

Spiritual well-being of nursing professionals with work-related musculoskeletal disorders: a cross-sectional study

Bem-estar espiritual de profissionais de enfermagem com distúrbios osteomusculares relacionados ao trabalho: estudo transversal

Bienestar espiritual de los profesionales de enfermería con trastornos musculoesqueléticos relacionados con el Trabajo: estudio transversal

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ABSTRACT

Objective: To analyze the spiritual well-being of nursing professionals with work-related musculoskeletal disorders.

Method: Cross-sectional observational study, carried out with nursing professionals from a public university hospital in Bahia, Brazil, from March to June 2023. Data was collected in a face-to-face interview in which sociodemographic, clinical and occupational data were extracted, in addition to the Spiritual Well-Being Scale application. Descriptive and analytical statistical analysis was carried out.

Results: Most nursing professionals (n=48) were women (89.6%), mean age 44.3(±5.4), black and brown (85.5%), married (31.3%), nursing technicians (83.3%), more than 10 years in the profession (87.5%). The majority of participants had a religion (60.4%), 43.8% were Catholic, with positive scores for spiritual well-being (77.1%), religious well-being (87.5%) and existential well-being (54.2%). Having worked in the field for more than 10 years, having a religion, and having spiritual/religious practices were related to higher spiritual well-being scores. Nursing technicians showed high levels of religious well-being and there was no significant results when comparing the variables studied with existential well-being.

Conclusion: Most nursing workers with musculoskeletal disorders presented a high level of spiritual well-being and religious well-being. In addition, there was little difference between the moderate and high results of existential well-being.

Descriptors: Cumulative Traumatic Disorders. Spirituality. Pain. Nursing Professionals.

RESUMO

Objetivo: Analisar o bem-estar espiritual de profissionais de enfermagem com distúrbio osteomuscular relacionado ao trabalho.

Método: Estudo de corte transversal, realizado com profissionais de enfermagem de um hospital universitário público da Bahia, Brasil, de março a junho de 2023. Dados coletados em entrevista face-a-face na qual foram extraídos dados sociodemográficos, clínicos e ocupacionais, além da aplicação da Escala de Bem-Estar Espiritual. Procedeu-se à análise estatística descritiva e analítica.

Resultados: entre profissionais de enfermagem (n=48), predominaram mulheres (89,6%), idade média 44,3 (±5,4), pretas e pardas (85,5%), casadas (31,3%), técnicas de enfermagem (83,3%), com mais que 10 anos na profissão (87,5%). A maioria das participantes tinha religião (60,4%), sendo 43,8% católicas, com escores positivos para bem-estar espiritual (77,1%), bem-estar religioso (87,5%) e bem-estar existencial (54,2%). Tempo na profissão, ter religião e ter prática espiritual/religiosa relacionou-se a escores mais altos de bem-estar espiritual. Técnicos de enfermagem apresentaram elevado bem-estar religioso e não houve significância na comparação das variáveis estudadas com o bem-estar existencial.

Conclusão: Predomina entre os profissionais de enfermagem com distúrbios osteomusculares um alto nível de bem-estar espiritual e bem-estar religioso, com pouca diferença entre o resultado moderado e alto do bem-estar existencial.

Descritores: Transtornos Traumáticos Cumulativos. Espiritualidade. Dor. Profissionais de Enfermagem.

RESUMEN

Objetivo: Analizar el bienestar espiritual de los profesionales de enfermería con trastornos musculoesqueléticos relacionados al trabajo.

Método: Estudio observacional transversal con profesionales de enfermería de un hospital público universitario de Bahía, Brasil, de marzo a junio de 2023. Datos recogidos en entrevista presenciales en que se extrajeron datos sociodemográficos, clínicos y ocupacionales, además de la aplicación de la Escala de Bienestar Espiritual. Se realizó un análisis estadístico descriptivo y analítico.

Resultados: La mayoría de los profesionales de enfermería (n=48) eran mujeres (89,6%), edad media 44,3 (±5,4%), color negra o marrón (85,5%), casada (31,3%), técnicas de enfermería (83,3%), con más de 10 años en la profesión (87,5%). La mayoría de los participantes tenían religión (60,4%), el 43,8% eran católicos, con puntuaciones positivas en bienestar espiritual (77,1%), bienestar religioso (87,5%) y bienestar existencial (54,2%). El tiempo en la profesión, tener una religión y tener prácticas espirituales/religiosas se relacionaron con puntuaciones más altas de bienestar espiritual. Los técnicos de enfermería mostraron alto bienestar religioso y no hubo significancia al comparar las variables estudiadas con el bienestar existencial.

Conclusión: Predomina un alto nivel de bienestar espiritual y bienestar religioso entre los profesionales de enfermería, con trastornos musculoesqueléticos. Además, hubo poca diferencia entre los resultados moderados y altos de bienestar existencial.

Descriptores: Trastornos de traumas acumulados. Espiritualidad. Dolor. Profesionales de enfermería.

