

## RESEARCH ARTICLE

# Frontline nurses' compassion fatigue and associated predictive factors during the second wave of COVID-19 in Kampala, Uganda

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Email: [amirkabs2017@gmail.com](mailto:amirkabs2017@gmail.com)**Abstract****Aim:** This study aimed to assess the prevalence and associated contextual factors of compassion fatigue in nurses in Kampala.**Design:** This study employed a cross-sectional study design.**Methods:** Participants included 395 nurses. They provided details about their demographic information. Stamm's Professional Quality of Life V-5 was used to assess the levels of compassion fatigue. Statistical analysis included Pearson's chi-square and Fischer's exact test, bivariate and multivariate logistic regression. A  $p$ -value of  $<.05$  was considered statistically significant.**Results:** Of the total 395 participants, 58.23% ( $N = 230$ ) were female, 39.76% had a diploma, 47.09% were single, 43.54% had worked for 11–15 years, 54.94% had an exposure to COVID-19 cases and 43.54% worked for more than 10 hr a day. 49.11% had high levels of compassion fatigue. The predictors of compassion fatigue were working experience ( $p$ -value =  $<.001$ ), exposure to COVID-19 ( $p$ -value =  $<.019$ ), long working hours ( $p$ -value =  $.003$ ) and remuneration ( $p$ -value =  $<.001$ ).**KEYWORDS**

compassion fatigue, COVID-19, nurses, remuneration

## 1 | BACKGROUND

COVID-19 pandemic is one of the greatest global health crises of the 21st century affecting all nations (Assefa et al., 2021). The severity of the complication of the disease and its associated high mortality rate has contributed to significant mental distress, particularly among healthcare professionals (Ruiz-Fernández et al., 2020). The nursing care providers, in particular, are at the frontline to provide health care and as a large group; they are exposed to the virus (Alharbi et al., 2020). Nursing care providers attend to severe COVID-19 patients without patients' families and loved ones

present (Hossain & Clatty, 2021). They also witness the agony and death of their patients which predispose them to psychological issues including compassion fatigue. Reports of the mental burden on nursing care providers have appeared during this global health predicament (Huang et al., 2020). Since the second wave is hitting Uganda, healthcare facilities with already exhausted nursing care providers may be the worst scenario to handle the pandemic and nursing care providers are likely to experience compassion fatigue.

Compassion fatigue also called secondary traumatic stress is the cost of caring for those in pain, resulting from the desire to relieve the suffering of others (Ruiz-Fernández et al., 2020).

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Compassion fatigue appears to manifest as a continued experience of hyperarousal, worthlessness, helplessness, and disenchantment (Missouridou, 2017). Compassion fatigue leads to diminished quality of care provided, moral injury, mental exhaustion, poor relationship, sleep disturbances, somatization symptoms, depression, increase in turnover, and decreased productivity (Missouridou, 2017). This may be exacerbated by the COVID-19 pandemic. Thus, researchers caution against undermining compassion fatigue and recommended close monitoring of the well-being of nursing care providers to reduce compassion fatigue caused by the COVID-19 pandemic (Alharbi et al., 2020).

There is evidence to show that compassion fatigue is high among healthcare professionals particularly for those who work in an environment where they deal with large numbers of people such as in the case of those diagnosed with COVID-19 (Wallace et al., 2020). Recent studies in China, Indonesia, and America among the nursing care providers showed that 42%, 48.2%, and 52% had moderate and high levels of compassion fatigue respectively (Alharbi et al., 2020; Nurhidayati et al., 2021). The constant exposure to the agony of others, the desire to alleviate the pain of others, experiencing the death of patients, increased workload, empathy, gender, age, marital status, social support, long working hours, working experience, and emotional intelligence increase the odds of developing compassion fatigue (Alharbi et al., 2020; Doherty & Hauser, 2020).

Uganda reported its first COVID-19 case on 21st March 2020. Contact tracing was also introduced on the first and subsequent confirmed cases, with all contact being test and isolated. Consequently, the government closed Uganda's borders and banned international flights and water vessels from accessing the country except for cargo and goods. More stringent measures like total lockdown, restriction on public transport, closure of academic institutions and public places and curfew were put in place to contain the spread of COVID-19. As of August 2021, 128,212 confirmed cases and 3,269 COVID-19-related deaths were reported in Uganda (Fergus et al., 2021). As the country moves through its second wave of COVID-19 and with just 1% of the total population currently fully vaccinated, the situation is still worrying (Fergus et al., 2021).

