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Quality of Life of Hospital Healthcare Staff in the Context of COVID-19: A Multicenter Survey in Public Hospitals

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ABSTRACT

Introduction: *The COVID-19 pandemic has exerted unprecedented pressure on health systems and healthcare workers worldwide. This study aimed to assess the quality of life of healthcare professionals in Congolese public hospitals during this pandemic health crisis.*

Materials and Methods: *A multicentric cross-sectional study was conducted from March to August 2021, involving nursing staff from nine public hospitals across four departments in the country. We collected data on the socio-professional characteristics of the nursing staff and assessed their physical, mental, and overall quality of life using the Short Form 12 (SF-12) questionnaire.*

Results: *The study population consisted of 454 nurses (64.9%) and 246 nursing assistants (35.1%), with most females (83.6%) and an average age of 39.2 years ±8.1. The marital status was dominated by singles (52.9%) and nearly half (49.7%) had more than 3 dependents. The physical, mental, and overall quality of life was good in approximately 95% of the nursing staff. However, healthcare workers older than 40 years and those with more than 3 dependents had a significantly higher poor physical, mental, and overall quality of life than others (p=0.000). There was no correlation between gender, marital status, the role occupied (nurse or nursing assistant), and the physical, mental, and overall quality of life.*

Conclusion: *Although most of the nursing staff maintained a satisfactory quality of life during the pandemic, it is essential to identify and support those most at risk of diminished quality of life, to ensure optimal care for all.*

Keywords

Nursing staff, Quality of life, Socio-professional traits, COVID-19, Congo.

Introduction

The advent of COVID-19 in 2019 severely challenged global healthcare systems, necessitating swift and substantial modifications [1]. For Sub-Saharan African nations, such as Congo-Brazzaville, this pandemic emerged against a backdrop of existing public health challenges, infrastructural limitations, and human resource constraints [2]. Consequently, frontline healthcare workers grappled with intersecting epidemiological, administrative, and societal pressures. Worldwide, preliminary investigations have identified an upsurge in psychopathological disorders among healthcare professionals during this pandemic era, including anxiety, depression, and post-traumatic stress syndrome [3-5]. Nonetheless, beyond these psychopathological manifestations, it's crucial to explore the holistic quality of life (QoL) of these professionals, encompassing not only their psychological well-being but also their physical, social, and environmental facets

[6]. Quality of life inherently entails job satisfaction, the ability to achieve personal aspirations, and the perceived societal role contribution [7]. Within a hospital environment, this also translates to ideal working conditions, harmonious professional interactions, and acknowledgment of healthcare workers' pivotal contributions [8].

In Congo-Brazzaville, despite the region's unique challenges, these issues might resonate similarly. However, literature delving into the QoL of hospital healthcare workers, especially in a pandemic context, is scarce. Against this backdrop, we embarked on this study, primarily aiming to assess the QoL of healthcare professionals within Congo-Brazzaville's public hospitals amid the ongoing health emergency.

Materials and Methods

Study Type, Setting, and Population

A descriptive, cross-sectional study with prospective data collection was conducted over a six-month period, from March to August 2021, across nine public hospitals located in four administrative departments of Congo. The hospitals included four in Brazzaville (University Hospital Center, Pierre-Mobengo Central Military Hospital, Makelekele Reference Hospital, and Talangaï Reference Hospital), three in Pointe-Noire (Adolphe Sicé General Hospital, Tié-Tié Base Hospital, and the Regional Military Hospital), one in Dolisie (Dolisie General Hospital), and one in Oyo (Edith Lucie Bongo-Ondimba General Hospital).

The study population, selected through exhaustive sampling, consisted of nursing staff, including nurses and nursing assistants working across different departments of the selected hospitals, who were present during the survey period and consented to complete the questionnaire. The sample size, of convenience, comprised all nursing personnel who satisfied our selection criteria.

