

Original Research Article

Prevalence of burnout among the health team workers at paediatric intensive care unit

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ABSTRACT

Background: Paediatricians work in the ICU have to deal with babies who have serious or chronic conditions associated with multiple problems and they have to interact with their stressed and often fatigued parents. This makes them more exposed to developed burnout. This study aimed to estimate the prevalence of burnout among the paediatric health team at King Abdulaziz University Hospital and to determine the stress predictors among them.

Methods: This cross-sectional study utilized the Maslach Burnout Inventory (MBI) that was distributed to the all the target group who filled it anonymously. The data were analysed using the Statistical Package of Social Science (SPSS) Version 16.

Results: About 58 % of the participants had moderate grade burn out and 61 % of them had high grade of exhaustion. "Being single" and "being married with children" were significant predictors of burnout among the participants. The top five stressors for the participants were the poor work life balance, patient education, salary, volume of work and decision making in ICU. There was significant positive correlation between the degree of burnout and the lack of institutional resources ($p=0.001$), poor work life balance ($p<0.001$), volume of work (0.012), complexity of clinical work ($p=0.009$) and on call requirement ($p=0.004$).

Conclusions: Large percent of pediatric ICU health team experienced high grade of emotional exhaustion compared to their national or international peers. There should be an interventional preventive plans to deal with such phenomenon.

Keywords: Burnout, Health team, Intensive care, Paediatric, Predictors-prevalence, Stressors

INTRODUCTION

Burnout is a psychosocial problem that affects professionals from different fields. It is produced by chronic stress in the work environment and results in three symptoms: emotional exhaustion, depersonalization and reduced professional achievement.^{1,2} Emotional exhaustion means lack of occupational motivation which might be caused by personal conflict in relationships and a heavy workload. Depersonalization is a sense of emotional distance from one's patients or job. While

reduced professional achievement is feeling less competent and successful thus become dissatisfied with their professional achievement.³ Burnout is considered as an occupational hazard to which all physicians are exposed all through the phases of medical training and practice.⁴

Awareness about burnout in medical profession has been started since more than 10 years. A task force worked on burnout in different specialities was organised by Accreditation Council for Graduate Medical Education in

2015 and many research projects concerning burnout were critically reviewed and supported by them in December 2016.⁵

It was recently documented that healthcare workers such as physicians, technicians, nurses, are susceptible to developed burnout like other workers. According to the previous reports the prevalence of burnout among physicians was ranged from 50% to 76%.^{6,7} High burnout rates were reported among residents as well as program directors in many specialties.⁸ Burnout could affect not only the physicians from all specialties throughout their career but also it could affect the students during their medical study.⁹ Emotional burnout is frequent in specialities directly connected to the mortality and morbidity of patients. The stress and dissatisfaction associated with burnout represents a challenge to the leaders, learners, and colleagues.¹⁰

Burnout is a serious phenomenon that affect not only physician on multiple levels (health, mental and social aspects), but can also affect the quality of patient's care directly.¹¹ Studies have recently started to evaluate the cause and effect relationships plus preventive measures of burnout.¹² However, it does merit attention due to the sheer number of people affected by and the damage it can cause to individual and collective quality of life in the workplace.^{13,14} Persons suffering from burnout are unable to deal with with emotional stress at work with negative, cynical feelings and attitudes toward their colleagues and patients. They often feel unsatisfied with their work and accomplishments.¹⁵ Maslach et al, created the Maslach Burnout Inventory (MBI).¹⁶ It is reproducible and valid questionnaire that has been validated in many studies conducted at different countries.^{3,14} This study aimed to estimate the prevalence of burnout among the paediatric health team at King Abdulaziz University Hospital (KAUH) and to determine the stress predictors among these target group.

METHODS

This study was approved by the biomedical research ethics committee at the Faculty of Medicine (FOM), King Abdulaziz University (KAU), Jeddah Saudi Arabia. This cross-sectional study utilized a self-administered questionnaire, MBI that was distributed to the all the health team at the paediatric intense care unit (ICU), at the KAUH, included physicians and nurses. The MBI was anonymous in order to ensure that the participants information will remain confidential.

