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Knowledge, Attitude, and Practice of Hospital Nurses Caring for Older People During the Covid-19 Pandemic in Tanzania

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Abstract

Introduction: *Nurses have a role in providing quality care for older people with Covid-19 through their knowledge, and skills. We aimed to examine nurses' knowledge, attitude, and practice (KAP) in caring for older people in the context of the COVID-19 pandemic.*

Methodology: *This study used a quantitative cross-sectional design. Simple random sampling was used to recruit nurses (N=379) working in COVID-19-designated departments at Muhimbili National Hospital (MNH) in Tanzania. Data were analysed using SPSS version 26. Pearson's chi-square tests were used to examine relationships between KAP variables, and linear regression was used to test the correlations between KAP variables.*

Results: *The majority of participants had low knowledge (61.5%) and negative attitudes (63.9%) regarding caring for older people hospitalized with COVID-19, and around 20% had less effective practice. Chi-square tests between knowledge and practice and between attitude and practice which were 172.710a and 223.460a respectively indicated there was a strong relationship between the variables (P=0001). Regression analysis between knowledge and practice and between attitude and practice were 6.468 and 28.557 respectively which also revealed a strong correlation between these variables (r=1).*

Conclusion: *These results suggest that nurses need additional education to effectively care for elderly patients hospitalized with COVID-19 in Tanzania.*

Keywords: Elderly Care, Knowledge of Nurses, Covid-19, Attitude of Nurses, Tanzania, Practice of Nurses.

Introduction

The increasing number of older people mean that population aging is becoming a major public health concern globally [1]. The number of older people is expected to increase to one in six by [2]. According to the, by 2050, the people aged over 60 years will increase from 12% in 2015 to 22%, and 80% of them will be from developing countries [3]. In Tanzania, the number of people aged 60 years and over will increase from 4% to 10% of the total population by 2050 [4]. The older population is known to have weakened immune system and is therefore at risk for many health problems, including infectious diseases such as coronavirus disease 2019 (COVID-19) [5, 6]. In addition, elderly people are considered a vulnerable group because of the biological effects of aging, which lead to common physical health problems

In Tanzania, the first case was confirmed on 16 March 2020 and by 2022, there have been 42,927 confirmed cases of COVID-19 with 846 deaths [7, 8]. Evidence suggested that older people were at high risk for acquiring and dying from COVID-19 , and the older population accounted for around 15% more COVID-19-related deaths than younger people (Morley & Vellas, 2020). A US study showed that 45% of all COVID-19 deaths occurred in homes for older people, and 42%–57% of COVID-19 deaths were among older people [9, 10]. In addition, a study conducted in Tanzania indicated that the burden of stroke, a condition that mostly affects older people, had increased following COVID-19 infection. The severity of symptoms, along with uncertainties in health outcomes and circumstances surrounding end-of-life care were also higher among older patients compared with younger patients, which also increased the burden on healthcare systems [11, 12]. In general, the increasing older population requires an adequate number of healthcare providers with gerontology skills this need is heightened in crisis or pandemic situations. The shortage of nurses is already a worldwide burden, and the COVID-19 pandemic makes it even worst [13, 8]. The nurses have a high exposure to COVID-19, and therefore, require special attention (Huang et al., 2020). Assessing nurses' KAP toward COVID-19 is significant to identify the gaps for prevention and control of the negative outcome [14]. It also serves as one of the indicators of the nurses' readiness in dealing COVID-19 transmission [15]. It has been noted that the large number of older people in Sub-Saharan African countries, including Tanzania, has increased the burden on the scarce healthcare resources available to care for this population.

Approximately half of all healthcare workers globally are nurses [16]. As nurses form a large component of the healthcare workforce, they were at the forefront of COVID-19 care for older patients. Because COVID-19 placed older people at increased risk given their weakened immunity, nurses needed good knowledge, attitudes and practices (KAP) relating to caring for older people in this context [17]. However, many studies reported that nurses lacked knowledge about providing care during COVID-19. found that 43.5% of nurses had low knowledge despite their risk for contracting COVID-19. Similarly, a study conducted in Dubai indicated that 42.6% of nurses had low knowledge about caring for patients with COVID-19. Another study found that 16.8% of nurses did not know that older people were at high risk for developing a severe case of COVID-19 [17-19]. Furthermore, gaps in knowledge and attitudes were highlighted in a study from Yemen that assessed nurses' KAP in relation to COVID-19 [20]. The study recommended to healthcare authorities must help to alleviate anxiety, fear, and panic and improve nurses' KAP. However, the study did not identify the required strategies towards improving KAP. A study from Ethiopia found that 26%, 28% and 33% of nurses had low knowledge, attitudes and practices, respectively [21].

