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Socio-Demographic Variables as Correlates of Knowledge and Practice of Infection Control Among Health Care Workers in Jega Local Government, Kebbi State

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Abstract

The study examined socio-demographic variables as correlates of knowledge and practice of infection control among health care workers in Jega local government, Kebbi State. The design for this study was a quantitative cross sectional descriptive survey. The target population for the research was four categories of health care workers which included, Laboratory technicians/technologists, Community Health Officers (CHO), Community Health Extension Workers (CHEW) and Health Information Management officers. The total population was 93 healthcare workers. Total enumeration method was used being that the target population was relatively small. A self-administered questionnaire and an observation checklist were designed for data collection. The instruments were given to experts of Nursing Science for scrutiny, thereby affirming the face and content validity of the instruments. A pilot study was conducted to test the reliability of the instruments. Data collected were analysed through Cronbach Alpha which yielded coefficient value of 0.85 and 0.92 for the questionnaire and checklist respectively. The findings of the study revealed that the knowledge of the study participants about infection control is very low while they also demonstrated poor practice of infection control. In addition, working experience and job categories of healthcare workers were related with knowledge and practice of infection control. It was recommended among others that employers and the management of health facilities should ensure updating knowledge and practice of healthcare workers through continuing in-service educational programs and effective

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Introduction

Healthcare acquired infections (HCAIs) also known as nosocomial infections is associated with increased illnesses and death among hospitalized patients and predisposes healthcare workers (HCWs) to an increased risk of infections. Even in the most refined areas of practice, the knowledge and practice of infection control cannot be said to be adequate as discovered by Adegboye, et al., (2018) in a study of understanding and practice of infection control by HCWs in an intensive Care Unit of a tertiary hospital in Nigeria where they found that Knowledge and awareness of infection control among the HCWs in Intensive Care Units was good but the practice was poor.

Infection control is a step-by-step effort of preventing the prone host from the invasion of disease causing pathogens. It is one of the major functions of all HCWs as a duty of care during every meeting with the patient (health care consumer). Infection control is defined as policies, procedures and activities, which target preventing or minimizing the risk of spread of infections at health care facilities. Knowledge and practice of infection control is among the major principles that are taught in all institutions of health sciences to the health-care workers in training. Infection control is both practical & theoretical in nature; therefore, having the required understanding from training schools does not always guarantee the translation of understanding into practice.

Recent pandemic of COVID 19 destroying the world and evidence of community spread of the disease has made it crucial to pay more attention to the measures of infection control taken by HCW's in the provision of care for the community. This also necessitates a wider evaluation of how HCWs socio-demographic variables correlate with the understanding and practice of infection control among them. HAIs otherwise known as nosocomial infections to a large extent are related to understanding and practice of infection control undertaken by the health care providers. Resources must be sufficiently allotted to determine the required number and mix of health care providers important to provide safe health services to the populace. This is only imaginable when the health care workers knowledge and practice of infection control is continuously studied and monitored to ensure compliance with world best practices.

According to Assefa, Diress and Adane (2020), the World Health Organization (WHO) estimated that 3 million percutaneous exposures occur annually among 35 million HCWs globally, over 90% occurring in resource-constrained countries. Healthcare workers in Africa suffer two to four needle stick injuries per year on average, with Nigeria, Tanzania, and South Africa reporting 2-10 injuries per healthcare workers on average. The situation may be worse in states with very poor health indices in Nigeria. Recently Lara, (2020) identified five states in Nigeria with least performing health services and Kebbi is among the five states. Literature holds evidences of spread of infection from HCWs to health worker, from health worker to the patient and from the health worker to the community members. These reasons are strong enough to necessitate a scrutiny of the knowledge and practice of infection control among health care providers, the health care provider being in the frontline and very critical to the fight of infectious diseases are of great significance in combating any health care challenge, it is therefore important that the infection control knowledge and practice among them is giving the required attention.

The burden of transmissible diseases and that of health-care associated infections is a global health concern. The burden is grater in high income countries such as Nigeria. Infection control, which refers to all policies, procedures and activities which aim to prevent or minimize the risk of transmission of infections at health care facilities, needs to be practically demonstrated by the health-care workers at all times. Although every health care worker is

expected to have the basic knowledge and skills of infection control, a visit to most of our health facilities leaves one wondering how the health workers tend neglect this very important aspect of their practice. It is common to see a healthcare worker from every category, young or old and from the highly experienced to the novice attending to a patient without performing the simple hand hygiene or other simple infection control measures.

