Professional quality of life and occupational stress in nursing workers during the COVID-19 pandemic

Qualidade de vida profissional e estresse ocupacional em trabalhadores de enfermagem durante pandemia por COVID-19

Calidad de vida profesional y estrés ocupacional en trabajadores de enfermería durante la pandemia del COVID-19

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ABSTRACT

Objective: To identify the levels of professional quality of life and the occupational stress in nursing professionals.
Method: Cross sectional study conducted between April and August 2020, with nursing professionals working in inpatient units for clinical and surgical patients of a large hospital. The Work Stress Scale and the Professional Quality of Life Scale were applied.
Results: The sample consisted of 150 professionals, with a mean age of 43 ± 8.89 years, being 84.7% (127) female. The mean of the work stress scale was 1.9 ($\pm$ 0.71), a moderate level of stress. It was found that compassion satisfaction had a median of 50.3 (9.1 – 64.6), burnout of 48.5 (32.2 – 84.8) and post-traumatic stress disorder of 47.1 (38.6 – 98.3).
Conclusion: Stress at work and Compassion Fatigue were identified in the sample, especially in secondary-level professionals, demonstrating the need to implement strategies to reduce psycho-emotional harm in these professionals.
Keywords: Indicators of quality of life. Occupational stress. Nursing. Occupational health. Psychological distress.

RESUMO

Objetivo: Identificar os níveis de qualidade de vida profissional e o estresse ocupacional em profissionais da enfermagem.
Método: Estudo transversal realizado entre abril e agosto de 2020, com profissionais da enfermagem atuantes em unidades de internação para pacientes clínicos e cirúrgicos de um hospital de grande porte. Os instrumentos utilizados foram a Escala de Estresse no Trabalho e Escala de Qualidade de Vida Profissional.
Resultados: A amostra foi constituída por 150 profissionais, com média de idade de $43 \pm 8,89$ anos, sendo 84,7% (127) do sexo feminino. A média da escala de estresse no trabalho foi 1,9 ($\pm$ 0,71), nível moderado de estresse. Verificou-se que satisfação por compaixão apresentou mediana de 50,3 (9,1 – 64,6), burnout de 48,5 (32,2 – 84,8) e estresse pós-traumático de 47,1 (38,6 – 98,3).
Conclusão: Identificou-se estresse no trabalho e Fadiga por Compaixão na amostra, principalmente nos profissionais de nível médio, demonstrando a necessidade de implementar estratégias para a redução do dano psicoemocional nestes profissionais.
Palavras-chave: Indicadores de qualidade de vida. Estresse ocupacional. Enfermagem. Saúde do trabalhador. Angústia psicológica.

RESUMEN

Objetivo: Identificar los niveles de calidad de vida profesional y estrés laboral en los profesionales de enfermería.
Método: Estudio transversal realizado entre abril y agosto de 2020, con profesionales de enfermería que laboran en unidades de internación para pacientes clínicos y quirúrgicos de un gran hospital. Se aplicó la Escala de Estrés Laboral y la Escala de Calidad de Vida Profesional.
Resultados: La muestra estuvo formada por 150 profesionales, con una edad media de $43 \pm 8,89$ años, siendo el 84,7% (127) mujeres. El promedio de la escala de estrés en el trabajo fue de 1,9 ($\pm$ 0,71), un nivel de estrés moderado. Se encontró que la satisfacción a través de la compasión tuvo una mediana de 50,3 (9,1 – 64,6), el agotamiento de 48,5 (32,2 – 84,8) y el trastorno de estrés postraumático de 47,1 (38,6 – 98,3).
Conclusión: En la muestra se identificaron estrés en el trabajo y fatiga por compasión, especialmente en profesionales de nivel medio, lo que demuestra la necesidad de implementar estrategias para reducir el daño psicoemocional en estos profesionales.
Palabras clave: Indicadores de calidad de vida. Estrés laboral. Enfermería. Salud laboral. Distrés psicológico.

