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Research article

Occupational Health of Staff Nurses Working in Private Hospitals during the Early Post-Pandemic Period of COVID-19

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Abstract

The COVID-19 pandemic has significantly impacted healthcare professionals, causing issues like anxiety, hopelessness, and difficulty sleeping. Occupational health encompasses nurses' physical, mental, emotional, and social well-being and has been significantly affected due to the pandemic on nurses' work and the resulting changes in their occupational health. This study assessed the level of occupational health among staff nurses in private hospitals during the early post-pandemic period in the northern part of the Philippines. This study utilized a mixed-method design implemented in private hospitals in Tuguegarao City, Cagayan, to gather data on occupational health and wellness on a sample size of 100 nurses during the early post-pandemic period. The researchers used a purposive sampling technique and a questionnaire with adopted and modified questions as well as a self-made question. Frequency and percentage were used to describe the profile and mean to present the level of occupational health. Analysis of variance was used to determine the difference in the level of occupational health of nurses according to their profile. Thematic analysis was used to analyze qualitative data. Results show that staff nurses have a good level of occupational health during the early post-pandemic period. Moreover, qualitative data revealed that nurses experienced many health issues during the peak of the pandemic and that they experienced an improvement in their overall occupational health during the early post-pandemic period. The staff nurses experienced reduced anxiety, performed better self-care, and observed stricter adherence to infection prevention and control protocols, which greatly affected their occupational health. It can be concluded therefore that the occupational health of nurses during the early post-pandemic period of the COVID-19 pandemic has improved compared to during the pandemic. Their experiences during the pandemic led to less anxiety, improved self-care and better compliance with IPC protocols.

INTRODUCTION

Occupational health is defined as developing and maintaining the best level of mental, physical, social, and emotional well-being among workers across all occupations.[1] It offers different objectives upon securing the health of workers such as

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preservation and promotion of the health and working capacity of workers, the development of the working environment and conditions to become suitable to health and safety, and the creation of organizational structures and work environments that should be compatible with the basic moral principles accepted. Upon the goal of occupational health, different concerns of the workers can be addressed to help them for the security of their health. Healthcare workers especially the nurses are known to be among the most difficult tasks in the health field. Nurses have various tasks performed such as working for long hours and social pressure.[2] Health risks cannot be avoided in the health field, making nurses be constantly exposed to different health issues.[1]

With the occurrence of the pandemic, problems arise in the health field and it puts a huge demand, and stress on the healthcare workers' occupational health, especially the nurses, to provide for various health needs of patients. The COVID-19 pandemic has significant negative effects on both the mental and physical well-being of healthcare providers, and public health measures should consider this.[3] The peak of the COVID-19 pandemic was seen during the months of April to June of the year 2020 in the Philippines, and this required an increase in different precautionary measures such as work lockdown, required usage of PPE, adherence to hand washing, and social distancing to control the spread of the COVID-19 virus. During the COVID-19 pandemic, healthcare staff from a variety of specializations, jobs, and exposure risks reported anxiety, sadness, discomfort, and sleep problems.[4] While in the Philippines, stress, mental health exhaustion, work overload, pressure upon learning new technology, fear of infection during health care service, and webinar fatigue are among the different health issues experienced by health workers.[5] From these health problems arose during the pandemic, this caused nurses to stop from working. Overall, 40% of nurses that are working in private hospitals resigned since the onset of the pandemic because of low wages, working without any benefits and hazard pay regardless of the increased health risk and threats during the pandemic. COVID-19 related distress was shown in 73.1% of the recovered Filipino health care workers with a high percentage of 20.4% that had severe post-traumatic stress symptoms.[6]

WHO defines post-pandemic as decreasing pandemic surveillance because the pandemic is declining with organizations that remain in charge of being vigilant to ensure preparedness.[7] The end of the COVID-19 pandemic was officially announced on May 2023 by WHO.[8] This signifies that a low risk for COVID-19 compared to the onset of the pandemic was already reached where different precautions for healthcare workers are being implemented to combat the transmission of the COVID-19 virus such using complete PPE, adhering to N95 mask only, and use of face shield. Healthcare workers can now adhere to lessen the precautions from not adhering to use of complete PPEs such as elimination of face shield, using ordinary face mask and to provide healthcare services complete adherence to healthcare protocols compared to the onset. This provides change in the work environment of the nurses which will now affect again the state of the work of nurses and whether there will be a change seen in their occupational health status during the early post-pandemic period compared to the onset of the COVID-19 pandemic.