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INTRODUCTION

Work-related musculoskeletal disorders (WMSD) are characterized as multifactorial conditions that can affect muscles, tendons, nerves, and joints. Physical work capacity can be compromised and lead to the functional restriction of workers⁽¹⁾. Nursing workers are exposed to occupational musculoskeletal injuries⁽²⁾, with prevalences of WMSD above 80%⁽²⁻⁴⁾. This high prevalence is associated with poor ergonomics in work environments, bad posture, excessive use of physical strength, and high levels of stress⁽⁵⁾. These occupational risk factors are known to increase the likelihood of disease, decreasing social participation and affecting the quality of life of those affected, in addition to overloading government health care programs⁽⁴⁾.

The first line WMSD treatment includes leave from work, immobilization, anti-inflammatories, analgesics, and physical therapy rehabilitation. In more severe cases, surgical intervention may be the initial choice⁽⁶⁾. Nonetheless, the results found can be influenced by unconventional approaches, such as spirituality. Addressing spirituality in individuals with WMSD can help reducing psychosocial barriers that trigger chronic cases and inabilities⁽⁷⁾. Furthermore, it can help people who feel pain and physical restrictions, with a positive impact when dealing with challenging life situations⁽⁸⁾.

Spiritual well-being is the subjective, immaterial dimension of consciousness⁽⁹⁾. In this context, it includes the need to be, to feel satisfaction with one's inner self, transcending concerns and giving a broader meaning and purpose to one's life, even in adverse health conditions⁽¹⁰⁾.

A growing number of health workers is affected by WMSD. That makes them likely to face physical and psychological limitations, since a greater load of physical labor, as well as occupational tension, are more related with the emergence of musculoskeletal diseases in these workers⁽¹¹⁾. The nursing professional cares for the other, but also needs to be cared for in their personal and professional life⁽¹²⁾. Considering the above, it is essential to identify the spiritual well-being of nursing workers affected by WMSD and investigate its associations, in order to expand the knowledge about integral health in this professional field. The goal of this research was to analyze the spiritual well-being of nursing workers with work-related musculoskeletal disorders.

METHOD

Cross-sectional cohort research, following the guidelines of the Strengthening the Reporting of Observational Studies

in Epidemiology (STROBE). The research was conducted in a large teaching hospital in Salvador, a reference in medium and high complexity care in the state of Bahia, Brazil, from March to June 2023⁽¹³⁾.

The study included nursing workers with functional restrictions related to the medical diagnosis of WMSD, who worked in administrative, diagnostic, and health care units of low to medium complexity, in the institution that was the setting of the research. Eligibility criteria included nursing workers registered in the Occupational Service and Work Safety, having been diagnosed with a WMSD recognized by the International Classification of Diseases (ICD-10 or ICD-11) at least six months prior to the start of data collection. This time frame was chosen so new hires who had been diagnosed with WMSD in the past were interviewed, as they could represent a confounding factor. We did not include professionals who were on leave due to vacation or medical leave at the time of collection.

Sample size was calculated using the calculator from the Universidade de São Paulo (USP), available at (http://estatistica.bauru.usp.br/calculoamostral/ta_ic_proporcao.php). We considered a significance level of 95% and an estimated error of 10% in an estimated population of 80% of WMSD, and a finite population of 1,000 registered employees. After this data was inserted, estimates indicated that 58 participants would be necessary for the sample to be representative. The calculation could not be applied to the main outcome, spirituality level, as the authors did not know similar studies.

Data collection took place after the ethical committee approved the research, with the permission of those responsible for the relevant sectors of the research setting. We used the snowball technique to reach the sample of the study. This is a non-probabilistic chain sampling method. This technique uses reference networks, which is why it is appropriate for hard to access groups or for more private topics. It consists in identifying one participant, and then asking the interviewee to recommend others that could be in accordance with the inclusion criteria⁽¹⁴⁾.

Data from this research was found through a questionnaire elaborated by the researches and proposed to respondents, with questions on sex, age, marital status, ethnicity, occupation, time in the profession, work shift and workload, in addition to questions about the WMSD and functional limitations. From the weight and height informed by the participants, researchers calculate the body mass index (BMI). Furthermore, questions about affiliation and religious/spiritual practices were asked. This interview was carried out in the workplace of the interviewees, in a private environment where the confidentiality of the information was guaranteed.

The Spiritual Well-Being Scale (SWS) was also applied. This instrument was validated and adapted into Brazil and is recommended for studies on spirituality due to its psychometric qualities. It is often used to evaluate people who have some form of suffering that involve the lack of existential or religious meaning⁽¹⁵⁻¹⁶⁾.

The spiritual well-being presents itself in four interrelated domains: personal (the relationship of the inner-self with meaning, purpose, and values in life); community (centered on the depth and quality of relationships between self and others) and humanistic values (love, forgiveness, trust, hope, and faith in people); environmental (relationship between people and the external environment); and transcendental (relationship of faith with something or a higher being)⁽¹⁷⁾.

