



Burnout Syndrome in Syria: What are the affecting factors?

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Abstract

Background: Burnout syndrome is the response to work-related process of chronic stress. In recent years, burnout syndrome began to be investigated in college students. A more comprehensive definition of burnout has recently been proposed to differentiate three different clinical subtypes of the syndrome: the frenetic type, the underchallenged type, the worn-out type characterized by overload, lack of development, neglect respectively. Risk Factors for Burnout include Specific job characteristics and personality characteristics. Emotional Intelligence (EI) is proposed to have the potential to deepen and enrich students' understanding of competency during medical training, and possibly contributing in developing burnout among students.

Materials and Methods: we preformed cross-sectional study on medical and dental students of Damascus University. A specially designed questionnaire was used to collect data consisting of three sections: the first dedicated to collect the demographic data for the sample, the second is (BCSQ-12-SS) questionnaire to evaluate burnout syndrome, the third is (SSREIS) to measure emotional intelligence. SPSS 22 was used to perform the statistical analysis.

Results: final sample size was 376 students, 51.3% of whom were dental students, and 48.7% were medical students. The prevalence of overall burnout was 48.9%, while 22.1%, 24.2%, 19.1% had overload, lack of development, neglect respectively. Family income and type of work students did and practicing a hobby were significantly related with burnout ($P=0.033$, $P=0.21$, $P=0.049$). Students had an average emotional intelligence of 121.2, EI was significantly related ($P=0.089$) and negatively correlated ($P=-0.007$) with lack of development, and was significantly related ($P=0.043$) and negatively correlated with neglect ($P=-0.065$), and it was positively correlated with overload ($P=0.014$)

Conclusion: High prevalence of burnout is present among health care students, Emotional intelligence appears to have a role in the syndrome and further studies need to be carried out to intensely investigate this relation and other contributing factors to the burnout, and to develop programs to help these students in adapting coping mechanism to avoid burnout.

Keywords: Burnout syndrome; Medical students; Dental students; Emotional intelligence

Background

Burnout syndrome is the response to work-related process of chronic stress. It has been considered as an important health problem in the past decade. Burnout syndrome consists of three components as it was first defined: emotional exhaustion, depersonalization and low personal achievement [1]. People dedicated to work with constant, direct and intense interpersonal relations will suffer by the time from psychological tiredness, loss of energy and emotional wasting [2]. In recent years, burnout syndrome began to be investigated in college students [3] The constant struggle that students go through to become highly

qualified healthcare providers might, in some cases, result in psychological distress [4-5]. In addition, students' mental and emotional health can be unintentionally negatively affected by some aspects of training [6]. A more comprehensive definition of burnout has recently been proposed to differentiate three different clinical subtypes of the syndrome [7].

The 'frenetic' type of burnout is characterized by 'overload' (OL), the perception of jeopardizing one's health to pursue worthwhile results and is highly associated with exhaustion. The 'underchallenged' type of burnout is characterized by 'lack



of development' (LD), defined as the perception of a lack of personal growth, together with the desire for a more rewarding occupation that better corresponds to one's abilities, and is most strongly associated with cynicism. The 'worn-out' type of burnout is characterized by 'neglect' (NE), defined as an inattentive and careless response to responsibilities, and is closely associated with inefficacy [8]. The dimensions of 'overload', 'lack of development' and 'neglect' show great explanatory power over the classical burnout definition, while having a significant ability to distinguish the different profiles [9].

Risk Factors for Burnout include Specific job characteristics and personality characteristics [10,11] Coping with stress varies between physicians according to their personal experiences and interpersonal skills which can relieve of burnout syndrome [12]. In addition, professional decline, cultural level and number of days per week dedicated to clinical practice is influenced by the demographic variable [13].

Emotional intelligence (EI) is the awareness of one's own emotions and the ability to control and express these emotions to guide interpersonal relationships [14]. EI is proposed to have the potential to deepen and enrich students' understanding of competency during medical training [15]. It is important to understand how EI is associated with burnout, in that field many studies focused on that association among graduated doctors [16-18] while this has not been studied intensively among students.

Aims of this Study

- To investigate the prevalence of burnout syndrome among medical and dental students in clinical years.
- To identify the factors associated with Burnout Syndrome.
- To study the relation between Burnout Syndrome, Emotional Intelligence and demographic variables.

Materials and Methods

Study Design: A cross sectional study regarding the prevalence of burnout syndrome and its relation to emotional intelligence and demographic factors among medical and dental student was conducted in March 2018.