Ahmed et al. (2020)[2] reported that that 48% of healthcare workers were unaware of required measures to combat COVID-19, and 38% were practicing inadequately to combat the disease. In addition, despite older people with COVID-19 being at high risk for hospital admission, needing intensive care and dying, there appeared to be limited evidence of nurses' KAP regarding provision of effective care for this group (Lloyd-Sherlock et al., 2020)[12]. Research also suggested that nurses experienced negative emotions, which impacted provision of immediate care [23]. A study conducted in Zanzibar indicated that despite older people requiring healthcare workers with specific knowledge, skills, attitudes and practices, many healthcare workers were not adequately prepared to care for this population [24]. The severity of the COVID-19 pandemic among older people highlighted the need for effective nursing care to promote good health among this group [5]. As nurses were frontline care providers for patients with COVID-19, they needed to be well informed about the pandemic [25, 26]. indicated that preparation for nurses should include frequent training to prevent stress and ensure better quality care for older people with COVID-19. The evidence from the refereed studies including the study conducted in Zanzibar (Tanzania islands) indicates the gap identified among nurses towards inadequate KAP regarding caring older people hospitalized with COVID-19. So, it is important to assess KAP among nurses in Tanzania to inform measures to promote good quality care for older people in the context of the COVID-19 pandemic. Therefore, we aimed to examine nurses' KAP in caring for older people in the context of the COVID-19 pandemic. The results may form a basis for further improvement measures and provide a reference point for subsequent training to improve the quality of care for older people in pandemic or crisis situations. The results of this study may also help in developing health policies targeting nurses to increase their KAP through training and inform further intervention studies to improve nurses' practices in caring for older people with COVID-19.

Methods

Design

A cross sectional design was used to identify the status of KAP among nurses regarding care for older people hospitalized with COVID-19 and clarify the correlations between KAP variables at a single point in time.

Setting and Study Population.

The study population was nurses working at Muhimbili National Hospital (MNH), which is a national referral, consultant and teaching hospital located in Dar es Salaam, Tanzania. MNH is a 1,500-bed facility that attends to 1,000–1,200 outpatients per day and admits 1,000–1,200 inpatients per week with 29 departments and 107 units organised in eight directorates: medical services, clinical services, nursing services and quality, clinical support services, human resources, finance and planning, technical services and information and communications technology. MNH was selected for this study as it is a national referral hospital and receives referrals, including COVID-19 cases, from all over the country.

Sampling and Sample Size

Simple random sampling of nurses in designated three COVID-19 departments at MNH was used to recruit nurses involved in providing care for older people hospitalized with COVID-19. The sample was obtained using six steps: defining the population, choosing the sample size, listing the population, assigning numbers to the units, preparing random numbers, and selecting the sample. The population (N=767) for this study was all nurses working in three COVID-19 departments. The sample size of 379 participants was calculated using the Kish Leslie formula [27] as follows.

$$n = \frac{Z^2 p (1-p)}{e^2}$$

Whereby n is the required sample size, Z is the 95% confidence level (standard value of 1.96), P reflects the estimated prevalence of lack of knowledge regarding COVID-19 among nurses (44%) (Nemati et al., 2020) and E represents the level of significance at 5% (0.05); therefore [21]:

$$\frac{1.96 \times 1.96 \times 0.44 (1-0.44)}{0.05 \times 0.05} = 378.628096 \sim 379$$

A lottery method was used to identify participants. To select the required sample of 379 participants, pieces of paper that indicated consecutive numbers from 1 to N were prepared and placed in a box. Then, each nurse was asked to take one piece of paper from that box. Nurses who selected numbers 1–379 were included in this study.

Selection Criteria

Inclusion Criteria

Full time nurses who were available during the data collection period and who were willing to provide consent were included in this study.

Exclusion Criteria

Any nurse identified for the purpose of this study who did not give consent or who was away on leave such as holiday or sick leave was excluded. To avoid information bias, managers and in charges were also excluded from the study.