It is important to know the different healthcare issues that nurses are facing during the early post-pandemic period and to see if there are any changes in the occupational health issues experienced by nurses from the peak of the pandemic. This is especially important for nurses because they perform incredibly demanding work with a high risk of infection and contamination incidents. In particular, moral distress, which contributes to nursing

burnout and compassion fatigue, develops more particularly when nurses are unable to offer compassionate care to patients.[9, 10] Hence, this study assessed the level of occupational health among staff nurses' in private hospitals during the early post-pandemic period in the northern part of the Philippines.

METHODS

This study employed a concurrent explanatory mixed-methods research design using descriptive quantitative and bas qualitative approaches.[11] The quantitative analysis assessed the current level of occupational health status among nurses during the early post-pandemic period, while the qualitative analysis explored their occupational health by exploring any changes experienced during the pandemic's peak and the early post-pandemic period. The study was conducted in all five private secondary hospitals in Tuguegarao City, Cagayan, each with a bed capacity of 100-150, which have been operational since the start of the pandemic in 2020. A total of 106 nurses was included selected thru purposive sampling technique. Selection of respondents were based on criteria of at least three years of service in the private hospitals included in the study and have provided nursing care during the time of the pandemic.

A survey questionnaire was used to collect data. The questionnaire was divided into quantitative section consisting of structured questions and qualitative sections with open-ended questions. The quantitative section has of two parts: the first part gathered demographic information such as age, sex, years of working, marital status, position, and ward and the second part was adopted from a previous study assessed the respondents' physical, mental, social, and emotional status, which were rated on a five-point Likert scale from "never" (1) to "always" (5). [12] The qualitative section consists of open-ended questions, with the first two designed for data comparison and the remaining questions intended for additional information. Voluntary participation of the respondents was ensured. The respondents were provided with an informed consent form, assured of confidentiality, and given the option to withdraw at any time without harm. The six-month study was conducted transparently, with no conflicts of interest. Participants answered questionnaires at their convenience, and follow-ups clarified data when necessary. No compensation was provided. The study was reviewed by the University of Saint Louis Research Ethics Board with protocol number: before implementation of the data collection.

The data gathered in the quantitative part were analyzed using both descriptive and inferential statistical methods. Frequency and percentage were used to analyze the profile while mean was used to analyze and interpret the level of occupation health using the following range: very poor (1.00-1.49), poor (1.50-2.49), fair (2.50-3.49), good (3.50-4.49), and excellent (4.50-5.00). An Analysis of Variance (ANOVA F-test) at a 0.05 level of significance was employed to assess the difference in the level of occupational health of the staff nurses when grouped according to their profile variables. For the qualitative part, a thematic analysis was used to interpret the data, following six key steps.[13] First, the researchers familiarized themselves with the data by reading it repeatedly to identify emerging patterns. Next, initial codes were created by categorizing and labeling these patterns, simplifying the data for easier analysis. In the third step, these codes were grouped into broader themes that represent the data, with any gaps or unfitting themes clearly explained. The researchers then reviewed how these themes contributed to the overall analysis, revisiting any missing elements if necessary. Afterward, each theme was described in detail, highlighting its significance to the data.

RESULTS

Table 1 presents the profile of the respondents in terms of sex, age, years of working, and years started working. It can be seen in the table that the majority of the staff nurses are female, single, 30 years old and younger, and working for less than 5 years. It was also found that most of the respondents are working in general wards.

Table 1
Profile Characteristics of the Respondents (n=106)

Variable	f	%
Sex		
Male	33	31.1
Female	73	68.9
Age		
23-25 years	13	12.30
26-30 years	56	52.80
31-35 years	25	23.60
Over 36 years	12	
Years of Service		
Less than 5	57	53.80
5 and more	49	46.20
Marital Status		
Single	68	64.20
Married	37	34.90
Widowed	1	0.90

Table 2 shows the level of occupational health in terms of physical, mental, emotional, and social health of nurses. These findings indicate a good level of occupational health among nurses in all aspects.

Two themes were derived from the qualitative phase of the study which helps better describe the occupational health of the staff nurses during the end of the pandemic. These themes are: occupational health concerns of staff nurses during the pandemic and the changes in occupational health of nurses at the end of the pandemic

Table 2
Level of Occupational Health of the Staff Nurses

Categories	Mean	Interpretation
Physical	3.73	Good
Mental	3.62	Good
Social	3.70	Good
Emotional	3.76	Good

Occupational Health Concerns of Staff Nurses during the Pandemic

Nurses since the peak of the COVID-19 Pandemic acquired different health issues due to the negative effect that the pandemic has brought to the Philippines at that time especially for our health care practitioner. Negative effects of the COVID-19 pandemic were very visible through the responses of the nurses on what they had observed about their health. All of the respondents reported health issues experienced during the peak of the Pandemic in the Philippines. Two subthemes were also formulated based on the responses of the nurses about their health concerns during the peak of the pandemic which include: a) Increased anxiety and fear of infection, and b) Increased fatigue and exhaustion.

