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ORIGINAL RESEARCH

Prevalence and factors associated with minor psychic disorders in intensive care unit physiotherapists in a large city in the state of Bahia

Prevalência e fatores associados a distúrbios psíquicos menores em fisioterapeutas intensivistas de uma grande cidade do estado da Bahia

Prevalencia y factores asociados a trastornos psíquicos menores en fisioterapeutas de cuidados intensivos de una gran ciudad de Bahía (Brasil)

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ABSTRACT | Studies indicate that work-related factors can make intensive care unit workers ill, but those addressing minor psychological disorders (MPDs) in ICU physical therapists are still scarce. This study aim to estimate the prevalence and factors associated with MPDs in ICU physical therapists in a large municipality in the state of Bahia. This is a cross-sectional epidemiological study that analyzed 60 ICU physical therapists in the municipality of Feira de Santana, Bahia. A self-reporting questionnaire evaluated sociodemographic data, work characteristics, psychosocial aspects of the work and the presence of MPDs. The prevalence of MPDs was 41.7%, with an association between sociodemographic variables, work characteristics, lifestyle, psychosocial aspects of the work and MPD. We observed a high prevalence and a diversity of factors associated with MPDs among the studied physical therapists. The results suggest new epidemiological studies that can better identify the factors associated with MPDs in these workers.

Keywords | Mental Suffering; Physiotherapists; Prevalence; Intensive Care Unit.

RESUMO | Estudos indicam que fatores relacionados ao trabalho podem levar ao adoecimento de trabalhadores de unidades de terapia intensiva, mas estudos sobre distúrbios psíquicos menores (DPMs) em fisioterapeutas intensivistas ainda são escassos. Este estudo visa estimar a prevalência e os fatores associados a DPMs em fisioterapeutas intensivistas de uma grande cidade do estado da Bahia. Trata-se de um estudo epidemiológico de corte transversal que analisou uma população de 60 fisioterapeutas trabalhadores da terapia intensiva na cidade de Feira de Santana, Bahia. Um questionário autoaplicável avaliou dados sociodemográficos, características do trabalho, aspectos psicossociais do trabalho e presença de DPMs. A prevalência de DPMs encontrada foi de 41,7% e verificou-se associação entre as variáveis sociodemográficas, características do trabalho, hábitos de vida, aspectos psicossociais do trabalho e DPM. Observou-se elevada prevalência e uma diversidade de fatores associados aos DPMs entre os fisioterapeutas estudados. Os resultados apontam a necessidade de novos estudos epidemiológicos que

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possam identificar com mais precisão os fatores associados a DPMs nesses trabalhadores.
Descritores | Sofrimento Mental; Fisioterapeutas; Prevalência; Unidade de Terapia Intensiva.

RESUMEN | Los estudios indican que los factores relacionados con el trabajo pueden llevar a la enfermedad entre los trabajadores de las unidades de cuidados intensivos, pero todavía son pocos los que tratan de los trastornos psíquicos menores (TPM) en fisioterapeutas de cuidados intensivos. Este estudio tiene como objetivo estimar la prevalencia y los factores asociados a los TPM en fisioterapeutas de cuidados intensivos en una gran ciudad de Bahía (Brasil). Se trata de un estudio epidemiológico, transversal, en el que participó 60 fisioterapeutas que actúan en cuidados intensivos en la ciudad de Feira de Santana, Bahía. Un cuestionario autoaplicable evaluó los datos sociodemográficos, las características del trabajo, los aspectos psicosociales del trabajo y la presencia de TPM. La prevalencia de TPM fue del 41,7%, y hubo asociación entre las variables sociodemográficas, las características del trabajo, los hábitos de vida, los aspectos psicosociales del trabajo y el TPM. Se observó una alta prevalencia y diversidad de factores asociados a los TPM entre los fisioterapeutas estudiados. Los resultados apuntan a la necesidad de realizar nuevos estudios epidemiológicos para identificar con mayor precisión los factores asociados con los TPM en los trabajadores.
Palabras clave | Sufrimiento Mental; Fisioterapeutas; Prevalencia; Unidad de Cuidados Intensivos.

INTRODUCTION

Work is fundamental for the human being, by working the individual produces psychological meanings and builds social relationships, mediating the psychological and the social. Also, depending on how the work is organized and performed, it may or may not be harmful to the workers' mental health[1].

Work-related issues and ICU workers' health has recently gained visibility due to studies that noticed the prevalence of mental suffering and burnout syndrome in these workers[2-6].