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■ INTRODUCTION

In 2020, when it was decreed by the World Health Organization – WHO, the state of a pandemic due to COVID-19, little was known about the virus, prevention, and treatment, generating uncertainty, anguish and fear. Since then, we have experienced changes and new habits of life and coexistence. Such as the use of masks, social distancing and constant hand hygiene[1].

In addition to such routine changes, the speed of spread, severity and lethality of COVID-19 have become important stressors for healthcare professionals. Impacting on an increase in psycho-emotional distress, such as stress, anxiety, depression, Burnout, and compassion fatigue, among these workers. These factors end up to negatively interfere in the Professional Quality of Life (ProQOL) and in the physical integrity of the health teams[2].

Among the professionals who worked intensively in coping and assisting patients affected by COVID-19, nursing represents the largest number. Whose work is centered on caring for the human being, with a direct link between professional and patient. This interrelationship, added to other daily, psychosocial and psychosomatic factors for the worker, can negatively affect ProQOL, as well as trigger occupational stress[3].

ProQOL is characterized by two factors: Compassion Satisfaction (CS) is the positive aspect of helping, in which the caregiver feels good when treating and helping another person, who is in a difficult and/or traumatic situation; and, Compassion Fatigue (CF) defined as a pious feeling, of exacerbated sympathy for the personal tragedy of the other, with the desire to help, however with a negative aspect for the one who helps[4–5].

Occupational stress, in turn, is the set of disorders that cause physical and psychological imbalance and that occur due to aspects and relationships that involve the work environment. Defined by the International Labour Organization as a set of manifestations in the worker's organism that have the potential to negatively affect health[6].

Based on the above, the objective was to identify the levels of professional quality of life and the occupational stress of nursing professionals working in inpatient units during the COVID-19 pandemic.

■ METHOD

This is a cross-sectional, analytical and quantitative study developed with nursing professionals from the inpatient units of a university hospital in the city of Porto Alegre, Rio Grande do Sul (RS), Brazil.

The study population consisted of 520 nursing professionals from the Surgical Nursing and Inpatient Clinical Nursing Services.

To calculate the sample size, it was used the Winpepi software, version 11.65. Considering a sample stratified by professional category in the institution, with a strength of 80%, significance level of 5% and a minimum correlation of 0.25, the total sample size was 124 subjects. Respecting the proportionality and representativeness of the sample, it resulted in 25% (31) nurses and 75% (93) nursing technicians and nursing assistants.

Data collection took place from April and August 2020. Inclusion criteria were defined as: nursing professionals who were active in the position, hired for more than 30 days, in any work shifts. Those on pregnancy or breastfeeding leave, on prolonged leave (health leave, social security benefit), on vacation or who had returned for less than 15 days after these leaves were excluded.

For the participant selection, a simple random probabilistic sampling was used, with a proportion of one nurse for every three technicians or nursing assistants in each unit.

Data collection was conducted through the individual application of three questionnaires containing a block of socio-labor questions, a Professional Quality of Life Questionnaire (ProQOL-BR) and a Work Stress Scale.

The assessment of the independent variables was performed through the socio-labor data questionnaire, designed by the authors, based on professional experience and literature. It includes the collection of socio-biographical data, socio-occupational data, data on health conditions and chronic, psychic diseases previously identified, osteoarticular diseases and others.

The Work Stress Scale (WSS) was built considering the organizational stress indicators of psychosocial origin. It mentions different organizational aspects. This scale has 23 items analyzed by a five-point Likert scale, where each item presents a stressor and a type of reaction to this stressor. The scores range between 23 and 115 points and the validation showed good reliability, with $\mu = 0.91$. The result was obtained through the mean of the sum of the items, being considered low occupational stress values from 1 to 2, medium occupational stress values from 2.01 to 2.99 and high occupational stress values from 3 to 5[4].

