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Burnout among Egyptian physical therapists in burn departments

Wypalenie zawodowe wśród egipskich fizjoterapeutów pracujących na oddziałach oparzeniowych

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Abstract

Background. Burnout is a common syndrome among healthcare providers which affects their quality of life and the healthcare service they provide. Physical therapists in burn units are at high risk to develop burnout due to several stressors.

Objective. This study's main objective was to evaluate the extent of burnout experienced by physical therapists employed in burn units.

Design. The present study employed a cross-sectional study.

Methods. A total of 520 physical therapists, aged 24–44 years, working in burn units of Egyptian hospitals participated in our study. Burnout evaluation was conducted using the Maslach Burnout Inventory Human Services Survey (MBI-HSS).

Results. 520 physical therapists participated in the study, about 50% of them were aged between 30 and 40 years, and about 44.9% had a bachelor's degree. Females represented 63.3% of them. According to the results of the MBI-HSS assessment, it was found that 73.5% of the participants exhibited symptoms of burnout on the emotional exhaustion (EE) scale, while 44% displayed burnout on the depersonalization (DP) scale. Additionally, 51% of the participants reported low personal accomplishment (PA) on the scale measuring this construct. Results confirmed that men, more than women, experienced depersonalization, and they were less satisfied with their professional accomplishments.

Conclusion. Physical therapists working in burn units who responded to the survey expressed severe burnout. To assess the impact of burnout on physical therapists working in burn units and to create strategies to lessen it, more study is needed.

Keywords

physical therapy, burnout syndrome, maslach burnout inventory, burn unit

Streszczenie

Tło. Wypalenie zawodowe to powszechny syndrom wśród pracowników ochrony zdrowia, który wpływa na jakość ich życia oraz świadczonych usług medycznych. Fizjoterapeuci pracujący na oddziałach oparzeniowych są narażeni na wysokie ryzyko wypalenia zawodowego z powodu wielu czynników stresogennych.

Cel. Głównym celem tego badania była ocena stopnia wypalenia zawodowego wśród fizjoterapeutów zatrudnionych na oddziałach oparzeniowych.

Projekt badania. Przekrojowe badanie obserwacyjne.

Metody. W badaniu wzięło udział 520 fizjoterapeutów w wieku od 24 do 44 lat, pracujących na oddziałach oparzeniowych w egipskich szpitalach. Ocena wypalenia zawodowego została przeprowadzona za pomocą Maslach Burnout Inventory Human Services Survey (MBI-HSS).

Wyniki. W badaniu uczestniczyło 520 fizjoterapeutów, z czego około 50% było w wieku od 30 do 40 lat, a około 44,9% posiadało tytuł licencjata. Kobiety stanowiły 63,3% badanych. Według wyników oceny MBI-HSS, u 73,5% uczestników stwierdzono objawy wypalenia zawodowego na skali wyczerpania emocjonalnego (EE), natomiast 44% wykazywało wypalenie na skali depersonalizacji (DP). Dodatkowo 51% uczestników zgłosiło niski poziom poczucia osobistych osiągnięć (PA). Wyniki potwierdziły, że mężczyźni częściej niż kobiety doświadczali depersonalizacji i byli mniej zadowoleni ze swoich osiągnięć zawodowych.

Wnioski. Fizjoterapeuci pracujący na oddziałach oparzeniowych, którzy wzięli udział w badaniu, zgłosili wysokie nasilenie wypalenia zawodowego. Aby ocenić wpływ wypalenia na fizjoterapeutów pracujących na oddziałach oparzeniowych oraz opracować strategię jego redukcji, potrzebne są dalsze badania.

Słowa kluczowe

fizjoterapia, syndrom wypalenia zawodowego, maslach burnout inventory, oddział oparzeniowy

Introduction

The term "burnout" was first adopted by Herbert Freudenberger, an American psychologist, in 1974 [1]. The study was based on the volunteer staff's observations in a free drug addiction clinic as a compilation of physiological manifestations, such as tiredness, headaches, insomnia, and "quick wrath" and depressive thoughts. He noted that sad employees looked, acted, and seemed burned out [2].

Burnout is a poorly controlled syndrome that is thought to be caused by ongoing stress at work. It has three characteristics: a lack of energy or fatigue, diminished professional effectiveness, increased mental gap from one's work, and bad thoughts about one's work. According to Wolff, a well-known health specialist, burnout is a state of mental and physical weariness accompanied by intense discontent and perceived inadequacy [3].