Study Methods

Procedure

Within each department, the survey was overseen by the head nurse of that department. They provided each healthcare worker, both nurses and nursing assistants, with a self-administered questionnaire to be completed and returned at the end of each week**.**

Data collection

The Short Form 12 (SF-12) questionnaire was utilized for data collection. The SF-12 is a self-assessment-based indicator evaluating the impact of health on an individual's daily life and is employed as a measure of quality of life. The SF-12 is a condensed version of its predecessor, the SF-36 [9]. It encompasses precisely the same eight domains as the SF-36 [10,11]:

- Limitations in physical activities due to health issues,
- Limitations in social activities due to physical or emotional problems,
- Limitations in usual roles due to physical health problems,
- Physical pain,
- General mental health (psychological distress and well-being),
- Limitations in usual roles because of emotional problems,
- Vitality (energy and fatigue),
- General perceptions of health.

Study variables

The variables examined in this study were primarily independent variables, including age, gender, marital status, and the number of dependent children. Secondarily, the main dependent variables were the physical quality of life score, the mental quality of life score, and the overall quality of life score.

Outcome measures

The SF-12 questionnaire presents the results in the form of two scores: a "physical" quality of life score and a "mental" quality of life score.

The algorithm used for score analysis yields a physical score ranging from 6 to 28. A physical score strictly below 14 indicated poor physical quality of life, while a score of 14 or higher corresponded to good physical quality of life. For the mental score, values ranged from 8 to 36. A score strictly below 18 defined poor mental quality of life, whereas a score of 18 or higher indicated good mental quality of life. Regarding the overall quality of life, scores ranged from 14 to 64. A score strictly below 32 signified poor overall quality of life, while good overall quality of life was defined by a score of 32 or higher.

Statistical analysis

The data from this study were entered using the Cs Pro 7.2 software and exported to Excel 2021 for processing. Statistical analyses were conducted using SPSS 25 software. Qualitative variables were presented in tables of frequencies and proportions. Quantitative variables were summarized in the form of means with standard deviations.

To compare proportions, Pearson's Chi-2 test was employed. The significance level was set at 5%.

Results

Socio-professional characteristics of the study population

During the study period, the selection criteria retained 700 nursing staff from an expected 3,106, resulting in a participation rate of 22.5%. This was composed of 454 nurses (64.9%) and 246 nursing assistants (35.1%). The average age of our sample was 39.2 years ± 8.1, with a range from 21 to 60 years. The gender ratio (F/M) was 5.1, which is 5 women for every man. Table 1 provides a summary of all socio-professional parameters.

Physical quality of life

Across the entire population, 34 (4.9%) healthcare workers had a physical quality of life score of less than 14, indicating poor physical quality of life, versus 95.1% who had good physical quality of life.

Table 1: Distribution of nursing staff based on socio-professional characteristics.

Variables	Frequencies (n=700)	Percentages (%)
Sex		
Male	115	16.4
Female	585	83.6
Age (years)		
20-29	98	14.0
30-39	266	38.0
40-49	267	38.1
≥50	69	9.9
Work Schedule		
"3x8" Shifts	88	12.6
"2x12" Shifts	466	66.6
Day "7am-2pm"	146	20.9
Continuity of Work Rhythm		
Continuous	517	73.9
Semi-continuous	78	11.1
Discontinuous	105	15.0
Type of Rotation		
Long	38	5.4
Short	662	94.6
Workplace		
Brazzaville	381	54.4
Pointe-Noire	185	26.4
Dolisie	99	14.2
Oyo	35	5.0

Mental quality of life

Good mental quality of life (score ≥18) was observed in 95.1% of the healthcare staff, while 4.9% (34) demonstrated poor mental quality of life.

Overall quality of life

According to the SF-12, we found poor overall quality of life (total SF-12 score <32) in 29 nurses, or 4.1%, compared to 95.9% who had good overall quality of life.

Bivariate Analysis

Socio-professional characteristics and physical quality of life

Among the healthcare workers, we found that being older than 40 years and having more than 3 dependent children were significantly associated with poor physical quality of life. The details are provided in Table 2.