Data Collection Tool

The questionnaire used in this study was adapted from a questionnaire designed for a study examining COVID-19-related KAP among medical students in India which was free for use [28]. The questionnaire comprised two parts: participants' demographic details and their KAP related to COVID-19. We adapted the questionnaire for this study to ensure it was appropriate to investigate the nursing profession and the Tanzanian context (e.g., the question on religion was removed). In addition, we added questions to both the demographic and KAP assessment sections. Demographic variables covered by the questionnaire included age, gender, level of education, work experience, and marital status. The second part of the questionnaire comprised 15 questions (four questions were added) investigating knowledge, six (two questions were added) covering attitude and eight (one question was added) examining practice. In addition, all questions were modified to focus to the care for older people hospitalized with COVID-19. These KAP questions had two response options ("Yes" and "No"). The Cronbach's alpha coefficient for the questionnaire was 0.71 [28]. Participants' knowledge and practice were categorised using Bloom's cut-off points, and classified as good (scores 80%–100%), moderate (scores 50%–79%) and poor (scores <50%) [29]. Attitude was also categorised using modified Bloom's cut-off points as positive (scores 80%–100%), neutral (scores 50%–79%) and negative (scores <50%) (Seid & Hussen, 2018). However, the scoring system was modified to two scores that good or low knowledge, positive or negative attitude and good or less effective practice.

Data Collection

Data were collected using self-administered written questionnaires. Participants were contacted in their specific working departments. The research team took appropriate measures to prevent transmission of COVID-19; all researchers and participants used face masks and hand sanitizer. In addition, they maintained physical distancing of 2 meters and above to avoid contact. Study participants were provided with details of the study objectives and informed that their identity would be kept confidential, and the results would be used only for research purposes at the beginning of the survey. Informed consent was obtained from each participant, after which participants received a copy of the questionnaire. Because of their busy schedules, participants were able to complete the questionnaires at a convenient time. The questionnaire took approximately 30 minutes to complete. Completed questionnaires were collected by the researchers and checked, coded, and entered into SPSS version 26 for analysis. Duration for data collection was two months.

Data Analysis

Data were analysed using SPSS version 26. Demographic data were presented as frequencies and percentages. Pearson's chi-square tests were used to examine the relationships between KAP variables. Differences in the distribution of variables (KAP) were evaluated using linear regression to test the correlations between variables [30].

Ethical Considerations

Ethical approval was obtained from the Aga Khan University Ethics Review Board and National Institute for Medical Research. Permission to conduct this study was also sought from MNH through the letter with reference number MNH/TRCU/IRB/Perm/2022/071. Informed consent was obtained from all participants. Participants were advised they were free to withdraw from the study at any time without providing an explanation. Principles of medical ethics, namely beneficence (doing good), non-maleficence (to do no harm), autonomy (giving participants freedom to choose, where they were able) and justice (ensuring fairness) were considered through this study. There was no potential harm to participants as a result of participating in this study. Confidentiality was ensured by using code numbers instead of participants' names. Hard copies of questionnaires and any study information were kept in a locked cupboard and electronic data were encrypted with a password.

Results

Demographic Characteristics

Table 1 shows the sample demographic characteristics. The majority of participants were female (n=251, 66.2%) and 63.1% were married (n=239). The most common age group was 30–39 years (n=138, 36.4%), 29.8% (n=113) had 0–5 years of work

Table 1: Participants' Demographic Characteristics (N=379)

Variables		Frequency	Percent
Gender	Male	128	33.8
	Female	251	66.2
	20–29	103	27.2
	30–39	138	36.4
	40–49	82	21.6
	50–59	53	14.0
	>59	3	.8
Marital status	Married	239	63.1
	Unmarried	140	36.9
Work experience,	0–5	113	29.8
	6–10	102	26.9
	11–15	64	16.9
	16–20	32	8.4
	21–25	22	5.8
	26–30	24	6.3
	>30	22	5.8
Education level	Master's degree	34	9.0
	Bachelor's degree	113	29.8
	Diploma	131	34.6
	Certificate	101	26.6

Participants' KAP

KAP scores were categorised as high (≥80%) or low (≤79%). The majority of participants (n=233, 61.5%) had low knowledge about caring for older people hospitalized with COVID-19. In addition, the majority (n=242, 63.9%) had negative attitudes toward caring for older people hospitalized with COVID-19. However, fewer participants (n=74, 19.5%) had less effective practice in relation to caring for older people hospitalized with COVID-19.