The phenomenon of physiotherapist burnout was initially documented by Wolf in 1981. According to his statement, burnout may arise due to failure and unhappiness, an overwhelming workload, and conflicts between several roles. According to Wolff's hypothesis, individuals may experience burnout through three distinct mechanisms: reduced time allocation per patient, compromised quality of care for each patient, and an inability to fulfill patient-related goals [3].

Any profession can experience burnout, but the intense physical demands and emotional strains that define the work and profession in physiotherapy make it particularly concerning as both a symptom and a syndrome [4]. The potential for burnout when working with patients is particularly concerning if it is negatively connected with how well they perceive their care [5]. Patient unhappiness can negatively impact Medicare payments [6]. Other burnout symptoms, like incompetence and mental illness, can result in increased malpractice, compromised patient safety, and increased accountability to the medical institution [7]. Burnout-related emotions can cause physiotherapists to leave clinical practice or their profession entirely, which creates a lack of skilled medical professionals to care for the rising number of patients [8].

Most people agree that the Maslach Burnout Inventory (MBI) is the "gold standard" for measuring and assessing burnout [9]. The MBI is available in three primary forms that measure same aspects of burnout (depersonalization, emotional exhaustion, and personal accomplishment), but are customised for other professions. These MBI-General Survey, MBI-Educators Survey, and other forms and MBI-HSS (MBI-Human Services Survey [10]. For the purpose of evaluating burnout, the MBI-HSS has shown to be a valid and a reliable tool across a range of human services fields, including dentistry [11, 12], nursing, and healthcare professionals [12].

Physical therapy is a highly developing profession in Egypt. Subspecialties such as burn rehabilitation have begun to take their place, but the number of therapists working in burn rehabilitation is extremely few when comparing with other specialties. There is no reviews available right now that specifically look into the occurrence of burnout among physical therapists working in burn units. The current study expanded on previous research to ascertain burnout's prevalence, causes, and effects in burn units.

Methods

Design and ethical approval

The present study employed a cross-sectional design. The Ethical and Research Committee of Faculty of Physical Therapy granted ethical authorization for the study (IRB No:P.T.REC/012/003627).

Participants

Male and female physical therapists employed in burn units who had not previously experienced any medical issues that would have compromised their psychological health or overall well-being were the target audience. From May 2023 to September 2023, physical therapists were selected from burn units located in several governorates around Egypt. A thorough explanation of the study's goals was given to each participant prior to them giving their informed consent to take part. The age range of the participants was 24 to 44.

Physical therapists with a history of mental illnesses as well as those employed by other hospital departments were excluded from the study, per its criteria.

The determination of sample size

Utilizing the G*Power 3.1 software [13], a minimum sample size of 260 participants resulted. The calculations were based on the Poisson regression model of z test to explore the relationship between the MBI score and binomial predictors ($\pi = 0.5$), an alpha error of 5%, a power of 80%, a mean MBI score of 10, and an effect size to be detected of at least 1.1. Assuming that only approximately 50% of the physical therapists in the initial sample would participate in the study, the sample size was increased to 520.

Outcome measures

A Google form survey was distributed online through any participant's social media accounts. The research was conducted on a volunteer basis and without any commercial motives. After the participant had finished the survey and ensured its integrity by preventing any modifications post-submission, the survey was not shown for further viewing. The gathered information was secured with a username and password and kept on Google Drive. The questionnaire was submitted to all participants using an online Google form using a link shared via emails, social media (Whats app). The data were collected automatically by Google spreadsheet.

Socio-demographic data

Participants were asked to report their: Name, age, gender, level of physical therapy education (bachelor, master, and doctorate), name of hospital, years of experience in burn rehabilitation, and number of patients treated per day. The purpose of these inquiries is to evaluate individuals' socio-demographic and professional histories.

The Maslach Burnout Inventory Human Services Survey (MBI-HSS)

The Maslach Burnout Inventory Human Services Survey (MBI-HSS) is used to evaluate burnout. The MBI-HSS is well acknowledged as the top and most widely employed asses-

ment of burnout, and a substantial body of research has supported it since it was first published [14]. It is divided into three subscales with a total of 22 elements. The initial subscale is the emotional exhaustion (EE) subscale, with nine items that gauge an individual's level of fatigue and emotional depletion to the point that they are unable to provide adequate care. The depersonalisation subscale, which is the second subscale, gauges negative shifts in attitudes and behaviours towards people, particularly those who receive health care services. It also gauges the rate at which people become irrationally angry, irritable, and lose their appreciation for their jobs, as well as cynical tendencies towards patients and their families. The third subscale is called the Personal Achievement (PA) subscale, and it measures how much a person tends to view his accomplishments adversely. This can cause a person to experience a variety of symptoms, including despair, withdrawal, a lack of productivity, and a sense of failure. Consistent with the Maslach definition, burnout was defined by both high emotional exhaustion, (> 26) and high depersonalization (> 12) [15,16].

