

The frequency of academic burnout and related factors among medical students at Shahid Beheshti University of Medical Sciences, Tehran, in 2016

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Accepted for publication: 15 March 2016

Abstract

Background: Academic burnout is the state of negative emotions and low motivation in one's education. Understanding the status of academic burnout is the primary step to make proper decisions. The present study, therefore, was conducted to investigate comparative degrees of academic burnout among medical students in their first five semesters of medical education at Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Methods: In the present cross-sectional study, a total of 525 medical students at the School of Medicine filled out the Persian version of Maslach Burnout Inventory – Student Survey from January 15 to February 5, 2016. Chi square, Mantel-Haenszel, and Kruskal–Wallis tests were run in SPSS for data analysis. P-value<0.05 was considered significant.

Results: Based on the collected data, it was shown that 49.2% of the participants were male and 50.8% were female. Only 8 (1.5%) participants were married. No statistically significant difference was observed between the variables investigated and academic burnout ($P>0.05$). It was also observed that only four (0.8%) medical students (all new-comers) were in low academic burnout group and 521 (99.2%) were categorized in medium academic burnout group. Finally, it was found that academic burnout of the students increase as their educational level advance, making the first-semester students having the lowest and fifth-semester students the highest academic burnout indices ($P<0.001$).

Conclusion: It is concluded that, from among the variables studied, only students' educational level made a difference in medical students' academic burnout.

Keywords: Academic efficacy; Burnout; Cynicism; Exhaustion; Medical Students

Cite this article as: Azimi H, Shams J, Sohrabi MR, Malih N. The frequency of academic burnout and related factors among medical students at Shahid Beheshti University of Medical Sciences, Tehran, in 2016. SDH. 2016;2(1):21-28.

Introduction

Burnout is a debilitating psychological state, sequela of chronic stressors (1). It is characterized as a three-dimensional construct, namely exhaustion, cynicism or depersonalization, and inefficacy or reduced personal efficacy (2). These three dimensions are defined as the state of chronic emotional fatigue and tension (exhaustion), indifference or distance toward one's work and/or co-workers (cynicism), and decline in one's feelings of competence and achievement in work (reduced personal efficacy) (3, 4). Burnout has extensively been regarded as bringing about mental health problems like higher risk of depression (5), low self-esteem (6), and a higher suicide risk (7), which warrants careful investigations in this field. A majority of burn out research has focused on hows and whats of burnout in occupations making occupational burnout a well-studied area (8, 9, among others); however, recently, the focus has shifted toward non-occupational burnout, including burnout in students (10, 11).

Academic burnout, also known as learning burnout and school burnout (12) includes enduring negative emotions and low motivation that can cause many problems for the students, including lower performance in school activities (13) and high percentage of leaving school (14). This signifies doing more research so as to prevent this phenomenon.

The previous studies have investigated many causes of academic burnout. Yang named course stress and course load as two causes of academic burnout (15). Also, examinations and inappropriate teacher behavior (16) as well as personal expectations of school results (17) and high expectations from teachers and family members (17, 18) are reported as reasons for academic burnout in the individuals. Still, there are many factors that need to be investigated regarding students and academic burnout.

Medical students, compared with students of other majors, are more vulnerable to

meet many more of the aforementioned causes of burnout (10), like heavy workload, yet there are other variables leading them toward academic burnout. Investigation of these possible causes can shed light on the causing factors of academic burnout. Thus, the present study was carried out with the aim of investigating comparative degrees of academic burnout among medical students in their first five semesters of medical education program at Shahid Beheshti University of Medical Sciences, Tehran, Iran, considering the seven variables.

Methods

In the present descriptive cross-sectional survey, all the first- to fifth-semester medical students of the School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran, were invited to take part in the study from January 15 to February 5, 2016. Totally, 525 students, 259 males (49.2%) and 266 females (50.8%), filled out the questionnaire on a voluntary basis. Participants' age ranged from 18 to 22.