The increase in health problems is related to work and, among them, minor psychological disorders (MPDs) have been increasingly discussed by researchers in the field of Occupational Health. These disorders are characterized as public health issues, although they are not seen as a nosological category in the 10th International Classification of Disease (ICD-10) and in the Diagnostic and Statistical Manual of Mental Disorders (DSM) of the American Psychiatric Association (APA), and can be caused by many factors, especially those related to the work environment, such as low level of control over one's own work, high psychological demands, and low social support[7].

MPDs are clinical conditions characterized by changes in thoughts and emotions or by behaviors related to personal anguish and/or the decay of the psychological functioning, harmfully affecting individuals, their families, and the community. Symptoms include forgetfulness, difficulty to focus and to make decisions, insomnia, irritability and fatigue, and physical complaints, demonstrating a rupture in the individual's normal functioning: headache, lack of appetite, shaking, poor digestion, among others[8].

Many studies show that the main factors associated with mental suffering among intensive care workers, for example, ICU physical therapists, are: excessive workload, chronic stress, mental and cognitive overload, night shift, absence of rest breaks and lack of control over one's own work[2-6,9]. In epidemiological studies conducted with healthcare providers, researchers noticed an association between the work healthcare perform and the occurrence of MPDs[10,11]. Other studies[3,12] analyzed the psychosocial aspects of the work and found a high prevalence of MPDs in workers due to high demand and low control over work.

In the field of Occupational Health, psychosocial aspects of the work deserve special attention because they represent occupational stressors that affect workers' health. The study by Araújo, Graça, and Araújo[7] indicate an interaction among the place, content, conditions, work organization and the worker's individual conditions, highlighting the ability to adapt and to develop personal skills and needs that can influence their health, according to their experiences and perceptions[7].

Barros et al.[2] observed in their study with Intensive Care Unit (ICU) physician in Salvador, Bahia, that the ICU environment has stood out as a stressful work environment for the health team. This stress mainly occurs due to this Unit being a closed environment with

exhausting rhythm and work conditions, demanding schedule, ethical issues that require difficult and frequent decisions, living near suffering and death, unpredictability, and excessive workload.

Physical therapists joined the ICU multidisciplinary teams—which already had physicians and nurses—from Ordinance No. 3,432/1998 of the Brazilian Ministry of Health. This ordinance also defined the proportion of beds per physical therapist – one physical therapist for every 10 ICU beds[13].

Studies have observed a high presence of MPDs among healthcare providers[6,11,14,15]. However, few studies address the prevalence of MPDs among ICU physical therapists and their associated factors. Therefore, this study aimed to estimate the prevalence and factors associated with MPDs in ICU physical therapists in a large municipality in the state of Bahia.

METHODOLOGY

This is a cross-sectional, populational and exploratory epidemiological study conducted with ICU physical therapists in the municipality of Feira de Santana, Bahia.

In total, 60 ICU physical therapists—who worked in seven out of the eight hospitals with ICU in the municipality—were studied. They were included in the study after the authorization by the hospital boards of directors. One of the hospital board of directors did not authorize the research. However, ICU physical therapists working in this hospital participated in the study through other medical facilities in the city. The studied hospitals include: a reference general hospital in urgency and emergency in the Mideastern region of Bahia; a state hospital reference in pediatric care, a municipal hospital and four private hospitals—a maternity, a reference hospital in cardiology and two adult and pediatric emergency hospitals.

An anonymous self-reporting questionnaire was used, composed of nine sets of questions: general identification; general work information; psychosocial characteristics of the work; burnout syndrome; quality of life; work capacity; health-related aspects; lifestyle and sleep patterns; and stress factors in the ICU.

To detect MPDs, the Self-Reporting Questionnaire (SRQ-20), composed of 20 questions, was used: four questions about physical symptoms and 16 about psycho-emotional symptoms. This model offers two answers (yes or no), and they were assigned, respectively, the values 1 and 0. The suggested cutoff point to identify MPDs was the score ≥7 positive answers[6].

To describe the psychosocial aspects of the work, the Job Content Questionnaire (JCQ) was used. JCQ is a standard questionnaire that identifies the psychosocial dimensions of the work: psychological demand and the worker's control over activity. Combining both dimensions, the questionnaire distinguishes specific work situations that structure different health risks. Its recommended version has 41 questions that address control, psychological demand, and social support from managers and co-workers. The Portuguese version of the JCQ contains: 17 questions about the workers' control over their work—6 about skills and 11 about decision-making power—; 13 questions about demand—8 about psychological demand and 5 about physical demand—; and 11 questions about social support. Out of the 41 questions, 38 are measured on a scale of 1 to 4: 1=strongly disagree; 2=disagree; 3=agree; and 4=strongly agree[7].