Statistical analysis

The study used SPSS version 22 for statistical analysis. The MBI-HSS scores were calculated for each participant and we-

re categorized as high, moderate or low on the subscales according to the instructions provided by the MBI manual. The frequencies and percentages of distributions of demographic and outcome variables were provided. The maximum chi-squared tests were used to determine if demographic and employment variables had a statistically significant impact on burnout scores. A p value of < 0.05 was deemed statistically significant.

Results

Socio-demographic data

520 physiotherapists working in burn units, both genders, aged 24 - 44, were involved in the study. Regarding the age distribution of participants, about fifty percent of the participant's ages were between thirty and forty years old. The vast majority were women 330 (63.3%), while male were 191 (36.7). Concerning education, 44.8% had a bachelor's degree, 32.7% of the group members had a master's degree, and 18.4% had a Ph.D. degree. All respondents were employed full-time.

The data obtained showed that the lowest number of patients received per day was in physiotherapists with experience of more than ten years, while it was the same in the other physiotherapist groups (Table 2).

Table 1. Number and percentage of participants according to age.

Age	Frequency	Percent	Valid Percent	Cumulative Percent
24-29	233	44.8	44.8	44.8
30-34	170	32.7	32.7	77.5
35-39	96	18.4	18.4	95.9
40-44	21	4.1	4.1	100.0
Total	520	100.0	100.0	-

Table 2. Number and percentage of participants according to experience.

Years of experience	Frequency	Percent
Less than 5 Years	202	38.8
From 5 to 10 Years	116	22.4
More than 10 Years	202	38.8
Total	520	100.0

*Maslach Burnout Inventory Human Services Survey (MBI-HSS)

Emotional exhaustion

Regarding emotional exhaustion, Table 3 shows that about

26.5% of participants had a low degree, 42.9% had a moderate degree, and 30.6% had a high degree

Table 3. Number and percentage of participants according to emotional exhaustion

EE	Frequency	Percent
Low Degree	138	26.5
Moderate Degree	223	42.9
High Degree	159	30.6
Total	520	100.0

Depersonalization

Regarding depersonalization, the data in Table 4 indicate that about 45%

of the participants exhibited a low degree, 30.6% displayed a moderate degree, and 24.5% demonstrated a high degree of depersonalization.

Table 4. Number and percentage of participants according to depersonalization.

DP_RANK	Frequency	Percent
Low Degree	234	45
Moderate Degree	159	30.6
High Degree	127	24.4
Total	520	100.0

Personal accomplishment

Regarding assessment, Table 5 shows that the personal accomplish-

ishment of participants was markedly affected, as about half of the participants (50.9%) had a low degree of personal accomplishment.

Table 5. Number and percentage of participants according to personal accomplishment.

PA_RANK	Frequency	Percent
Low Degree	265	50.9
Moderate Degree	149	28.7
High Degree	106	20.4
Total	49	100.0

Emotional exhaustion (EE)

In Table 6, using Chi-square statistical analysis reveals significant associations between age and experience levels with the Emotional exhaustion(EE) variable, indicating that variations in these factors are correlated with different degrees. Specifically, the chi-square tests demonstrate that age and experience have a discernible impact on the distribution of EE_RANK, suggesting potential influences of these demographic factors on the observed degrees. Conversely, sex,

patients per day, and degree do not exhibit statistically significant associations with EE_RANK. These findings provide valuable insights into the demographic determinants of EE_RANK within the studied population, emphasizing the importance of considering age and experience when examining professional degrees. However, caution is warranted in generalizing these results, and further research is recommended to explore additional factors that may contribute to the observed variations in EE_RANK.