The SWS has a vertical dimension, the religious well-being (RWB), which is a reference to God or a superior being. There is also a horizontal dimension, the existential well-being (EWB), which shows a direction or satisfaction with life regardless of a religious reference⁽¹⁵⁾. The scale has 20 questions in a six-option Likert scale: Strongly Agree (CA), Agree More Than Disagree (AD), Somewhat Agree (PA), Somewhat Disagree (SD), Disagree More Than Agree (DA), and Strongly Disagree (TD). The score of the questions that have a positive connotation (3,4,7,8,10,11,14,15,17,19, and 20) are added up as follows: CA=6, AD=5, PA=4, SD=3, DA=2, and TD=1. For the others, which are negative, the score should be added up inverted (CA=1, AD=2, PA=3, SD=4, DA=5, and TD=6). The total result of the scale is the sum of the scores of these 20 questions, which can vary from 20 to 120 points. The cutoff points for the general SWS are scored in the following intervals: from 20 to 40 (low), from 41 to 99 (moderate); and from 99 to 120 (high)⁽¹⁶⁾.

The RWB aims to measure religious well-being, while the EWB measures existential well-being. The RWB and EWB scales are scored in intervals from 10 to 20 (low), 21 to 49 (moderate), and 50 to 60 (high). The EWB is considered positive when the score is high, and negative when its low⁽¹⁵⁾.

The database and the statistical data analysis used the software Statistical Package for Social Sciences (SPSS version 17.0). The normality of variables was verified using the Shapiro-Wilk test, in addition to an analysis of the histogram. A descriptive analysis of the data was conducted, and its results are presented in the tables below. Categorical variables were presented in frequencies (n) and percentages (%), while continuous variables with normal distribution were presented as means and standard deviations. For an

association between the SWS scale and its subscales RWB and EWB, considering categorical variables, we used the chi-squared test. For variables in which there were less than five individuals in any category, Fisher's exact was used.

Furthermore, in a comparison with numerical variables, we used Student's t-test for independent samples. For statistical inferences, we adopted $p < 0.5$ for all analyses. To investigate correlations between EWB and RWB scales, we carried out the Pearson's correlation test. Cronbach's alpha was used in the general index, in the religious well-being subscale and in the existential well-being subscale. An alpha above 0.70 was considered to be acceptable, while alphas above 0.80 were considered to be reliable. In this study, Cronbach's alpha coefficient for the SWS scale was 0.801. For the RWB and EWB subscales it was, respectively, 0.776 and 0.740.

This project was submitted and approved by the Research Ethics Committee of the institution involved, under opinion 5.778.729 and CAAE 63841922.5.0000.0049. All procedures recommended by Resolution No. 466/2012 were adopted.

■ RESULTS

The final research sample included 48 workers with WMSD, since, among the 58 participants recruited, five refused participation and five were excluded due to sick leaves. Most of the sample was female, married, and self-declared brown or black. Regarding the self-reported weight status, 73.3% were overweight or obese to some degree. Most participants have a religious affiliation and have some religious/spiritual practice; they were mostly Catholic.

Regarding their occupational profile, most participants were nursing technicians, worked a mean of 36 hours a week, mostly during the day, had been working in the profession for 10 years, and 25% had a second employment contract. Regarding WMSD variable, all informed they have some form of functional limitation. More than half reported from 2 to 4 regions of the body as being affected by WMSD, and some reported having to be on leave from work after their functional limitation, as Table 1 shows.

The description of the total SWS scores showed that the highest category was more prevalent in all general scores and subtypes, suggesting that the population studied has a high spiritual well-being (77.1%), high religious well-being (87.5%), and high existential well-being (54.2%). CA 10 No participant presented a low result, there were only moderate and high results, as Table 2 below shows.

Table 1 – Sociodemographic and occupational profile, and performance of variables regarding WMSD, and spirituality/religiosity, Salvador, Bahia, Brazil, 2023.

Variables	n (%)
Sex	
Female	43 (89.6)
Male	5 (10.4)
Age m±SD	44.3 ±5.4
Marital status	N (%)
Single	14 (29.2)
Married	15 (31.3)
Stable Relationship	6 (12.5)
Widow/widower	1 (2.1)
Separated or divorced	12 (25.0)
Ethnicity	
Black	20 (41.7)
White	5 (10.4)
Brown	21 (43.8)
Asian	1 (2.1)
Native	1 (2.1)
BMI	
Normal	12 (26.7)
Overweight	20 (44.4)
Obesity I	9 (20.0)
Obesity II	4 (8.9)
Institutional Occupation	
Nursing technician	40 (83.3)
Nurse	8 (16.7)
Weekly workload	
36 hours or less	33 (68.8)
More than 36 but no more than 60	5 (10.4)
>60 hours	10 (20.8)
Shift	
M	1 (2.1)
A	0
MA	40 (83.3)
NS	7 (14.6)

Table 1 – Cont.