The Professional Quality of Life Scale (ProQOL-IV) was created by Stamm(2010) and validated for Portuguese by Lago and Codo(2013). It consists of 28 items divided into

three factors: compassion satisfaction (CS), compassion fatigue (CF) and burnout, respectively with 15, 10 and 3 items. Through ProQOL-IV it is possible to assess the professional quality of life of workers who provide individual or community assistance to people in situation of pain, suffering or at risk of death. It is a Likert-type response scale, ranging from zero to five points, where 0 = never, 1 = rarely, 2 = few times, 3 = sometimes, 4 = often and 5 = very often[5–6].

The Shapiro-Wilke normality test was performed, and non-parametric data were verified in the statistical analysis. To compare, the Mann-Whitney test and the chi-square test with Yates' correction were used. To assess the relationship between the variables, the Spearman correlation coefficient was used, and for the analysis of independent variables, it was used the Kruskal Wallis. The analysis of internal consistency was calculated using Cronbach's alpha.

Significance values were adjusted by Bonferroni correction for multiple tests. The significance level adopted was 5% (p<0.05) with a strength of 0.8. The analyses were performed using the SPSS software, version 25.0.

The study was evaluated and approved by the Ethics Committee and Scientific Committee of the *Hospital de Clínicas de Porto Alegre*, under CAAE 23346619.0.0000.5327.

■ RESULTS

The sample consisted of 150 professionals, with a mean age of 43 ± 8.89 years, and 84.7% (127) were female. There was significant difference regarding age and professional category, where nursing assistants had a higher mean age (53.0 ± 1.27) in relation to nurses (39.9 ± 1.17) (p < 0.001).

Table 1 presents the distribution of socio-labor variables and habits of nursing professionals.

Occupational stress

The analysis of internal consistency of the Work Stress Scale (WSS) was 0.95. When verifying the descriptive statistics of the work stress assessment instrument, through the WSS, it was observed that the total mean of the scores in this sample was 1.9 ± 0.71. The distribution of participants according to the result of the WSS score is categorized according to the scale levels, represented in Figure 1.

The age groups "18 to 30 years old" and "over 60 years old" did not showed any participants at high risk.

Table 2 shows the five items with the highest mean and, therefore, that represent the highest stress scores for the
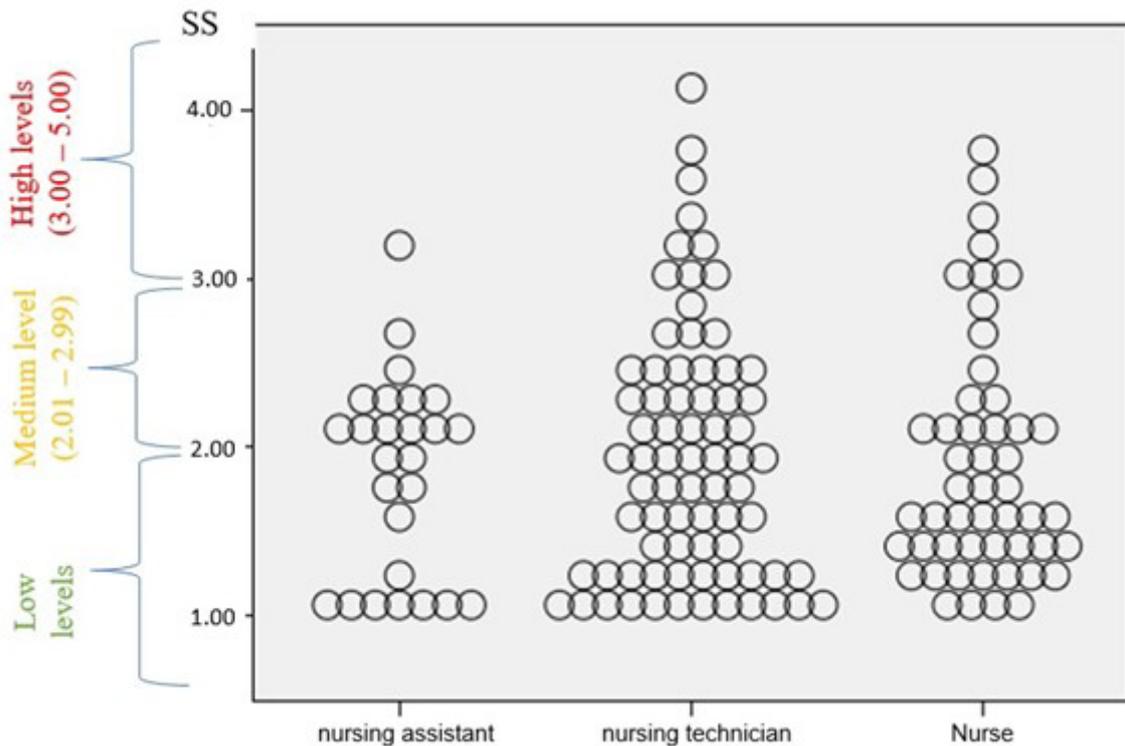