Recent pandemic of COVID 19 scourging the world with pronounced evidence of community transmission of the disease has made it necessary to pay more attention to the measures of infection control taken by the health care providers in the community. The several categories of health care providers who are of different job cadres, working experience and age all work under the same assumption of providing optimal care with adequate knowledge and practice of infection control.

To the researcher's knowledge, there seems not have been any published research that investigated the correlations between the socio-demographic characteristics of these care providers and their knowledge and practice of infection control practice in Kebbi state. Thus this study aimed at investigating the correlations between socio-demographic variables of health workers and their knowledge and practice of infection control. Furthermore, the health-care workers job category, working experience and age seems not to have been studied in order to provide reliable data for effective health-care personnel management. Knowledge and practice of infection control among health care workers can be influenced by several factors as opined by Ahmed et al (2020)

In view of the above, the study examined socio-demographic variables as correlates of knowledge and practice of infection control among health care workers in Jega local government, Kebbi State. This study specifically:

1. determined the level of knowledge of infection control among health care workers;
2. determined the level of infection control practices among health care workers;
3. examined the relationship between knowledge and practice of infection control among the healthcare workers; and
4. examined the relationship between socio-demographic variables and knowledge and practice of infection control among healthcare workers.

Research Questions

The following research questions were raised for this study:

1. What is the level of knowledge of infection control among health care workers?
2. What is the level of infection control practices among health care workers?

Research Hypotheses

These hypotheses were postulated for this study:

1. There is no significant relationship between knowledge and practice of infection control among the healthcare workers.
2. There is no significant relationship between socio-demographic variables and knowledge of infection control among healthcare workers.
3. There is no significant relationship between socio-demographic variables and practice of infection control among the healthcare workers.

Methodology

The design for this study was a quantitative cross sectional descriptive survey. The study setting was Jega local government of Kebbi State. It is one of the twenty-one local government areas in Kebbi State. The target population for the research was four categories of health care workers which included, Laboratory technicians/technologists, Community Health Officers (CHO), Community Health Extension Workers (CHEW) and Health Information Management officers. The total population was 93 healthcare workers. Total

enumeration method was used being that the target population was relatively small. A self-administered questionnaire and an observation checklist were designed for data collection in this study. The instruments were given to experts of Nursing Science for scrutiny, thereby affirming the face and content validity of the instruments. A pilot study was conducted to test the reliability of the instruments. Data collected were analysed through Cronbach Alpha which yielded coefficient value of 0.85 and 0.92 for the questionnaire and checklist respectively. Data collected through the instruments were analysed quantitatively using descriptive and inferential statistics.

Results

Research Question 1: What is the level of knowledge of infection control among health care workers?

Table 1: Knowledge level on infection control among health care workers

Level	Frequency(n=93)	Percentage (%)
Low	48	51.6
Moderate	21	22.5
High	24	25.8
Total	**93**	**100**

Table 1 shows the healthcare workers level of the knowledge about infection control. It was discovered in this table that there are three level of display of the knowledge of infection control called high, moderate and low. Majority of the health workers had low knowledge of infection control. The lowest indicate 48(51.6%) of low knowledge, while high followed with 24(25.8%) and moderate level of knowledge was indicated by 21(22.5%) knowledge level.

Research Question 2: What is the level of infection control practices among health care workers?

Table 2: Level of practice of infection control among healthcare workers

Level	Frequency(n=93)	Percentage (%)
Low	39	41.9
Moderate	32	34.5
High	22	23.6
Total	**93**	**100**

Table 2 shows the level of healthcare worker's practice of infection control. It was discovered in this table that there are three level of display of the practice of infection control called high, moderate and low. Majority of the health workers 39(41.9%) demonstrated low practice of infection control. Those with moderate practice are 32(34.5%), while the least respondents showed that they were high in practice of the infection control with 22(23.6%).

Test of Hypotheses

Hypothesis 1: There is no significant relationship between knowledge and practice of infection control among the healthcare workers

Table 3: Pearson's correlation between knowledge and practice of infection control among the healthcare workers

		1	2
1	Knowledge of Infection		.277**
2	Practice	.277**	
	**. Correlation is significant at the 0.01 level (2-tailed).		

