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Original Article

Hazards of Hospital Cleaners in a Tertiary Health Facility in Southwest Nigeria

Abstract:

Introduction: Hospital cleaning job is outsourced to companies that employ unskilled cleaners. Despite being an important role, little attention is paid to the work place hazards hospital cleaners are exposed. **Objective:** This study therefore aimed at determining the prevalence of and factors associated with occurrence of work related hazards among hospital cleaners at Federal Medical Centre, Owo, Ondo State, Nigeria. **Methods:** A cross-sectional study of 249 hospital cleaning staff was conducted. A semi-structured interviewer administered questionnaires were used to obtain information on sociodemographic characteristics and work place related hazards. Descriptive statistics were done and associations were explored with the chi square test at 5% level of significance. **Result:** The mean age of respondent was 34 ± 7 years, (range 20 - 60 years), 142(57.0%) attended secondary school. In all, 67.7% of the cleaners spent < 8 hours at work daily. Chemical hazards affected 79.1% females compared to 57.9% of the males (p=0.03). Also, 60% of those with primary education had mechanical hazards compared to 39.1% of those with tertiary education. (p=0.02). Mechanical hazards occur in 53.8% cleaners sitting for < 5hours compared to 38.1% sitting ≥ 5hours at work daily (p=0.03). Respondents were exposed to physical, chemical, mechanical, and biological hazards. **Conclusion:** Various forms of hazards were reported by the cleaners studied. Research can be undertaken to reduce hospital cleaners exposure to hazards.

Key Words: Hazards; cleaners; hospital; health facility; occupational health .

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Introduction

The cleaning work in most tertiary health facilities in Nigeria is contracted to cleaning companies which in turn employ the cleaners to work for them. Out sourcing non clinical services in the hospital is used in the developed countries as well [1]. Though, the cleaners are unskilled, they play a vital role in the workings of the hospital. These groups of people though exposed to various hazards and health challenges are often neglected and basic preventive measures including education and training for health and safety are usually overlooked. This is not limited to Nigeria in the developed countries these categories of workers are usually not covered by legislation, and do not have access to basic occupational health services available to other staff [2-4].

Hospital cleaners routinely clean patient rooms, nursing units, surgical areas, administrative offices, laboratory areas, waiting areas and public restrooms. They clean furniture, polish floors and vacuum carpets. They empty trash and restock medical supplies. Hospital cleaners also collect dirty laundry from all patient areas and distribute the clean linen and hospital gowns back to the appropriate quarters. Some also take inventory of any repairs or replacements [5].

In relation to occupational safety, a hazard is a potential source of harm or adverse health effect on a person or persons [6]. Hospital cleaners are subjected to various occupational health hazards that also affect professional health care workers. Problems such as poor posture, mechanical load on the joints, prolonged standing, long working hours, missed meals, not taking breaks during work hours, as well as being subjected to physical factors such as noise and higher temperatures are important occupational health hazards for these workers. They often times are exposed to various forms of work hazards like accidental exposure to the blood and body fluids of patients similar to their counterparts [2, 3].

Studies on hospital cleaning staff are scarce. Hospital cleaning is far more complex than cleaning offices or schools [1]. Hospital cleaning therefore requires teaching and training. However, cleaners are often not provided with any form of training and new recruits are often provided with nothing more than a routine introduction to the cleaning process. The cleaners may perform poorly at the job and allow key microbial reservoirs in the clinical environment go unrecognized. They are also liable to hazards of several magnitude. Regular teaching of basic microbiological

principles for all cleaning staff, and assessment of hazards have proved beneficial [7]. This study aims to determine the prevalence and factors associated with occurrence of work related-hazards among hospital cleaners of Federal Medical Centre, Owo, Ondo State, Nigeria.