Variables	n (%)
Other work contract	
Yes	12 (25.0)
No	36 (75.0)
Time in the profession	
6 months to 2 years	0
2 years and one month to 4 years	0
4 years and one month to 6 years	1 (2.1)
6 years and one month to 8 years	3 (6.3)
8 years and one month to 10 years	2 (4.2)
>10 years	42(87.5)
Functional limitation	
Yes	48 (100.0)
No	0
On leave after WMSD diagnosis	
Yes	22 (45.8)
No	26 (54.2)
Follow-up time *	
6 months to 2 years	15 (31.3)
2 years and 1 month up to 4 years	16 (33.3)
4 years and 1 month up to 6 years	6 (12.5)
6 years and 1 month up to 8 years	8 (16.7)
8 years and one month to 10 years	2 (4.2)
> 10 years	1 (2.1)
Number of areas affected by WMSD	
1	22 (45.8)
2	13 (27.1)
3	8 (16.7)
4	5 (10.4)
Religion	
Yes	41 (85.4)
No	7 (14.6)
Religious/spiritual practice	
Yes	29 (60.4)
No	19 (39.6)

Table 1 – Cont.

Variables	n (%)
Which religion	
Catholic	21 (43.8)
Evangelical	13 (27.1)
Spiritism	5 (10.4)
Does not follow one	9 (18.8)
Duration of the functional limitation	
6 months to 2 years	13 (27.1)
2 years and one month to 4 years	16 (33.3)
4 years and one month to 6 years	10 (20.8)
6 years and one month to 8 years	7 (14.6)
8 years and one month to 10 years	1 (2.1)
> 10 years	1 (2.1)

n=number of participants; m=mean; SD= standard deviation; *Duration of the follow-up in the occupational service. Source: Research data.

Table 2 – Levels of spirituality in the sample of nursing workers according to the SWS, Salvador, Bahia, Brazil, 2023.

Variables	n=48
Total score m $\pm$ SD	105.8 $\pm$ 10.2
Total SWS Score Classification	N (%)
Moderate	11 (22.9)
High	37 (77.1)
Total RWB Score $\pm$ SD	56.2 $\pm$ 5.8
RWB Classification	N (%)
Moderate	6 (12.5)
High	42 (87.5)
Total EWB score m $\pm$ SD	49.6 $\pm$ 6.7
EWB Classification	N (%)
Moderate	22 (45.8)
High	26 (54.2)

n=number of participants; m=mean; SD=standard deviation.

Table 3 shows a synthesis of the questions in SWS, followed by the percentages of the responses by participants, according to the Likert scale. The questions in the RWB subscale that have religious nature had high scores. On the other hand, some existential questions from the EWB, such as the meaning and satisfaction of life, had moderate-to-high scores.

A comparative analysis between the classification in the spiritual well-being scale and sociodemographic characteristics, only one variable showed a statistically significant difference, according with the chi-squared test: the time working in the

profession, as those working in the field for more than 10 years were associated with high spiritual well-being. On the other hand, a lower time in the profession was associated to a moderate score, an inverse relationship. A comparison between institutional occupation and the RWB subscale showed an association with the category nursing technicians (88.1%). However, being a nurse was associated with a high RWB score in only 11.9% of cases. Still in the RWB, working in the MT shift had a high score, of 85.7%. The other variables showed no association, even considering those regarding the existential subscale, as Table 4 shows.

Table 3 – Synthesis of the answers to SWS questions from nursing workers of a medium-and-high complexity hospital from Salvador, Bahia, Brazil.

Questions	CA	AD	PA	DP	DA	TD
1. I don't find much satisfaction in personal prayer with God.	12.5%	2.1 %	0.0 %	8.3 %	2.1 %	75.0%
2. I don't know who I am, where I came from and where I'm going.	0.0 %	4.2 %	2.1 %	10.4%	2.1 %	81.3%
3. I believe God loves me and cares about me.	95.8%	0.0 %	4.2 %	0.0 %	0.0 %	0.0 %
4. I feel that life is a positive experience.	75.0%	0.0 %	20.8%	4.2 %	0.0 %	0.0 %
5. I believe God is impersonal and uninterested in my everyday situations.	2.1 %	0.0 %	4.2 %	2.1 %	4.2 %	87.5%
6. I feel uneasy about my future.	16.7%	10.4 %	25.0%	20.8%	8.3 %	18.8%
7. I have a meaningful personal relationship with God.	83.3%	2.1 %	10.4%	2.1 %	2.1 %	0.0 %
8. I feel very fulfilled and satisfied with life.	41.7%	6.3 %	39.6%	10.4%	0.0 %	2.1 %
9. I don't get much strength and support from my God.	4.2%	0.0 %	2.1 %	8.3 %	2.1 %	83.3%
10. I have a sense of well-being about the direction my life is taking.	43.8%	14.6 %	27.1%	8.3 %	2.1 %	4.2%
11. I believe God cares about my problems.	83.3%	2.1 %	14.6%	0.0 %	0.0 %	0.0 %
12. I don't appreciate life very much.	0.0 %	0.0%	2.1 %	4.2 %	0.0 %	93.8%
13. I don't have a personal, satisfying relationship with God.	0.0%	2.1 %	2.1 %	12.5%	0.0 %	83.3%
14. I feel good about my future.	31.3%	10.4%	37.5%	6.3 %	8.3 %	6.3 %
15. My relationship with God helps me not to feel alone.	81.3%	4.2 %	10.4%	0.0 %	2.1 %	2.1 %
16. I feel that life is full of conflict and unhappiness.	6.3 %	12.5 %	18.8%	22.9%	6.3 %	33.3%
17. I feel fully fulfilled when I am in intimate communion with God.	81.3%	2.1 %	14.6%	0.0 %	2.1 %	0.0 %
18. Life doesn't make much sense.	2.1%	0.0 %	4.2 %	10.4%	0.0 %	83.3%
19. My relationship with God contributes to my sense of well-being.	89.6%	4.2 %	6.3 %	0.0 %	0.0 %	0.0 %
20. I believe there is some true purpose to my life.	91.7%	0.0 %	8.3 %	0.0 %	0.0 %	0.0 %

