



Knowledge, Attitude and (Saidu, M. A. 2024) DOI: <https://10.59479/jiaheri.v1i1.63>

Knowledge, Attitude and Practice of Nurses on Vital Signs Monitoring During Covid-19 in North West Nigeria

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Abstract

The study focuses on vital signs monitoring during COVID-19 Pandemic in Kano and Kaduna Nigeria. To guide the study, two research purposes later converted to hypothesis were utilized in the study. A cross sectional descriptive survey research design was used. The sample size for the study was 619 nurses, midwives and post basic nurses working in secondary health facilities determined using Krejcie and Morgan. This research adopted a multistage sampling approach. A pilot tested structured questionnaire was used for data collection. The instrument is made-up of five sections. All the statements or questionnaire items of this scale are structured based on four (4) point Likert rating scale. The categorical data were analysed using simple descriptive statistics of frequency, percentage, mean and standard deviation while the null hypotheses were tested using inferential statistics tests that includes Pearson product correlation, t-tests (one-sample and independent t-tests) as well as linear and multiple regression analyses. The finding of the study reveals that all the hypotheses were statistically significant. The finding further reveals that there are differences between the nurse's knowledge, attitude, practice and vital signs monitoring during COVID-19 in Kano and Kaduna States. Kaduna nurses have higher knowledge than Kano, but in terms of attitude and practice, Kano has more positive attitude and practice. Also, the older the nurse, the higher is their knowledge of vital sign monitoring during the COVID-19 pandemic and the older is the nurse, the higher or greater is the utilization of vital signs monitoring and the younger is the nurse, the higher or more positive is their attitude towards vital signs monitoring. Appropriate recommendations were made based on these findings.

Keywords – Covid-19, Nurses, Knowledge, Attitude

Introduction

Exploration of nurses' vital signs knowledge, practice and attitude during COVID-19 pandemic is very vital in prevention of spread of the infection in hospitals and public at large. Proper using standard protective equipment during nurses' procedures will greatly curtail the spread of the infection in health facilities. Vital signs include blood pressure, temperature, pulse rate, respiratory rate and oxygen saturation.

In hospital, the major aim of admission of a patient is to alleviate suffering, treat ailments, and prevent complications which are achieved by effective monitoring of vital signs. Vital signs provide information to caregivers on the health status of patients. Vital signs monitoring is the backbone of nurses' procedures which is the key responsibility of nurses' procedures (Rose 2010).



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Corona Virus Disease started in 2019 in China. The first case of the disease outside China is from Thailand. Retrospective investigations by Chinese authorities have identified human cases with the onset of symptoms in early December 2019. While some of the earliest known cases had a link to a wholesale food market in Wuhan and some did not. (WHO, 2020).

The coronavirus disease 2019 has spread around the world at an unprecedented speed. It is a highly contagious disease caused by coronavirus-2, also known as SARS-CoV-2. The COVID-19 was declared a global pandemic by the World Health Organization (WHO) in March, 2020 and has created public health concerns and threatened the economy worldwide Hossain et al., (2020). Human transmission of COVID-19 is reported to occur when infected respiratory droplets are expelled during close face-to-face contact while talking, sneezing or coughing Hossain et al., (2020) & Wiersinga et al., (2019). Various symptoms have been reported, ranging from mild symptoms to severe complications such as acute respiratory distress syndrome, sepsis, hyper inflammatory response, multi organ failure, thromboembolism and vascular damage Hossain et al., (2020). Although vaccination against COVID-19 has recently started, no specific treatment is available for COVID-19 to this date Stasi et al., (2020). The management of confirmed cases is continuously evolving based on expert opinions and guidelines, and they are primarily being treated based on pathological features, symptoms and supportive care Charitos et al.,(2020). Therefore, governmental bodies have responded with containment measures, including national lockdowns, quarantines, curfews and social distancing, to prevent community transmission. Also, they have emphasized the importance of personal hygiene, including wearing facemasks and hand washing. Mok et al., (2015) researched to explore nurses' attitudes towards vital signs monitoring in the detection of clinical deterioration in general wards. "Nurses' attitudes were most significantly influenced by whether they had a degree qualification followed by whether they worked in a general ward with a specialty and had >5 years of experience". "Conclusions reveal a need for continuous professional development to improve ward nurses' attitudes towards vital signs monitoring". Vital signs monitoring needs to be prioritized in workload planning. Ugochinyere et al., (2020) conducted a research on knowledge, attitude, practice, perception and preventive practice towards COVID-19 in sub-Saharan African, which the findings reveals that most of the participants had adequate knowledge related to COVID-19 despite adequate knowledge, the attitude was not always positive. There by necessitating further education to convey and continues preventive practices towards reducing and transmitting of COVID-19 pandemic. Habib et al., (2020) conducted a study on knowledge, attitude and practice (KAP) survey among Hausa Muslim society in Nigeria in March 2020. An analytic cross-sectional survey with questionnaires administered to the general Population including Health Care Workers (HCW) in Kano, Nigeria. One among the findings shows that most of the participants had adequate knowledge related to COVID-19. Despite adequate Knowledge, the attitude was not always positive, thereby necessitating further education to convey the importance of forming a positive attitude and continuous preventive practice towards reducing contraction and transmission of COVID-19.

