Assessment of Work-Related Hazards and Their Prevention Among Cleaners In Selected Primary Health Care Centres In Lagos State

BAKARE, Mosidat Olabisi & KIO, Janet O

Department of Community/Public Health Nursing, School of Nursing, Babcock University, Ilishan Remo, Ogun State, Nigeria
Corresponding author: Bakare, Mosidat O.

Abstract: *Cleaners are often not provided with any form of training and recruitees are often provided with nothing more than a routine introduction to the cleaning process despite their crucial role in keeping the health care environment clean little or no research has been done concerning their hazard exposure. Primary health care cleaners are subjected to various occupational health hazards that also affect professional health care workers. This research assessed work-related hazards and their prevention among cleaners in selected primary health care centers in Lagos. The aim of this study was to assess the level of knowledge of work-related hazard, and their prevention among cleaners in selected primary health Centre of Lagos state and determine the attitude of cleaners towards infection control measures. A non-experimental descriptive cross-sectional survey was used for this study and 135 sampled respondents across the selected primary health care centres in Lagos state. The findings of this research showed majority of the participants had an above average knowledge on work related hazard 87(64.9%) majority of the respondents always utilise all the preventive measures. For instance, result shows that most of the participants wear their clean gloves 97(72.4%), clean and disinfect equipment and environment 97(72.4%), and regular hand washing 99(73.9%) also majority of the participants highly practice preventive measures in the selected PHC prevent hazards 107(79.9%). The findings of this study showed a significance relationship between level of knowledge and practice of hazard prevention among cleaners in the anselected ($x^2 = 924.323^a$; p=0.000< .05), and also age is ($x^2 = 8.872$, p = .043); marital status ($x^2 = 5.005$, p = .039); educational qualification is ($x^2 = 19.001$, p = .000); experience on the job is ($x^2 = 23.103$, p = .006); and formal training is ($x^2 = 11.765$, p = .000) are good correlates of practice of hazard prevention. This research recommends that nursing students could organize health education programme to the workers about prevention of occupational hazards during their industrial visit. In conclusion the high level of knowledge demonstrated by respondents was not at variance with practice, therefore, measures aimed at promoting safety practices and, minimizing exposure to hazards such as; provision of safety equipment, pre-placement and routine training of staff on safety practices and adequate reinforcement of staff capacity and capability should be institutionalized and made mandatory. The protocol of the safety training and drills should be responsive to evidence-based emerging and sectoral safety challenges.*
Keywords: *Primary Health Care Centre, Cleaners, Work-Related Hazard.*

I.   Background Of The Study

The role of cleaners for proper operation of primary health centres is crucial, without clean environment, primary health centres would not be able to provide the same high-quality care environment that patients expect and that is needed by regulations and quality guidelines (Langabeer & Helton, 2016). Cleaners are people employed to clean both the interior and exterior of a building. The cleaning of the primary health centres environment is necessary to prevent primary health care acquired infections and for the primary health care activities in general, there is little concern about the workers' health and safety (Fontoura, Gonçalves, & Soares, 2016). National Institute for Occupational Safety and Health (NIOSH) estimates that every year approximately 100,000 persons die of occupational diseases and about 400.000 new cases documented annually among the workers. It was not only health care professionals that are at risk but also other employees may sustain injuries specially the auxiliary staff including cleaners, morticians and laundry staff (Nwankwo, Karanja, & Vasanthakaalam, 2018).

Ergonomic hazards such as heavy lifting and carrying, awkward postures, stretching, vibrations and excessive repetitive motions (Arcangeli, Montalti, Sderci, Giorgi, & Mucci, 2019). In addition, primary health

centres cleaners are exposed to various biological hazards as they get in contact with contaminated and/or used linens that /may harbor numbers of microorganisms from the various body substances like blood, urine, stool, skin, sputum, vomitus and other tissues (Okareh, 2018). These groups of workers however, exposed to numerous hazards, they are often neglected and basic preventive measures including training and education for health and safety are usually overlooked, usually not covered by legislation, and do not have access to basic occupational health services provided to other staff (Sara ,Salwa , Heba, & Hanaa,2020). The role of occupational health nurse is to train individuals who work in laundry to know the location and proper use of the available personal protective equipment (PPE) and adequately inform them about the physical and other health hazards present in the laundry, the known hazards and what to do in case of an accident. Therefore, provide a harmless environment in the laundry which is crucial to maintain employee's health (Manuel, Daphnie, D'cunha, & Suresh, 2015). Despite the significant role these health personnel perform in the primary health care, there are a very small number of studies globally and locally concerned with their health, safety and hazards exposure.

