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ABSTRACT

Background: **Corona virus disease 2019 (COVID-19) resulted in unprecedented stress on hospital and critical care systems globally. Healthcare professionals are critical resources for every country in control of any outbreak and their health as well as safety is crucial for the continuous safety of patient care. Health workers offering patient care during pandemic outbreaks are under exaggerated stress linked to increased infection risk, stigmatization, low staffing, as well as uncertainty, hence comprehensive support is crucial during and after the outbreaks.**

Objectives: **The aim of the study was to describe the experiences of critical care unit nurses with management of COVID-19 patients at Kenyatta National Hospital (KNH), Nairobi City County Kenya.**

Methods: **This was an exploratory study using an inductive approach based on semi-structured in-depth interviews conducted face to face with 25 nurses actively working in critical care units with COVID-19 patients. Interviews were conducted until saturation was reached. Convenience sampling was used to select respondents for the study. Study data was interpreted according to themes identified using thematic analysis.**

Results: **The experiences of nurses managing COVID-19 patients were summarized into four major themes, difficulties in care and treatment, responses to challenges, corresponding necessities and learnt lessons.**

Conclusion: **The experiences of nurses managing COVID 19 patients in KNH have been affected psychologically and emotionally. They experienced resistance due to myths and misconceptions related to false information from unreliable sources circulating on social media which contributed to low uptake of COVID 19 vaccine by the eligible population. One of the biggest challenge**

was living in fear and terror due to risk of catching the virus and spreading to family members. Interventions to boost nurses' psychological and emotional energy are recommended.

INTRODUCTION

The first case of COVID-19 was detected in Wuhan province, China by December 2019 towards the end spreading across several nations globally; as well it is a disease which was not known to the world [1]. Since Chinas first reported case, there was a consistent rise in incidence rates as well as increased mortality rates across the globe [2]. In March 11, 2020 it was announced global pandemic by World Health Organization (WHO) [3]. Pandemic is considered an emergency in public health that can lead to several deaths as well as cause social and economic destructions [3].

COVID-19 can be symptomatic with variable symptoms or asymptomatic and it may be severe causing death. It has an estimated incubation period ranging from between two to fourteen days and key symptoms identified are cough, dyspnea, fever, tiredness, muscle pains, headaches, new loss of taste or anosmia, congestion, loose motion, or nausea [4]. It may cause viral pneumonia with extra pathological complications and mortality is associated with preexisting problems such as male gender, old age, diabetes mellitus, blood/heart diseases, and presence of hypertension [5]. And this complicates working environment for critical care nurses offering services to these patients because they are also prone to catching the infection in their line of duty causing a strange experience to nurses during this period [6]. COVID-19 occurred in different waves and variants causing confusion among many nurses caring for this patient's resulting to varying experiences and challenges [7].

In Africa each country reported their cases differently depending on when the first case was detected and the prevalence rates also varied per country. The first case in Kenya was reported in March 13th, 2020 with a steady rise in incidence and prevalence rates [5, 7].

Due to rising cases of this disease, global health care systems faced challenges causing greater pressure on nurses psychologically as they offered critical care to COVID-19 patients [8]. Moreover, with intensified nursing staff shortage and rapidly changing guidelines and working conditions nurses themselves experienced a wide range of symptoms while working under pandemic conditions. Caring for COVID 19 patients required knowledge adjustment since there were no known definitive drugs to treat and manage the disease [8]. Nurses were offering care amidst challenges with variants and waves of COVID 19 transmission causing difficult management strategies [1, 9]. Exposure rates to risk of infection is relatively higher among nurses than other healthcare workers compared due prolonged contact with patients a situation which gives nurses varying emotional experiences [10]. Depression, insomnia and anxiety were identified as the major mental health problems that affected nurses who were treating patients with severe acute respiratory syndrome (SARS) [1, 9]. Additionally, nurses experienced massive workload, prolonged fatigue, and threat to risk of infection, as well as frustration of dying patients under their care.

Studies revealed that among the health care professionals who were infected with

COVID-19 majority were nurses at 38.6%which was attributed to the fact that they spend most of their time offering close care to critically ill patients, and that some patients were asymptomatic COVID-19 cases contributing to their higher risk of infection with the virus [15]. Perceptions vary among nurses for instance in Italy there were suicide of nurses providing care to very sick patients' which shows how nurses respond differently to challenges as well as work crisis [9].