Nurses are expected to carry out the standard procedures of vital signs monitoring on their patients as the first contact and subsequently as the case may be, but the reverse is the case as people are admitting that Nurses are not doing what they are expected to do as indicated in a study conducted by Mok (2015) stated that the majority of adverse events are preceded by a period of



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abnormal vital signs which could be identified through consistent and accurate monitoring which Nurses ignore. “Close monitoring of vital signs is essential to detect and act upon deterioration with the potential to reduce adverse events, such as cardiopulmonary arrest. Despite this, several studies have indicated that vital signs are not consistently measured, recorded, or reported”. “A study conducted by Mok et al., (2015) to explore nurses' attitudes towards vital signs monitoring in the detection of clinical deterioration in general wards reveals a need for continuous professional development to improve ward nurses' attitudes towards vital signs monitoring and need to prioritize in workload planning. Consistent concerns about monitoring and reporting of vital signs were raised. Nurses are perceived to be neglecting vital signs monitoring or do not regard it as a priority which could affect how well they carry out the task”. Health workers are in the habit of ignoring monitoring of vital signs of patients/clients or recording false vital signs on patients' records which could be hazardous to patients' condition. During outbreak of COVID-19, the entire health workers were afraid to attend to sick people because of the fear of getting infected, many died in the process which creates more fears in dealing with patients which in turns affect vital signs monitoring during the pandemic.

Purpose of the Study

Purpose of the research is to assess vital signs monitoring among nurses during COVID-19 pandemic in public secondary health facilities in Kano and Kaduna Nigeria. The specific objectives are:

1. To explore the differences in the knowledge, attitude, and practice of nurses regarding vital signs monitoring during the COVID-19 pandemic in Kano and Kaduna state
2. To identify the differences between caregiver age groups in knowledge, attitude, and practice of vital signs monitoring during the COVID-19 pandemic

Research Questions:

1. What are the differences in the knowledge, attitude, and practice of nurses regarding vital signs monitoring during the COVID-19 pandemic in Kano and Kaduna state ?
2. What are the differences between caregiver age groups in knowledge, attitude, and practice of vital signs monitoring during the COVID-19 pandemic?

Research Hypothesis

3. In Kano and Kaduna states, there is no significant difference in the knowledge, attitude, and practice of nursing staff monitoring of vital signs during COVID-19 pandemics
4. There is no significant difference between nurses' age groups in their knowledge, attitude and practice of vital signs monitoring during COVID-19 pandemic.

Methodology

A cross sectional descriptive survey research design was used for the study. Creswell (2003) observes that a descriptive research design is used when data are collected to describe persons, organization, setting or phenomena. This research was conducted in northwest geopolitical zone of Nigeria. The zone comprises of seven states which Kano and Kaduna are selected. The target populations are the entire professional Nurses/Midwives and those with post basic nursing course working in public secondary health facilities. The final sample size for the study was 619 determined using Krejcie and Morgan (1970) Table. This sample size estimation based on Krejcie and Morgan Table (1970:609) summarized the results of their computations graphically for easy use by researchers working on population that are within 1 and 1,000,000 in size