Figure 1 – Distribution of work stress scores according to professional category. Porto Alegre, Rio Grande do Sul, Brazil, 2020
Source: Authors, 2020.

Table1 – Distribution of socio-labor variables and habits of nursing professionals (n = 150). Porto Alegre, Rio Grande do Sul, Brazil, 2020

Variables		N (%)
Professional category	Nursing assistant	26 (17.3)
	Nursing technician	74 (49.3)
	Nurses	50 (33.3)
Marital status	Married or stable union	99 (66.0)
	Single	51 (34.0)
Children	No children	44 (29.3)
	1 child	55 (36.7)
	2 children	39 (26.0)
	3 children	10 (6.7)
	4 children or more	2 (1.3)
Performing physical activity	Once a week	9 (6.0)
	2 to 3 times a week	37 (24.7)
	4 to 6 times a week	23 (15.3)
	Never	81 (54.0)
Tobacco use	No	135 (90.0)
	Yes	15 (10.0)
Alcohol consumption and frequency	Does not use	97 (64.7)
	Once a week	37 (24.7)
	2 to 3 times a week	16 (10.6)
Family income	Up to 4,500.00 BRL	36 (24.0)
	From 4,500.00 BRL to 6,500.00 BRL	55 (36.7)
	More than 6,500.00 BRL	59 (39.3)

Source: Authors, 2020.

nursing professionals in the study. It stands out: "Insufficient time to perform my workload makes me nervous" (2.59±1.33); "The way tasks are distributed in my area has made me nervous" (2.31±1.16); "I get angry with discrimination/favoritism in my work environment" (2.27±1.31).

Table 2 – Items with the highest mean in the work stress scale in nursing professionals in inpatient units. Porto Alegre, Rio Grande do Sul, Brazil, 2021

Item	Mean	Standard Deviation
I feel annoyed that my superior cover up my job well done in front of other people	2.59	1.33
The way tasks are distributed in my area has made me nervous	2.31	1.16
I get angry with discrimination/favoritism in my work environment	2.27	1.31
The few prospects for career growth have made me anguished	2.27	1.28
I feel annoyed by the lack of disclosure of information about organizational decisions	2.13	1.12

Source: Authors, 2020.

Quality of life at work

The consistency analysis of each subscale that makes up the ProQOL-BR was assessed using Cronbach's alpha and presented indexes of n=0.87 for compassion satisfaction (CS), n=0.83 for secondary traumatic stress (STS) and n=0.71 for burnout (BO).

Observing the subscales separately, it was found that compassion satisfaction (CS) has a median of 50.31(9.0 – 64.61), burnout (BO) of 48.51(32.19 – 84.78) and post-traumatic stress (STS) of 47.12(38.60 – 98.28).

Table 3 presents the results of the correlation between the ProQOL subscales, where it is observed that the item related to compassion satisfaction showed an inverse and moderate correlation with the burnout subscale(ρ=-0.416; p=0.000)and an inverse and weak correlation with secondary traumatic stress(ρ=-0.272; p=0.001). The correlation between the two compassion fatigue subscales was positive and moderate(ρ=0.464; p=0.000).