Additionally, there is evidenced report on the unpredictable changing global trend in occurrence of emerging diseases such as avian influenza (AVIAN FLU-H5N1), Human swine influenza (SARS), Middle East Respiratory syndrome (MERS), COVID-19 and MONKEY POX which was announced recently by WHO. They mostly appear with consistent challenging experiences to many critical care nurses (CCNs) giving care for these patients globally showing worry trend [10]. Literature review shown that even though there is ample literature describing the experiences of healthcare professionals including nurses in providing care during COVID-19 pandemic, qualitative exploratory studies on the Kenyan population are scarce. Therefore, the aim of this study was to describe nurses' experiences of managing COVID-19 patients during the initial phase of pandemic.

METHODOLOGY

Study design

This was an exploratory study using an inductive approach aimed at identifying nurses' experiences with care of COVID-19 patients in critical care setting at Kenyatta national hospital, Nairobi County Kenya during the pandemic. Exploratory design was useful in this study due to the fact that COVID-19 was a newly emerging disease pandemic that had no known treatment.

Sample

Due to the pandemic, the study sample was recruited using the convenience sampling method and nurses were interviewed face to face in a well-ventilated room with free flow of air. Interviews were continued until the data became repetitive and were concluded upon reaching data saturation, after interviewing 25 nurses. Inclusion criteria were actively working as a nurse in COVID-19 critical care unit ward and consenting to participate in the study. Exclusion criteria were declining to participate in the study and having quitted the duties in the COVID-19 unit.

Data collection

Individualized face to face interviews were conducted with participants to collect data. Audio recordings were also done at some point to collect and record certain vital information which was later transcribed. Data collected was checked for consistency and completeness, and then prepared for thematic analysis. No name was recorded on the interview guide and the conclusion of data collection was determined by saturation. The interviews did not last for more than 25 minutes.

During this process COVID 19 protocols were observed by ensuring social distance of 1.5 meters between the participants, wearing face mask throughout, hand washing with

soap and running water or using alcohol hand rub sanitizers and avoiding handshake to reduce the risk of infection.

Data analysis

Generated data in form of field notes, audio recordings and transcripts were analyzed thematically. Before generating themes data was transcribed verbatim, back translated, cleaned, read word for word and assign codes. Data was analyzed in form of themes to describe nurses' experiences with COVID -19 patients.

Ethical considerations

Approval for the study was obtained from Kenyatta University Ethics and Research committee (PKU/2461/11593), NACOSTI (License NO. NACOSTI/P/22/18177), Kenyatta National Hospital/ University of Nairobi Ethics and research Committee (KNH-UoN ERC) (P656/07/2022). Researcher also obtained informed consent from the participants by signing consent form before joining the study. Participation was voluntary; the aim of the study was explained to study participants. Details of the participants were only Known to the researcher as such confidentiality was maintained by limiting access to key codes, ensuring that files containing electronic data are password-protected and encrypted, files containing electronic data are closed when computers were left unattended to as well as storing research data securely in locked cabinets throughout the study period.

Strengths and limitations

The main strength of this study is that it addresses the dearth of research examining the experiences of nurses managing patients in critical care units at Kenyatta national hospital during the COVID-19 pandemic. However, the key limitation of the study is that the results are not generalizable beyond the study participants.

RESULTS

Socio-demographic information

Participants from all the five units were interviewed, both male and females were considered according to inclusion criteria. Characteristics of respondents were 15 (60%) females, 10 (40%) males, and single ladies 8 (32%), married (56%) 14, and others were 3 (12%). Education status constituted diploma 6 (24%), higher diploma 9 (36%), degree 8 (32%), and masters 2 (8%).

Themes and excerpts

Four major themes emerged following data analysis: (1) difficulties nurses faced (living in fear and terror), (2) nurses' reactions to raised difficulties (regular training), (3) corresponding necessities (psychosocial and moral support), and (4) gained experiences (transition to virtual learning) during management of patients diagnosed with this novel viral disease.