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universally. The research adopted a multistage sampling approach to select the sample for the study. This approach made use of the stratified random sampling technique to select the required samples. “This technique is considered appropriate because of the nature of the accessible population which consisted of sub-groups. A Pilot tested structured questionnaire developed by the researcher from different literatures was used to collect the main data from the respondents. The instrument is made-up of five sections. Section A elicited information on the demographic profile of the respondents such as state, senatorial zone, age, years of experiences, educational qualification and professional level. Section B consists of 6 items on knowledge. Section C measures the nurses’ attitude towards monitoring vital signs during COVID-19. This also is composed of 10 items. Section D is on the practice of monitoring vital signs during COVID-19 periods also 10 questions. All the statement or questionnaire items of this scale are structured based on “four (4) point Likert rating format of 4= strongly agree, 3=agree, 2= disagree and 1= strongly disagree”. The research instrument was subjected to validation process by showing the researcher’s supervisor(s) and two other experts in the field of Measurement and Evaluation for careful, in-depth scrutiny and necessary suggestions. Furthermore, a pilot testing was conducted to determine the reliability of the research instrument. In establishing the reliability of the research questionnaire, a trail testing (pilot-study) was carried out to ensure that the instrument was consistent (repeatability) with what is supposed to measure. Twenty (20) respondents that were not part of the study were used for the trial testing. The reliability coefficients of knowledge, attitude and practice of vital signs monitoring produce .600, .732 and .604 values computed via Cronbach Alpha method. The questionnaires were distributed to various hospitals and later after one week, were retrieved. A total of 619 questionnaires were given to nurses in various hospitals and only 557 retrieved after filling. The null hypotheses were tested using inferential statistics tests that include Pearson product correlation, t-tests (one-sample and independent t-tests) as well as linear and multiple regression analyses. All the statistical analyses were facilitated with the help of computer software called SPSS version 23 Chicago.

Result

Hypothesis one: There are no significant differences in nurse’s knowledge, attitude and practice of vital signs monitoring during COVID-19 in Kano and Kaduna States

Table 1 an independent sample t-test on differences between the nurse’s knowledge, attitude and practice of vital signs monitoring during COVID-19 in Kano and Kaduna States

Variable	State	N	Mean	Std Deviation	T	Sig	Remark
Nurses Knowledge	Kano	241	20.03	2.73	-5.47*	<.001	Sign.
	Kaduna	303	21.23	2.39			
Nurses Attitude	Kano	241	29.02	7.16	3.66*	<.001	Sign
	Kaduna	303	27.12	4.86			
Nurses Practice	Kano	241	31.11	6.09	4.06*	<.001	Sign
	Kaduna	303	29.14	5.24			
Vital signs monitoring	Kano	241	30.39	6.21	8.09*	<.001	Sign
	Kaduna	303	26.31	5.51			



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Independent sample t-tests were explored to compare the differences between nurses in Kano and Kaduna states on their knowledge, attitude and practices of vital signs monitoring during COVID-19 pandemic. The analysis displayed in Table 1 reveals clearly that there was a statistically significant difference between the nurses knowledge working in Kano state (M=20.03, SD=2.73) compared to their counterparts in Kaduna state (M= 21.23, SD=2.39), $t(542) = -5.47, P < .001$. The magnitude of the difference in the means = -1.20, 95% CL: -1.64 to -.77 was very moderate (eta squared = .05).

A closer look also reveals that the relationship between nurses attitude and vital signs monitoring during COVID-19 produced statistically significance between nurses in Kano (M=29.01, SD=7.16) compared to those in Kaduna (M=27.12, SD= 4.86), $t(542) = 3.66, P < .001$. The magnitude of the difference in the means =1.89, 95% CL: .875 to -2.90, was very large (eta squared = 0.66). Similarly, the correlation between practice and vital signs monitoring among nurses also revealed a statistically significant difference between those in Kano (M=31.11, SD=6.09) compared to those nurses in Kaduna (M=29.14, SD=5.24), $t(542) = 4.06, P < .001$. The magnitude of the difference in the means =1.97, 95% CL: .101 to -2.92, was very small (eta squared = 0.03). Finally, statistically significant difference was also found on vital signs monitoring during COVID-19 between nurses in Kano (M=30.39, SD=6.21) compared to the nurses in Kaduna (M=26.32, SD=5.51), $t(542) = 8.09, P < .001$. The magnitude of the difference in the means = 4.07, 95% CL: 3.09 to 5.06, was very large (eta squared = 0.12). With all these results, the first null hypothesis is hereby not supported and thus rejected for the alternative. This then implies that there are significant differences between the nurse’s knowledge, attitude, practice and vital signs monitoring during COVID-19 in Kano and Kaduna states in the study area.

Hypothesis two: There are no significant differences in the age groups of nurses on their knowledge, attitude and practice of vital signs monitoring during COVID-19 pandemic.

Table 2: One-way ANOVA of the influence of age bracket groups on the nurse’s knowledge of vital signs monitoring during COVID-19 pandemic

Descriptive statistics

Age Groups	N	Mean	Standard deviation.
a.21 - 30 years	144	20.01	2.75
b.31 - 40 years	147	21.08	2.68
c.41 – 50 years	173	20.64	2.54
d.51 years and Above	80	21.40	2.11
Total	544	20.70	2.62

ANOVA

Source of variation	Sum of squares	Df	Mean Squares	F	P
Between Groups	129.101	3	43.034	6.476	<.001
Within Groups	3588.250	540	6.645		
Total	3717.351	543			