The creation of demand and control indicators was conducted based on the sum of their variables, considering how the questionnaire was operated. To dichotomize the demand (low/high) and control (low /high) the median was defined as a cutoff point. Based on the assumptions from the demand-control model, the high demand and low control conditions—high requirement—compose what was considered as greater exposure. On the other side is the work of lower exposure, that is, low demand and high control—low requirement. The other combinations were considered intermediate exposure work situations[7].

The questionnaire and the written informed consent form were delivered to each professional at the health units, scheduling the place and time of return with the workers. Professionals who did not return the questionnaire on the scheduled date were contacted by telephone call to minimize losses. The questionnaires were returned in sealed envelopes to ensure confidentiality.

The data collected from July to September 2016 were double typed on EpiData, version 3.1, to minimize possible errors. The SPSS software was used for statistical analysis.

The descriptive analysis of the data was performed with the calculation of absolute and relative frequencies of categorical variables, and the mean and standard deviation of numerical variables. For bivariate analysis, the prevalence ratio (PR) was used as a measure of association. Because it is a populational study, no statistically significant calculations were performed[16].

RESULTS

The study included 60 physical therapists and the estimated prevalence of MPDs in the workers studied was 41.7%. Among these professionals, 80% were female and 20% were male and the mean age was 32.2±4.9. Also, 55% of the participants were single and 58.3% had no children. We estimated that 51.7% of the physical therapists worked in the adult ICU, 20% in the pediatric ICU and 28.3% in the newborn ICU. Most participants (63.3%) reported an income ranging from R$3,001 to R$6,000, whereas 18.3% earn less than R$3,000, 11.7% earn from R$6,001 to R$10,000, and 6.7% earn from R$10,001 to R$20,000.

Regarding the characteristics of the work, 63.3% of the participating physical therapists were working less than five years in the ICU, 56.7% worked 24-hour shifts and 40% worked 12-hour shifts. About the weekly on duty workload, 65% worked from 24 to 30 hours, 30% worked from 36 to 78 hours and only 5% worked 12 hours per week. On the total weekly workload, including all paid work activities, 50.8% of the professionals worked less than 56 hours and 45.8% worked more than 56 hours. Among other work activities, 63.3% worked in another specialty, 13.3% were professors, 5% reported working in another activity and 18.3% did not report another activity.

Regarding night shift in the ICU, 90% of the professionals worked from 12 to 24 hours and 10% worked from 36 to 96 hours. Regarding the number of hospitals that these workers were part of, 61.7% worked in one hospital, 30% worked in two, 6.7% worked in three, and 1.7% worked in up to four hospitals. Besides, 75% of the workers had 10 patients per shift. Regarding lifestyle, 58.3% reported that did not drink alcohol, 88.3% never smoked. Physical activity was a habit of 56.7% of the studied physical therapists, 73.5% practiced twice a week, 20.6% three times a week, and 5.9% only once a week (Table 1).

Table 1. Sociodemographic, work and lifestyle characteristics of the studied intensive care unit physical therapists in Feira de Santana, Bahia, 2016

Sociodemographic, work and lifestyle characteristic of the ICU physical therapists studied in Feira de Santana, Bahia, 2016	N*	%
Sex (n=60)		
Female	48	80
Male	12	20
Age group (n=60)		
≤33 years old	36	60
≥34 years old	24	40
Marital status (n=60)		
Single	33	55
With a partner	27	45
Children (n=60)		
No	35	58.3
Yes	25	41.7
Working time in the ICU (years) (n=60)		
≤5 years	38	63.3
≥6 years	22	36.7
WL** on the night shift in the ICU (n=60)		
12-24 hours	54	90
36-96 hours	6	10
Total WL** (n=57)		
≤56 hours	30	50.8
>56 hours	27	45.8
Comes from another job (n=60)		
No	38	63.3
Yes	22	36.7
Practice of physical activity (n=60)		
Yes	34	56.7
No	26	43.3
Alcoholic beverage (n=60)		
Yes	25	41.7
No	35	58.3

*: Valid answers, the ignored ones were excluded; **: Weekly workload (WL).