Uganda has had a history of infectious diseases Marburg, Yellow Fever, Rift Valley Fever and Ebola Virus Disease (EVD) (Aceng et al., 2020). Of all these, the most deadly was EVD. The country has had four EVD outbreaks in 2000, 2014, 2017 and 2018. In 2000 the country registered 425 cases and 224 deaths (Aceng et al., 2020). These outbreaks have not only tested and strengthened the nation's response system but given healthcare workers experience to deal with deadly outbreaks. However, COVID-19 has overstretched health system and some healthcare workers succumbed to the disease (Amir, 2021).

In Uganda, the health worker density is only 0.71 indicating a huge shortage in care (Muzyamba et al., 2021). Such a dilemma coupled with other diseases like HIV, malaria and lower respiratory infections have put the healthcare system in the country at greater risk of collapse (Muzyamba et al., 2021). The onset of the second wave

of COVID-19 poses an even greater threat on the healthcare system particularly the frontline nurses providing direct care to COVID-19 patients (Kabunga & Okalo, 2021). Hospitals have run out of oxygen or have reported acute shortages forcing the medics to decide who gets the life-saving treatment (Nakazi, 2021). Nursing care providers on the frontline of the COVID-19 pandemic have the responsibility for decisions related to resource rationing and utilization which place them at increased risk for developing compassion fatigue (Doherty & Hauser, 2020). To date, however, while the nursing workforce is at the forefront in handling COVID-19 patients, there is limited evidence on their well-being during the pandemic; rather, there is a pre-occupation with concerns of flattening the curve. Hence the present study aimed to assess frontline nursing care providers' compassion fatigue and associated predictive factors during the second wave of COVID-19 in Kampala, Uganda.

## 2 | METHODS

### 2.1 | Study design, participants and setting

This study used a cross-sectional study design with a sample of nursing care providers who voluntarily responded to the survey questionnaire. These were nursing care providers registered with the Uganda Nurses and Midwives Council from different health centres in Kampala, Uganda. The sample size was estimated using a single population proportion formula (Kish & Frankel, 1974). The z-score ( $z$ ) was 1.96, the margin of error ( $e$ ) was 0.05 and the prevalence ( $p$ ) for unknown population because the proportion of nursing care providers with compassion fatigue is unknown. The calculated sample was 427 including 10% allowance for nonresponse. These included 270 nursing assistants and 157 registered nurses. The eligible participants were randomly invited to participate in the study. With the lottery method, each eligible participant was assigned a number, after which participants were selected at random. The study was conducted in one referral and four general hospitals. These are reception centres and care for COVID-19 patients in Kampala. Kampala is the epic centre of the COVID-19 pandemic with the highest cases of infections, deaths, and recovery (Olum & Bongomin, 2020). The nursing care providers in the capital city may be working with critical patients and thus susceptible to compassion fatigue.

### 2.2 | Study instruments

Stamm's Professional Quality of Life V-5 (ProQOL) was used to assess the levels of compassion fatigue. ProQOL is used with healthcare professionals who are exposed to conditions of pain and trauma (Stamm, 2010). Demographic information including gender, age, marital status, working experience and level of education was collected from the participants. We also developed a set of contextual

questions (workload, exposure to COVID-19 cases and remuneration/allowances) contributing to compassion fatigue. The ProQOL V-5 is a self-administered questionnaire consisting of 30 items in three subscales of burnout, compassion fatigue, and compassion satisfaction each with 10 items (Stamm, 2010). However, only 10 items measure compassion fatigue and were therefore used in this study. It is rated on a 5-point Likert scale ranging from 1(never) to 5 (very often). A compassion fatigue score of 22 or less indicates a low level, 23–41 denotes average level, and 42 and above signifies high levels of compassion fatigue. The tool reported Cronbach's alpha value of 0.82 for compassion fatigue in the Ugandan context (Kabunga et al., 2020). For this study, Cronbach's alpha for compassion fatigue was 0.82.

## 2.3 | Procedure

Study data was collected in April 2021. The eligibility criteria required participants to be registered nursing care providers working in central Uganda. One referral and four general hospitals agreed to participate in this study. This was after initial contact with hospital administration officers in Kampala, Uganda. Following the approval of the research protocol, potential participants were identified, informed about the purpose of the study, the right to voluntary withdraws if appropriate, and asked to participate after signing the written consent forms. The nursing care providers who volunteered completed the informed consent and questionnaires.