Increased anxiety and fear of infection

The pandemic imposed a huge threat not only for the people but also for the healthcare professionals. Healthcare professionals specifically nurses report to acquire anxiety and fear due to the COVID-19 pandemic. Though nurses are always at risk of being infected in their work, they still developed anxiety and fear of being infected with the COVID-19 virus due to its unfamiliar effects during the peak of the pandemic. Moreover, their concerns upon acquiring anxiety and fear were focused on being infected by the COVID-19 virus and the chance of transmitting it to the community especially to their families.

Some of the responses of the informant/s:

> During COVID-19 Pandemic, I gets anxious with a thought that I will get infected with the virus *(AI18)*;
>
> We are faced with the uncertainties of life. Stress, anxiety and fear about our health status and our loved ones *(AI16)*.

Increased fatigue and exhaustion

The pandemic demands a greater effort not only to stop and avoid the spread of COVID-19 virus but also for nurses to still render care effectively for different patients during the peak of the pandemic. Experience of fatigue and exhaustion was one of the major responses of nurses which they had observed during the peak of the pandemic.

> I felt that my body easily gets tired in my performance of duty (DI23);
>
> During COVID-19 Pandemic, I observed that I easily get exhausted *(AI18).*

Some of the staff nurses even mentioned a decrease in productivity due to this exhaustion.

> During the onset of COVID 19, due to heavy workload, I experienced fatigue because of that I became less productive *(DI12).*

Changes in Occupational Health at the end of the Pandemic

Based on the state of health during the early post-pandemic period, nurses have been the focus of several observations. This category includes two subthemes: the decline in nurse's levels of anxiety and fear and the alteration of nurses' immune systems. According to most responses, COVID-19 is now under control, and health protocols are less strict than they were at the height of the pandemic. Changes in the health of the nurses were noted. Most of the respondent's health had improved. Three subthemes were also identified which can help better explain the changes in the occupational health of staff nurses during the early part of the post-pandemic period. These subthemes are: a) Reduced anxiety and fear of infection, b) Better self-care, and c) Stricter adherence to IPC guidelines.

Reduced anxiety and fear of infection

Health security crises affect not only physical health but also the mental health and well-being of healthcare workers, especially nurses, due to the increased amount of exposure. Nurses were still concerned about infecting their family or getting sick. However, during the early post-pandemic period, nurses became less anxious and more energetic.

> There is absolutely a change after the pandemic. I observed that I don't get anxious already, and I became more energetic because PPEs now are adequate (AI1);
>
> The fear of COVID-19 disappeared, that's what I had observed during this time (early post-pandemic period) especially with the COVID-19 vaccination available *(AI10)*.

Furthermore, nurses are now relaxed due to fewer restrictions on health precautions, and they may go out without fear of acquiring the virus. Moreover, because most nurses are now completely vaccinated, the symptoms of the patients are already mild and not severe, and nurses are now less frightened.

> I am now relaxed because health precautionary measures are less restrictive, and I can now easily go around since the cases have decreased (AI3);
>
> During this time (early post pandemic period), COVID is not scary anymore due to the vaccines, and the symptoms of the patients are already mild, unlike before, when they were severe *(AI20)*.

However, one of the respondents still reported being anxious despite being back to normal during the early post-pandemic period. The respondent is still worried about when the pandemic will end. As SI24 respondent stated:

> Pandemic caused or affected a lot on

> my mental and emotional health. This post-pandemic, I observed that I'm back to being productive on my work, but there's still this fear of having this virus, and every time that I hear that someone has this virus, I can't help but worry that what if the virus will come back again and we'll be experiencing the traumas and fears we've experienced during the COVID-19 pandemic *(AI24)*.

Better self-care

During the outbreak of the pandemic, nurses who have weaker immune systems and are burdened with workload are prone to acquiring the COVID-19 virus, which affects their rendering of care to the patients, and hospitals give free vitamins to all staff to protect their immune systems since there is no vaccines at that time.

> Taking vitamins that the hospital gave to all staff *(AI4)*.