Caption: CA = completely agree; AD = agree more than disagree; PA = partially agree; PD = partially disagree; DA = disagree more than agree; AD = completely disagree. Source: Research Data (2023)

Table 4 – Association between sociodemographic and occupation data and total scores of the SWS scale and the RWB and EWB subscales, categorized as high and moderate, pertaining to nursing workers from a medium-and-high complexity hospital in Salvador, Bahia, Brazil, 2023.

Variables	TOTAL SWS			RWB			EWB		
	High (n=37)	Moderate (n=11)	P	High (n=42)	Moderate (n=6)	P	High (n=26)	Moderate (n=22)	P-value
Gender			0.679*			0.503*			0.502‡
Female	33 (89.2)	10 (90.9)		38 (90.5)	5 (83.3)		24 (92.3)	19 (86.4)	
Male	4 (10.8)	1 (9.1)		4 (9.5)	1 (16.7)		2 (7.7)	3 (13.6)	
Age m ± SD	44.8 ±5	42.6 ±6	0.247†	44.6 ±5.3	42.2 ±5.4	0.304†	43.0 ±4.9	45.8 ±5.6	0.078†
Marital status			0.11‡			0.919‡			0.262‡
Single	9 (24.3)	5 (45.5)		12 (28.6)	2 (33.3)		8 (30.8)	6 (27.3)	
Married	14 (37.8)	1 (9.1)		14 (33.3)	1 (16.7)		11 (42.3)	4 (18.2)	
Stable Relationship	4 (10.8)	2 (18.2)		5 (11.9)	1 (16.7)		2 (7.7)	4 (18.2)	
Widow/widower	0	1 (9.1)		1 (2.4)	0		0	1 (4.5)	
Separated or divorced	10 (27.0)	2 (18.2)		10 (23.8)	2 (33.3)		5 (19.2)	7 (31.8)	
Ethnicity			0.895‡			0.664‡			0.712‡
Black	16 (43.2)	4 (36.4)		19 (45.2)	1 (16.7)		11 (42.3)	9 (40.9)	
White	4 (10.8)	1 (9.1)		4 (9.5)	1 (16.7)		2 (7.7)	3 (13.6)	
Brown	15 (40.5)	6 (54.5)		17 (40.5)	4 (66.7)		11 (42.3)	10 (45.5)	
Asian	1 (2.7)	0		1 (2.4)	0		1 (3.8)	0	
Native	1 (2.7)	0		1 (2.4)	0		1 (3.8)	0	
BMI			0.153‡			0.673‡			0.119‡
Normal	11 (32.4)	1 (9.1)		11 (28.2)	1 (16.7)		8 (32.0)	4 (20.0)	
Overweight	14 (41.2)	6 (54.5)		17 (43.6)	3 (50.0)		10 (40.0)	10 (50.0)	
Obesity I	5 (14.7)	4 (36.4)		7 (17.9)	2 (33.3)		3 (12.0)	6 (30.0)	

Table 4 – Cont.