To collect data, the Persian version of Maslach Burnout Inventory – Student Survey (MBI-SS) (19) was distributed among the participants. MBI-SS is comprised of 15 items rated on a 7-point Likert-type scale, ranging from 1 ('never') to 7 ('always'). These 15 items are categorized into three subscales: *Exhaustion* (items 1, 2, 3, 4, 5, 6, and 7), *Cynicism* (items 8 and 9), and *Academic efficacy* (items 10, 11, 12, 13, 14, and 15). Items 1 to 9 were scored as above and items 10 to 15 were scored inversely. Accordingly, the scores could range between 15 and 105 with higher scores indicating higher academic burnout. Internal consistency of the instrument was evaluated in a previous study and Cronbach's alphas of .88, .90, and .84 ($P < 0.05$), for exhaustion, cynicism,

and academic efficacy subscales, had been reported respectively. They ran principle component factor analysis with varimax rotation to determine construct validity and checked the concurrent validity and divergent validity of the inventory, as well (19). To categorize the scores, scores between 15-45 were considered as Low Academic Burnout, those between 46-75 as Average Academic Burnout, and scores between 76-105 were categorized as High Academic Burnout.

Participants were initially informed about the purposes of the study. They were also assured about the confidentiality policy and voluntary basis of participation. Next, the questionnaire with a consent form attached to it was given to each student. Participants were asked to hand in the completed forms in maximum 20 minutes. From among 545 students, 525 completed the questionnaire and signed the consent form. The study was approved by the Ethical Committee at the School of Medicine, Shahid Beheshti University of Medical Science, Tehran, Iran (Code # IR.SBMU.SM.REC.1394.109).

Data was analyzed using Statistical Package for the Social Sciences (SPSS), version 16. Chi square and Mantel-Haenszel Chi squared tests were used for categorical and independent t-test and Kruskal–Wallis test were run for numerical variables. *P* values lower than 0.05 were considered as statistically significant.

Results

Socio-demographic data of the participants are given in Table 1. Totally, 525 participants filled out the questionnaire. The overall response rate was 96.3%. Eight students were married (1.52%) making marital status the only statistically significant difference among the variables related to the participants.

The result of Mann-Whitney test, as given in Table 2, showed that there was no statistically significant difference between male and female participants' scores based on the three themes of the burnout questionnaire.

According to Table 3 all the second- to fifth-semester medical students demonstrated medium degrees of academic burnout (Table 3).

Finally, to answer the main question of the study, Kruskal-Wallis test was run to compare the academic burnout scores between and among the five semesters (Table 4).

According to Table 4, in total, academic burnout scores of the first-semester students were statistically lower than those of the students in the fourth and fifth semesters ($P<0.001$). Likewise, academic burnout scores of the medical students in the second semester were significantly lower than those in the fourth and fifth semesters ($P<0.001$). Third-semester students, too, can be observed to have lower academic burnout scores as compared with those of their fourth- and fifth- semester counterparts ($P<0.001$).

In the *exhaustion* theme, first-semester students demonstrated significantly lower scores compared with those of the students in the third, fourth, and fifth semesters ($P<0.001$). Similarly, academic burnout scores for the second-semester students were observed to be lower than those of the students in the third-, fourth-, and fifth- semesters ($P<0.001$). Also, third-semester students were observed to have lower scores on MBI-SS compared with those of the fourth- and fifth-semester students ($P<0.001$). In other words, medical students who were in the fourth and fifth semesters demonstrated higher academic burnout scores compared with other medical students in the first three semesters ($P<0.001$).