Relationships Between Knowledge and Practice and Attitude and Practice

Pearson's chi-square tests were used to test the relationships between KAP variables. We found significant relationships between knowledge and practice and between attitude and practice (p=0.0001 for both) (Table 2).

Table 2: Relationship Between Knowledge and Practice, and Between Attitude and Practice (N=379)

		Practice		
		Value	Df	P-value
Knowledge	Pearson's chi-square	172.710a	72	.000
	Likelihood ratio	175.369	72	.000
	Linear-by-linear association	6.468	1	.011
Attitude	Pearson's chi-square	223.460a	36	.000
	Likelihood ratio	103.717	36	.000
	Linear-by-linear association	28.557	1	.000

Correlation Between Knowledge and Practice

The differences in the distribution between knowledge and practice were evaluated using linear regression to test the correlation between variables. As indicated in Figure 2, there was a linear relationship between knowledge and practice showing a strong correlation between the variables (r=1).

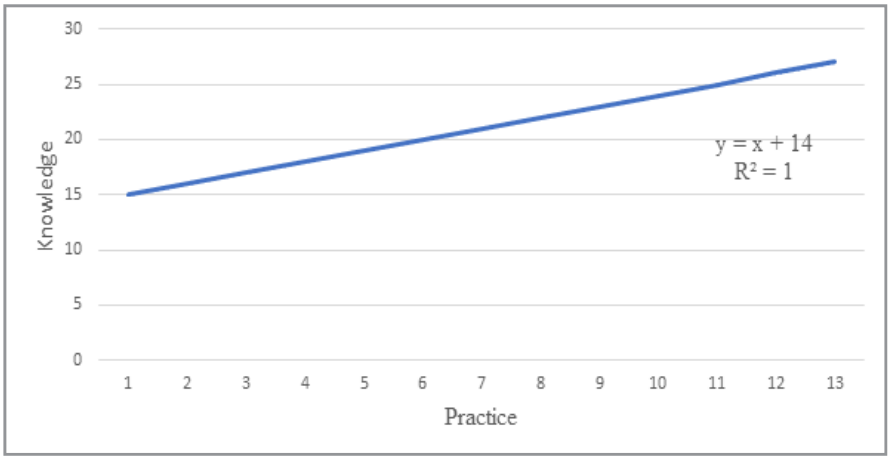

Figure 1: Correlation Between Knowledge and Practice (N=379)

Correlation Between Attitude and Practice

The differences in the distribution between attitude and practice were also evaluated using linear regression to test the correlation between variables. There was a linear relationship between attitude and practice showing a strong correlation (r=1) between the two variables (Figure 3).

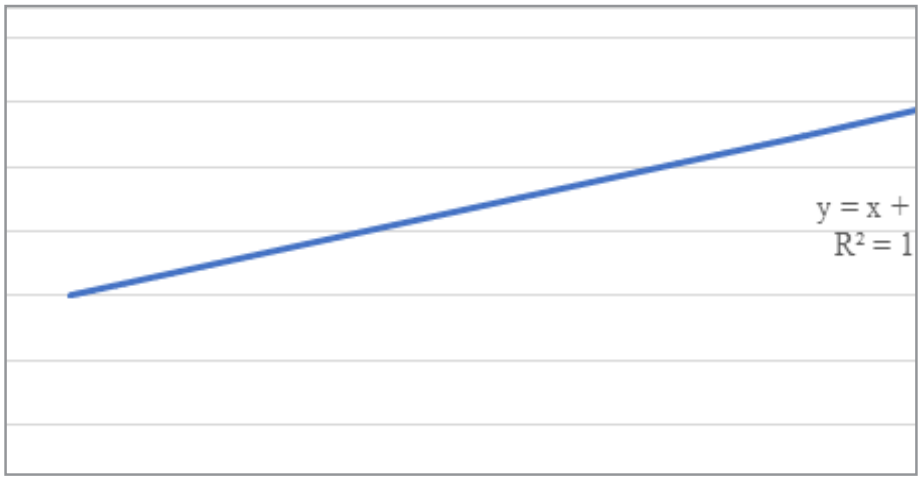

Figure 2: Correlation between attitude and practice (n=379)

