and academic situations and contexts.

In addition, the final results of the research showed that emotional exhaustion with a score of 4.12 was the next and one of the most important factors in the academic burnout of students. As Pines *et al.* state, burnout results from emotional and mental exhaustion, leading to negative attitudes and loss of interest in academic tasks.^[14] In fact, the results showed that most of the students had some type of emotional distance from education and had some negative attitudes toward continuing education. In fact, negative attitudes toward the discipline chosen as the major affects their intention toward continuing the studies in the academic environment and even their feeling of mistake in the choice of the major as a future profession. The results of a study by Marzooghi *et al.* confirm the findings of this study. According to them, academic burnout can create a feeling of exhaustion in performing the educational duties and studies, negative attitudes toward continuing university studies, and a sense of inefficiency, which all

result in failure in academic performance and increase in worries as to their mistakes in doing their assignments.^[15]

Finally, indifference with a score of 3.87 was identified as another factor affecting the amount of academic burnout. In fact, in this case, students are reluctant to learn lessons, are unable to continue attending classrooms, have frequent absenteeism, do not contribute to classroom activities, have a feeling of disability in learning the content, and eventually experience academic failure. This kind of unwillingness in students can lead to less motivation for doing the requirements of the courses and a high percentage of university drop-outs, and so on; these are examples of mental health disorders and should be given much consideration. In line with our results, Asayesh *et al.* in a study came to the conclusion that academic burnout is the result of one's inability to cope with the stressing factors during his/her studies. An exhausted student is disappointed, has no interest in his courses and no motivation to continue his/her studies, and does not take part in class activities, all leading to low performance in his/her academic tasks.^[16]

Any study has some limitations and the present one is no exception. The students of medicine are overloaded with their classes and courses and some prefer to be absent in their classes, so finding them to fill out the questionnaire was sometimes hard. We planned to see them at evenings in their dormitory.

Conclusion

The results of this study showed the importance of academic burnout among the students; it is suggested that the authorities should take measures to reduce the rate of burnout among the medical students. The present situation should be improved by holding workshops on academic exhaustion by counselors, especially at the beginning of medical courses and in the first semester of the study to manage the students' interests. It is also suggested that resilience training programs, especially on self-efficacy, which is one of the most effective educational features, should be held. Practicing macroeconomic management in universities to create a balance between demand and supply with the capacity of the external environment and the management of the fields offered by the university; using scientific and expert counselors at

Table 8: Comparison of the mean rate of students' academic burnout according to being indigenous or non-indigenous

Burnout	Habitat, mean±SD		t	P
	Indigenous	Non-indigenous		
Emotional exhaustion	3.98±0.396	3.69±0.349	5.002	0.001
Indifference	4.00±0.443	3.61±0.393	5.992	0.001
Inefficiency	4.02±0.371	4.32±0.334	5.491	0.001
Burnout	4.00±0.158	3.92±0.150	3.400	0.001

SD=Standard deviation

Table 9: Comparison of the students' mean academic burnout with respect to the place of residence

Burnout	Place of residence, mean±SD				F	P
	Home	Dormitory	Single	With parents		
Emotional exhaustion	4.12±0.178	3.76±0.278	3.29±0.266	3.98±0.396	17.46	0.000
Indifference	4.10±0.136	3.67±0.309	3.19±0.370	4.00±0.443	20.6	0.000
Inefficiency	3.93±0.149	4.24±0.226	4.76±0.284	4.02±0.371	22.41	0.000
Burnout	4.04±0.076	3.93±0.140	3.85±0.178	4.00±0.158	5.72	0.001

SD=Standard deviation

the specialist level for medical students using interviews and specialized tests of mental and intellectual abilities of the businesses; trying to raise the students' awareness and interest and the psychological preparedness for continuing a medical profession that has a high level of stress; and finally guiding them toward continuing their studies in specialty courses are the measures which are suggested to be taken to reduce academic burnout among medical students.

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Conflicts of interest

There are no conflicts of interest.

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