Difficulties and critical issue raised by nurses offering care and treatment

Living in Fear and Terror

The nurses reported the dread and horror of emotional and psychological reactions to their worry of contracting and spreading COVID-19. Many of the nurses expressed concern about accidently passing the illness

to family members, putting their loved ones at danger. Due to the fact that some patients were a symptomatic contributed to a more difficult situation to the nurses. They also stated other reasons such as patients' characteristics, crowded units and the use of PPEs.

> *"It [COVID-19 outbreak] was a terrible experience for me. A disease, when you come in contact by touching body fluids or inhaling droplets, you can get infected. It was a horrible experience that you're coming in contact with patients without properly using personal protective equipment." (N10 Cardiac CCU).*

Reactions to issues raised by nurses caring for patients

Regular Training and updates

The participant's reported that the changing nature of the disease occurrence resulted to and influenced their need of attending regular trainings and seeking updated information from the most reliable sources in order to keep up with most recent patient management strategies. To gain the essential information and abilities, nurses also depended on website resources such as learning modules, tutorials, and instructional audiovisuals accessible information in platforms such as YouTube.

> *"We had to search for information on websites for training and tutorials to keep updating ourselves with what is going on currently. The training included simple procedures such as hygiene, donning and doffing protective equipment's and the disease pathophysiology." (PICU Nurse17).*

Corresponding necessities for nurses to offer care to patients with COVID-19

Psychosocial and Moral Support

The participants mentioned that emotional support for nurses during the COVID-19 pandemic was necessary. Nurses experienced trauma due to challenges such as witnessing high number of fatalities, limits on family visiting, and limited time available to offer personalized care and assistance to patients which caused huge emotional pain to them.

> *"Psychosocial and moral support was crucial, as many of our colleagues were silently suffering from the pain of witnessing rapid deaths and increased patients suffering from this disease, and their needs often went unattended due to time and work constraints."(N18 Cardiac CCU).*

Experiences gained by nurses

Transition to Virtual Learning

Participants' mentioned that they witnessed a drastic global change in the learning platform where a significant shift to virtual learning occurred as a result of the influence to curb COVID 19 spread a change that has never been seen before the disease incidence. In compliance to the CDC recommendations on event cancellations and public health measures to reduce the spread of COVID-19 several institutions transited to virtual

learning. Nurses discovered that learning could still continue remotely outside a crowded classroom setup through various digital channels such as zoom, Google meet among others to deliver accurate and relevant information.

DISCUSSION

Participants who cared for patients diagnosed with Corona virus disease 2019 mentioned that they had feelings of fear and stress of catching the viral infection. In conjunction, nurses' experiences of anxiety, sadness, lack of power to control the situation as well as guilt of observing patients suffering and death was different for individual nurses. Similarly other studies reported that initially nurses had experienced fear and confusion towards the new virus and its repercussions, which was common among health care workers during physiological distress [3]. In consistency they agreed that COVID-19 experiences were new and different from other viral pandemic diseases occurring ever before. This difference is due to its rapid transmission, highly infectious with absence of proven effective vaccines or therapies initially as well as greater mortalities [8]. Nurses had the nervous feeling of being infected or spreading an infection to their families, friends and general population, which is consistent with previous international studies [7]. A combination of high risk of infection with the new virus and fear of unknown emerging disease which captured global attention contributed to intense anxiety among majority of nurses offering patient care resulting to their confusion, living in fear and terror [14].

Staying with at risk family members such as infants, pregnant women, sick and geriatric parents, contributed to the worst experience and distress of accidentally spreading the virus a scenario similar to other international studies [13].

Lack of information and training deficit about the disease increased further confusion and reluctance towards caring for these patients. Nurses felt the need to understand more concerning care strategies since they were unsure about the disease transmission, risks, preventive measures, and treatment. Nurses reported that to fulfil their much needed information about this virus in order to reduce stress, they depended on reviewing WHO and Center for disease control circulars. Though, they also considered more updates in social media, however, they stressed its skewed impact in perpetuating confusion towards COVID 19. This was in concurrence with studies conducted in China [4]. Nurses' capability and readiness to offer services during outbreaks are influenced through sufficient education, intensive training and receiving guidance from relevant stakeholders [11].