However, one of the respondents reported that nurses have previously been vaccinated, and their immune systems are now stronger than before. As a result, hospitals stop giving free vitamins to all staff.

> Infection control practices use of PPE, mask, gloves, gowns, and goggles. All are still being implemented except for free vitamins *(AI6)*.

Stricter adherence to IPC guidelines

Due to the increased exposure and cases, nurses are anxious about acquiring the virus that affects their mental health, especially their physical health. However, nurses are less anxious about acquiring the virus during the early post-pandemic period because PPEs are now adequate. Hospitals are implementing and providing wearing PPE entirely and properly to protect the nurses from acquiring the virus.

> Yes, the Infectious Control Nurse make rounds to every ward to make sure the staff are wearing their PPE properly *(D18)*;
>
> The infection control nurse made guidelines especially proper wearing of uniforms that is approved by the medical director that will be disseminated by ward *(D48)*.

During the end of the pandemic, due to the decrease in surveillance as the pandemic became less severe, the wearing of personal protective equipment was still implemented; however, healthcare personnel can now adhere to guidelines to minimize the risks associated with not wearing complete PPEs, such as the removal of face shields and the use of regular face masks.

> DI1: "Now, they remove the glass barriers but still continue to use PPE, but there's no face shield, and can use ordinary face masks."

DISCUSSION

The results revealed that majority of the nurses were female. Around the world 90 percent of nurses are women. Moreover, there are 74.1 percent of female nurses and 25.9 male nurses in the Philippines.[14] The majority of the nurses are about 26-30 years old and working for about 3 to 4 years. It is stated that sixty percent of those in the health profession is under the age of 35, or most commonly referred to as the millennial generation, less than five percent of health professionals in the country are 60 years old and over, and the average age of health professionals in the Philippines is 33 years for men and 35 years for women.[15] It was also found that most of the respondents were working in basic wards, are singles, and resided in Hospital A, were most of them are staff nurses. It is not surprising that nearly half of our health professionals are single despite their young age profile.

This study also determined the level of occupational health among nurses during the early post-pandemic period. The study revealed that the occupational health of nurses in terms of their physical, mental, and emotional health is good. This finding can be supported based on the results of the qualitative part of the study. Based on the responses of nurses, health issues that the nurses experienced during the peak of the COVID-19 pandemic were very high due to the effects of COVID-19 such as fatigue, exhaustion, anxiety and fear were greatly emphasized. This finding is supported by a previous study, wherein many healthcare personnel had to deal with changes to their primary workplace, how work processes were carried out, and adopting new protocols and procedures while carrying out jobs and fear of contracting the disease or unintentionally spreading it to others was the greatest source of concern among nurses during the COVID-19 pandemic.[10, 16, 17] During the COVID-19 pandemic, this was strongly stressed. Fighting an unidentified virus puts pressure on their job physically, psychologically, and socially. This uncertainty and dread led to considerable strain. Nurses caring for COVID-19 patients face a variety of challenges, including job pressure, a lack of safety equipment, exclusion, psychological issues, fear, a neglected personal and family life, and a lack of a strong organizational culture.[18] Other sources of anxiety in nurses were noted including a lack of personal protective equipment (PPE), fear about carrying a novel coronavirus at work, a lack of access to COVID 19 testing, concern about spreading the virus at work, anxiety about their institution's ability to support them in the event of an infection, nervousness about being placed in an unfamiliar ward or unit.[19] However, from having high levels of those health issues mentioned during the peak of the COVID-19 pandemic, nurses reported that there is an improvement on their health during the early post-pandemic period. Health improvements mentioned based on their responses were decreased on the anxiety and fear as the COVID-19 pandemic is controlled, fewer cases are being recorded, and may go out without being worried of acquiring the virus due to the availability and aid of the COVID-19 vaccination. It shows that there are high resilient scores on vaccinated healthcare worker and has low anxiety levels.[20] Another aspect of resilience we saw in our study was satisfaction with new activities initiated after the implementation of social distance. Earlier research was on mitigating risk factors, such as anxiety and poor health. Still, our findings showed that healthcare professionals have been proactively implementing stress-reduction and resilience-building measures. Resilience, or the ability to "bounce back" or recover quickly following a stressful event, may assist nurses in managing, coping, and tolerating stressful conditions.[21] Additionally, availability of the COVID-19 vaccination is not only beneficial for our healthcare workers but also for the public as this is not only a way to fight COVID-19 virus but also to help in various aspects such as promoting normal interactions and being secured from worrying the effects of COVID-19 virus. During the peak of the pandemic, nurses mentioned that they had a fear of infecting their loved ones that made nurses continually concerned about infecting themselves and their families with COVID-19, which hampered their concentration and accuracy.[22] However, during the early post-pandemic period, because of the vaccines that most people already have, nurses are now relaxed and less worried about infecting their families, which proves that their social health is good. Most of the nurses employed private hospitals had COVID-19 immunization and tended to have pro-vaccine attitudes and practices.[18] A willingness to recommend the vaccine to a friend and the ability to get the COVID-19 vaccine were linked to influenza vaccination. Moreover, nurses reported that this COVID-19 early post-pandemic period, they are now more relaxed due to the fact that we are in a low-risk state and being more productive and more energetic about their work because of the decreased