According to a study by Alice *Et al* 2015, it was observed that health care workers are prone to primary health care-acquired infection, while pathogens can be transmitted through the health care workers hand, equipment, supplies, and unhygienic practice. The cleaner in the primary health care does have contact with materials like; used needles, linen used by the patient which makes them vulnerable to infections.

The Centres for Disease Control had set certain guidelines to control infection among health care workers. Infection control measures are Standard precautions set to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes. These measures are to be used when providing care to all individuals, whether or not they appear infectious or symptomatic. It includes good hand hygiene, universal blood and blood fluids precautions, cleaning and disinfection, sterilization of equipment/instruments, surfaces decontamination, correct use of disinfectants, aseptic techniques, safe disposal of wastes, sharps, handling soiled linen, wearing of personal protective equipment. Other measures that have been incorporated into Centres for Disease Control (CDC) guidelines include personal health & safety education, placement evaluation, immunization programs such as screening for hepatitis B and C, management of health care workers illnesses and exposure as well as post-exposure prophylaxis (Manuel, Daphnie, D'cunha, & Suresh, 2015).

A study revealed that majority of the cleaners employed to work in the primary health care centre environment lack proper training in the work environment and also shown that ineffective infection control can lead to primary health care-acquired infection. Therefore, this study seeks to asses work-related hazards and compliance to infection control measures among cleaners in a primary health care centres (Okareh, 2018).

II.   Research Methodology

A descriptive cross-sectional research design was used for this study. The study was carried out in two selected primary health care centres in Lagos State. Total enumeration was utilized for the study. Stratified simple random sampling techniques was used to select 9 primary health care centres consisting of 135 cleaners. The instrument used for this study was a self-developed structured questionnaire, which consisted of closed ended question and multiple-choice question. The instrument had a total of 29 questions which was divided into four sections with Likert Scale Scores. The questionnaire was validated using face and content validity by the supervisor. The reliability of the instrument was tested using Pearson's moment of correlation and test retest reliability. A set of questionnaires was first distributed to a set of respondents, retrieved, and in about a week, redistributed. The respondents were informed of the researcher's intent and the process of filling the questionnaire was explained to respondents available. The data from the questionnaire was coded and entered into a Microsoft Excel spreadsheet and analysis will be done using SPSS, version 21. For quantities variables in descriptive variables: mean and standard deviation will be calculated. Chi square and linear Regression test will be applied for the analysis of data.

III.   Result

Table 1: Demographic Characteristics of Respondents

Variable		Frequency (n)	Percentage (%)
Gender	Male	39	29
	Female	95	70.9
	Total	134	100
Age	20-29years	22	16.4
	30-39years	46	34.3

	40-49years	45	33.6
	50years above	21	15.7
	Total	134	100.0
	Mean age =35years; SD= ±0.94		
Marital Status	Single	28	20.9
	Married	81	60.4
	Divorced	13	9.7
	Widowed	12	9.0
	Total	134	100.0
Educational Qualification	Primary	21	15.7
	Secondary	78	58.2
	Tertiary	31	23.1
	No formal education	4	3.0
	Total	134	100.0
Experience on the Job	Less than one year	21	15.7
	1-3year	25	18.7
	4-6years	46	34.3
	7years and above	42	31.3
	Total	134	100.0
Formal training for the job	Yes	95	70.9
	No	39	29.1
	Total	134	100.0