The prevalence of MPDs was associated with females (PR=1.87), aged 33 years old or less (PR=1.71), single (PR=1.45), without children (PR=1.83), not practicing physical activity (PR=1.66), working for less than 6 years (PR=1.48), weekly workload on night shift from 15 to 95 hours (PR=1.45), caring for more than 10 patients per shift (PR=1.65), and coming from another job before duty in the ICU (PR=1.87) (Table 2).

The prevalence of MPDs varied according to the quadrants of the demand-control model. The high requirement situation, that is, high demand and low control, presented 62.5% of prevalence of MPDs. While the situation of low requirement—low demand and high control—presented a prevalence of 42.9%. Passive work—low demand and low control—presented a prevalence of 55.6% and active work—high demand and high control—presented the lowest prevalence: 28.5% (Table 3).

Table 2. Prevalence and prevalence ratio among sociodemographic, work, and lifestyle characteristics of the studied intensive care unit physical therapists in Feira de Santana, Bahia, 2016

Sociodemographic/work/lifestyle Characteristic	MPD				
	Yes	%	No	%	
Sex (n=60)					
Female*	22	46.8	25	53.2	1.87
Male	3	25	9	75	
Age (n=60)					
≤33 years old	18	50	18	50	1.71
≥34 years old	7	29.2	17	70.8	
Marital status (n=60)					
Single*	16	48.5	17	51.5	1.45
With partner	9	33.3	18	66.7	
Children (n=60)					
No*	18	51.4	17	48.6	1.83
Yes	7	28	18	72	
Practice of physical activity(n=60)					
No*	14	58.3	12	46.2	1.66
Yes	11	32.4	23	67.6	
Working time in the ICU (years) (n=60)					
<6 years old*	18	47.4	20	52.6	1.48
≥6 years old	7	31.8	15	68.2	
WL** on night shift in the ICU (n=60)					
15-96 hours*	11	52.4	10	47.6	1.45
12 hours	14	35.9	25	64.1	
Number of patients (n=60)					
>10 patients*	2	66.7	1	33.3	1.65
≤10 patients	23	40,4	34	59.6	
Comes from another job (n=60)					
Yes*	13	59.1	9	40.9	1.87
No	12	31.6	26	68.4	

*: Reference value in the numerator; **: Weekly workload (WL).

Table 3. Prevalence and prevalence ratio between the result of the Job Content Questionnaire and the detection of minor psychological disorders by the Self-Reporting Questionnaire of intensive care units physical therapists in Feira de Santana, Bahia, 2016

JCQ Result	MPD				
	Yes	%	No	%	PR
High requirement	5	62.5	3	37.5	1
Passive work	10	55.6	8	44.4	1.12
Low requirement	6	42.9	14	57.1	1.46
Active work	4	28.5	10	71.5	2.19

DISCUSSION

The studied intensive care unit physical therapists in Feira de Santana compose an young population profile, mainly female, single, without children, with up to six years working in the ICU, with monthly income from R$ 3,001 to R$ 6,000, weekly workload of 24 to 30 hours, shifts of up to 24 hours, and night shifts from 12 to 24 hours. Most professionals worked in only one hospital, had at least 10 patients per shift, had a paid employment relationship—private/public—, did not drink alcohol, did not smoke, and practiced physical activity twice a week.

Our outcomes are similar to that found by other studies conducted with ICU professionals. These studies had a predominance of female and single individuals[5,9], the mean age was less than 40 years old[6,17,18] and the time spent working in the ICU was less than 5 years[6,9], and 41.7% of the workers showed prevalence of mental suffering.

Similar to our investigation, the study by Carvalho et al.[19] estimated that 56.2% of the physicians living in Recife suffered from some psychological disorder. The study by Marcelino Filho and Araújo[17], who researched healthcare providers from a specialized center in Aracaju, presented 57.1% of prevalence of MPDs. Pinhatti et al.[14] estimated a global prevalence for possible MPD of 32.6% among nurses of a public university hospital in Paraná.

The prevalence of MPDs in this study was higher than that found in five other studies. Araújo et al.[12] obtained a prevalence of 33.3% in nurses of a public hospital in Salvador, Bahia; the study by Nascimento Sobrinho et al.[20] obtained a prevalence of 26% in a random sample of physicians in Salvador; Alves et al.[21] obtained 27.9% of positive results for MPD in healthcare providers of the Clinical Hospital of the Universidade Federal do Triângulo Mineiro (UFTM); Rodrigues et al.[11] obtained a prevalence of 35% in nurses of a general hospital in Feira de Santana, Bahia; and Nascimento et al.[6] obtained 24.6% in ICU nurses from Feira de Santana.

