



# Effects of a Pandemic on the Professional Quality of Life in Vietnamese Healthcare Workers



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### Authors

Trung N.T.<sup>1</sup> PhD  
 Long N.D.<sup>2</sup> PhD  
 Huong T.L.<sup>2</sup> MSc  
 Thuan D.T.<sup>2</sup> MSc  
 Tam N.T.<sup>3</sup> MSc  
 Lan N.T.P.<sup>4</sup> PhD  
 Tuan M.D.<sup>1</sup> PhD  
 Bach N.X.<sup>5\*</sup> PhD

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<sup>1</sup>Department of Community Medicine and Preventive Medicine, University of Medicine and Pharmacy, Hanoi, Vietnam

<sup>2</sup>Saint Paul Hospital, Hanoi, Vietnam

<sup>3</sup>Department of Preventive Medicine, Faculty of Medicine, Dai Nam University, Hanoi, Vietnam

<sup>4</sup>Department of Basic Medicine and Pharmacy, University of Medicine and Pharmacy, Hanoi, Vietnam

<sup>5</sup>Department of Basic Pharmaceutical Sciences, Faculty of Pharmacy, University of Medicine and Pharmacy, Hanoi, Vietnam

### \*Correspondence

Address: VNU, University of Medicine and Pharmacy, Ha Noi, 144 Xuan Thuy Road, Cau Giay, Hanoi, Vietnam. Postal Code: 1000001

Phone: +84 983001505

Fax: +84 2437450146

bachnx.ump@vnu.edu.vn

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## ABSTRACT

**Aims** This study aimed to measure the professional quality of life of healthcare workers in an urban hospital in Vietnam after the epidemic and identify the associated factors.

**Instrument & Methods** This cross-sectional study was conducted among healthcare workers in an urban hospital in Hanoi, Vietnam, from July to September 2022. A total of 924 participants were recruited in the study. The Professional Quality of Life Scale for Health Workers was employed. Chi-square and Kruskal-Wallis tests were used for data analysis.

**Findings** The mean professional quality of life score for healthcare workers was moderate. Being female was positively associated with the PS domain ( $r=0.7$ ) but negatively related to STS ( $r=-0.9$ ) and MD domains ( $r=-0.9$ ). Living with a spouse/partner positively affected the CS domain ( $r=0.6$ ). Lower education level was negatively correlated with CS and PS scores. Participants with other professionals had higher CS ( $r=0.9$ ) and PS ( $r=1.1$ ) scores but lower BO ( $r=-1.0$ ), STS ( $r=-0.6$ ), and MD scores ( $r=-0.6$ ). Being staff was negatively associated with CS and PS scores. Higher working days per week were negatively correlated with CS ( $r=-0.4$ ) and PS scores ( $r=-0.4$ ), while a higher number of working hours per day was positively correlated with BO ( $r=0.2$ ) and STS scores ( $r=0.1$ ).

**Conclusion** This study shows a moderate professional quality of life among Vietnamese healthcare workers after the pandemic.