Socio-professional characteristics and mental quality of life

Poor mental quality of life was also significantly associated with age (over 40 years) and having more than 3 dependent children among the nursing staff. Details are provided in Table 3.

Socio-professional characteristics and overall quality of life

Based on the total score obtained with the SF-12, poor overall quality of life was more common among healthcare workers over 40 years of age and those with more than 3 dependent children, with a statistically significant difference. Details are presented in Table 4.

Table 2: Relationship between socio-professional characteristics and physical quality of life level.

Variables	Physical quality of life			
	Poor	Good	Chi-2	p-value
Sex			2.895	0.099
Male	2 (1.7%)	113 (98.3%)		
Female	32 (5.5%)	553 (94.5%)		
Age group			35.362	**0.000**
20 – 29	0 (0.0%)	98 (100.0%)		
30 – 39	3 (1.1%)	263 (98.9%)		
40 – 49	20 (7.5%)	247 (92.5%)		
≥50	**11 (15.9%)**	58 (84.1%)		
Marital status			2.425	0.220
Married	18 (5.8%)	290 (94.2%)		
Single	14 (3.8%)	356 (96.2%)		
Widowed	2 (9.1%)	20 (90.9%)		
Position/Role			0.000	1.000
Nurse	22 (4.8%)	432 (95.2%)		
Nursing assistant	12 (4.9%)	234 (95.1%)		
Number of dependent children			13.026	**0.002**
0	0 (0.0%)	43 (100.0%)		
1 – 3	7 (2.3%)	302 (97.7%)		
>3	**27 (7.8%)**	321 (92.2%)		

Table 3: Relationship between socio-professional characteristics and mental quality of life level.

	Mental quality of life			
Variables	Poor	Good	Chi-2	p-value
Sex			0.077	0.822
Male	5 (4.3%)	110 (95.7%)		
Female	29 (5.0%)	556 (95.0%)		
Age group			20.891	**0.000**
20 – 29	0 (0.0%)	98 (100.0%)		
30 – 39	5 (1.9%)	261 (98.1%)		
40 – 49	**22 (8.2%)**	245 (91.8%)		
≥50	**7 (10.1%)**	62 (89.9%)		
Marital status			1.555	0.895
Married	16 (5.2%)	292 (94.8%)		
Single	17 (4.6%)	353 (95.4%)		
Widowed	1 (4.5%)	21 (95.5%)		
Position/Role			0.122	0.854
Nurse	23 (5.1%)	431 (94.9%)		
Nursing assistant	11 (4.5%)	235 (95.5%)		
Number of dependent children			18.310	**0.000**
0	0 (0.0%)	43 (100.0%)		
1 – 3	5 (1.6%)	304 (98.4%)		
>3	**29 (8.3%)**	319 (91.7%)		

Table 4: Relationship between socio-professional characteristics and overall quality of life level.

	Overall quality of life			
Variables	Poor	Good	Chi-2	p-value
Sex			0.153	0.695
Male	4 (3.5%)	111 (96.5%)		
Female	25 (4.3%)	560 (95.7%)		
Age group			24.512	**0.000**
20 – 29	0 (0.0%)	98 (100.0%)		
30 – 39	3 (1.1%)	263 (98.9%)		

	Overall quality of life			
40 – 49	**18 (6.7%)**	249 (93.3%)		
≥50	**8 (11.6%)**	61 (88.4%)		
Marital status			0.788	0.674
Married	15 (4.9%)	293 (95.1%)		
Single	13 (3.5%)	357 (96.5%)		
Widowed	1 (4.5%)	21 (95.5%)		
Position/Role			0.006	1.000
Nurse	19 (4.2%)	435 (95.8%)		
Nursing assistant	10 (4.1%)	236 (95.9%)		
Number of dependent children			13.463	**0.001**
0	0 (0.0%)	43 (100.0%)		
1 – 3	5 (1.6%)	304 (98.4%)		
>3	**24 (6.9%)**	324 (93.1%)		

Discussion

This work was conducted during the height of the COVID-19 pandemic, precisely one year after the first confirmed case was declared in the Republic of Congo. The hospital services included in our study were not front-line units for the care of patients affected by COVID-19. However, some patients might end up there due to misdirection, triage issues, lack of space in specific care units, or while awaiting disease confirmation. These organizational shifts could influence our results, creating a selection bias as the services were not in their usual operational configuration. Nonetheless, the prospective nature of this study ensures some reliability in the results, eliminating potential reporting biases.