Discussion

COVID-19 spread rapidly worldwide and became a major global concern, especially among older people given their weakened immune system. As nurses comprise a large part of the healthcare workforce and were at the forefront of providing COVID-19 care for older people, we aimed to examine nurses' KAP in caring for older people in the context of the COVID-19 pandemic. Our findings showed that the majority of participants had low knowledge about caring for older people hospitalized with COVID-19, which was consistent with previous studies. For example, Nemati et al. (2020) reported that 43.5% of nurses in Iran had low knowledge about caring for older people hospitalized with COVID-19 despite being at high risk for contracting the disease. In addition, 42.6% of nurses in Dubai [18] and 26% of nurses in Ethiopia had low knowledge about caring for older patients with COVID-19. Furthermore, a study from Yemen that assessed nurses' KAP related to COVID-19 highlighted a major knowledge gap [20-22]. Reported that most (81.9%) healthcare workers in Pakistan believed that signs and symptoms of COVID-19 were the same as the common flu, although they knew that older people were the main group affected (79%). Concerningly, those authors also found that 48% of healthcare workers were unaware of measures to combat COVID-19. An investigation of nurses' awareness of COVID-19 in Morocco [19] showed that 16.8% did not know that older people were at higher risk for developing severe COVID-19. The similarities across these studies indicated nurses lacked knowledge about caring older people hospitalized with COVID-19, which highlighted a need for knowledge capacity building in this area.

The majority of participants in this study had negative attitudes toward caring for older people hospitalized with COVID-19, which was consistent with previous studies. For example, Tadesse et al. (2020) found that 28% of nurses in Ethiopia had poor attitudes toward caring for older people hospitalized with COVID-19. noted that nurses in China who provided close care experienced negative emotions [29, 31].

Our findings showed that some participants had less effective practice in relation to caring for older people hospitalized with COVID-19, which was also consistent with previous studies. For example, [21]. Found that 33% of nurses in Ethiopia had less effective practice in caring for older people hospitalized with COVID-19, and reported that 38% of healthcare workers in

Pakistan were practicing inadequately to combat the disease [22, 24]. highlighted that care for older people in Zanzibar required healthcare workers with specific knowledge, skills, attitudes, and practice; however, many healthcare workers were not adequately prepared to care for older people. Studies by ; Lloyd-Sherlock et al. (2020) indicated that despite the older population having higher odds of hospital admission, needing intensive care, and dying from COVID-19, there appeared to be limited evidence on nurses' KAP regarding the provision of effective care for this group. This implies nurses need training to better prepare them to respond to future emergent health challenges [12].

Nurses must have good information about COVID-19 among older people to enable them practice competently and confidently. We found a strong correlation between knowledge and practice, and between attitude and practice, with an increase in one variable indicating an increase in another. This was comparable with findings from other studies. A study conducted [32] reported a positive correlation between nurses and other health care workers' attitudes and knowledge and a positive correlation between practice and knowledge regarding COVID-19. Another study from Nigeria found a significant positive correlation between knowledge and attitudes and between attitude and practice among nurses [33]. These findings highlight the need to empower nurses to take up the challenge and save lives of vulnerable groups, particularly older people.

Limitations

This study has several limitations. This study was conducted in one hospital and therefore the results cannot be generalised to all nurses in Tanzania. However, the findings will be useful to inform government policy and enhance awareness regarding KAP among nurses. Further studies should be conducted to investigate nurses' KAP in relation to care for older people hospitalized with COVID-19 in various hospitals around Tanzania. The questionnaire primarily consists of items related to COVID-19 and lacks attention to the nurses' specialized knowledge and skills required to care for the elderly. Finally, as the questionnaire used in this study was self-reported by participants, there is a possibility that our data included errors or misrepresentation of information [34].

Conclusion

This study identified relatively poor levels of KAP related to COVID-19 among nurses working at MNH. The Tanzanian government may need to develop effective and customised training programmes for nurses to improve their KAP in relation to caring for older people hospitalized with COVID-19 or during similar public health challenges. This will lead to increased knowledge, better attitudes, and safe practices. Data from multiple studies indicate that nurses' KAP regarding COVID-19 is low, negative, or less effective, respectively. Given the state of the science, to improve nurses' KAP for caring the elderly hospitalized with COVID-19, research specific to the elderly should be conducted. One of the studies that indicated deficit of KAP among nurses was the study conducted by Kunz and Minder (2020) and Lloyd-Sherlock et al. (2020) that found limited nurses' KAP regarding the provision of effective care for this group [15].

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Declaration of any Potential Financial and Non-financial Conflicts of Interest

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