Original Research Article

Burnout syndrome among Lebanese pediatric dentists: An epidemiological study

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 is 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 accomplishment was higher when respondents exercised moderately (P= .04). Male pediatric dentists experienced more burnout than females (P= .03). **Conclusion:** Burnout in its three dimensions' model was experienced by few pediatric dentists in Lebanon; the prevalence found was 3.4%.

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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. In particular, pediatric dentists working in Lebanon face additional difficulty linked directly to the economic crisis where social security does not cover dental care. This leads to oral health neglect making emergencies the main cause for dental visits. 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. Furthermore, children with special needs require unique considerations which can constitute a big challenge and strain for pediatric dentists thus posing the risk of burnout.

Burnout syndrome has been investigated in Lebanese oncologists, nurses and preclinical medical students. [7, 10, 11] The aim of the study is to determine the prevalence of burnout among pediatric dentists in Lebanon and to analyze various factors that may influence the appearance of the syndrome.

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2. METHODOLOGY:

After the approval of the Scientific Committee of the Faculty of Dental Medicine at the Lebanese University, an observational cross-sectional 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.

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 Human Services Survey for Medical Personnel or MBI-HSS (MP). [6, 8] It consists of 22 statements related to the three dimensions of burnout where five statements correspond to DP, nine to EE and eight to PA. [8]

Respondents use a seven point Likert scale from zero (never) gradually increasing to six (every day) to indicate the frequency of the statement. Summing up the Likert scale score of the statements specific to each dimension provides scores for each of the three domains. [8]

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). [12]

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)

Table 1: *Percentages of the burnout dimensions giving the different levels.*

Levels / Dimensions	Low	Moderate	High
EE	33.6%	31.9%	34.5%
DP	53.4%	31.0%	15.5%
PA	24.1%	28.4%	47.4%

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)

Table 2: *Correlation between demographic factors and burnout.*

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

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 3: *Correlation between different practice conditions and burnout.*

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

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 4: *Correlation between alcohol consumption, exercise and burnout syndrome.*

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

4. DISCUSSION:

The study sample size was 117. This number is acceptable statistically since it is higher than the minimum needed sample size (117>105).

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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. [13]

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. [13]

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, 14-16] 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.

As for DP, 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.

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, 14, 15]

As for burnout, its low prevalence 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.

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.

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. [17] Accordingly, 48.8% of those who exercise occasionally have low PA.

Limitations: the questionnaire was not administered face-to-face due to the COVID-19 outbreak. An online questionnaire was sent which usually has lower response rates. In addition, 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.

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5. CONCLUSION:

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%) have low PA; respondents who exercised moderately experienced higher PA levels.

The prevalence of burnout in Lebanese pediatric dentists was found 3.4% with male pediatric dentists experiencing more burnout than females.

Implementing preventive measures is important to avoid reaching the final stages of burnout and to ensure patients' safety.

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together

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. 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.

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