Participants: All participants were current medical and dental students at Damascus University. Participants were recruited from clinical years (fourth and sixth years) in both Faculties of Medicine and Dentistry at Damascus university.

Data collection: An anonymous online questionnaire was designed using Google Forms, and was distributed to medical and dental students in Faculty of Medicine and Faculty Dentistry of Damascus University via students' online platforms.

Convenience sampling was used to recruit participants, and participation was available for all students of the targeted clinical years. The objectives of the study were explained to the participants who were informed that their participation was voluntary, and anonymity was assured. The participants were also told that the results of this research will be published. Filling out

the questionnaire and submission by the student himself/herself was considered as a declaration of willingness to participate.

The Questionnaire

BCSQ-12-SS: the short version of Burnout Clinical Subtype Questionnaire adaptation for students were used to assess the prevalence of burnout syndrome and recognize the clinical profiles. Each item of the scale represented a feeling or a thought regarding the participants experience as students, the students were asked to point their degree of agreement to each item. It's 12-item questionnaire with 7-points from 1 (totally disagree) to 7 (totally agree). The items of the scale were evenly distributed among the dimension's "overload", "lack of development", and "neglect" that represent clinical subtypes of burnout syndrome "frenetic", "under-challenged", and "worn-out" respectively. Results are presented in scalar scores. For each dimension, scores were considered to be high if the sum is higher than the upper quartile of the scores observed in the sample, thereby indicating the presence for a burnout clinical subtype, while low scores implied scores lower than or equal to the upper quartile. BCSQ-12-SS is reliable tool used to recognize clinical profiles of burnout among students and to suggest potential intervention strategies specific to the characteristics of each particular case [19]. An Arabic version of BCSQ-12-SS was developed by assuring linguistic and cultural validity of the questionnaire via forward translation, expert panel opinions, back translation and pilot testing.

SSREIS: the Schutte Self Report Emotional Intelligence Scale. The SSREI is a 33-item scale. Participants were asked to rate the extent they agree or disagree with each statement on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Of the 33 items, 3 items (5, 28, 33) are reverse scored. Results are presented in scalar scores, the mean score across many large samples is about 124, with a standard deviation of about 13. Scores below 111 or above 137 are considered to be unusually low or high. SSREI scale has been used with a variety of respondents including adults, adolescents and secondary school students, and the scale is easy to understand and score [20]. An Arabic version of SSREIS questionnaire was developed and validated in previous study.

In addition, we asked the students to answer a specially designed questionnaire that aimed to investigate the factors associated with burnout syndrome. This survey contained questions about demographic characteristics (gender, faculty, year of study, residence state), financial characteristics (monthly family income, personal income), questions concerning the success status of students in their faculty (years of dropping, number of unpassed tests per year, satisfaction with cumulative rate), habits (extracurricular hobbies, smoking), having job while studying (paid job, voluntary job).

Statistical Analysis: Data was analyzed using SPSS v.22 for descriptive data (percent, mean, standard deviation) and inferential statistics using the following tests: T-test for independent samples, ANOVA test, Pearson's correlations. The significance level was set at $p < 0.05$.

Results

Sample size calculations

After analyzing data from the pilot study which was conducted to test the validity of the questionnaire, finale sample size was calculated based on its results. The prevalence of burnout in the pilot study was (32.9%), each student with at least one burnout variable higher than the third quartile was considered to have a

clinical subtype of burnout syndrome, the third quartiles were (19, 19, 14) for (OL), (LD), (NE) Respectively. Based on the previous results, sample size formula for cross-sectional studies with qualitative variables was used ($z=1.96, p=32.9, d=0.05$) and the required sample size was (339). The final number of questionnaires collected after applying the exclusion criteria was 376, confidence level (95%), and confidence interval ($4.55\pm$) (Table 1).

Table 1: Sample size analysis.

Required sample size	Total number	Included sample	Excluded	Confidence interval	Confidence level
339	384	376	8	± 4.55	95%
Age	Mean = 22.06		SD= 1.06	Range = 20-28	

Validation of the BCSQ-12-SS questionnaire

We performed reliability test for the three components of BCSQ-12-SS questionnaire: lack of development, overload, neglect. Cronbach’s alpha for each component was: 0.771, 0.748, 0.837 respectively.