**Keywords** Quality of Life; Healthcare Workers; Pandemics; COVID-19; Urban

## CITATION LINKS

- [1] The experiences of primary healthcare nurses during the ... [2] Professional quality of life, self-compassion, resilience, and empathy ... [3] Prevalence of depression, anxiety, and insomnia among healthcare workers ... [4] The global prevalence of depression, anxiety, stress, and, insomnia ... [5] The cost of caring: An exploration of compassion fatigue, ... [6] Compassion satisfaction, compassion fatigue, anxiety, ... [7] The relationship between professional quality of life (ProQol) and general ... [8] Extent of compassion satisfaction, compassion ... [9] Perceived stress and professional quality of life ... [10] Work-related stressors among the healthcare professionals ... [11] Occupational stress, job satisfaction, and intent to leave: Nurses ... [12] Covid-19-implications for the ... [13] Economic impact of COVID-19 pandemic on healthcare ... [14] Coronavirus (COVID-19) ... [15] Psychological impacts of COVID-19 on Vietnamese health workers over ... [16] Well-being of healthcare workers and the general ... [17] Pattern and perceived changes in quality of life of Vietnamese medical ... [18] Professional quality of life and its associated factors among ... [19] Professional Quality of Life scale for health worker ... [20] Professional quality of life among physicians and nurses working ... [21] Professional quality of life among nurses: Compassion satisfaction, burnout, ... [22] Professional quality of life in nurses on ... [23] Professional quality of life, engagement, and self-care in ... [24] A comparison of burnout frequency among oncology physicians and ... [25] Relationship between gender, stress, ... [26] Professional quality of life and clinical ... [27] Relationship between job position, job attributes, ... [28] Cultivating compassionate ... [29] Compassion fatigue among healthcare, emergency and community ... [30] The relationship between nurse's professional ... [31] Symptoms in health care workers during the ... [32] Prevalence, severity, and comorbidity of 12-month ... [33] Sex differences in trauma and posttraumatic stress ... [34] Psychosocial and professional characteristics of burnout ... [35] Burnout in rural physician assistants: An ... [36] High level of burnout in intensivists: Prevalence ... [37] Exploring the key predictors of retention in ... [38] Burnout and psychological adjustment in mental health ...

## Introduction

The onset of a pandemic has presented healthcare workers (HCWs) with a diverse array of difficulties, including the experience of encountering a high volume of fatalities, grappling with ethical decision-making, facing the constant threat of infection and the potential exposure of their family members, coping with an increased workload, and operating without adequate equipment [1, 2]. These stress-inducing circumstances have also manifested as symptoms of mental disorders and somatization among healthcare workers [3, 4]. Consequently, these immediate and enduring challenges have had a profound impact on the effectiveness of health professionals, their levels of occupational stress, and the quality of care they provide to patients, thereby influencing their professional quality of life (ProQoL).

ProQoL encompasses a multifaceted construct pertaining to the extent to which individuals can satisfy their personal needs within the context of their work environment encounters [5]. The concept involves a sense of renewal and energy as a result of individuals' engagement in their work, burnout, and secondary traumatic stress stemming from their compassion-driven efforts. Several prior studies have indicated that a higher level of professional quality of life is connected to a lower occurrence of mental disorders [6, 7] as well as reduced perceived stress [8, 9]. Various factors pertaining to healthcare professionals' professional and social roles, such as ambiguity, role conflict, and workload, can lead to work-related stress, consequently diminishing professional effectiveness, particularly during the ongoing COVID-19 pandemic [10, 11]. The COVID-19 outbreak has been recognized as a widespread public health challenge with significant repercussions on nations' healthcare infrastructures and economies [12, 13]. To date, Vietnam has suffered significant health, social, and economic impacts of the COVID-19 pandemic [14]. HCWs were recognized among the most vulnerable populations to physical and mental disorders due to COVID-19 [15, 16]. Several studies have been performed to measure the QoL of HCWs [17, 18], including one study that attempted to measure ProQoL [18]. However, this previous study was conducted with only a small sample size, with the main objective of validating the ProQoL instrument. Given the matter that ProQoL is an individual's perception about their work aspects, therefore, it is highly dependent on contextual background, socioeconomic and workplace characteristics. Therefore, more evidence should be provided about the ProQoL of HCWs, particularly among frontline HCWs during an epidemic, in order to develop appropriate interventions to improve the ProQoL of HCWs.

This study aimed to measure the ProQoL of HCWs in an urban hospital in Vietnam and identify associated factors after the epidemic.

## Instrument and Methods

### Study design and setting

A cross-sectional study was conducted on an urban hospital in Hanoi, Vietnam, from July to September 2022. Participants were HCWs who worked in the hospital for at least three months, voluntarily participated in the study, and gave written informed consent. Individuals working in the hospital for less than three months, having acute illnesses, or disagreeing to participate in the study were excluded. We included all people who met the eligibility criteria. A total of 924 participants were recruited in the study.

