



Burnout Syndrome among Lebanese Pediatric Dentists: An Epidemiological Study

Carole Sabbagh^{a*} and Nahla Nassif Debs^a

^a *Department of Pediatric Dentistry and Dental Public Health, Faculty of Dental Medicine, Lebanese University, Hadath, Lebanon.*

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JAMMR/2022/v34i731329

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/85764>

Original Research Article

Received 26 January 2022

Accepted 06 April 2022

Published 09 April 2022

ABSTRACT

Background: Burnout is the result of unsuccessful management of chronic work related stress. The syndrome is characterized by three dimensions: emotional exhaustion, depersonalization and reduced personal accomplishment. It is considered a risk to dentists where they face various types of stressors including constant time pressure and low patient appreciation. Additional sources of pressure are present in pediatric dentistry such as uncooperative and fearful patients.

Aim of the Study: The aim of the study was to determine the prevalence of burnout among Lebanese pediatric dentists and to analyze various factors that may influence the appearance of the syndrome.

Materials and Methods: An observational cross-sectional study was performed among 117 Lebanese pediatric dentists who answered a two-part questionnaire. The first part consisted of demographic data and personal information. The second is the Maslach Burnout Inventory Human Services Survey for Medical Personnel used for the detection of the syndrome. Statistical analysis was performed to determine burnout's prevalence and to analyze its correlation with various variables.

Results: High emotional exhaustion was noted in 34.5% of participants, 15.5% had high depersonalization and 47.4% had reduced personal accomplishment. Lebanese pediatric dentists with little professional experience had high emotional exhaustion scores ($P= .01$). Depersonalization was lower in exclusive pediatric dentists ($P= .04$). Furthermore, personal

*Corresponding author: E-mail: carole.e.sabbagh@gmail.com;

accomplishment was higher when respondents exercised moderately ($P= .04$). The prevalence of overall burnout was found 3.4% with male pediatric dentists experiencing more burnout than females ($P= .03$).

Conclusion: Burnout in its three dimensions' model was experienced by few pediatric dentists in Lebanon with gender predominance towards males.

Keywords: *Burnout syndrome; emotional exhaustion; depersonalization; personal accomplishment; pedodontics.*

ABBREVIATIONS

AAPD : American Academy of Pediatric Dentists

DP : Depersonalization

EE : Emotional Exhaustion

PA : Personal Accomplishment

RPA : Reduced Personal Accomplishment

1. INTRODUCTION

Work is an inseparable part of life, it is a source of accomplishment and helps build one's identity [1]. Nonetheless, unsuccessful management of chronic work related stress can result in the development of burnout syndrome; a phenomenon characterized by emotional exhaustion (EE), depersonalization (DP) and reduced personal accomplishment (RPA) [2-6].

In other words, job stress accumulation exhausts individuals; they lose interest and positive emotions towards people they work with and their professional efficacy decrease which contribute in the formation of a negative self-image [5,7]. Consequently, their energy resources will no longer be sufficient to overcome the pressure [7]. Individuals working in professions that require constant contact with people are more susceptible to develop burnout because dealing with others' problems and concerns can be emotionally draining [8]. Therefore, the professionals at risk are: Nurses, doctors, psychologists, police officers, teachers and dentists among others [1].

Burnout impacts their physical and mental health and inevitably reduces work performance [5]. As a consequence, patient safety incidents increased among physicians with burnout syndrome. For this reason, it is important to assess burnout among dentists to intervene before patients' safety is threatened. Moreover, it is well known that dentistry is a stressful profession due to its work conditions [9]. Dentists face various types of stressors such as constant time pressure and low patient appreciation since

patients commonly associate them with pain [3].

Pediatric dentists, in comparison with general dentists, seemingly work in a more stressful environment given the fact that they have to deal in their daily practice with very young, fearful and uncooperative patients [10]. In particular, pediatric dentists working in Lebanon face additional difficulty linked to the economic crisis where social security does not cover dental care. This leads to oral health neglect making dental problems and emergencies the main cause for dental visits [11]. Hence, the child's first appointment is complicated by pain and anxiety which make the dental procedure a harder task. They also have to cope with patients' protective parents which presence can sometimes be a burden in the dental clinic. These factors can constitute a big challenge and strain for pediatric dentists thus posing the risk of burnout [10].