Variables	TOTAL SWS			RWB			EWB		
	High (n=37)	Moderate (n=11)	P	High (n=42)	Moderate (n=6)	P	High (n=26)	Moderate (n=22)	P-value
Obesity II	4 (11.8)	0		4 (10.3)	0		4 (16.0)	0	
Institutional Occupation			0.361*			0.019*			0.300*
NT	32 (86.5)	8 (72.7)		37 (88.1)	3 (50.0)		23 (88.5)	17 (77.3)	
N	5 (13.5)	3 (27.3)		5 (11.9)	3 (50.0)		3 (11.5)	5 (22.7)	
Weekly workload			0.629‡			0.073‡			0.471‡
36h or less	26 (70.3)	7 (63.6)		31 (73.8)	2 (33.3)		17 (65.4)	16 (72.7)	
from 36 to 60h	3 (8.1)	2 (18.2)		3 (7.1)	2 (33.3)		2 (7.7)	3 (13.6)	
>60 hours	8 (21.6)	2 (18.2)		8 (19.0)	2 (33.3)		7 (26.9)	3 (13.6)	
Shift			0.160‡			0.027‡			0.356‡
M	0	1 (9.1)		0	1 (16.7)		0	1 (4.5)	
MA	31 (83.8)	9 (81.8)		36 (85.7)	4 (66.7)		21 (80.8)	19 (86.4)	
NS	6 (16.2)	1 (9.1)		6 (14.3)	1 (16.7)		5 (19.2)	2 (9.1)	
Other work contract						0.631*			0.505*
Yes	10 (27.0)	2 (18.2)	0.705*	10 (23.8)	2 (33.3)		8 (30.8)	4 (18.2)	
No	27 (73.0)	9 (81.8)		32 (76.2)	4 (66.7)		18 (69.2)	18 (81.8)	
Time in the profession			0.010‡			0.368‡			0.274‡
4y1m to 6y	0	1 (9.1)		1 (2.4)	0		0	1 (4.5)	
6y1m to 8y	3 (8.1)	0		3 (7.1)	0		2 (7.7)	1 (4.5)	
8y1m to 10y	0	2 (18.2)		1 (2.4)	1 (16.7)		0	2 (9.1)	
> 10 years	34 (91.9)	8 (72.7)		37 (88.1)	5 (83.3)		24 (92.3)	18 (81.8)	

n=number of participants; m=mean; y=year; SD=Standard Deviation; NT=nursing technicians; N=nurse; *Fischer's exact;

‡ Independent T-test; †Chi-square test.

The table below (Table 5) shows an association between religion and high spiritual well-being scores (94.6%), versus moderate (54.5%) scores, with a statistically significant result ($p=0.004$). Regarding religious/spiritual practices, 70.3% had a high score, while 27.3% had moderate spiritual well-being scores. On the other hand, there was a significant association between not having a religion and having moderate spiritual well-being scores ($p=0.004$).

No significant associations ($p<0.05$) were found in a comparison between the existential subcategory and the occupational and sociodemographic profile, nor with WMSD/spirituality/religiosity variables. Furthermore, the correlation found between the scores of both subscales (RWB vs. EWB) led to a relationship coefficient of 0.345, and a p -value of 0.017.

DISCUSSION

The findings of this research showed a high institutional religious affiliation, especially for the Catholic religion, with frequent religious/spiritual activities, similarly to another study with nursing workers in Minas Gerais, in which Catholics also predominated⁽¹⁸⁾. Systematic reviews with meta-analyses have shown that spiritual practices work as a protective factor for the mental health of nurses⁽¹⁹⁾.

An analysis of the general SWS scores and that of its subscales, RWB and EWB, the results found contrasted previous studies. While this research found high spiritual well-being for most participants, another study, also involving nursing workers, found lower means both in the total score and in its subscales, even among workers who often attend religious activities⁽²⁰⁾.

However, different religious cultures⁽²¹⁾ have confirmed that nurses in Asia, Europe, the Middle East, and North America are the most engaged professionals when it comes to encouraging the search for spirituality in patients and family members. This behavior confirms that, probably, these professionals are the ones who assume their spiritual beliefs and values in the hospital environment with more ease⁽²¹⁾. Greek nurses from different hospital specialties often provide spiritual care to their patients. Both internal and external factors influence their attitudes in this regard⁽²²⁾. This behavior helps the well-being of professionals and the patients they assist.

However, discrepancies in the study subscales raised questions about the influence the hospital environment exerts over these workers, interfering in their existential well-being, due to the stressing nature of the situations these workers have to deal with daily. Spiritual practices can also be insufficient or negative⁽²⁰⁾. In the same line, another research found a strong negative correlation between burnout and spiritual

well-being in nurses, suggesting that, as one increases, the other decreases considerably⁽²³⁾. It is impossible to know if the conditions would be worse with no spiritual practices, and whether the religious experience can be negative, reiterating patterns of guilt and despondency when dealing with the adversities of life. The difference between these findings can also be explained by sociocultural differences, since these are determining factors of health.

Female nurses and nursing technicians in this study showed the lowest mean score in the SWS, when compared with a study by Rodrigues⁽¹⁵⁾, which only interviewed women. There were also differences in their subscales, with a higher performance in EWB than in RWB⁽¹⁵⁾. These variations may be attributed to the inclusion of nursing technicians, since these workers were predominant in the current study.

It is worth noting that the work of technicians requires much physical strength as they provide care to dependent, bedridden patients⁽²⁴⁾, while nurses tend to assume care, managerial, or supervision roles. Furthermore, there is also a difference in socioeconomic and educational levels between these groups⁽²⁵⁾. This hypothesis is supported by a study by Kim and Yeom⁽²³⁾, in which nurses in managerial roles, who have a religion and a post-graduation, have higher existential well-being levels.