### Data collection

A self-reported structured questionnaire was developed and distributed to the participants. The questionnaire's contents were piloted in 10 participants and revised according to their feedback. Each participant spent 10-15 minutes completing the Socio-demographic questionnaire (job characteristics, age, gender, education, marital status, years of experience, position, time working per day and week, number of days on duty per week, and changing the amount of work or income during the COVID-19 pandemic). The Professional Quality of Life Scale for Health Workers (Pro-QoL Health) was employed [19]. The instrument consists of 30 items, which encompass five domains; Compassion Satisfaction (CS), Perceived Support (PS), Burnout (BO), Secondary Traumatic Stress (STS), and Moral Distress (MD). Each section comprises six inquiries, with the responses allocated a corresponding numerical value on a scale of 1 (Never), 2 (Rarely), 3 (Sometimes), 4 (Often), and 5 (Very often). The upper limit for the cumulative score in each domain is 30 points. The evaluation of each aspect was conducted based on its corresponding score, which was categorized into three levels: 1) Low, indicating a score of 12 or less; 2) Average, representing a score within the range of 13 to 23; And 3) High, indicating a score of 24 or more. The Cronbach alpha test was conducted to assess the alpha value for Pro-QoL Health and its respective domains, including CS, PS, BO, STS, and MD, yielding values of 0.84, 0.87, 0.82, 0.82, 0.74, and 0.70. The Vietnamese version of Pro-QoL Health has been validated elsewhere [18].

### Statistical analysis

The data was analyzed using the Stata 14.0 by Chi-square test and the Kruskal-Wallis test to discern disparities in ratios or means among various groups based on variations in working time (whether it increased, remained constant, or decreased) after the COVID-19 pandemic. The associated parameters with each domain of healthcare workers' professional quality of life were investigated using multivariate Tobit regression models. A forward stepwise selection approach was employed to eliminate variables that were not statistically significant, whereby the criterion for selection of variables in the

reduced models was set at a p-value of less than 0.2 for the log-likelihood ratio test. A p-value below the threshold of 0.05 was deemed to indicate statistical significance.

### Findings

The average age of the participants was 37.2±7.9. There was no significant difference between the age groups of the participants according to their viewpoint on the amount of work (increase/constant/decrease) during the pandemic (p=0.21).

**Table 1.** Comparing the frequency (the numbers in parentheses are percentages) of participants' viewpoints on the amount of work during the pandemics according to the sociodemographic characteristics (n=924)

Characteristics	Increase	Constant	Decrease	p-Value
<b>Gender</b>				
Male	176 (60.7)	45 (15.5)	69 (23.8)	0.01
Female	445 (70.2)	83 (13.1)	106 (16.7)	
<b>Marital status</b>				
Single	99 (67.8)	20 (13.7)	27 (18.5)	0.92
Living with spouse/partner	502 (67.2)	102 (13.6)	143 (19.1)	
Divorce, separation, widow	20 (64.5)	6 (19.4)	5 (16.1)	
<b>Education</b>				
Postgraduate	140 (63.1)	35 (15.8)	47 (21.2)	0.45
Graduate	229 (70)	38 (11.6)	60 (18.4)	
Under-graduate	252 (67.2)	55 (14.7)	68 (18.1)	

**Table 2.** Comparing the frequency (the numbers in parentheses are percentages) of participants' viewpoints on the amount of work during the pandemics according to the job characteristics (n=924)

Characteristics	Increase	Constant	Decrease	p-Value
<b>Professionals</b>				
Doctor	107 (56.6)	33 (17.5)	49 (25.9)	0.001
Nurse	300 (73.9)	40 (9.9)	66 (16.3)	
Other professionals	49 (63.6)	10 (13)	18 (23.4)	
Others support departments	113 (66.9)	35 (20.7)	21 (12.4)	
<b>Position</b>				
Manager	197 (69.4)	37 (13)	50 (17.6)	0.65
Staff	424 (66.3)	91 (14.2)	125 (19.5)	
<b>Change in revenue during the COVID-19 pandemic</b>				
Increase	4 (100)	0 (0)	0 (0)	0.001
Instant	65 (74.7)	22 (25.3)	0 (0)	
Decrease	552 (66.3)	106 (12.7)	175 (21)	

Men comprised 31.4% of the sample, with a significantly smaller proportion experiencing an increased workload during the pandemic compared to women. The percentages of participants