In the distribution of burnout levels according to the professional category, there is a predominance of the moderate level of BO in all categories. In total, 20.7% (n=31) employees of the different categories had high levels on the burnout subscale, 58% (n=87) had moderate levels of BO and 21.3% (n=32) had low levels of stress, with distributions by categories.

Table 3 – Correlation between the ProQOL-BR subscales (n = 150). Porto Alegre, Rio Grande do Sul, Brazil, 2020

ProQOL Subscale		Compassion Satisfaction	Burnout	Secondary Traumatic Stress
Compassion satisfaction	Correlation coefficient	**1.000**	-.416***	-.272***
	Significance	.	.000	.001
Burnout	Correlation coefficient	-.416***	**1.000**	.464***
	Significance	.000	.	.000
Secondary Traumatic Stress	Correlation coefficient	-.272***	.464***	**1.000**
	Significance	.001	.000	.

Source: Authors, 2020.
Spearman Test, p<0.05. *** Strength of correlations: 0-0.3 (weak); 0.3-0.7 (moderate); 0.7-0.9 (strong); 0.9-1.0 (very strong)

It was observed, regarding work stress, that as stress levels increase, the levels of professional quality of life observed through the ProQOL subscales decrease, that is, the higher the stress levels, the greater the burnout results($X^2(2)=37.66$; $p<0.001$) and secondary traumatic stress ($X^2(2)=32.84$; $p<0.001$). At lower levels of occupational stress, higher scores of quality of life at work were found through the compassion satisfaction subscale($X^2(2)=22.75$; $p<0.001$).

Comparing the independent groups of the ProQOL subscales with the levels of work stress, it was observed that within the BO subscale there is a significant difference between low and medium stress levels($X^2=-3.2$; $p<0.001$) and between the low and high levels($X^2=-61.5$; $p<0.001$).

When checking within the STS subscale, it was observed that there is a statistically significant difference regarding low and medium levels of work stress ($X^2=-35.8$; $p=0.000$) and between low and high levels of stress($X^2=-53.6$, $p=0.000$)

and with no difference between medium and high levels ($X^2=-17.5$, $p=0.52$).

Comparing the compassion satisfaction subscale, it was observed that in stress levels there is a significant statistical difference between high and low levels of work stress($X^2=36.0$; $p=0.009$) and between medium and low levels($X^2=33.8$; $p=0.000$), while between high and medium levels there was no significant difference ($X^2=2.2$; $p=1$).

When analyzing the association of CS, BO, STS and WSS, separated between high, moderate and low levels, with sociodemographic data, using the Kruskal-Wallis test for non-parametric variables, a significant relationship was found($X^2=6.397$; $p=0.041$) between performing physical activity and high results of compassion satisfaction. There was also a trend of relation ($X^2=5.992$; $p=0.05$) between compassion fatigue and family income below four thousand five hundred BRL(Table4).

Table 4 – Association of WSS and ProQOL subscales with sociodemographic data. Porto Alegre, Rio Grande do Sul, Brazil, 2020

		Marital status	Schooling	Family income	Professional category	Physical activity	Smokes	BMI	Age
CS	KW*	.977	3.790	.951	2.184	3.948	2.352	.496	.436
	Sig.**	.614	.150	.622	.336	.139	.309	.780	.804
BO	KW*	2.404	.316	5.992	4.799	2.527	.286	2.192	1.365
	Sig.**	.301	.854	.050	.091	.283	.867	.334	.505
STS	KW*	1.456	2.267	3.503	.128	6.397	.280	.974	1.099
	Sig.**	.483	.322	.174	.938	.041	.869	.614	.577
WSS	KW*	1.047	1.941	2.395	2.419	2.500	2.014	1.370	.772
	Sig.**	.592	.379	.302	.298	.287	.365	.504	.680

Source: Authors, 2020.
*Kruskal-Wallis test for non-parametric samples; **Significance of the test

■ DISCUSSION

When analyzing the description of nursing professionals, it is noticed that the majority are female, as verified in other studies, which attribute this fact to the history of the profession, primarily performed by women since its creation[7–8].