Table 3 shows that there was significant correlation between practice of infection control and the knowledge of infection control among the health care workers with (r=.277and $p< 0.01$). This implies that knowledge of infection control is positively related to practice of infection control among health care workers.

Hypothesis 2: There is no significant relationship between socio-demographic variables and knowledge of infection control among healthcare workers?

Table 4: Correlation between Socio-demographic Variables and Knowledge of Infection Control among Healthcare Workers

Socio-demographic Variables	**Knowledge of Infection Control among Healthcare Workers**	
	X^2	**P-value**
Age	0.346	.838
Working experience	10.15	.001*
Job categories	8.578	.015*

*Statistically significant at p 0.05

Table 4 shows that the respondents working experience and job categories are significantly correlated with knowledge of infection control with a p-value of .001 and .015, respectively. However, the respondents' age is not correlated with knowledge of infection.

Hypothesis 3: There is no significant relationship between socio-demographic variables and practice of infection control among the healthcare workers?

Table 5: Correlation between socio-demographic variables and practice of infection control among healthcare workers

Socio-demographic Variables	**Practice of Infection Control among Healthcare Workers**	
	X^2	**P-value**
Age	0.648	.0745
Working experience	11.512	.001*
Job categories	8.650	.004*

*Statistically significant at p < 0.05

Table 5 shows that the respondents working experience and job categories are significantly correlated with practice of infection control with a p-value of .001 and .004, respectively. However, the respondents' age is not correlated with practice of infection.

Discussion

The findings of the study indicated that majority of the health workers had low knowledge of infection control. The lowest indicate 48(51.6%) of low knowledge, while high followed with 24(25.8%) and moderate level of knowledge was indicated by 21(22.5%) knowledge level. It seems to be similar with findings of Unakal, et al (2017) while assessing knowledge, attitudes and practice of healthcare workers towards infection prevention reported that **a** total of 300 participated in the study, with a 100% response rate. In the study only 20.3% respondents were knowledgeable, 46.7% had good attitude and 44% had good practices toward infection prevention, suggesting less than satisfactory scores.

Furthermore, it was revealed that majority of the health workers 39(41.9%) demonstrated low practice of infection control. Those with moderate practice are 32(34.5%), while the least respondents showed that they were high in practice of the infection control with 22(23.6%). Desta, et al (2018) made similar findings which was also closely similar to that of Hamid, et al (2019) who revealed that the overall knowledge of their study participants was found to be relatively good (60.4%), but for practice of infection control the overall practice for all staff were found to be least (24.6%).

Findings in this study show that there was a strong correlation between practice of infection control and the knowledge of infection control among the health care workers with (r=.277and $p< 0.01$), This implies that the null hypothesis is rejected. It is in line several findings reported in Yakob, Lamaro and Henok (2015), and Alemayehu, Ahmed and Sada (2016), Ogoina, et al (2015).

Findings show that the respondents working experience and job categories are significantly correlated with knowledge of infection control but respondents' age is not correlated with knowledge of infection. This finding aligned with Naderi, et al (2017). Almost similar findings were made by Beyleyegn, et al (2021), where out of 236 participants; 90% and 57.2% of the participants had good knowledge and positive attitude towards Hospital Acquired Infections (HAI) prevention, respectively. Meanwhile, only 36% of the study participants had good practice towards HAI prevention, suggesting less than satisfactory scores. Level of education and work experience were significantly associated with safe-infection prevention attitude and practice (P value < 0.005).

Findings show that the respondents working experience and job categories are significantly correlated with practice of infection control but the respondents' age is not correlated with practice of infection. This finding is directly opposed to discovery made by Alemayehu, Ahmed and Sada (2016) who reported that working experience and job categories are not related with practice of infection control.

Conclusion

The knowledge of the study participants about infection control is very low, hence the need for updating the participants knowledge with the recent and up-to date information on infection control. The study also concludes that study participants demonstrated poor practice of infection control despite having some knowledge, therefore effective supervision and guidelines for the better practice be established. In addition, working experience and job categories of healthcare workers were related with knowledge and practice of infection control.

Recommendations

The current study recommends the following;

1. In view of the findings from the study, the educational institutions and regulatory bodies responsible for training and licensing of these categories of health-care staff should ensure the development of adequate and up-to date course content on infection control to be taught in the schools.
2. Employers and the management of health facilities should ensure updating knowledge and practice of healthcare workers through continuing in-service educational programs and effective supervision.

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