Table 1 presents the demographic features of the respondents from the study. The study shows that majority of the respondents were female 95(70.9%) while few were male 39(29%). Moreso, the age spectrum of the participant across the setting were between 20years to ≥50years with a mean age of 35years. Highest number of the respondents were between age 30 to 39years 46(34.3%), followed by those who were aged 40 to 49years 45(33.6%), younger participants were 20-29years 22(16.4%), while oldest group of participants (aged ≥50years) were relatively few 21(15.7%). In addition, Married participants were predominantly represented in this study 81(60.4%) compared with those who were single 28(20.9%), divorced 13(9.7%), and widowed 12(9%). Hence, this implies that most of the participant were above their youthful age and the study were mainly influenced by married participants. On the other hand, many of the respondents had secondary qualification 78(58.2%), followed by few with Tertiary education 31(23.1%), primary education 21(15.7%) and least respondents with no formal education 4(3%) which implied that majority were averagely literate to understand the study. Furthermore, more of the participants were on the job for 4-6years 46(34.3%), followed by those who had been on the job for ≥7years 42(31.3%) while least of the respondents were new to the job for less than one year 21(15.7%). This infers that majority of the respondents were technically experienced to understand this findings. With regards to formal training, more of the participants were formally trained 95(70.9%) compare to fewwho were not 30(29.1%).

Table 2: Level of knowledge on work-related hazard among cleaners in selected PHC Lagos State.

Levels of knowledge	Category of Scores	Frequency	percentage	Mean ±SD
Above average	30-50	87	64.9%	
Average	17-33	27	20.1%	34.3±12.0
Below average	0-16	20	14.9%	
Total		299	100	
Minimum score= 0; Maximum score= 48				

Table 2 Reveal the level of knowledge on work related hazard among cleaners in selected PHC Lagos State. The result shows that majority of the participants had an above average knowledge on work related hazard 87(64.9%) while very few of the participants had knowledge below average 20(14.9%). The means score of the participants knowledge was 34.3±12.0 which can be categorise as high knowledge. This implies that majority of the cleaners in the selected PHC were highly knowledgeable on the associated hazard in their job. This might be as a result of their years of experience.

Table 3: Level of prevention of hazards among cleaners in selected PHC, Lagos State.

Levels of prevention	Category of Scores	Frequency	percentage	Mean ±SD
High	28-39	107	79.9%	
Moderate	14-27	22	16.4%	33.4±6.76
Low	0-13	5	3.7%	
Total		134	100	
Minimum score= 6; Maximum score= 39				

Table 3 shows the level of hazards prevention among cleaner in the selected PHC, Lagos State. The result shows that majority of the participants highly prevent hazards 107(79.9%) while very few of the participants practice hazard prevention at a lower rate 5(3.7%). The means score of the participants preventive practice was 33.4±6.76 which can be categorised as high hazard preventive practice. This implies that majority of the cleaners highly practice preventive measures in the selected PHC. This might as a result of their level of knowledge and years of experience.

Table 4: Relationship between level of knowledge and practice of hazard prevention among cleaners in the selected PHC, Lagos State

Level of prevention	Levels of Knowledge				Df	X^2-value	p-value
	Low 0-16	Average 17-32	High ≥33	Total			
High [≥27]	17 (12.6%)	21 (15.6%)	77 (57.8%)	115 (85%)	640	924.323[a]	.000
Moderate[14-26]	1 (0.7%)	6 (4.5%)	8 (5.9%)	15 (11.2%)			
Low [0-13]	2 (1.5%)	-	3 (2.2%)	5 (3.7%)			
Total	**20 (15.9%)**	**26 (19.4%)**	**88 (65.7%)**	**134 (100%)**			

Table 4 Summarises a significance relationship between level of knowledge and practice of hazard prevention among cleaners in the selected $(x^2 = 924.323^a$; p=0.000< .05). Since P-value (0.000< 0.05) This prove the rejection of the null hypothesis which stated that there is no significance relationship between level of knowledge and practice of hazard prevention among cleaners in the selected PHC, Lagos state.