Sample characteristics

The sample consisted (35.15%) males and (64.9%) females. The average age was (22) and ranged between 20-28 years. (48.7%) of the sample were medical students, (51.3%) dental students. And (57.4%) were in their fourth year of study and (42.6%) in their

fifth year. Only 8 (2.1%) students in the sample had dropped in either 4th or 5th year of study, while the usual number of unpassed tests was categorized into 4 groups: 0 (43.1%), 1-2 (36.7%), 3-4 (17.6%), and 5 or more (2.7%) unpassed tests. Most of the students in the sample live with their families or less than 20 km away from the family house (70.7%). And the majority of the sample had enough family income for life essentials (70.5%). Also (72.3%) of the sample didn’t have any paid or voluntary work, while (8.2%) had non-voluntary work, (17.3%) had voluntary work, and (2.1%) had both types of work. (43.6%) practiced any type of hobby, and (18.6%) are smokers.

Prevalence of burnout

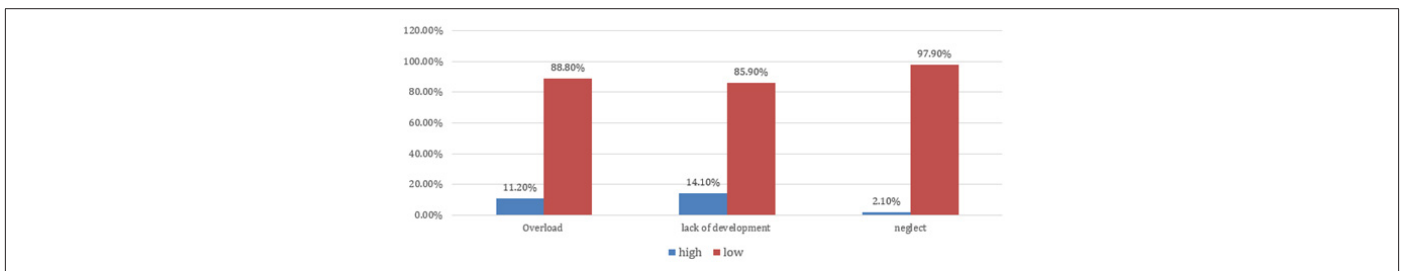


Figure 1: Prevalence of Burnout.

Table 2: Prevalence of burnout out and its components.

	Question	Mean (St. Deviation)	average	Third quartile	Burnout level according to each variable burnout	
					High level	Low level
Overload	1	4.03 (1.55)	15.55	19	83 (22.1%)	293 (77.9%)
	4	3.7 (1.73)				
	7	3.79 (1.72)				
	10	4.03 (1.70)				
Lack of development	2	3.55 (1.87)	15.79	19	91 (24.2%)	285 (75.8%)
	5	3.84 (1.78)				
	8	4.15 (1.81)				
	11	4.23 (1.74)				
Neglect	3	2.54 (1.43)	10.7	14	72 (19.1%)	304 (80.9%)
	6	2.79 (1.46)				
	9	2.64 (1.36)				
	12	2.78 (1.49)				
Students with burnout (at least one component is high level)		Mean = 14.03 (3.31)			48.90%	51.10%

The burnout syndrome consists of three components: overload (OL), lack of development (LD), and neglect (NE). The students were considered to have high level of a component if he/she got a score higher than the third quartile for that component, the third quartiles for (OL), (LD), (NE) were respectively (19, 19, 14). 22.1% of students had high level of overload, 24.2% had high level of lack

of development, and (19.1%) had high level of neglect (Figure 1). Students were considered to have the burnout level if he/she got a high score in at least one of the previous components. therefore, (48.9%) of the students had burnout syndrome, and (51.1%) didn't have any clinical subtype of burnout syndrome (Table 2).