Table 6. Chi-square statistical analysis of Emotional exhaustion (EE) variable

Variable		EE_RANK						Chi-square	Df	p value
		Low Degree		Moderate Degree		High Degree				
Age	24-29	53	10.20%	106	20.38%	74	14.23%	8.301	6	0.021
	30-34	64	12.3%	53	10.20%	53	10.20%			
	35-39	21	4.03%	64	12.3%	11	2.11%			
	40-44	0	0.00%	0	0.00%	21	4.03%			
Sex	Male	42	8.07%	85	16.34%	64	12.3%	0.285	2	0.867
	Female	96	18.46%	138	26.53%	96	18.46%			
Experience	Less than 5 Years	32	6.15%	117	22.5%	53	10.19%	7.379	4	0.017
	5 to 10 Years	21	4.03%	32	6.12%	64	12.3%			
	More than 10 Years	85	16.34%	74	14.23%	42	8.07%			
Patients Per day	Less than 5	42	8.07%	117	22.5%	74	14.23%	2.895	4	0.575
	From 5 to 10	85	16.34%	74	14.23%	74	14.23%			
	More than 10	11	2.11%	32	6.15%	11	2.11%			
Degree	BSC	64	12.3%	127	24.42%	44	8.46%	4.025	4	0.403
	MSC	42	8.07%	74	14.23%	74	14.23%			
	PHD	32	6.15%	21	4.03%	42	8.07%			

In Table 7, the presented statistical analysis unveils noteworthy associations between various demographic variables and the depersonalization (DP) categories, providing insights into potential determinants of different degree levels. Notably, age, sex, experience, patients per day, and degree exhibit diverse patterns of influence on DP_RANK. Age-wise, individuals in the 24-29 age group are more prevalent in the low degree category, while those in the 35-39 age group are less represented in high degree categories. Sex demonstrates a significant association, with males more likely to be in low degree categories. Experience also plays a role, as those with less than 5 years or more than 10 years of

experience show higher representation in certain DP_RANK categories. Patients per day influences DP_RANK, particularly for those seeing less than 5 or more than 10 patients per day. Degree-wise, individuals with a BSC degree are more prevalent in high degree categories. These findings offer valuable insights into the demographic factors associated with DP_RANK, contributing to a nuanced understanding of the variables influencing professional degrees in the examined context. However, cautious interpretation and consideration of potential confounding factors are warranted, and further research may be needed to validate and extend these findings to broader populations.

Table 7. Chi-square statistical analysis of depersonalization (DP) variable

Variable		DP_RANK						Chi-square	Df	p value
		Low Degree		Moderate Degree		High Degree				
Age	24-29	96	18.46%	96	18.46%	42	8.07%	8.077	6	0.023
	30-34	85	16.34%	42	8.07%	42	8.07%			
	35-39	53	10.19%	21	4.03%	21	4.03%			
	40-44	0	0.00%	0	0.00%	22	4.23%			
Sex	Male	85	16.34%	53	10.20%	53	10.20%	0.202	2	0.044
	Female	149	28.65%	106	20.38%	74	14.23%			
Experience	Less than 5 Years	96	18.46%	85	16.34%	20	3.84%	5.98	4	0.021
	5 to 10 Years	32	6.15%	32	6.15%	53	10.20%			
	More than 10 Years	53	10.20%	96	18.46%	53	10.20%			
Patients Per day	Less than 5	85	16.34%	117	22.5%	85	16.34%	9.439*	4	0.041
	From 5 to 10	106	20.38%	44	8.46%	30	5.76%			
	More than 10	42	8.07%	0	0.00%	11	2.11%			
Degree	BSC	138	26.53%	64	12.3%	32	6.15%	7.087	4	0.031
	MSC	53	10.20%	85	16.34%	53	10.20%			
	PHD	42	8.07%	11	2.11%	42	8.07%			

In table 8, the statistical analysis of the personal accomplishment (PA) variable reveals several interesting associations with demographic factors. While the chi-square tests do not indicate significant associations for age and sex, the distribution of PA_RANK appears to vary significantly based on experience and degree. Notably, individuals with more than 10 years of experience are overrepresented in high degree categories, suggesting a potential positive correlation between experience and higher professional degrees. Furthermore, the degree variable demonstrates a significant association, with

those holding a BSC degree more likely to fall into high degree categories. These findings contribute valuable insights into the factors influencing PA_RANK, emphasizing the importance of experience and educational background in professional attainment within the studied context. However, the absence of significant associations with age and sex suggests a more nuanced interplay of factors that may require further investigation. It is crucial to interpret these results with caution and consider potential confounding variables for a comprehensive understanding of the dynamics influencing PA_RANK.