The One-way Analysis of Variance (ANOVA) was conducted to explore the influence of age groups on the use of the nurse’s knowledge of vital signs monitoring during COVID-19 pandemic. The results presented in Table 2 indicated a statistically significant difference among the four age groups of the nurses knowledge of vital signs monitoring during COVID-19 pandemic, $F(3,540)$



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= 6.48, $p < .001$ eta squared = 0.03 (small effect size). Based on these results, the nurse's knowledge component of null hypothesis was not supported, hence rejected. A further prove using post hoc test of LSD indicated that while there is a significant mean difference between Group A (21-30 years) and Group B (31-40 years), Group C (41-50 years), as well as Group D (51 years and Above). Others are Group C (41-50 Years) and Group D (51 Years & Above), other significant difference was not found between each of the other pairs of age groups. A critical look at the mean analysis leads to a conclusion that the older the nurse, the higher is their knowledge of vital sign monitoring during the pandemic.

Discussion of Findings

The first finding of this research relates to the first hypothesis. This implies there are significant differences between the nurse's knowledge, attitude, practice and vital signs monitoring during COVID-19 in Kano and Kaduna states in the study area. Kaduna has more knowledge than Kano, but in terms of attitude, Kano has more positive attitude. This is in agreement with research conducted by Ugochinyere et al., (2020) on knowledge, attitude, practice, perception and preventive practice towards COVID-19 in sub-Saharan African, which the findings reveals that most of the participants had adequate knowledge related to COVID-19 despite adequate knowledge, the attitude was not always positive. There by necessitating further education to convey and continues preventive practices towards reducing and transmitting of COVID-19 pandemic. Habib et al., (2020) conducted a study on knowledge, attitude and practice (KAP) survey among Hausa Muslim society in Nigeria in March 2020. One among the findings shows that most of the participants had adequate knowledge related to COVID-19. Despite adequate Knowledge, the attitude was not always positive, thereby necessitating further education to convey the importance of forming a positive attitude and continuous preventive practice towards reducing contraction and transmission of COVID-19.

The second finding of this study implies that there are statistically significant differences among the 4 age groups of nurses knowledge vital signs monitoring during COVID-19 pandemic, because the older the nurse, the higher is there knowledge of vital sign monitoring during the pandemic. There are statistically significant differences among the 4 age groups of nurses attitudes towards vital signs monitoring during COVID- 19 because the younger the nurse, the higher or more positive is their attitude towards vital signs monitoring. There are non-statistically significant differences among the 4 age group of nurses' practice towards vital signs monitoring. There is statistically significant difference among the age group of nurses on vital signs monitoring during COVID-19 pandemic because the older is the nurse, the higher or greater is the utilization of vital signs monitoring maybe due to previous experience of precautionary measures, exposure and years of experience.

Based on the findings from the study, this then implies that there are significant differences among the age groups of nurses on vital signs vital monitoring during COVID-19 pandemic in the study area. A critical look at the mean analysis leads to a conclusion that the older the nurse, the higher is the utilization of vital sign monitoring during the pandemic. This is in agreement with Mok et al.,(2015) which in his findings stated that nurses attitudes were most significantly influenced by whether they had a degree qualification, followed by whether they worked in general ward with a specialty and > 5years of experience. The older you are in service the more years of experience.



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On the other hand, the younger the nurse, the higher or more positive their attitude towards vital signs monitoring, and the younger the nurse, are more energetic, have zeal, time and wants to grow in the profession, has positive attitudes towards nursing profession while the older nurses are faced with a lot of stress. Furthermore, the practical aspect, there are non-statistically significant differences among the 4 age group of nurses' practice towards vital signs monitoring. This is also in line with Habib et al., (2020). Among his findings, most of the participants had adequate knowledge related to COVID-19. Despite adequate Knowledge, the attitude was not always positive.

Conclusion

Reveals that there is differences between the nurse's knowledge, attitude, practice and vital signs monitoring during COVID-19 in Kano and Kaduna States. Kaduna nurses have higher knowledge than Kano, but in terms of attitude and practice, Kano has more positive attitude. Also, the older the nurse, the higher their knowledge of vital sign monitoring during the COVID-19 pandemic and the older the nurse, the higher or greater the utilization of vital signs monitoring and the younger the nurse, the higher or more positive their attitude towards vital signs monitoring

Recommendations

1. The researcher recommended that nurses should be train more on good knowledge, attitude and practices on vital signs monitoring during COVID-19 as we are not over with the Pandemic.
2. Good motivation to the older nurses so that they should be teaching the younger nurses. The study find out that the older the nurse, the higher or greater is the utilization of vital signs monitoring maybe due to previous experience of precautionary measures, exposure and years of experience.

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