Additionally, they described feeling distressed due to frequent shifting information and changing guidelines from credible sources on COVID-19 transmission and patient care. More so, the variants and changing waves caused a huge challenge in service delivery as reported by majority of nurses. Short courses and regular trainings were offered to bridge this gap and enable them readjust to new guidelines. This was

similarly noted in another study where recurrent changes in policies particularly related to treatment guidelines contributed to serious confusion where nurses resorted to seeking information from credible sources [12].

Participating nurses further mentioned that regular communication to general population by the government and various stake holders through media channels by giving reliable and educative information on transmission, control and preventive measures consequently contributed to dispelling rumors, which positively influenced community perceptions on disease control measures. This contributed to a significant decline in prevalence rates of infection in the general population. Other studies on epidemic outbreaks have similar findings, indicating vigorous educative messages contributed positively to changes in perspective of the community about various diseases influencing directions on control strategies. Furthermore, some studies concur that health care workers engagement in education of their families and patients as well as institutional influences eased the effects of rumors and misconceptions [9].

Psychosocial and emotional support during COVID-19 pandemic was considered by majority as a relevant aspect in caring for patients in critical care unit during that period. It was emphasized that frequent checks, debriefings and counselling sessions offered to nurses were more crucial which gave them some hope during difficult times. It assisted in gaining confidence when they were confronted with numerous challenges of caring for their own needs, as well as emotional pain due to high number of fatalities, limits on family visiting, and limited time to offer personalized care in assisting patients. Furthermore, it offered solutions to issues about safety and family's welfare needs [11]. Concerns such as physical distancing, restraining from sharing hugs and body contacts gave many nurses difficult moment especially those with young children at home. It was described by most nurses that it was hard for them to avoid handling their babies especially the breastfeeding ones during that period. The findings were in agreement with studies conducted in India where nurses shared similar sentiments [1].

Most significant lesson realized by majority of participating nurses was drastic shift to virtual trainings through digital platforms in most learning institutions in an attempt to contain COVID-19 spread. The transition has changed the mode of information delivery in many academic institutions across the world, a situation which was strengthened by COVID-19 outbreak. This has permanently changed the mode of conducting meetings in health sectors enhancing efficiency globally. This is in concurrent with international studies conducted in USA where many meetings shifted to digital platforms [11].

CONCLUSIONS

Emergence of COVID-19 contributed to a remarkable change in nursing care service delivery in CCU. It contributed to frequent readjustment and adapting to new strategies of service delivery to meet patient healthcare needs.

Therapeutic relationships between nurses, patients and significant others changed suddenly because of limited family visits and introduction of social distancing as strategies to curb spread of COVID-19. Limited information and lack of training related to SARS-COV-2 created intense fear and uncertainty among nurses. Nurses' emotional stress was too high due to perceived risk of contracting the virus during care of patients contributing to living in fear and terror.

Disease control success was majorly due to continuous prioritization of prompt isolation, efficient knowledge sharing, contacts tracing, effective reporting and surveillance strategy, concurrent testing, collaborations and cooperation within and outside the hospital. Regular community involvement, physical distancing, right respiratory as well as hand hygiene are considered top priority control measures during such pandemic outbreaks. Advocating for advanced technologies, adaptation of best practices and creating innovative concepts to meet the challenges featured.

Finally, strict adherence to infection prevention protocols emerged the most significant control measure and nurse's expectations were matching as compared from different CCUs in this hospital.

Competing interests

The authors declare no competing interests.

Author's contributions

ECW conceptualized and designed the study. NM and GG Contributed in guidance as lecturers. All authors have reviewed and approved the final manuscript.

RECOMMENDATIONS

Recommendations for research

Strengthen and focus more on clinical research areas due to continuously unpredictable global epidemiological trends in occurrence of emerging and reemerging diseases such as COVID 19 and currently the Monkey pox (Mpox), which has rapid spread causing massive deaths in the community. Hence, healthcare workers including nurses should be encouraged to regularly take active role in research participation in order to remain current with knowledge in readiness to handle any pandemic eventuality in the community.

Recommendations for policy

Policies on safety measures such as infection prevention and control should be strengthened in order to reduce disease burden in the community. Regular reviewing and incorporation of relevant changes to meet the needs is crucial. Focusing on nurse's mental well-being is significant in countering increased pressure, stress and burden of witnessing massive patient deaths due to lack of clear treatment protocols and guidelines during the initial outbreak phases.

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