Domingues, et al⁽¹⁸⁾ showed lower RWB scores and higher EWB scores when compared to the findings of the present study. Nonetheless, this research is different from that one as it only includes professionals affected by WMSD, while their research was more generic. Concerning SWS responses, a part of participants reported dealing with conflicts and unhappiness in life, while others reported uneasiness about the future. As these are cross-sectional studies, it is impossible to state whether this is a consequence of the disease faced by these people with limitations from the WMSD, or whether the structure of their personality and spirituality that was already in place before they started working in nursing interferes in the value of these subscales.

Spiritual interventions have been found to increase well-being and spirituality in nurses, protecting their mental health and general well-being⁽¹⁹⁾ while increasing their work satisfaction⁽²⁶⁾. Positive responses to questions in the RWB subscale showed that faith is a strong religious belief, that favors the feeling of well-being and promotes a strong feeling of being connected with God. This connection with the divine is related to a vertical spiritual dimension, that is, the relationship with a higher being⁽²⁷⁾. In the perception of the sample, health is associated with having faith and a religion.

Regarding the negative items in the RWB scale, a significant portion of people does not agree that God is impersonal.

Similarly, participants completely disagree that they do not receive strength and support from God, and disagree that they do not find satisfaction in their personal prayer to God, in accordance with a study with nursing students from Paraná⁽¹⁶⁾. This phenomenon can be also explained by the fact that the Brazilian population is highly involved with religion⁽²⁷⁾, although South America was not included in a study that compared spirituality of nurses in different cultures⁽²¹⁾.

The comparison between the variables studied in the total SWS showed that a longer time in the profession, adopting a religion, and practicing it, were associated to a greater spiritual well-being. Nonetheless, participants with no religious affiliation presented moderated spiritual well-being scores. Another research showed that nurses with less experience and no religion had higher scores of physical and mental exhaustion at work⁽²³⁾. This calls attention to questions about the physical risk factors for the development of WMSD. One would expect that a longer period working in the profession would increase one's risk for this condition, but more spirituality may be a protective factor. An intervention program carried out in the workplace of Korean nurses had positive effects in their spiritual and psychosocial well-being, by implementing spirituality training⁽²⁸⁾.

Furthermore, working during the day, as well as being a nursing technician, was associated with higher scores of religious well-being, suggesting that this category aims to focus on the practice of religious dogma. This result is in disagreement of a study with female intensive care therapy nurses from Korea, where the existential well-being score was higher, suggesting that they seek the essence of spirituality as they search for meaning and purpose in life⁽²³⁾. These differences could be attributed to sociocultural reasons.

The fact that the existential subscale showed no association with the variables in this study could be due to actual lack of an association, or to the subjectivity of the topic "spirituality", since reflecting on existential questions is often not easy, since there are many uncertainties in life. The socioeducational level of participants may also have influenced the results of this subscale, which is more subjective and requires greater reflective depth. The existential dimension is more complex than simply participating in a religious community. This research found a correlation, albeit one low in intensity ($R=0.342$), between RWB and EWB scores, suggesting that the higher the RWB, the higher the EWB. This finding reiterates that the spiritual well-being of the sample is associated with organizational religious practices that help them deal with WMSD symptoms.

These workers deal with adversity not only from a physical standpoint, but also from a perspective that is based on spirituality. Thus, we can infer that the spiritual/existential dimension, as related to the essence of spirituality as the purpose of life and transcendence with one, others, and the divine, can be explored more deeply. An integral approach can increase the resilience and the self-efficacy of health workers and contribute to the creation of more efficient strategies to prevent and deal with WMSD.

Adopting spiritual practices in one's self-care can help nursing workers deal with their lives⁽²⁹⁾ and influence their health⁽¹²⁾. Integral health care includes physical, mental, social, and spiritual/existential dimensions. Therefore, integrated activities such as praying, mindfulness, and meditative walking can promote benefits, helping reach a calmer state and general well-being when dealing with adversities⁽²⁹⁾.

A limitation of this research was the lack of an actual quantitative knowledge about nursing workers diagnosed with WMSD in the field of study, and the fact that it was not possible to compare with members from the category with no WMSD. Further research should be conducted to increase knowledge in the field, using longitudinal designs that allow accessing more professionals and comparing other variables, such as professional category, gender, work environment, institutional support, as well as other types of health organizations, in addition to public ones.

■ CONCLUSION

This study showed that health workers who were in the profession for longer and had regular religious affiliation and practices had expressive high scores, while those who did not have a religion had moderate scores. Nursing technicians were the category with the highest score in the religious well-being subscale, although the sample did not have the same statistical significance in existential well-being, considering the correlations found. It became clear that existential questions go beyond religious practices, despite significant correlations between them.