Throughout the study, the population was predominantly female, young, single, and nearly half had more than three dependent children. The feminization of the nursing profession found in this sample only confirms the data from literature [12,13]. This reaffirms that patient care has traditionally been delegated to women, in line with the social division of labor seen in some Latin American countries [14]. On the other hand, Soltaninejad, in his work with 1,256 Iranian nursing staff, found a male predominance (55.6%), explained by the influence of the Islamic religion, which restricts women's work solely to household tasks [15].

The proportions of healthcare workers having poor physical and mental quality of life, and overall were relatively low, not exceeding 5%. Conversely, other authors such as Adams et al [16] reported higher frequencies of poor overall quality of life with a higher prevalence in his Franco-German health professional population. The same was found by Kraiem et al. [17] in a comprehensive study of Tunisian care agents, with respective frequencies of poor physical quality of life, poor mental quality of life, and overall poor quality of life of 54.5%, 63%, and 55.4%. Also in Tunisia, Gallas et al. [18] found among nurses from two university hospitals in Sousse that 17.8% had poor physical quality of life scores, and 56.3% had poor mental quality of life. The low frequencies of these poor quality of life scores in our study population might be explained by changes in work organization, the African characteristics of the population, the fact that the selected nursing staff were not from high-tension services due to the health crisis, or our methodology that included multiple centers with varied activity levels.

Regarding the relationship between socio-professional characteristics and quality of life levels, there was no impact of gender, marital status, or role on either physical or mental quality of life, or on overall quality of life. In a literature review by Vagharseyyedin et al. [19], marital status seemed to have a beneficial impact on nurses' quality of life. Other studies found that diminished physical quality of life was associated with being female [18,20], while in two other studies, men were less satisfied with their quality of life than women [21,22]. Overall, in our study population, young nursing staff (under 40 years) and those with no dependent children had good quality of life in its various forms (physical, mental, and overall). Age over 40 and having more than three dependent children negatively impacted quality of life. These results might be explained by the fact that older staff, with longer tenure, experienced more psycho-organizational constraints than younger ones, and having more than three children implied more emotional stress outside work. Conversely, in a study among psychiatric nurses, quality of life was significantly lower among younger nurses and those with shorter tenure [23].

Finally, during the specific period of the study, and throughout the COVID-19 pandemic, the work organization underwent changes to respond effectively to the healthcare emergency. The healthcare staff was divided into two groups: one group assigned exclusively to care for patients affected by COVID-19, and another group assigned to areas not dedicated to COVID-19 care. The working hours were also adjusted during this time. Many hospitals adopted a work rhythm comprising two shifts of 12 hours each, rather than the usual pattern of three shifts of 8 hours, to cope with the massive influx of patients without an increase in the number of healthcare personnel. These new operational configurations might have introduced a bias in the selection of participants.

Conclusion

The COVID-19 pandemic has disrupted the operations of hospital services worldwide. Frontline healthcare workers have been impacted in every aspect of life. Despite this backdrop, our study reported good quality of life—both physical and mental—as well as overall well-being in this population. However, advanced age and increased familial responsibilities were associated with a decrease in this quality of life. Therefore, it is crucial to consider these factors when devising strategies to support healthcare professionals, regardless of the context. Prioritizing the mental and physical health of caregivers is essential, as it directly influences the quality of care provided to patients.

Ethical Consideration

The study received approval from the Dean's Office of the Faculty of Health Sciences at Marien Ngouabi University (ref: 08/UMNG-FSSA.V.DOY dated March 21, 2021) and from the management of the included hospitals. Informed consents of the participants were sought for the study.

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