Burnout syndrome has been investigated in Lebanese oncologists, nurses and preclinical medical students [7,12,13]. The aim of the study was to determine the prevalence of burnout among pediatric dentists in Lebanon and to analyze various factors that may influence the appearance of the syndrome.

2. METHODOLOGY

After the approval of the Scientific Committee of the Faculty of Dental Medicine at the Lebanese University, an observational cross-sectional survey study was performed. A self-administered online survey was sent to all 170 Lebanese pediatric dentists (122 females and 48 males) during the first (COVID-19) confinement in March 2020. The website Google Form® was used to administer the online survey instrument. An introductory e-mail and a hyperlink to the survey webpage were sent. All survey responses were anonymous without the use of any identification computer cookies and participation was voluntary.

The primary outcome was burnout among pediatric dentists. Burnout was determined as a combination among its three dimensions; Therefore, dependent variables comprised the three dimensions (emotional exhaustion, depersonalization, reduced personal accomplishment) and the combined overall burnout.

Independent variables such as demographic variables and questions related to the clinical experience of the pediatric dentist were evaluated in relation with the dependent variables to evaluate as risk factors or mediators of burnout.

Lebanese pediatric dentists who consented to participate in the research answered a two part questionnaire. The first part consists of personal information and socio-demographic data. The second part is the Maslach Burnout Inventory for Human Services Survey for Medical Personnel or MBI-HSS (MP) and consists of 22 statements related to the three domains where five statements correspond to DP, nine to EE and eight to PA [6,8].

Respondents use a seven point Likert scale from zero to six to indicate the frequency of the statement (0=never, 1= a few times a year or less, 2= once a month or less, 3= a few times a month, 4= once a week, 5= a few times a week and 6=everyday). Summing up the Likert scale score of the statements specific to each dimension provides scores for each of the three domains [8].

Since there are no established normative values in Lebanese dentists especially in pediatric dentists, the classical cut-offs were adapted to categorize burnout's dimensions into low, moderate and high. The dimensions were categorized as follows, for EE: low (≤ 17) moderate (18-29), high (≥ 30); for DP: low (≤ 5), moderate (6-11), high (≥ 12); and for PA: high (≤ 33), moderate (34-39), low (≥ 40) [14].

Subjects with high EE, high DP and low PA levels simultaneously were considered to have burnout syndrome.

Statistical analysis was conducted using IBM SPSS Statistics for Windows, version 24 (IBM

Corp., Armonk, N.Y., USA). Shapiro-Wilk, one-way ANOVA test with suitable post-hoc test, student-t test, Kruskal–Wallis, Chi-square and Fisher exact test were used. Level of significance was considered below $P= .05$.

3. RESULTS

The response rate was 68.82%; 117 out of 170 pediatric dentists completed all the survey questions.

Table 1 displays the percentages of the three dimensions by levels (low, moderate and high). High EE was found in 34.5% of the respondents, 31.9% had moderate EE and 33.6% had low EE. The percentages of the levels of DP were: 15.5% high, 31% moderate and 53.4% low. As for PA, the percentages were: 24.1% high, 28.4% moderate and 47.4% low (Table 1).

In the present study, four participants out of 117 responded to the criteria (high EE, high DP and low PA). Therefore, the prevalence of burnout based on the three dimensions was 3.4%.

Table 2 shows the correlation between age, gender, marital status, number of participants' children and burnout. A statistical significant correlation was found between burnout and gender; 12% of males suffer from the syndrome compared to 1% of females ($P= .03$) (Table 2).

The correlation between the different practice conditions (years of practice, hours of work per week and the exclusivity of pediatric dentistry) and burnout syndrome is shown in Table 3. The EE increased when the number of years of practice decreased ($P= .01$). DP was higher in non-exclusive pediatric dentist ($P= .04$) (Table 3).