## 2.4 | Data analysis

Data from the field was entered in a Microsoft Excel spreadsheet 2016, cleaned, and imported into STATA version 13 for analysis. In the analysis of the prevalence of compassion fatigue, the scale was analysed as a categorical variable. Descriptive analysis was conducted on demographic and compassion fatigue-related variables. Quantitative data were compared using Pearson's chi-square and Fischer's exact test-in cases where the cell count was <5. Variables with a  $p < .05$  at binary logistic regression level were included in the multivariable logistic regression model. The model fitness was checked using the Hosmer-Lemeshow test and a backward conditional logistic regression method was used to determine variables that independently associated with the outcome variable. A  $p$ -value of <.05 was considered to be statistically significant.

## 3 | RESULTS

Overall, 409 participated, of which 12 questionnaires were excluded due to missing information, enabling 395 to be eligible for further analysis, and their characteristics are presented in Table 1. Of the total 395 participants, 58.23% ( $N = 230$ ) were female, 39.76% ( $N = 157$ ) had a diploma, 47.09% ( $N = 186$ ) were single, 43.54% ( $N = 128$ ) had worked for 11–15 years, more than half, 54.94% ( $N = 217$ ) had an exposure to COVID-19 cases and 43.54% worked for more than 10 hr a day.

| Variable                   | Category          | Frequency | Percentages |
|----------------------------|-------------------|-----------|-------------|
| Sex                        | Men               | 165       | 41.77       |
|                            | Women             | 230       | 58.23       |
| Marital status             | Single            | 186       | 47.09       |
|                            | Married           | 152       | 38.48       |
|                            | Separate/widowed  | 57        | 14.43       |
| Level of education         | Certificate       | 117       | 29.62       |
|                            | Diploma           | 157       | 39.75       |
|                            | Bachelor's degree | 111       | 28.10       |
|                            | Master's degree   | 10        | 2.253       |
| Working experience         | 1–5 years         | 100       | 25.32       |
|                            | 6–10 years        | 92        | 23.29       |
|                            | 11–15 years       | 128       | 32.41       |
|                            | >15 years         | 75        | 18.99       |
| Exposure to COVID-19 cases | Exposed           | 217       | 54.94       |
|                            | Not exposed       | 178       | 45.06       |
| Workload                   | 4–6 hr            | 100       | 25.32       |
|                            | 7–10 hr           | 123       | 31.14       |
|                            | >10 hr            | 172       | 43.54       |
| Remuneration/allowances    | Less satisfactory | 191       | 48.35       |
|                            | Satisfactory      | 204       | 51.65       |

TABLE 1 Demographic and contextual information of the respondents ( $N = 395$ )

### 3.1 | Prevalence of compassion fatigue

Based on the ProQOL manual guidelines, 49.11% ( $N = 194$ ) had high levels of compassion fatigue, 29.62% ( $N = 117$ ) reported average levels of compassion fatigue and 21.27% ( $N = 84$ ) indicated that had low levels of compassion fatigue (Table 2).

### 3.2 | Analysis of factors related to compassion fatigue

Table 3 shows a univariate analysis between compassion fatigue and each independent factor variable. The results show that sex of the participants ( $p$ -value = .005), exposure to COVID-19 cases ( $p$ -value = <.001), workload ( $p$ -value <.001), remuneration/allowances ( $p$ -value = <.001) and work experience ( $p$ -value = <.001) were correlated with compassion fatigue. However, marital status and level of education were not related to compassion fatigue.

### 3.3 | Multivariable logistic regression analysis

To identify factors that predict compassion fatigue, an ordered logistic regression analysis of the model that consisted of the variables that had significant  $p$ -values in Table 2 was conducted. The results in Table 4 show that the respondents who had 11–15 years of working experience were 0.147 times less likely to have compassion fatigue compared to those who had working experience of 1–5 years ( $p$ -value = <.001). The results also show that the respondents who had exposure to COVID-19 cases were 0.266 more likely to have compassion fatigue compared to those that were not exposed ( $p$ -value = .019). The results further indicate that the respondents who worked for more than 10 hr a day were almost 3 times more to experience compassion fatigue than those that worked for 4–6 hr ( $p$ -value = .003). Lastly, the results in Table 4 reveal that the respondents who were less satisfied with their remuneration/allowances were 0.149 times more likely to report compassion fatigue than those who were satisfied with their remuneration/allowances ( $p$ -value = <.001).