Table 8. Chi-square analysis of the personal accomplishment (PA) variable

Variable		PA_RANK						Chi-square	Df	p value
		Low Degree		Moderate Degree		High Degree				
Age	24-29	32	6.15%	85	16.34%	53	10.19%	8.742	6	0.189
	30-34	117	22.5%	42	8.07%	11	2.11%			
	35-39	32	6.15%	21	4.03%	42	8.07%			
	40-44	85	20.23%	0	0.00%	0	0.00%			
Sex	Male	85	16.34%	53	10.20%	53	10.20%	1.005	2	0.605
	Female	180	34.61%	96	18.46%	53	10.20%			

Variable		PA_RANK				Chi-square	Df	p value		
		Low Degree	Moderate Degree	High Degree						
Experience	Less than 5 Years	74	14.23%	74	14.23%	53	10.20%	3.124	4	0.049
	5 to 10 Years	74	14.23%	32	6.15%	11	2.11%			
	More than 10 Years	117	22.5%	42	8.07%	42	8.07%			
Patients per day	Less than 5	128	24.61%	64	12.3%	42	8.07%	5.937	4	0.204
	5 to 10	138	26.53%	53	10.20%	42	8.07%			
Degree	More than 10	0	0.00%	32	6.15%	21	4.03%	4.467	4	0.034
	BSC	85	16.34%	74	14.23%	74	14.23%			
	MSC	117	22.5%	53	10.20%	21	4.03%			
	PHD	64	12.3%	21	4.03%	11	2.11%			

Discussion

Employees in the health care system are subjected to a variety of stressors, which raises the prevalence of psychological burnout [17]. Work discontinuity, low productivity, job discontent, weakened work commitment, and higher turnover have all been linked to burnout [18]. Many studies have examined burnout syndrome among physical and occupational therapists. For example research by Corrado and colleagues demonstrated that physical therapists have a higher risk of experiencing burnout syndrome [19].

Although management of burned patients has many challenges due to different problems as extreme pain, wounds, infections, disfigurement and psychological disorders, and These problems make burn therapists under continuous stress and burnout. As far as we are aware, no earlier studies have looked into burnout among physical therapists who are working in hospitals burn units.

Therefore, the purpose of our study was to ascertain the prevalence of burnout syndrome among Egyptian physical therapists employed in burn units. This study's findings demonstrated that about half of the participants (55%) had a moderate or high degree of depersonalization and marked affected personal accomplishment of participants as about half (50.9%) had a low degree of personal accomplishment. Moreover, the study showed statistically significant relationships between the subjects' age and the level of burnout indicators ($p > 0.05$) for all indicators. However, there are statistically significant range differences in depersonalization and emotional exhaustion in subgroups divided according to gender.

Sociodemographic features, organizational policies, work load, specialty, subspecialty, and country of origin may contribute to the difference in the level of burnout [20]. The findings of our study indicated that depersonalisation affected males more than women. In addition, The data collected indicated that there is a substantial correlation between personal accomplishment and education level, but not between education level and the other variables. Higher educated people than less educated physiotherapists reported higher personal achievements, which may have something to do with their increased knowledge of infection control protocols. These results were consistent with the results of the research conducted by Kim and colleges, from which they concluded that young female therapists (20 years old) employed in hospitals are prone to experiencing burnout. Additionally, he identified characteristics connected to both the individual and the work environment [21].

Physical therapy's professional atmosphere could make things more difficult at work. Physical therapists have high professional standards and can struggle with the tension between their personal values and therapeutic realities [22, 23].

The incidence and severity of burnout are predicted to be significantly influenced by the workplace [24]. Therefore, conducting a multicenter study to validate the findings in light of the various hospital cultures is crucial. In addition, more institutions are now hiring occupational and physical therapy professionals in response to the rising societal need for rehabilitation services. However, in earlier investigations, physical or occupational therapists were employed [25-26].

Elevated levels of physical exertion lead to a notable occurrence of burnout, characterized by emotional exhaustion, depersonalization, and reduced self-fulfillment. According to the current study, burnout among physiotherapists working in burn units was moderate to severe in terms of emotional weariness and depersonalization, and it had an impact on personal accomplishment.

The information presented in this study was only available at one specific time. In order to improve the mental health and decrease burnout among physiotherapists, more interventions are required to increase self-efficacy and resilience through efficient training and adequate support.

Limitations

1. This study, with its cross-sectional methodology, was unable to establish a causal relationship between the variables, even though it could establish an association.
2. It is crucial to consider the validity of an online survey when concluding the results. Online survey has some limitations as sampling issues, bias in response. These limitation may affect generalizability but at least highlight the underestimated subspecialty in Egypt.
3. Since the questionnaire relied on self-report, there are a number of hazards associated with it, including recollection bias and respondent over- or underestimation of their level of burnout.

Conclusion

In the burn care specialty, the physiotherapists were found to have moderate to severe burnout, which calls for quick intervention. These results highlight the significance of designing and implementing interventions to lessen burnout and boost physiotherapists' resilience.

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