Table 4 presents the correlation between exercise frequency, alcohol consumption and burnout syndrome. PA was high when participants exercised moderately ($P= .04$). Alcohol consumption was not frequent, 51.3% never drink, 31.6% consume it occasionally, 10.3% once per week, 6% drink alcohol several times per week and 0.9% consume it every day (Table 4)

Table 1. Percentages of the burnout dimensions giving the different levels (n=117)

Levels	Low	Moderate	High
Dimensions			
Emotional exhaustion	33.6%	31.9%	34.5%
Depersonalization	53.4%	31.0%	15.5%
Personal accomplishment	24.1%	28.4%	47.4%

Table 2. Correlation between demographic factors and burnout

Dimensions	Levels	Age					P-value	Gender		P-value	Marital Status			P-value	Children		P-value
		<30	30-39	40-49	50-59	≥60		Female	Male		Divorced	Married	Single		No	Yes	
EE	Low	9	14	9	4	3	Not applicable (N/A)	30	9	.98	0	24	15	.39	17	22	N/A
		21.4%	36.8%	52.9%	30.8%	42.9%		33.0%	34.6%		0.0%	38.7%	27.8%		27.8%	40.0%	
	Moderate	12	16	3	4	3		30	8		1	17	20		21	16	
		28.6%	42.1%	17.6%	30.8%	42.9%	33.0%	30.8%	100%	27.4%	37.0%	34.4%	29.0%				
	High	21	8	5	5	1	31	9	0	21	19	23	17				
		50.0%	21.1%	29.4%	38.5%	14.3%	34.1%	34.6%	0.0%	33.9%	35.2%	37.7%	30.9%				
DP	Low	22	19	10	8	4	N/A	52	11	.16	1	33	29	.97	32	30	.96
		52.4%	50.0%	58.8%	61.5%	57.1%		57.1%	42.3%		100%	53.2%	53.7%		52.4%	54.5%	
	Moderate	13	12	7	3	1		28	8		0	20	16		19	17	
		31.0%	31.6%	41.2%	23.1%	14.3%	30.8%	30.8%	0.0%	32.3%	29.6%	31.1%	30.9%				
	High	7	7	0	2	2	11	7	0	9	9	10	8				
		16.7%	18.4%	0.0%	15.4%	28.6%	12.1%	26.9%	0.0%	14.4%	16.7%	16.3%	14.5%				
PA	Low	13	18	12	9	4	N/A	43	13	.97	1	35	20	.32	23	32	.09
		31.0%	47.4%	70.6%	69.2%	57.1%		47.3%	50.0%		100%	56.5%	37.0%		37.7%	58.1%	
	Moderate	15	12	3	1	2		26	7		0	15	18		21	12	
		35.7%	3.6%	17.6%	7.7%	28.6%	28.6%	26.9%	0.0%	24.2%	33.3%	34.4%	21.8%				
	High	14	8	2	3	1	22	6	0	12	16	17	11				
		33.3%	21.1%	11.8%	23.1%	14.3%	24.2%	23.1%	0.0%	19.4%	29.6%	27.8%	20.0%				
Burnout	No	41	35	17	13	6	N/A	90	23	.03*	1	58	53	N/A	60	52	.34
		97.6%	94.6%	100%	100%	85.7%		98.9%	88.0%		100%	95.0%	98.1%		98.3%	94.4%	
	Yes	1	2	0	0	1	1	3	0	3	1	1	3				
		2.4%	5.4%	0.0%	0.0%	14.3%	1.0%	12.0%	0.0%	4.9%	1.9%	1.6%	5.4%				

Table 3. Correlation between different practice conditions and burnout

Dimensions	Levels	Years of practice				P-value	Hours of work/week					P-value	Exclusivity of pediatric dentistry		
		<5	5-15	16-25	≥26		< 10	10-20	21-30	31-40	> 40		No	Yes	P-value
EE	Low	10	13	12	3	.01*	3	6	12	10	8	.16	13	26	.43
		24.4%	30.2%	66.7%	21.4%		23.1%	19.4%	38.7%	38.5%	50.0%		27.7%	37.1%	
	Moderate	12	19	1	6		6	13	12	4	3		15	23	
		29.3%	44.2%	5.6%	42.8%		46.2%	41.9%	38.7%	15.4%	18.8%		31.9%	32.9%	
High	19	11	5	5	4	12	7	12	5	19	21				
	46.3%	25.6%	27.8%	35.7%	30.8%	38.7%	22.6%	35.7%	31.3%	40.4%	30.0%				
DP	Low	24	18	12	9	.14	9	17	15	14	8	N/A	23	40	.04*
		58.5%	41.9%	66.7%	60.0%		69.2%	54.8%	48.4%	53.8%	50.0%		48.9%	57.1%	
	Moderate	11	17	6	2		3	11	12	7	3		12	24	
		26.8%	39.5%	33.3%	13.3%		23.1%	35.5%	38.7%	26.9%	18.8%		25.5%	34.3%	
High	6	8	0	4	1	3	4	5	5	12	6				
	14.6%	18.6%	0.0%	26.6%	7.7%	9.7%	12.9%	19.2%	31.3%	25.5%	8.6%				
PA	Low	13	21	13	9	.08	4	11	17	14	10	N/A	17	39	.11
		31.7%	48.8%	72.2%	60.0%		30.8%	35.5%	54.8%	53.8%	62.5%		36.2%	55.7%	
	Moderate	14	13	4	2		6	9	6	7	5		16	17	
		34.1%	30.2%	22.2%	13.3%		46.2%	29.0%	19.4%	26.9%	31.3%		34.0%	24.3%	
High	14	9	1	4	3	11	8	5	1	14	14				
	34.1%	20.9%	5.6%	26.6%	23.1%	35.5%	25.8%	19.2%	6.3%	29.8%	20.0%				
Burnout	No	40	41	18	14	N/A	13	30	31	24	15	N/A	45	68	1.00
		97.6%	95.3%	100%	93.3%		100%	96.7%	100%	92.3%	93.7%		95.7%	97.1%	
	Yes	1	2	0	1		0	1	0	2	1		2	2	
2.4%		4.6%	0.0%	6.6%	0.0%	3.2%	0.0%	7.6%	6.2%	4.2%	2.8%				