Table 1. Socio-demographic characteristics of the study participants

		Female	Male	Total	Chi ²	P
Education level	1	52 (19.5)	53 (20.5)	105 (20)	0.71	0.94
	2	50 (18.8)	55 (21.2)	105 (20)		
	3	54 (20.3)	51 (19.7)	105 (20)		
	4	55 (20.7)	50 (19.3)	105 (20)		
	5	55 (20.7)	50 (19.3)	105 (20)		
Marital status	Single	263 (98.9)	254 (98.1)	517 (98.5)	0.56	0.49*
	Married	3 (1.1)	5 (1.9)	8 (1.5)		
Mother's educational level	Non-academic	16 (6)	19 (7.3)	35 (6.7)	0.36	0.54
	Academic	250 (94)	240 (92.7)	490 (93.3)		
Father's educational level	Non-academic	6 (2.3)	6 (2.3)	12 (2.3)	0.002	0.96
	Academic	260 (97.7)	260 (97.7)	513 (97.7)		
Residency	Dormitory	164 (61.7)	155 (59.8)	319 (60.8)	0.18	0.91
	Parents	88 (33.1)	90 (34.7)	178 (33.9)		
	Personal	14 (5.3)	14 (5.3)	28 (5.3)		
Social media (hour)	<1	59 (22.2)	58 (22.4)	117 (22.3)	0.42	0.93
	1-3	115 (43.2)	116 (44.8)	231 (44)		
	3-5	71 (26.7)	63 (24.3)	134 (25.5)		
	>5	21 (7.9)	22 (8.5)	43 (8.2)		
Parental income [#]	<700	4 (1.5)	7 (2.7)	11 (2.1)	1.20	0.75
	700-1200	10 (3.8)	9 (3.5)	19 (3.6)		
	1200-2000	11 (4.1)	13 (5)	24 (4.6)		
	>2000	241 (90.6)	230 (88.8)	471 (89.7)		

*fisher's exact test

[#]Thousand Tomans

Table 2. Comparison of the three themes, total score, and sex

	Female (mean±SD)	Male (mean±SD)	Total (mean±SD)	Mann-Whitney U	P
Exhaustion	19.6 (5.29)	19.13 (5.34)	19.3 (55.31)	32648	0.29
Cynicism	5.6 (1.63)	5.49 (1.55)	5.54 (1.59)	32769	0.32
Academic efficacy	33.3 (3.66)	33.4 (3.47)	33.4 (3.59)	34156	0.86
Total score	58.5 (4.67)	58.0 (4.49)	58.3 (4.58)	32034	0.16

Table 3. Comparison of the burnout levels and demographic variables

		15-45	46-75	Total	Chi 2	P
Education level	1	4 (100)	101 (19.4)	105 (20)	16.12	<0.001*
	2 and more	0	420 (80.6)	420 (80)		
Sex	female	3 (75)	263 (50.5)	266 (50.7)	0.95	0.62*
	male	1 (25)	258 (94.5)	259 (49.3)		
Marital status	single	4 (100)	513 (98.5)	517 (98.5)	0.06	1*
	married	0	8 (1.5)	8 (1.5)		
Mother education level	Non-academic	0	35 (6.7)	35 (6.7)	0.28	1*
	academic	4 (100)	486 (93.3)	490 (93.3)		
Father education level	Non-academic	0	12 (2.3)	12 (2.3)	0.09	1*
	academic	4 (100)	509 (97.7)	513 (97.7)		
Residency	dormitory	2 (50)	317 (60.8)	319 (60.8)	0.19	0.64
	Non dormitory	2 (50)	204 (39.2)	206 (39.2)		
Social media	<3h	4 (100)	344 (66)	348 (66.3)	2.05	0.30
	>3h	0	177 (34)	177 (33.7)		
Parental income	<1200	0	30 (5.8)	30 (5.7)	0.24	1*
	>1200	4 (100)	491 (94.2)	495 (94.3)		

*Fisher's exact test

Table 4. Comparison of the academic burnout score between and among the five semesters

	No.	Mean±SD	Exhaustion Mean±SD	Cynicism Mean±SD	Educational Mean±SD
First	105	55.2 (4.49)	15.1 (2.56)	4.0 (1.11)	36.0 (3.72)
Second	105	55.7 (3.17)	14.8 (2.36)	4.3 (0.94)	36.5 (1.44)
Third	105	55.8 (2.41)	16.7 (1.49)	6.1 (0.86)	33.0 (2.12)
Fourth	105	61.1 (2.25)	23 (1.46)	5.6 (0.97)	32.5 (1.27)
Fifth	105	63.5 (2.71)	27.1 (2.27)	7.5 (0.91)	28.8 (1.54)
Total	525	63.5 (2.71)	19.3 (5.31)	5.5 (1.59)	33.4 (3.56)
Chi ²		312.8	413.54	341.22	367.90
df		4	4	4	4
P*		<0.001	<0.001	<0.001	<0.001

*Kruskal–Wallis test

As for the second theme, *cynicism*, newcomers of the first-semester enjoyed significantly lower scores than the third-, fourth-, and fifth-semester students on MBI-SS ($P<0.001$). A similar relationship can be observed between academic burnout scores of the second-semester students and those of the fourth- and fifth-semester students ($P<0.001$). In addition, medical students of the third semester had statistically lower academic burnout scores than students in the fourth and fifth

semesters ($P<0.001$). Finally, academic burnout scores of the fifth-semester students were significantly higher than those of the fourth-semester students ($P<0.001$).