The MBI included 22-items. The MBI assesses three domains; emotional exhaustion, measured with a nine-item subscale, depersonalization, measured with a five-item subscale and personal accomplishment, measured with eight items.¹⁷ Three domain scores were estimated independently. A scale score more than or equal 10 indicated high depersonalization, a score more than or equal 27 indicated high emotional exhaustion and a score

less than 33 indicates a low sense of personal accomplishment. The subscale score for personal accomplishment, as a criterion for burnout, was not used to determine burnout, but high depersonalization and/or emotional exhaustion scores were used.¹⁷ Demographic data besides some questions intended to characterized work-related conditions were also included in this survey. The data were collected and entered to the computer. The statistical analysis was performed by using the Statistical Package of Social Science Version 16 (Chicago, IL, USA), IL 60606-6307. The quantitative data were presented in the form of mean, standard deviation (SD) and Inter-quartile range (IQR). The qualitative data were presented in the form of number and percentage. Odds ratio and 95 confidence interval were done to estimate the risk. Person correlation coefficient was done to study the correlation between the stressors and the degree of burnout. Significance was considered at $p < 0.05$.

RESULTS

The survey was distributed to all the health team worker in the pediatric ICU (n=64) and all of them responded.

Table 1: Demographic characters of the participants.

Variable	Number	Percentage
Occupation		
Pediatric ICU doctors	18	(28.1)
Nurses	46	(71.9)
Age		
25 to 35 year	43	(67.2)
36 and more	21	(32.8)
Gender		
Male	13	(20.3)
Female	51	(79.7)
Degree		
Bachelor degree	44	(68.8)
PhD	6	(9.4)
Master	14	(21.9)
Year of graduation		
1-5	22	(34.4)
6-10	17	(26.6)
11-20	21	(32.8)
21-30	4	(6.2)
Years of experience		
0-5	14	(37.5)
6-10	19	(29.7)
10-15+	21	(32.8)
Night shift		
Yes	59	(92.2)
No	5	(7.8)
Marital status		
Single	21	(32.8)
Married	43	(67.2)
Having children		
No	42	65.6)
Yes	22	(34.4)
Work hour		
Less than 40	43	(67.2)

The demographic characters of the participants were shown in Table 1. It showed that nurses represented about 72% of the participants, 80% of them were females, about 71 % were graduated since 10 years, about 93% has night shift during work and more than two thirds were married and have children. It was observed that nurses working at the pediatric ICU represented about

72% of the participants and about two thirds of them were in the age ranged between 25 to 35 years. About 80 % participant were females and more than two thirds had bachelor degree. About 92% of the participants had night shift work. More than two thirds were married and had children.

Table 2: Domains of Maslash burnout inventory among the participants.

Domains	Mean	SD	Median	Inter-quartile range (IQR)
Exhaustion	31.06	11.93	32	(22-41)
Depersonalization	6.35	4.66	7	(3-10.75)
Accomplishment	29.82	9.92	34	(24-36)

Table 3: Classification of the participants according to level of burnout and its domain.

Domains	Number	Percentage
Exhaustion		
Low (0-16)	11	(17.2)
Moderate (17-22)	14	(21.9)
High (23-54)	39	(60.9)
Depersonalization		
Low (0-5)	31	(48.4)
Moderate (6-12)	30	(46.9)
High (13-30)	3	(4.7)
Accomplishment		
Low (39-48)	5	(7.8)
Moderate (32-38)	34	(53.1)
High (7-31)	25	(39.1)
Overall burn out score		
High burn out	2	(3.1)
Moderate burn out	37	(57.8)
Low burn	25	(39.1)

The mean of the domains of Maslash burnout inventory (exhaustion, depersonalization and accomplishment) among the participants were calculated and presented in Table 2. The prevalence of burnout among the participants were seen in Table 3. It was noticed that about 61 % of them had high grade of exhaustion, about 48% had low grade of depersonalization, and about 53% had moderate grade of accomplishment. The overall burn out score revealed that about 58 % of the participants had moderate grade burn out.

Table 4 showed the studied predictors of burnout among the participants. It was noticed that "being single" (odds ratio 5.66) or "being married with children" (odds ratio 4.5) were significant (p=0.008, p=0.016) predictors for burnout respectively.