Stressors related to insufficient time to do the service were observed in the study, in addition to many demands to perform in a short time. In a review study, it was observed

that high levels of occupational stress are related to excessive work demand, lack of recognition, lack of equipment, corporate aggressiveness, among other factors that vary according to each scenario. It was observed that nursing professionals experienced feelings such as: anxiety, stress, fear, ambivalence, depression and exhaustion in the context of the COVID-19 pandemic[9–10].

The subscales had predominantly moderate levels, however 20.7% of nursing professionals had high levels on

the burnout subscale. These results may be related to the pandemic period, when data collection was conducted, since there was a global increase in mental illnesses in this population, as well as burnout[10–11].

The distribution of subscales among the professional categories was something that drew attention due to the trend of nursing assistants and technicians to have higher scores than nurses. Considering the pandemic period, one can think about the fact that the nursing technician spends more time dedicated to the care of the same patient, creating more bonds and consequently suffering more from health worsening or death[11].

It was possible to verify a trend towards low salaries and high levels of compassion fatigue, specifically in the BO subscale. In previous studies, there was a relationship between low professors' salaries and an increase in Burnout scores[11].

Burnout is especially worrying, as it is characterized by a state of exhaustion and chronic stress, impairing the worker's cognitive functions during service, which can be dangerous for the professional safety, as well as for the patient safety. Therefore, these cases must be identified and treated, before any mistakes occur during the provision of care[12–13].

Secondary traumatic stress is equally incapacitating, but it can vary according to the situation and the resilience levels of professionals. In many cases, the temporary relocation of the employee's sector or work area is effective for the remission of symptoms, and may cause the employee to move to areas where patients with COVID-19 are not treated, for example[14].

It was noticed that there is a positive correlation between the two compassion fatigue subscales (BO and STS). Compassion fatigue occurs when there is a difficulty in creating resilience strategies that make the service provided have a greater significance than the labor and emotional exhaustion undertaken[6].

It was observed that the performance of physical activity exerts a positive interference in the CS scores. Corroborating this finding, a cross-sectional study conducted in five ICUs in the metropolitan region of Recife observed that the best levels of quality of life were found in individuals who performed physical activity. The practice of physical exercises is considered an effective and low-cost strategy, with positive results. However, during the pandemic, people reduced or stopped exercise practice due to fear and risks of contamination[15].

In recent studies, it was observed a high concern with the mental health of nursing teams around the world since nursing provides the comprehensive care of the human being. It was observed that the low predictability of responses regarding COVID-19 infection caused physical and psychological problems in nursing workers[16–17].

Exhaustive working hours, lack of assistance protocols and lack of protective equipment are among the problems of a class made up mostly of women in Brazil. Professional tasks and duties are the first factors identified as causers and enhancers of stress in nursing professionals[18].

During the COVID-19 pandemic, many professionals suffered from the fear of contaminating their families, choosing to remain isolated from their families, as little was known about the treatment of the new virus, whose spread was fast and with great potential to cause serious illness and death[19–20].

As limitations of this study, cross-sectionality is highlighted, as it is a cut in time, not allowing to verify the coping mechanisms used by professionals, nor the influence of external factors to the work environment. Still, no previous investigation that presented the relationship between the work stress scales and professional quality of life (ProQOL) was found, limiting the comparison of the results obtained with the findings in the literature. However, this study may serve as a basis for future investigations.

■ CONCLUSION

The research allowed the description of the professional quality of life levels and the occupational stress in nursing professionals from inpatient units. It was noticed that higher levels of occupational stress are related to higher levels of compassion fatigue. It was observed that professionals who perform physical activities regularly have better levels of compassion satisfaction, and therefore, better professional quality of life.

The instruments used allowed to achieve the proposed goals and had high internal reliability.

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