Table 4. Correlation between alcohol consumption, exercise and burnout syndrome

Dimensions	Levels	Exercise /week				Alcohol consumption/ week						
		Occasionally	1	2 to 3	≥ 4	P-value	Never	Occasionally	Once	Several times	Everyday	P-value
EE	Low	13	4	11	10	.93	17	16	5	0	1	N/A
		30.2%	26.7%	31.4%	43.5%		28.3%	43.2%	41.7%	0.0%	100%	
	Moderate	15	5	11	7		18	15	1	4	0	
DP	High	34.9%	33.3%	31.4%	30.4%	.93	30.0%	40.5%	8.3%	57.1%	0.0%	N/A
		15	6	13	6		25	6	6	3	0	
	34.9%	26.1%	37.1%	26.1%	41.7%		16.2%	50.0%	42.9%	0.0%		
PA	Low	24	7	19	12	.04*	29	26	6	1	1	N/A
		55.8%	46.7%	54.3%	52.2%		48.3%	70.3%	50.0%	14.3%	100%	
	Moderate	14	5	9	8		24	6	4	2	0	
Burnout	High	32.6%	33.3%	25.7%	34.8%	N/A	40.0%	16.2%	33.3%	28.6%	0.0%	.15
		5	3	7	3		7	5	2	4	0	
	11.6%	20.0%	20.0%	13.0%	11.7%		13.5%	16.7%	57.1%	0.0%		
Yes	Low	21	4	15	16	.04*	29	16	7	3	1	N/A
		48.8%	26.7%	42.9%	69.6%		48.3%	43.2%	58.3%	42.9%	100%	
	Moderate	13	8	7	4		19	10	3	1	0	
No	High	30.2%	53.3%	20.0%	17.4%	.04*	31.7%	27.0%	25.0%	14.3%	0.0%	N/A
		9	3	13	3		12	11	2	3	0	
	20.9%	20.0%	37.1%	13.0%	20.0%		29.7%	16.7%	42.9%	0.0%		
Yes	No	42	15	32	23	N/A	59	37	10	6	1	.15
		97.6%	100%	91.4%	100%		98.3%	100%	83.3	85.7%	100%	
	1	0	3	0	1		0	2	1	0		
No	Yes	2.3%	0.0%	8.6%	0.0%	N/A	1.6%	0.0%	16.7%	14.3%	0.0%	.15
		1	0	3	0		1	0	2	1	0	
	2.3%	0.0%	8.6%	0.0%	1.6%		0.0%	16.7%	14.3%	0.0%		

4. DISCUSSION

4.1 Descriptive Statistics

The majority of the respondents were females (78%) (Table 2). The predominance of females in the profession is actually an international trend; the American Academy of Pediatric Dentistry (AAPD) stated in its 2015 report that the percentage of females in the pediatric dentistry field has increased significantly over the years since 1998 [15].

Most participants (68.4%) were below 40 years of age (Table 2). As a matter of fact, younger generations are taking over the specialty; according to the AAPD (2015), the enrollment in pediatric dentistry post-graduate programs raised dramatically [15].