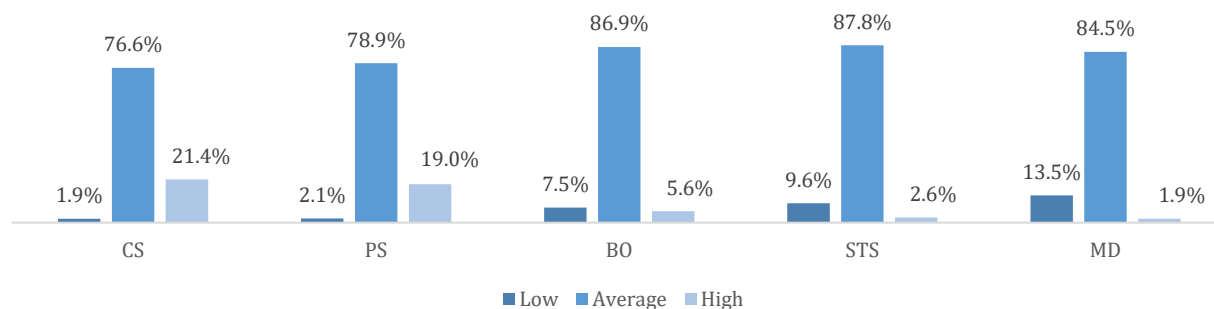
possessing undergraduate, graduate, and postgraduate education were 22.0, 35.4, and 40.6%, respectively (Table 1).

The majority of participants were nurses (43.9%), and their mean experience was 12.9±8.6 years. There was no significant difference between the participants' years of experience groups according to their viewpoint on the amount of work (increase/constant/decrease) during the pandemic (p=0.18).

Nurses experienced the greatest surge in workload during the pandemic, while doctors had the least increase compared to their regular duties (p<0.01). The mean number of working days per week was 5.3±0.6 days per week, the mean number of days on duty per week was 1.3±1.0 days, and the mean number of working hours per day of 8.7±1.8 hours per day. The majority of individuals experienced a decline or no change in their incomes throughout the duration of the pandemic (Table 2).

The mean professional quality of life scores for HCWs in the CS, PS, BO, STS, and MD categories were 20.6±3.5, 20.4±3.4, 17.6±3.5, 16.6±3.2, and 16.3±3.4, respectively. The proportion of HCWs who had the lowest levels of CS (1.9%) and PS (2.1%) was the lowest among all groups (Figure 1).

Regarding sociodemographic characteristics, being female was positively associated with the PS domain (r=0.7) but negatively related to STS (r=-0.9) and MD domains (r=-0.9). Living with a spouse/partner was positively associated with the CS domain (r=0.6). Lower education level was negatively correlated with CS and PS scores. Regarding job characteristics, participants having other professionals (e.g., technicians, midwifery, etc.) had higher CS (r=0.9) and PS (r=1.1) scores but lower BO (r=-1.0), STS (r=-0.6) and MD scores (r=-0.6). Being staff was negatively associated with CS and PS scores. Higher working days per week were negatively correlated with CS (r=-0.4) and PS scores (r=-0.4), while a higher number of working hours per day was positively correlated with BO (r=0.2) and STS scores (r=0.1). Participants with stable or decreased incomes had significantly higher BO scores than those with increased income. In addition, participants with a stable amount of work had a lower PS score, while those with a decreased amount of work had lower BO and STS scores (Table 3).



**Figure 1.** Professional quality of life among healthcare workers

**Table 3.** Factors associated with Compassion Satisfaction (CS), Perceived Support (PS), Burnout (BO), Secondary Traumatic Stress (STS), and Moral Distress (MD) among participants