We found a positive association between MPDs and sociodemographic characteristics—female, aged ≤33 years old, single and without children. In our study, with mostly female subjects, the highest occurrence of MPDs among women is plausible. Similarly, some studies showed a higher prevalence of MPDs in female healthcare providers[14,15,21]. The higher prevalence of mental suffering among women may be related to their suffering due to gender inequality, represented by the overload of activities, especially those that associate paid work with the excessive amount of household choress[22,23].

Regarding age group, the younger ones—aged ≤33 years old—were the most likely to develop MPDs, with a prevalence ratio of 1.71, a similar result to those reported by other studies[6,10,14,21]. This finding may be related to younger workers' inexperience in their work activities and, consequently, in their lower capacity to face the factors that may cause mental suffering[15]. The variables "marital status" and "no children" presented similar results to the study by Nascimento et al.[6] in ICU nurses, in which single ones and without children were more likely to present MPDs.

The analysis of MPDs prevalence, according to this study characteristics, also identified a positive association between working time in the ICU of less than five years, workload on night shift, number of patients assisted on duty, another job before duty in the ICU and physical therapists who did not practice physical activity. These findings are similar to those found in other national studies. Alves et al.[21] and Nascimento et al.[6], when researching MPDs in healthcare providers, observed a higher prevalence of MPDs among professionals who worked at night providing, as a possible explanation for this outcome, the fact that night shift can harm the professional's health, usually considered as a cause of stress, because it hinders the professional's quantity and quality of sleep[21,24]. As in other studies[6], having another job before duty in the ICU showed an association with MPDs.

Most physical therapists studied (56.7%) reported practicing physical activity. Among those, 73.5% practiced twice a week. We observed a higher prevalence of MPDs among professionals who did not practice physical activity, corroborating the study by Nascimento et al.[6], which showed the same result on ICU nurses. Studies[9,25] indicate many benefits of practicing physical activity in daily and professional habits, namely: cognitive improvement, combating stress, anxiety, and depression, improvement of energy and interpersonal relationships, less fatigue during working life, and better quality of life in physically active ICU workers.

Work-related MPDs have been considered a public health problem due to their high prevalence in healthcare providers and their consequences, such as absence, incapacity for work, and early retirement, although these disorders are not often recognized in clinical care. Notably, stressful work environments

in which psychosocial demands are high—as in the ICU—make workers more vulnerable to illness and psychological suffering[15].

The high prevalence of MPDs in the situation of high requirement of demand-control showed that high requirement work concentrates the greatest risks to the worker's health, followed by passive work, setting situations in both cases in which the worker has low control over work activity. This result is similar to the study by Tironi et al.[3], who investigated burnout syndrome in ICU physicians and obtained a high prevalence of burnout in the situations of high requirement of demand-control and passive work. These results suggest that the work in a low-control situation, even in cases of low demand, can be harmful to workers' mental health. These findings suggest that the level of control can play a more relevant role than the psychological demand in triggering psychological suffering[3].

MPDs can occur due to many factors, especially those related to the professional environment, such as low level of control over work, high psychological demands and low social support, as they are associated with workers' stress and mental suffering[7].

This study is the first one to provide a detailed profile of physical working in the ICU and to evaluate the prevalence of MPDs and associated factors in this population. However, some aspects of the cross-sectional design of this study must be noted. The cross-sectional study examines the relationship between exposure and disease in a population or a sample in a particular moment, providing a picture of how the variables relate in that moment. Therefore, this type of study does not establish a causal relationship, it only suggests the association between the studied variables.

Notably, the use of self-reporting questionnaires, which offer the interviewee the option of not answering all questions, hampers the control of data losses. However, the coherence and consistency of the findings indicated an association between MPDs and female ICU physical therapists, aged ≤33 years old, single, without children, working for less than five years in the ICU, who worked on night shift, working in another job before the ICU duty, had a weekly workload ranging from 15 to 95 hours, cared for more than 10 patients per shift and did not practice physical activity.

Finally, we noticed that the literature on MPDs in intensive care unit physical therapists is scarce, thus impairing the comparison and discussion of our outcomes. The results of this article revealed a high prevalence and diversity of factors associated with MPDs among the studied physical therapists, as well as the need for further epidemiological studies to evaluate the relationship of factors associated with MPDs in this population.

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