The level of emotional intelligence among students and its relation to burnout

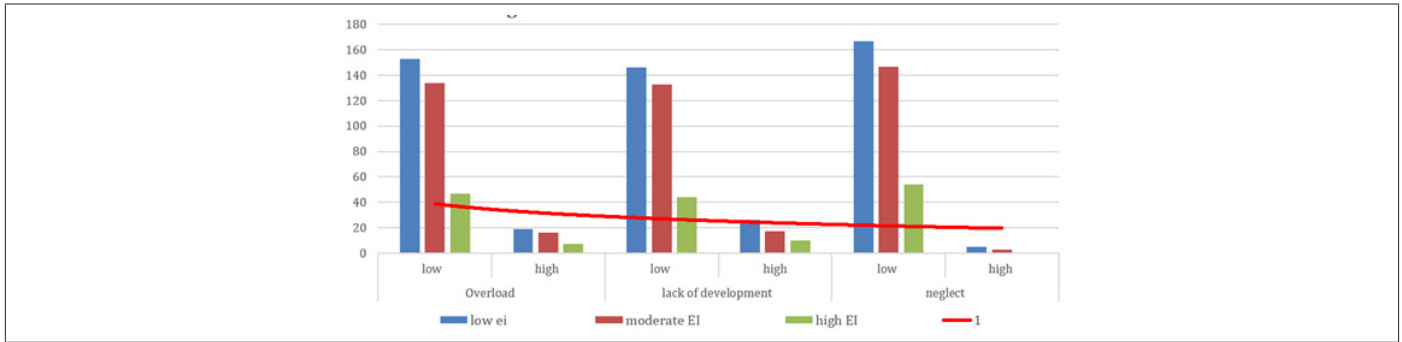


Figure 2: Relation between EI and Burnout Variables.

Emotional intelligence among the sample ranged between (45-160). It was divided into three levels: low EI (lower than 121), moderate EI (121- 136), high EI (more than 137). Students had an average EI value of (121.2). ANOVA test and Pearson's correlation were used to study the significant relation between the emotional intelligence and burnout components. Significant relation was

found between EI and LD (P=0.037), also between EI and NE (P= 0.043), but no significant relation was found between EI and OL (P= 0.089) (Figure 2). Pearson's correlation was significant and negative between EI and LD, and between EI and NE Respectively (P= -0.007, P= -0.065). however, Pearson's correlation was positive between EI and OL (P= 0.014) (Table 3).

Table 3: Emotional intelligence.

Average value		Range	St. deviation	Low EI	Moderate EI	High EI	
121.2		45-160	15.96	14.40%	39.80%	45.80%	
Burnout level and Emotional Intelligence							
		Overload		Lack of development		Neglect	
		low burnout	high burnout	low burnout	high burnout	low burnout	high burnout
Level of emotional intelligence	LOW EI	153	19	146	26	167	5
	MODERATE EI	134	16	133	17	147	3
	HIGH EI	47	7	44	10	54	0
Statistical test	ANOVA	0.089		0.037*		0.043*	
	Pearson's correlation	0.014		-0.007		-0.065	

Significant relation between burnout syndrome and the demographic variables

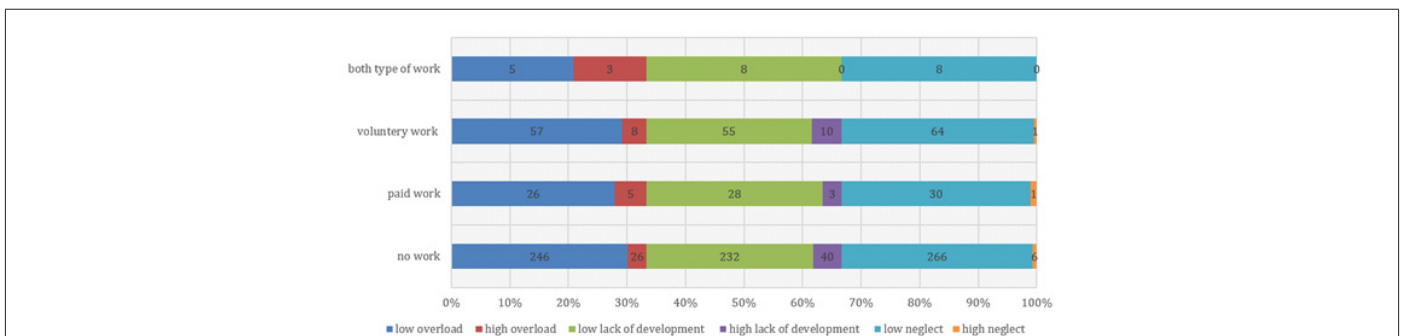


Figure 3: Prevalence of burnout according to type of work.

Medical and dental students had approximate prevalence of burnout, with no significant relation between the two groups (P=

0.077), dropped students had higher prevalence of burnout (P= 0.000). Significant relation was found between family income and

burnout syndrome ($P= 0.033$), as 60% of students who reported their family income is not enough for life essentials had burnout. Students who did paid work had the least prevalence of burnout (35.5%), while those did both paid and voluntary work had the highest prevalence of burnout (75%), a significant relation was established between burnout and students' type of work. No

significant relation was found between burnout and number of unpassed tests per year, satisfaction with cumulative rate, distance from family, or residence type (Table 4) summarizes the results of T-test for each demographic variable with each burnout component (Figure 3).