Characteristics	CS		PS		BO		STS		MD	
	r	95%CI	r	95%CI	r	95%CI	r	95%CI	r	95%CI
<b>Gender</b>	-	-	-	-	-	-	-	-	-	-
Male	ref	-	ref	-	ref	-	ref	-	ref	-
Female	0.5	0; 1	0.7**	0.2; 1.2	-0.5	-1; 0	-0.9**	-1.4; -0.4	-0.9**	-1.4; -0.5
<b>Marital status</b>										
Single	ref	-	-	-	-	-	-	-	-	-
Living with spouse/partner	0.6*	0.0; 1.1	-	-	-	-	-	-	-	-
Divorce, separation, widow	-	-	-	-	-	-	-	-	-	-
<b>Education</b>										
Postgraduate	ref	-	ref	-	-	-	ref	-	-	-
Graduate	-0.9**	-1.5; -0.3	-0.9**	-1.4; -0.3	-	-	0.6*	0.1; 1.2	-	-
Undergraduate	-1.1**	-1.7; -0.5	-1.2**	-1.8; -0.6	-	-	0.5	-0.1; 1	-	-
<b>Task position</b>										
Doctor	ref	-	ref	-	ref	-	ref	-	ref	-
Nurse	-	-	-	-	-	-	-	-	-	-
Other professionals	0.9**	0.3; 1.5	1.1**	0.5; 1.6	-1.0**	-1.6; -0.4	-0.6*	-1.2; -0.1	-0.6*	-1.2; 0.0
Others support departments	0.5	-0.1; 1.1	0.6	0; 1.2	-	-	-	-	-	-
<b>Position</b>										
Manager	Ref	-	ref	-	ref	-	-	-	-	-
Staff	-0.7**	-1.2; -0.2	-0.8**	-1.2; -0.3	0.3	-0.2; 0.8	-	-	-	-
<b>Working days per week</b>	-0.4*	-0.8; 0.0	-0.4*	-0.7; 0	0.3	0.0; 0.7	0.3	0.0; 0.7	-	-
<b>Days on duty per week</b>	-	-	-0.2	-0.4; 0.0	0.2	-0.1; 0.4	-	-	-	-
<b>Working hours per day</b>	-	-	-	-	0.2**	0.1; 0.3	0.1*	0.0; 0.3	-	-
<b>Change in income during the Covid-19 pandemic</b>										
Increase	-	-	-	-	ref	-	-	-	-	-
Instant	-	-	-	-	4.9**	1.4; 8.3	-	-	-	-
Decrease	-	-	-	-	5.5**	2.1; 8.8	-	-	-	-
<b>Changing the amount of work during the COVID-19 pandemic</b>										
Increase	ref	-	ref	-	ref	-	ref	-	-	-
Instant	-0.6	-1.2; 0.1	-0.9**	-1.5; -0.3	-0.4	-1.1; 0.2	-	-	-	-
Decrease	-	-	-	-	-1.0**	-1.6; -0.4	-0.5*	-1.1; 0.0	-	-

\*p&lt;0.05; \*\*p&lt;0.01

## Discussion

The results showed a moderate professional quality of life among Vietnamese HCWs after the COVID-19 pandemic. Moreover, we found different demographic and job characteristics that were related to the professional quality of life, which could be potentially used to develop appropriate interventions to improve the ProQoL of HCWs.

The present study employed the Pro-QoL Health instrument to assess the professional quality of life of HCWs. Findings suggested that Vietnamese HCWs had moderate professional quality of life, aligning with a study of Portuguese physicians and nurses during the third wave of the COVID-19 pandemic, which showed a moderate level of CS, BO, and STS among these HCWs [20]. Indeed, this study was performed during the latter half of 2022, when a global subjugation of the COVID-19 pandemic was observed. In the context of Vietnam, the current phase could be denoted as the new normal post-COVID-19 stage. Hence, it is evident that there exists minimal disparity in the overall professional well-being experienced by HCWs in the immediate aftermath of the pandemic when compared to the initial outbreak phase. The professional life of HCWs has been profoundly impacted since the onset of the epidemic, leading to a discernible decline in its overall quality.