4.2 Emotional Exhaustion

One third of pediatric dentists have high EE (34.5%) (Table 1), in fact pediatric dentistry is getting more challenging. New generation children are often harder to deal with, they get bored easily and are more materialistic, less respectful and have poor self-control. Moreover, parents' presence in the dental clinic can be a nuisance; they can become "experts" in five minutes by seeking information on the internet and try to question the pediatric dentist's authority. Compared to other studies, the percentage of high EE in Lebanese pediatric dentists (34.5%) is similar to that of Lebanese oncologists (33.3%), lower than that of English dentists (42.2%) while it was higher than dentists in Hong Kong (25.4%), Italian orthodontists (20%) and American pediatric dentists (22.8%) [3,10,12,16,17]. This difference can be explained by the lack of proper dental insurance in Lebanon, the insufficient oral health awareness and financial restrictions which make dental emergencies the main cause for patients' visits. Those are often distressing for the child, parents and dentist. They require complicated treatment from the first visit which will affect the patient's relationship with the pediatric dentist. He/she won't have the right amount of sessions and time required to make a proper psychological approach essential for gaining the patient's trust. The specialist will be in a tiring state of mind making him/her more prone to EE.

4.3 Depersonalization

Only 15.5% of Lebanese pediatric dentists have high DP levels (Table 1). DP implies treating the

patient as an object, which is against the principles of pediatric dentists. Indeed, pediatric dentists value their little patients; they have patience, communication skills and use behavior modification techniques to familiarize them with the dental environment.

4.4 Personal Accomplishment

Low PA was experienced by nearly half of the participants (47.4%). (Table 1) Reduced PA is linked to the lack of professional satisfaction [8]. Lebanese pediatric dentists may feel that they are not well rewarded compared to the effort and time spent for creating a welcoming environment to patients and parents. This might explain why the percentage was found the highest when compared to dentists in Hong Kong (32.2%), England (31.9%) and in American pediatric dentists (9.8%) [3,10,16].

4.5 Burnout

The low prevalence of burnout (3.4%) could be supported by the finding that dentists with postgraduate qualifications are 5.08 times less at risk of having burnout compared to non-specialized dentists [3]. Dentists with higher level of education generally have better knowledge, technique and communication skills to deal with patients.

4.6 Inferential Statistics

No statistical significance was found between age, marital status, number of children and burnout (Table 2). On the other hand, statistical significance was found between gender and burnout ($P= .03$). The percentage of males suffering from burnout syndrome (12%) was 12 times higher than that of females (1%). In fact, the man in Lebanon is looked at as the provider and financial support of the family. Consequently he works excessively to increase his income which puts him under more pressure and could eventually lead to burnout syndrome. In parallel the female's maternal instinct, patience and calmness help her communicate with children more easily.

There was a statistically significant correlation between emotional exhaustion and the number of years in practice ($P= .01$) (Table 3). In fact, levels of EE decrease when the years of practice increase; 46.3% of respondents who have an experience of less than five years have high EE. Lack of experience in child management will

complicate treatment and care making young pediatric dentists more susceptible to emotional exhaustion. These results are similar to Maslach's findings [6]. Singh (2015) identified in his systematic review younger age as a risk factor for dentists' burnout, knowing that young age is cofounded with the number of years in practice [2]. In contrast with Chohan's results (2020), this variable was not statistically related to EE in American pediatric dentists [10].

Concerning DP, a statistical significance was found when exclusive pediatric dentists were compared with non-exclusive pediatric dentists ($P= .04$). High DP was noted in 8.6% of exclusive pediatric dentists in contrast with 25.5% in non-exclusive pediatric dentists (Table 3). Working with kids requires putting lot of efforts to establish a good psychological approach compared to working with adults. Non-exclusive pediatric dentists may take excessive advantage of this fact by avoiding contact with their adult patients to the minimum resulting in DP.

Personal accomplishment was statistically correlated to exercise frequency ($P= .04$) (Table 4). It is well known that physical activity acts as a distraction from daily stressors and boosts self-esteem [18]. Accordingly, 48.8% of those who exercise occasionally have low PA.