Table 5: Association between the demographic characteristics and practice of hazard prevention

Variable		Frequency (n)	%	X^2	P
Gender	Male	39	29	4.089	.071
	Female	95	70.9		
	Total	134	100		
Age	20-29years	22	16.4	8.872	.043
	30-39years	46	34.3		
	40-49years	45	33.6		
	50years above	21	15.7		
	Total	134	100.0		
Marital Status	Single	28	20.9	5.005	.039
	Married	81	60.4		
	Divorced	13	9.7		
	Widowed	12	9.0		
	Total	134	100.0		
Educational	Primary	21	15.7		

Qualification	Secondary	78	58.2	19.011	.000
	Tertiary	31	23.1		
	No formal education	4	3.0		
	Total	134	100.0		
Experience on the Job	Less than one year	21	15.7	23.103	.006
	1-3year	25	18.7		
	4-6years	46	34.3		
	7years and above	42	31.3		
	Total	134	100.0		
Formal training for the job	Yes	95	70.9	11.765	.000
	No	39	29.1		
	Total	134	100.0		

Table 5 shows that the chi-square value obtained for age is ($x^2 = 8.872$, p = .043); marital status ($x^2 = 5.005$, p = .039); educational qualification is ($x^2 = 19.001$, p = .000); experience on the job is ($x^2 = 23.103$, p = .006); and formal training is ($x^2 = 11.765$, p = .000) all at the significant levels of less than 0.05. Since these p-values were equal to or less than 0.05 values, it could be said that all the socio-demographic variables used in this study except gender ($x^2 = 4.089$, p = .071) are good correlates of practice of hazard prevention.

IV. Discussion

The result shows that majority of the participants had an above average knowledge on work related hazard. This implies that majority of the cleaners in the selected PHC were highly knowledgeable on the associated hazard in their job. This might be as a result of their years of experience. This is in line with the findings of Aluko, et. al. (2016) in their study on knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers. They found that most respondents (89 %) in their study were knowledgeable about hazards in HCFs, identified recapping used needles as a risky practice (70 %) and recognized that effective hand washing prior to, and after every clinical procedure in preventing cross infection (100 %). Similarly, all respondents knew that effective hand washing after each and every clinical procedure is essential in preventing cross infection. The observation by Oluwagbemi (2011) that HCWs are exposed to a variety of hazards that might differ according to education or job description was evident from our study where occupational differences and different job duties exposed HCWs to different hazards. In support to the findings by Viragi et al. (2013, over half respondents in their study had high knowledge rating.

Age, marital status, educational qualification, experience on the job, and formal training on the job are good correlates of practice of hazard prevention. On relationship among variables, the respondents' occupation and sex categories were significantly associated with knowledge and attitude while education was also associated with knowledge, in agreement with the findings of Tziaferi et al. (2019) where it was concluded that the level of education influences the level of knowledge in health and safety issues. This meant that those with high knowledge had better education, in agreement with the rational model (2020). In like manner, marital status and religion of respondents influence practice while ethnicity, sex and religion influence their attitude. To engender safety precautions that will decimate the prevalence of occupation hazards in the HCF, attention should be focused on knowledge based awareness creation disseminated around marriage relationship and religion, to achieve desired results. Conversely, respondents practices were not influenced by sex and education while knowledge on occupational hazards and safety practice was not influenced by marital status and religion. Also, hand washing practice was not influenced by education and marital status. The above findings were in agreement with Tziaferi et al. (2019) where the authors concluded that level of education and professional specialty influenced their perception of risk level at a statistically significant level. The above is in support with the findings of studies in Belgaum city in India and Ile Ife in Nigeria, where most respondents acquired knowledge on occupational hazards and safety practices from post-employment seminars (Fasunloro & Owotade, 2004; Viragi, Ankola, & Hebbal, 2013).

V. Conclusion

The high level of knowledge demonstrated by respondents was not at variance with practice, therefore, measures aimed at promoting safety practices and, minimizing exposure to hazards such as; provision of safety equipment, pre-placement and routine training of staff on safety practices and adequate reinforcement of staff capacity and capability should be institutionalized and made mandatory. The protocol of the safety training and drills should be responsive to evidence-based emerging and sectoral safety challenges

VI. Recommendations

1.   Findings of the study could be made use by all nursing personnel, medical, allied science as well as employers of labour.
2.   The health team members could arrange health assessment camps in the construction sites to assess the risk of occupational hazards periodically.
3.   The nursing students could organize health education programme to the workers about prevention of occupational hazards during their industrial visit.
4.   The knowledge gained from this study may be utilized while conducting occupational health programs.
5.   Development of manual on safety at work place will enhance to reduce accidents at work place.

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