The mean level of stressors as perceived by the participants in the study was presented in Table 5. The stressor were descending ranked according to their mean levels. It was found that the top five stressors were the poor work life balance, patient education, salary, volume

of work and decision making in ICU. Kendal rank correlation coefficient was done to study the relation between degree of burn out and level of stressors. There was significant positive correlation between the degree of burnout and level of many stress like those resulted from lack of institutional resources (p=0.001), poor work life balance (p<0.001), volume of work (0.012), complexity of clinical work (p=0.009) and on call requirement (p=0.004) Table (5).

DISCUSSION

Burnout is considered an occupational risk that was described to "erodes professionalism, influences the quality of care, increases the risk of medical errors, and promotes early retirement.^{18,19} Although the work of healthcare professionals can be gratifying, factors as work-life imbalance, long hours, distress, perceived workload caused by complaints and lack of reciprocity in relationships with patients and colleagues may lessen job satisfaction increase the risk of burn out.^{20,21} Over the past years, the presence of burnout among health care

professionals has gained attention, especially among medical residents. In a literature review conducted on studies on burnout during the residency and identified 15 studies with different methodological limitations. The

average reported prevalence of burnout in varying scenarios is over 50% of assessed residents. Different studies have associated burnout with the working conditions of doctors and nurses.^{22,23}

Table 4: Predictors of burnout among the participants.

Variable	High and moderate burnout N=39		Low grade burnout N=25		Test of significance	Odds ratio 95 % confidence interval
	Number	Percent	Number	Percent		
Occupation						
Doctors	29	(63)	17	(37)	$\chi^2=0.35$ P=0.58	1.36 (0.45-4.12)
Nurses	10	(55.6)	8	(44)		
Age (year)						
From 25 to 35	38	(62.3)	23	(37.7)	$\chi^2=1.008$ P=0.55	3.36 (0.28-38.2)
More than 35	1	(33.3)	2	(66.7)		
Gender						
Male	34	(66.7)	17	(33.3)	$\chi^2=3.46$ P=0.065	3.2 (0.9-11.28)
Female	5	(38.5)	8	(61.5)		
Degree						
Bachelor	28	(70)	12	(30)	$\chi^2=2.56$ P=0.28	
Phd	2	(40)	3	(60)		
Master	4	(50)	4	(50)		
Year of graduation						
One-10	26	(66.7)	13	(33.3)	$\chi^2=1.36$ P=0.24	0.54 (0.17-1.71)
More than 10	13	(52)	12	(48)		
Year of experience						
Zero-15	35	(60.3)	23	(39.7)	$\chi^2=0.05$ P=0.78	1.31 (0.54-9.73)
More than 15	4	(60)	2	(40)		
Night shifts						
Yes	36	(61)	23	(39)	$\chi^2=0.002$ P=0.96	1.04 (0.162-6.73)
No	3	(60)	2	(40)		
Marital status						
Single	17	(85)	3	(15)	$\chi^2=7.07$ P=0.008	5.66 (1.45-22.18)
Married	22	(49.2)	22	(50.2)		
Having children						
No	21	(50)	21	(50)	$\chi^2=6.14$ P=0.016*	4.5 (1.7-19.1)
Yes	18	(81.8)	4	(18.2)		
Working hours						
More than 40	26	(60.5)	17	(39)	$\chi^2=0.012$ P=0.96	1.06 (0.36-3.1)
Less than 40	13	(61.9)	8	(38.1)		

Data are expressed as number and percentage. Significance is considered at $p < 0.05$.

In this study, it was found that 58 % of the pediatric ICU team had moderate grade burn out which is lower than what was previously reported by Jamjoom and Park as they found that about 70% of Saudi pediatric residents had severe burnout.²⁴ In another study conducted among internal medicine and pediatric residents, prevalence of burnout ranged from 40% to 76%.²⁵ This might be due to that the residents are more exposed to burnout than the specialist and consultants. Holmes et al, reported high burnout rates among residents in many specialties.⁸ Residents are exposed to many stressors that can be classified into three types; the situational stressors like the workload, lack of sleep, inadequate learning

environment or support, the personal stressors like family and social responsibilities and financial burden and the professional stressors like exhausting work responsibility and information.²⁶ In contrary to the results of this study, Al-Youbi and Jan found that paediatric consultants were more exposed to have burnout compared to more junior physicians and have attributed that to increased responsibilities.²⁷