Regarding specific domains of ProQoL, CS occurs when empathy motivates healthcare professionals to relieve patient pain. CS is the satisfaction that HCWs

find in productivity, aiding them in managing work challenges [21]. Meanwhile, PS is the awareness of HCWs' access to practical work support when needed, including task performance, advice, or emotional support. A higher PS score corresponds to better support [19]. CS and PS are powerful aspects of professional quality of life. In this study, high-grade CS and PS accounted for approximately 20%, which was higher than a prior report in Spain during the pandemic with 18.2% [20], but lower than a study in China (35.3%) [22]. Cuartero-Castañer *et al.* suggested that the social recognition of HCWs during the epidemic may cause a high prevalence of CS [23]. CS and PS scores were higher in other HCWs, such as technicians, midwives, and pharmacists, than doctors, which might be explained by the matter in the increasing workload during the outbreak among other HCWs. According to Wu *et al.*, working at the frontline positively affects CS [24]. Increased workloads during an epidemic may promote satisfaction due to a deeper sense of self-employment in the fight against the epidemic. Crediting overworked HCWs during the pandemic can boost support for them and increase PS. Women had higher PS scores than men, which might be due to women having more relationships and social support compared to men [25]. HCWs living with spouses had higher CS scores than those who are single, which could be explained that these HCWs developed coping mechanisms [23], and they sought help from their parents to take care of their families because

they were usually on duty [20]. CS and PS scores were also reported to be significantly lower in those with undergraduate/graduate education, and lower in staff versus management groups. Prior research suggested that HCWs with better clinical skills might have higher CS levels [26]. Indeed, HCWs with higher education levels were often appointed to management positions, which might result in better CS than those who were staff. Furthermore, there is evidence that managers tended to have better friendships and more support in the workplace [27]. Burnout refers to feelings of hopelessness that make it challenging to be productive at work. Meanwhile, STS is exposure to traumatic events at work, like witnessing suffering, violence, or death; While MD refers to when frontline HCWs have to act against personal values and ethics [19]. These vulnerabilities can cause medical errors and impact patient care [28] and professional relationships [29]. Our study showed a pervasiveness of moderate levels of BO, STS, and MD, which was different from prior studies [20, 22, 30]. However, the low rate of high levels of BO, STS, and MD in our study could be explained by the commonness of CS. Indeed, CS could play a role as a protective factor, which helped to lower STS and BO [31]. During the epidemic, the role of HCWs was enhanced, which boosted CS and, eventually, positively impacted STS and BO. Nonetheless, at the time of this investigation, HCWs in Vietnam had not only failed to recognize the worthy efforts in fighting the epidemic but also faced public criticism, which might explain the high scores of BO, STS, and MD. Regression analysis showed that women had lower STS and MD levels than men. This result was different from other reports showing that women were at higher risk of STS than men because they had a more sensitive hypothalamic-pituitary gland [31-33]. We supposed that females had a higher score of PS than their male counterparts, which helps balance the BO, STS, and MD factors. In addition, the analysis showed that the increased number of working hours per day increased the levels of BO and STS among HCWs, which was in line with other studies [34-36]. Healthcare workers with stable or reduced income during the pandemic had higher BO levels. In Vietnam, during the pandemic, HCWs still work despite the colonial expansion, and many HCWs exceeded their expected workload while their income increased significantly. Some authors have shown that income affects the quality of health workers' professional life [37, 38]. Moreover, job satisfaction increases when employees are paid fairly, reducing financial burdens and improving conditions for professional activities [37]. This study is among a few research using the Pro-Qol Health instrument to describe the professional quality of life among HCWs in Vietnam post-pandemic. The study helps improve healthcare services in the new normal. However, this study has limitations. The study was conducted at an urban hospital, which hinder the generalizability of the

study's findings to HCWs in Vietnam. Furthermore, the absence of evidence from the Pro-Qol Health tool hinders comparisons of study results with other studies. Finally, the cross-sectional descriptive study design limits the ability to conclude a causal relationship.

## Conclusion

This study showed a moderate professional quality of life among Vietnamese HCWs after the COVID-19 pandemic. Strengthening the healthcare system's capacity should be a top priority, along with supporting healthcare professionals in managing stress and developing psychological resilience, to improve HCWs' ProQoL.

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**Ethical Permissions:** The research has been approved by the Institutional Review Board, University of Public Health. No. 426/2023/YTCC-HD3, November 16, 2023.

**Conflict of Interest:** Nothing to be reported.

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