Furthermore, in the last theme, i.e. *academic efficacy*, first-semester students were observed to have higher scores compared with students in the third, fourth, and fifth semesters ($P<0.001$). Second-semester medical students, too, had higher scores when their scores on

MBI-SS were compared with those of the students in the third, fourth, and fifth semesters ($P < 0.001$). Likewise, academic burnout scores in this theme was higher in the third-semester students than in the fourth- and fifth-semester students. Finally, fourth-semester students' academic burnout scores were observed to be higher than those of the fifth-semester students ($P < 0.001$).

Discussion

The present study was conducted to compare academic burnout degrees among medical students in their first five semesters of medical education program at Shahid Beheshti University of Medical Sciences, Tehran, Iran. The results indicated that a negligible number of 525 medical students had low academic burnout indices. In fact, only 4 (0.8%) participants had low academic burnout scores and the rest, i.e. 99.8% belonged to middle academic burnout group. This is in line with the findings reported in Marzooghi, et al. (20). They reported that a majority of 210 students from the University of Welfare and Rehabilitation Sciences had middle academic burnout scores. Similarly, in a cross-sectional study conducted on medical students, it was found that 57.7% of the participant showed a risk of developing the burnout (21). This can probably be due to the busy schedule and vast syllabus medical students encounter in the early years of their education (15).

The present study demonstrated that female and male medical students did not significantly differ in term of their academic burnout. This finding confirms those reported by Backović, et al. (21). Similarly, in another study, the researchers studied 273 (129 male and 144 female) university students, aged between 21 years and 34 years, and reported no significant gender effects on academic burnout dimensions. The authors added that gender differences are unlikely and even if gender difference are observed, other factors might

have been influential (22), although other studies argue that literature witnesses inconsistent results on the relationship between gender and burnout (23).

Another significant finding of the present study was the frequency of academic burnout among the participants with respect to their academic level. We showed that the further medical students proceeded in their academic education, i.e. from semester one to semester five, the higher their academic burnout levels became. In other words, in the present study, a significant negative relationship was observed between educational level and academic burnout score. This can be justified in terms of many factors in the lives of medical students including heavy and higher mental engagement in medical courses (24) and course load (1, 15) for the students in higher semesters. It is also reported that course load has a significant negative effect on academic achievement and thus academic burnout (15, 24). Also, course progress is known to contribute to students' mental health deterioration and increased burnout in the individuals who enter the more advanced stages of their education (21). Yet, this finding is in contrast to those reported by Cecil, et al. (25) and Rashkovits and Livne (26). Rashkovits and Livne concluded that higher education, as in postgraduate studies, can contribute to more positive academic burnout. This is probably due to the difference between participants of the two studies. Participants in Rashkovits and Livne study were teachers with different professional goals, making them more ambitious, compared with medical students of the present study. Findings of the present study, however, should cautiously be generalized. A limitation that could affect generalizability of the findings is educational level of the students at Shahid Beheshti University of Medical Sciences, Tehran. Most of the medical students in this university were accepted with top ranks among university entrance examinees, making the university

classes enjoy a high standard education, and thus making it different from many other medical universities and higher education institutes. In addition, the questionnaire was distributed over a period of one month during which students had taken final exams and/or had received some of their exam results, which could have affected their answers during questionnaire completion.

Acknowledgements

The present article is financially supported by the Research Department of the School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran (Grant no. 6608).

The authors would like to acknowledge all the medical students of the School of Medicine who enthusiastically took part in the study.

Conflict of Interests

Authors declare no conflicts of interests.

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