It was reported that burnout syndrome is common among physically demanding professions or those necessitating full commitments in stressful work environment.²⁸ Examples of such profession is physicians who provide

surgical or procedural services; and intensive or emergency care services.²⁹ All these conditions are applicable on paediatricians who are working in various situations. Paediatricians in subspecialties like those works in the paediatric ICU have to deal with babies who have serious or chronic conditions associated with

multiple problems. They have to interact with their stressed and often fatigued parents. This explained the increased prevalence in paediatric speciality (58%) in this study compared to other specialities, 40% in internal medicine, 32% in gynecologic oncologists, respectively.^{25,30}

Table 5: The rank of stressors as perceived by the participants and the correlation between them and the degree of burnout among the participants.

Stressor	Rank	Mean	SD	Correlation	
				r	p
Poor work life balance	1	2.69	1.19	0.49	<0.001*
Patient education	1	2.69	1.08	0.42	<0.001*
Salary	2	2.56	1.24	0.16	0.14
Volume of work	3	2.42	1.005	0.32	0.012*
Decision making in ICU	4	2.34	1.02	0.32	0.012*
Inadequate support and communication with management	5	2.3	1.1	0.231	0.066
Taken non prescription to cope with burnout	6	2.3	0.79	0.054	0.762
Research teaching audit workload	7	2.23	1.08	0.18	0.155
Stress of ICU procedures	8	2.22	0.86	0.15	0.22
Lack of institutional resources	8	2.21	.9	0.54	0.001*
On call requirements	9	2.14	1.91	0.35	0.004*
Inadequate training pathway	10	2.12	.98	0.07	0.54
Medico legal pressure	11	2.11	1.09	0.24	0.056
Complexity of clinical work	12	2.05	1.03	0.33	0.009*
Pension	13	1.95	1.14	0.17	0.17
Inadequate experience communication enthusiasm from junior staff	14	1.92	0.87	0.221	0.086
Excess administrative workload	15	1.77	.95	0.25	0.041*
Availability of consultants or specialist posts	16	1.9	1.08	0.37	0.004*

Data are expressed as mean and SD (standard deviation). Significance is considered at $p < 0.05$.

Among the main finding in this study was that large percent of the pediatric ICU team, more than 60%, had high grade of emotional exhaustion. This percent is considered high when compared to other percent reported by some previous studies. Shanafelt et al, noticed 37% rate of emotional exhaustion among U.S. physicians.¹⁹ Campbell et al, reported high levels of emotional exhaustion in 44% of the American surgeons the MBI.³¹ In a more recent study, Jamjoom and Park reported that 43% of the pediatric residents had severe emotional exhaustion.²⁴ Jennings and Slavin claimed that problems with resident wellness have considerable impact revealed by occurrence of more medical errors, reduced adherence to best practices, problems in personal relationships, and possibly a reduced motivation for learning.³²

Among the interesting observations that seems to be contradicting in this study was that both being single or married with children are considered significant predictor for high and moderate burnout. These finding were in accordance with previous separated studies. Jamjoom and Park reported that the partner residents (engaged or married) had significantly higher emotional exhaustion and depersonalization compared to the single residents.²⁴ In another study, Aldrees et al, found that being a single

female is associated with higher burnout scores.³³ These results were contradicted with those of Abdulaziz et al, and Dyrbye et al who noted no relation between relationship status and burnout.^{34,35} It seems logic and expected for the married persons who have children to be exposed to burnout more than the single as they have to be balanced between the work and their social commitments related to the family. What was unexpected is the being single and more exposed to burnout. This might be attributed to traditions in some Arabic communities that look at the single female as a person suffering from a social problem and this represents a stressor on these females.

Neither of the other studied predictors included age, gender, years of experience or work hour showed significant association with burnout in the studied groups. And this was in agreement with many studies in the literature.

This study had some limitations. Among these limitation is the small sample size as the target population was represented by the pediatric ICU health team. So, the author is planning to conduct a multi-center study and target this team in many tertiary health care hospitals in

Saudi Arabia in order to obtain more reliable and generalizable results.

CONCLUSION

About 58 % of the pediatric ICU health team at KAUH had moderate grade of burnout. Large percent of them experienced high grade of emotional exhaustion compared to their national or international peers. The significant predictors of burnout among this health team was being single and being married with children. There should be an interventional preventive plans to deal with such phenomenon.

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