5. CONCLUSION

Burnout in its three dimensions' model (emotional exhaustion, depersonalization and reduced personal accomplishment) was experienced by few pediatric dentists in Lebanon (3.4%) with male pediatric dentists experiencing more burnout than females. Three out of ten Lebanese pediatric dentists suffer from high EE (34.5%). EE scores were higher in those with little professional experience. Concerning DP, 15.5% of the respondents scored high in this dimension with non-exclusive pediatric dentists having higher DP scores than exclusive pediatric dentists. Approximately half of the sample (47.4%) has low PA; respondents who exercised moderately experienced higher PA levels. Implementing preventive measures is important to avoid reaching the final stages of burnout and to ensure patients' safety.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely

no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Garbin C, Garbin A, Dos Santos R, Fagundes Freire A, Gonçalves P. Burnout's syndrome in dentists. *J Depress Anxiety*. 2011;1(1):1-4.
2. Singh P, Aulak DS, Mangat SS, Aulak MS. Systematic review: Factors contributing to burnout in dentistry. *Occup Med*. 2016;66(1):27-31.
3. Choy HB, Wong MC. Occupational stress and burnout among Hong Kong dentists. *Hong Kong Med J*. 2017;23(5):480-8.
4. World Health Organization. Burn-out an "occupational phenomenon": International Classification of Diseases; 2019. Accessed 19 January 2020 Available:https://www.who.int/mental_health/evidence/burn-out/en/
5. Alpöz E, Güneri P, Sürgevil O, Çankaya H. Burnout syndrome in a dentistry faculty: Effect of sociodemographic and academic factors. *J Hacettepe Fac Dent*. 2008;32(3):18-28.
6. Maslach C, Schaufeli W, Leiter M. Job burnout. *Annu Rev Psychol*. 2001;52:397-422.
7. Sabbah I, Sabbah H, Sabbah S, Akoum H, Droubi N. Burnout among Lebanese nurses: Psychometric properties of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). *Health*. 2012;4(9):644-652.

8. Maslach C, Jackson SE. The measurement of experienced burnout. *J Occup Behav.* 1981;2:99-113.
9. Calvo JM, Kwatra J, Yansane A, Tokede O, Gorter RC, Kalenderian E. Burnout and work engagement among US dentists. *J Patient Saf.* 2021 Aug;17(5):398-404. DOI: 10.1097/PTS.0000000000000355
10. Chohan L, Dewa CS, El-Badrawy W, Nainar SMH. Occupational burnout and depression among paediatric dentists in the United States. *Int J Paediatr Dent.* 2020;30(5):570-7.
11. Daou MH, Eden E, El Osta N. Age and reasons of the first dental visit of children in Lebanon. *J Med Liban.* 2016;103(3082):1-5.
12. Salem R, Akel R, Fakhri G, Tfayli A. Burnout among Lebanese oncologists: Prevalence and risk factors. *Asian Pac J Cancer Prev.* 2018;19(8):2135-9.
13. Fares J, Saadeddin Z, Al Tabosh H, Aridi H, El-Mouhayyar C, Koleilat MK, et al. Extracurricular activities associated with stress and burnout in preclinical medical students. *J Epidemiol Glob Health.* 2016;6(3):177-85.
14. Chatzea VE, Sifaki-Pistolla D, Vlachaki SA, Melidoniotis E, Pistolla G. PTSD, burnout and well-being among rescue workers: Seeking to understand the impact of the European refugee crisis on rescuers. *Psychiatry Res.* 2018;262:446-51.
15. American academy of pediatric dentistry. Trends in pediatric dentistry 2015. Chicago: Pediatric oral health research and policy center. 2015;45. Available: https://www.aapd.org/assets/1/7/Trends_in_Pediatric_Dentistry-2015.pdf
16. Denton DA, Newton JT, Bower EJ. Occupational burnout and work engagement: A national survey of dentists in the United Kingdom. *Br Dent J.* 2008;205(7):E13. Accessed 27 February 2020 Available: <https://doi.org/10.1038/sj.bdj.2008.654> DOI: 10.1038/sj.bdj.2008.654
17. Pirillo F, Caracciolo S, Siciliani G. The orthodontist burnout. *Prog Orthod.* 2011;12(1):17-30.
18. Anderson EH, Shivakumar G. Effects of exercise and physical activity on anxiety. *Front Psychiatry.* 2013;4:27. Accessed 12 January 2020 Available: <https://doi.org/10.3389/fpsy.2013.00027> DOI: 10.3389/fpsy.2013.00027

© 2022 Sabbagh and Debs; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/85764>