This study helped raise awareness and encourage initiatives that help develop the spiritual well-being of health workers who are dealing with limitations due to work-related musculoskeletal disorders. Additionally, future research can seek other evidence about the disease of nursing workers, thus creating strategies to help prevention, management, and/or nursing health care.

Table 5 – Association between WMSD/spirituality/religiosity variables and the total scores of the SWS scale and the RWB and EWB subscales, categorized as high and moderate, in nursing workers from a medium to high complexity hospital in Salvador, Bahia, Brazil.

Variables	TOTAL SWS			RWB			EWB		
	High (n=37)	Moderate (n=11)	P-value	High (n=42)	Moderate (n=6)	P-value	High (n=26)	Moderate (n=22)	P-value
Functional limitation						-			
Yes	37 (100.0)	11 (100.0)		42 (100.0)	6 (100.0)		26 (100.0)	22 (100.0)	
No	0	0					0	0	
On leave after being diagnosed with WMSD			0.977‡			0.674*			0.961‡
Yes	17 (45.9)	5 (45.5)		20 (47.6)	2 (33.3)		12 (46.2)	10 (45.5)	
No	20 (54.1)	6 (54.5)		22 (52.4)	4 (66.7)		14 (53.8)	12 (54.5)	
Time of follow up in the occupational service			0.579‡			0.841‡			0.560‡
6 months to 2y	11 (29.7)	4 (36.4)		12 (28.6)	3 (50.0)		7 (26.9)	8 (36.4)	
2y1m to 4y	12 (32.4)	4 (25.0)		14 (33.3)	2 (33.3)		8 (30.8)	8 (36.4)	
4y1m to 6y	6 (16.2)	0		6 (14.3)	0		4 (15.4)	2 (9.1)	
6y1m to 8y	5 (13.5)	3 (27.3)		7 (16.7)	1 (16.7)		5 (19.2)	3 (13.6)	
8y1m to 10y	2 (5.4)	0		2 (4.8)	0		2 (7.7)	0	
> 10 years	1 (2.7)	0		1 (2.4)	0		0	1 (4.5)	
No. of regions affected by WMSD			0.151‡			0.237‡			0.544‡
1	15 (40.5)	7 (63.6)		17 (40.5)	5 (83.3)		12 (46.2)	10(45.5)	
2	9 (24.3)	4 (36.4)		12 (28.6)	1 (16.7)		6 (23.1)	7 (31.8)	
3	8 (21.6)	0		8 (19.0)	0		6 (23.1)	2 (9.1)	
4	5 (13.5)	0		5 (11.9)	0		2 (7.7)	3 (13.6)	

Table 5 – Cont.

Variables	TOTAL SWS			RWB			EWB		
	High (n=37)	Moderate (n=11)	P-value	High (n=42)	Moderate (n=6)	P-value	High (n=26)	Moderate (n=22)	P-value
Religion			0.004*			0.033*			0.141*
Yes	35 (94.6)	6 (54.5)		38 (90.5)	3 (50.0)		24 (92.3)	17 (77.3)	
No	2 (5.4)	5 (45.5)		4 (9.5)	3 (50.0)		2 (7.7)	5 (22.7)	
Religious/spiritual practice			0.016*			0.030*			0.863‡
Yes	26 (70.3)	3 (27.3)		28 (66.7)	1 (16.7)		16 (61.5)	13 (59.1)	
No	11 (29.7)	8 (72.7)		14 (33.3)	5 (83.3)		10 (38.5)	9 (40.9)	
Which religion			0.004‡			0.011‡			0.141‡
Catholic	17 (45.9)	4 (36.4)		19 (45.2)	2 (33.3)		15 (57.7)	6 (27.3)	
Evangelical	12 (32.4)	1 (9.1)		5 (11.9)	0		3 (11.5)	2 (9.1)	
Spiritism	5 (13.5)	0		13 (31.0)	0		5 (19.2)	8 (36.4)	
Does not follow one	3 (8.1)	6 (54.5)		5 (11.9)	4 (66.7)		3 (11.5)	6 (27.3)	
Duration of functional limitation			0.329‡			0.791‡			0.630‡
6 months to 2y	10 (27.0)	3 (27.3)		11 (26.2)	2 (33.3)		6 (23.1)	7 (31.8)	
2y1m to 4y	11 (29.7)	5 (45.5)		13 (31.0)	3 (50.0)		8 (30.8)	8 (36.4)	
4y1m to 6y	10 (27.0)	0		10 (23.8)	0		6 (23.1)	4 (18.2)	
6y1m to 8y	4 (10.8)	3 (27.3)		6 (14.3)	1 (16.7)		5 (19.2)	2 (9.1)	
8y1m to 10y	1 (2.7)	0		1 (2.4)	0		1 (3.8)	0	
> 10 years	1 (2.7)	0		1 (2.4)	0		0	1 (4.5)	

Caption: n = number of participants; m=mean; y =year; SD=Standard Deviation; NT = nursing technicians; N=nurse; *Fisher's exact; † Independent T test; ‡ Chi-square test

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