number of COVID-19 cases and as there are fewer restrictions on the health precautions that must be adhered such as eliminating some of the PPEs used before such as the face shield and a complete set of PPE. This finding can also be supported based on the result in theme 3 of the qualitative part of the study, which shows that there were changes in the precautionary measures that hospitals implemented during the peak of the pandemic and the early post-pandemic period. Hence, these responses indicate that their occupational health during the early post-pandemic period is good where there are less concerns experienced at this time.

During the peak of the pandemic, healthcare workers, especially nurses, were considered to have some of the most challenging jobs in the medical field. As a result, nurses must do a variety of work, including working long hours and dealing with social pressure.[2] It has been stated in previous research that during the peak of the pandemic, nurses face different health issues related to their mental, physical, emotional, and social health.[3,] (4)[, 5, 23] The researchers conducted this study to know if there were changes in the occupational health of nurses during the peak of the pandemic compared the early post-pandemic period. The study revealed that during the peak of the pandemic, nurses were experiencing health issues such as anxiety, fear, fatigue, and exhaustion brought on by the pandemic. This is consistent which previous studies which revealed that COVID-19 exposure induced anxiety in healthcare workers due to the perceived danger of virus transmission among themselves, friends, family, partners, and peers.(19) (24) It is revealed that the majority of the respondents are anxious about getting the virus because they fear that they might spread it to their family. During the COVID-19 pandemic, many were terrified of becoming infected and infecting others. Moreover, the greatest source of concern among nurses was the fear of becoming infected or unintentionally infecting others.[17] Additionally, due to the pandemic demands during the peak of the pandemic, nurses experienced fatigue and exhaustion. Since healthcare workers are seen resigning during the COVID-19 pandemic, the workload of the nurses who continue to render care for the patients increases. As a result, nurses experience rampant fatigue and exhaustion related to their work during the peak of the COVID-19 pandemic to adhere to the different precautionary measures for the COVID-19 virus.

The results of the study also revealed that there is a decrease in anxiety among the nurses during the early part of the post-pandemic period. Some respondents reported that it is due to less restriction of health protocols, such as not adhering to the use of complete PPE, like the elimination of face shields, and social distancing. This is supported by a previous study which showed that other sources of anxiety in nurses include a lack of personal protective equipment (PPE).[19] As a result, nurses are now more enthusiastic about their work, and the anxiety they had at the peak of the pandemic has decreased. However, a few respondents still reported being anxious and having concerns about the COVID-19 pandemic. This response is supported by previous study which found that recovered healthcare workers have a high prevalence of COVID-19-related discomfort, which, if not treated, can lead to severe posttraumatic stress disorder.[6] Moreover, lower levels of fatigue have been seen among those who have sufficient staffing in their institutions.[21] Lastly, nurses also reported that they don't get sick as often as before. However, a few respondents still reported being vulnerable to sickness during the early post-pandemic period.

CONCLUSION

It can be concluded from the results of this study that the COVID-19 pandemic had a major effect on the occupational health of staff nurses working in private hospitals, especially at the height of the pandemic. It is evident that nurses encountered significant

mental, physical, emotional, and social difficulties throughout this time, with worry, exhaustion, and fear being the most common. However, the findings also suggest a notable improvement in nurses' occupational health in the early post-pandemic period. In addition to a decrease in worry and panic, nurses' general well-being have increased as a result of the easing of strict health regulations, the availability of COVID-19 immunizations, and significant decrease in new COVID-19 cases. The resilience exhibited by healthcare professionals and the improvement in their health outcomes are favorable indications of recovery, even though some worries still exist, especially with regard to long-term psychological consequences. Moreover, the results of this study emphasize the need for support to staff nurses, especially when it comes to preserving mental health resources and building resilience for upcoming difficulties.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest related to this study.

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