## 4 | DISCUSSION

The aim of this was to assess frontline nursing care providers' compassion fatigue and associated predictive factors during the second wave of COVID-19 in Kampala, Uganda. Results show that 49.11% had high levels of compassion fatigue. This is not a surprising result because while previous outbreaks in the country strengthened the nation's response system and gave healthcare workers experience, COVID-19 has overstretched health system and some healthcare workers succumbed to the disease (Kabunga & Okalo, 2021). The health system was not adequately prepared for such big number of patients and deaths amidst the limited resources. Nursing care

providers worked without Personal Protective Equipment (Kabunga & Okalo, 2021). This may account for increased infections of health-care workers and nursing care providers are in a state of anxiety and fear which could have caused a feeling of hopelessness. Previous studies conducted under the global pandemic reported adverse effects that the usual work activity of nursing care providers has on them (Ruiz-Fernández et al., 2020). COVID-19 seems to be a long-term pandemic and therefore nursing care providers caring for COVID-19 patients need to better coping mechanism.

However, 21.27% of the participants indicated that had low levels of compassion fatigue. This is evidence to show that nursing caregivers may feel a sense of satisfaction and sense of accomplishment as they overcome anxiety and fear experienced during COVID-19, a view echoing the result of a study among nursing care providers in Greece (Missouridou et al., 2021). Thus, the initial impact, engaging in empathetic relationship with COVID-19 patients may lead to opportunities for growth and appreciation of life (Missouridou et al., 2021). Nevertheless, as researchers recommend, there is need for recognition of personal loss history, unresolved issues and acceptance of personal limitations which is necessary for nursing care providers suffering from compassion fatigue (Missouridou, 2017).

Overall, the results confirm results from previous studies conducted under similar circumstances and populations in China, Indonesia and America (Alharbi et al., 2020; Nurhidayati et al., 2021). However, the results in this study revealed that nursing care providers have suffered generally higher levels of compassion fatigue than reported before the COVID-19 pandemic (Arkan et al., 2020). Compared to previous studies, our findings reported higher levels of compassion fatigue than 23% in Greece, 38.9% in Poland and 24.2% in China (Missouridou et al., 2021; Ogińska-Bulik et al., 2021; Yu et al., 2016). This incongruence may be attributed to differences in sample sizes, departments, cultures, regions, resources, and working environments in different countries.

Nursing care providers with working experience reported higher scores of compassion fatigue. This may be attributed to the fact that the less experienced nursing care providers identified with the patients more easily (Borges et al., 2019). The result collaborates the general belief that compassion fatigue lessened with an increase in working experience (Missouridou, 2017). The finding of the current confirms results of other studies which found compassion fatigue as more significantly correlated in nursing care providers with more years of experience compared with fewer years of experience (Borges et al., 2019). However, gender, marital status, and education were predictors of compassion fatigue. These results are not surprising because previous studies reveal inconsistent findings. Our results are in tandem with previous research which shows no correlation between compassion fatigue and demographic factors (Borges et al., 2019; Muliira & Ssendikadiwa, 2016). Other studies, however, reveal a statistically significant correlation between compassion fatigue and demographic factors (Ruiz-Fernández et al., 2020). In a systematic review of 71 studies, a correlation between socio-demographic characteristics and compassion fatigue was inconsistent (Cavanagh et al., 2020).

TABLE 2 Level of compassion fatigue

| Levels of compassion fatigue | Frequency/(%). |
|------------------------------|----------------|
| 22 (Low)                     | 84 (21.27)     |
| 23–41 (Average)              | 117 (29.62)    |
| (42) (High)                  | 194 (49.11)    |

TABLE 3 Factors associated with compassion fatigue

| Variable                          | p-value |
|-----------------------------------|---------|
| Sex                               | .005*   |
| Marital status                    | .198    |
| Level of education                | .182    |
| Exposure to COVID-19 cases        | <.001*  |
| Workload (working hours per week) | <.001*  |
| Remuneration/allowances           | <.001*  |
| Work experience                   | <.010*  |

\*Statistically significant variables at  $p < .05$ .

TABLE 4 Multivariable logistic regression analysis

| SN | Explanatory variable                  | Coef.  | OR    | p-value |
|----|---------------------------------------|--------|-------|---------|
| 1  | Sex                                   |        |       |         |
|    | Women versus men                      | -0.294 | 0.746 | .221    |
| 2  | Working experience                    |        |       |         |
|    | (6–10) versus (1–5)                   | -1.138 | 0.321 | .016    |
|    | (11–15) versus (1–5)                  | -1.917 | 0.147 | <.001*  |
|    | (>15) versus (1–5)                    | -1.956 | 0.141 | <.001*  |
| 3  | Exposure to COVID-19 cases            |        |       |         |
|    | Exposed versus not exposed            | -1.326 | 0.266 | .019*   |
| 4  | Workload                              |        |       |         |
|    | (7–10) versus (4–6) hr per week       | 0.166  | 1.181 | .638    |
|    | (>10) versus (4–6) hr per week        | 0.960  | 2.613 | .003*   |
| 5  | Remuneration/allowances               |        |       |         |
|    | Less satisfactory versus satisfactory | -1.905 | 0.149 | <.001*  |

\*Statistically significant variables at  $p < .05$ .