Table 4

Demographic Variables		OL number	LD Percent	NE Std.Deviation	Test BO	Burnout			
Gender	Males	132	35.1	0.47	T-test	0.000	0.559	0.067	0.658
	Females	244	64.9						
Collage	Medicine	183	48.7	0.5	T-test	0.048	0.027	0.000	0.077
	Dentistry	193	51.3						
Year	Fourth	216	57.4	0.49	T-test	0.873	0.037	0.013	0.023
	Fifth	160	42.6						
Dropout	No	368	97.9	0.19	T-test	0.027	0.013	0.017	0.000
	yes	8	2.1						
Number	No subjects	162	43.1	1.01	ANOVA	0.022	0.914	0.001	0.523
	1-2	138	36.7						
	3-4	66	17.6						
	5 or more	10	2.7						
Satisfaction about the total average	1	78	20.7	0.65	ANOVA	0.007	0.861	0.003	0.722
	2	216	57.4						
	3	82	12.8						
Distance away from family	>20 km	232	61.7	0.86	ANOVA	0.151	0.997	0.974	0.687
	20-75 km	46	12.2						
	<75km	98	26.1						
Residence	With family	266	70.7	0.91	ANOVA	0.388	0.209	0.207	0.872
	University campus	51	13.6						
	Privat place	33	8.8						
	Common place	26	6.9						
Family income	Not enough for life essential	35	9.3	0.53	ANOVA	0.015	0.016	0.027	0.033
	Enough for life essential	265	70.5						
	More than enough for life essential	76	20.2						
Work	No work	272	72.3	0.85	ANOVA	0.007	0.048	0.042	0.021
	Non-voluntary work	31	8.2						
	Voluntary work	65	17.3						
	Both types of work	8	2.1						
Hoppy	Yes	164	43.6	0.49	T-test	0.000	0.011	0.000	0.049
	no	212	56.4						
Smoking	Non-smoker	306	81.4	0.67	T-test	0.006	0.010	0.463	0.040

Discussion

The findings here indicate high prevalence of burnout syndrome among medical and dental students of Damascus University, 49.2% of medical students had burnout. while 48.2% of dental students had burnout. these results are among the highest prevalences that were reported by similar studies on medical and dental students [21-25].

Burnout syndrome is clinically caused by the stress of work and the profession circumstances, especially in doctors and medical and dental students. A study in Mexico found no relation between burnout syndrome that is caused among medical students and the other external factors [26]. Another study found that medical professionals who work in emergency rooms are at risk of getting burnout syndrome [27]. And a significant level between burnout

and type of work shift was found among health care providers, and with other selected organizational variables [28,29]. These results correspond with our results, that we found significant relation between burnout syndrome and the type of work the students do [27-29] and disagreed with another [26]. Students who did not do any type of work tended to have lower rates of all burnout components and we hypothesize this may be because of the less perceived stress that accompanies workload, and thereby less burnout compared to students who did both types of work.

Students who practiced a hobby had lower rates of burnout, this corresponds with previous studies that reported extracurricular activities are protecting factors against burnout [22-23].

Our study indicated a significant relation and a positive correlation between Emotional intelligence and lack of development, and between emotional intelligence and neglect, while no significant relation was found between emotional intelligence and overload, a previous study demonstrated a relation between all three components of burnout syndrome and overall emotional intelligence among surgery residents [30], another indicated to high emotional intelligence as protective factor against burnout among surgery residents as well [31-33], while the scores of EI were weakly correlated with decreased burnout in a study on oncology residents [34]. Emotional intelligence has mediation effect between emotional labour and burnout as was reported in one study on nurses [35]. The positive relation between EI and overload, the 'frenetic' type of burnout that is directly associated with stress corresponds with a recent study that indicated high emotional intelligence is associated with increased stress [32] even though, more research needs to be done to further study this relation, especially among students. In addition to that, there's a need to study the long-term effects of burnout during study years on the health care provided by this group of students after graduation. And at last, specially designed intervention programs should be developed to provide treatment and prevention strategies for students at most risk.

Conclusion

High prevalence of burnout syndrome is present among medical and dental students of Damascus university. Economic state of the family, practicing job or hobby, and the score of emotional intelligence all played roles as protective or risk factors for burnout, more studies need to be carried out to further study these factors and to develop specially designed programs to help these students in adapting coping mechanisms to avoid burnout.

Declaration of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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