The results show that compassion fatigue increased with an increase in workload/working hours. Nursing care providers are the largest and most significant group in the healthcare sector. They work in an increased workload to meet the complex necessities of their patients putting them at risk of compassion fatigue (Smith & Publicity, 2012). Additionally, they take care of the rapidly increasing number of COVID-19 patients for a long period. In line with the findings of this study, Hunsaker and colleagues established that hours

worked per week were significantly related to compassion fatigue among nursing care providers (Hunsaker et al., 2015). Similarly, another survey of nursing care providers from 11 tertiary hospitals in China revealed that compassion fatigue was related to work hours per day (Wang et al., 2020).

The results also show that the nursing care providers who had exposure to COVID-19 were more likely to have compassion fatigue compared to those that were not exposed. Nursing care providers exposed to COVID-19 cases may be particularly affected by severe emotional and psychological distress which is associated with the development of compassion fatigue (Alharbi et al., 2020). Additionally, frontline nursing care providers are susceptible to exposure to risk infection and are concerned with potentially contracting the virus themselves (Alharbi et al., 2020). The contextual factors surrounding the COVID-19 pandemic such as ease of transmission, limited personal protection equipment, and uncertainty of the pandemic trajectory affect the welfare of the nursing care providers (Usher et al., 2020). Sufficient personal protective equipment should be provided to the nursing care providers. Studies on factors influencing work-related stress in nursing care providers include deadly ill among others (Garrosa et al., 2010). Similarly, Kenny and Hull (Kenny & Hull, 2008), assessed compassion fatigue in nursing care providers caring for soldiers and concluded that multiple severe and life-threatening injuries predicted compassion fatigue.

The results further reveal that the nursing care providers who were less satisfied with their remuneration/allowances reported higher levels of compassion fatigue compared to those who were satisfied with their remuneration/allowances. Less satisfaction with remuneration may account for nursing care providers' moonlighting, thus witnessing prolonged suffering and exposure to deaths of the patients contributing compassion fatigue. This result suggests that increasing pay for nursing care providers could serve as an effective approach to minimize or prevent compassion fatigue. In agreement with our results, (Andriani et al. (2017)) found a significant correlation between compassion fatigue and pay satisfaction.

#### 4.1 | Limitations of the study

The results of this study aimed at providing clarity regarding the prevalence and the predictive factors of compassion. However, the researcher is unable to infer causality from the observed correlation due to the cross-sectional design used in the study. The study also used self-report questionnaires with the possibility of recall bias in the results. The study did not consider the component of compassion satisfaction yet it could have affected the quality of life of the participants. Instead of developing fatigue due to exposure to suffering and traumatization, nursing care providers may develop high morale and resiliency in adversity while experiencing pleasure and a sense of personal fulfilment and satisfaction. Additional research is needed to expand and clarify the present results of compassion fatigue in nursing care providers in Uganda.

## 5 | CONCLUSION

A substantial proportion of frontline nursing care providers in Kampala, Uganda reported high levels of compassion fatigue. Job experience, exposure to COVID-19 case, long working hours, and remuneration/allowances were predictors of compassion fatigue. All these aspects in the nursing profession should not be ignored. The nursing leadership should create a concussive work environment that is healthy and safe.

### 5.1 | Relevance for clinical practice

This is a novel study conducted in Uganda that assesses the prevalence and predictors of compassion fatigue among nursing care providers during COVID-19 in Uganda. The findings from this study results suggest that there is a need for continued assessment of the mental impact of nursing care providers given that they are vital for the proper functioning of health institutions in Uganda. These findings can be used to inform more tailored compassion fatigue management strategies for nursing leadership to combat the current health crisis. The results show the importance of providing personal protective equipment to the nursing care providers and reduce their workload during COVID-19.

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### CONFLICT OF INTEREST

The author(s) declared no potential conflict of interest concerning the research, and/or publication of the article.

### DATA AVAILABILITY STATEMENT

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### ETHICAL APPROVAL

This study was approved by the Makerere University School of medicine Research and Ethics Committee Institutional Review Board (UG-REC-027). Participants in this study were recruited based on written informed consent and confidentiality was maintained throughout the entire research protocol process. The study was anonymous and participants had the right to withdraw at any time.

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