Methods

This study was carried out at the Federal Medical Center, Owo, located in Owo Local Government Area of Ondo State, Nigeria. The hospital provides healthcare services at the primary, secondary and tertiary levels to the people within its catchment areas which are Ondo, Kogi, Edo, Ekiti and Osun States and its surrounding states. It also receives patients from almost all the states of the Federation because it is situated a stone's throw from the highway that links Abuja to Lagos. It is also an approved training center by both the West African Postgraduate College and the National Postgraduate College to train Resident Doctors in some specialist area of Medicine. The centre has 21 clinical and 7 non-clinical departments. It is a 250 bedded tertiary health center with average monthly attendance, by all age groups. The bed occupancy rate of not less than 70% at every point in time is the norm. The Staff strength of the hospital is about 1200 with 513 in the clinical departments and units including 213 Doctors and 300 Nurses as at the time of this study [8]. The normal work hour for cleaners at the centre is 8 hours. The categories of cleaners who worked standing for > 5hours include cleaners in the wards and the emergency areas. Those standing for < 5hours were office cleaners. Among cleaners in the hospital Male: Female ratio is 1:12.

In Federal Medical Centre, Owo six private companies were in charge of cleaning job. The companies have about 300 cleaning staff. All the cleaning staff were requested to participate in the survey. However, 249 staff participated at time of data collection. A cross-sectional design of all the cleaning staff was conducted using interviewer assisted questionnaire. Services of trained research assistants and Medical Officers were used for data collection. The study instrument was translated from English to Yoruba and then back- translated to English, to retain the original meanings of the words.

Questionnaires were checked for omissions and errors, corrections made where necessary. Data were analyzed using SSPS version 21.0.

History of exposure to the hazards in the last 4 weeks was captured. Physical hazards was the presence of at least one of the following noise, excessive light, heat and cold or vibration from working equipment. Chemical hazard was the presence of chemical containing liquid fumes and dust. Mechanical hazards include sharp edge machines, grinding machines, heavy load lifting, and exposure to sharp objects. Biological hazard was exposure to insect and animal bites.

Frequencies, proportions were presented using appropriate charts and tables. Chi-square test was used to assess associations between proportions. Level of statistical significance was at 5%.

Ethical consideration

Approval for the study was sought and obtained from the Federal Medical Centre, Owo, Health Research Ethics Committee. Informed consent was obtained from the respondents, who were made to understand that participation is voluntary and that there was no consequence whatsoever for non-participation or withdrawal at any stage. Information dissemination plan were discussed with the workers.

Limitations

One sixth of the study group did not participate. However, the male: female ratio of participants is similar to the male: female ratio of the respondents.

Some workers were not willing to tell the whole truth about their work practices. We overcame this by giving them adequate information with assurances of strict confidentiality as well as the benefit they will obtain from the study.

Results

Out of about 300 cleaning staff in the hospital 249 participated giving a response rate of about 83%. The mean age of respondent was 34 ±7 years, Age range from 20 - 60 years. Table I shows the socio-demographic and occupational characteristics of the respondents. Majority of them were females 230(92.4%). More than half of the respondents 36 (54.6%) were aged 30-39 years. Married respondents constituted 187(75.1%), 42(16.9%) were single. In all, 142 (57.0%) attended secondary school, 23(9.2%) had tertiary education. Most of the cleaners 156(67.7%) spent less than 8 hours at work daily. Time spent standing daily by 137(55.0%) of them was less than 5hours; 186(74.7%) spent less than 5 hours sitting.

Table I Socio-demographic and Occupational Characteristics of the Respondents

Sociodemographic Characteristics	N	%
Age in years		
20-29	52	20.9
30-39	136	54.6
≥40	61	24.5
Sex		
Male	19	7.6
Female	230	92.4
Marital Status		
Single	42	16.9
Married	187	75.1
Others*	20	8.0
Highest Level of Education		
Primary	55	22.1
Junior Secondary School	29	11.6
Senior Secondary School	142	57.0
Tertiary	23	9.2
Time spent at Work daily		
<8 hours	156	62.7
≥8 hours	93	37.3
Time spent Standing daily		
<5 hours	137	55.0
≥5 hours	112	45.0
Time spent Sitting daily		
<5 hours	186	74.7
≥5 hours	63	25.3

Figure 1 shows the prevalence of various forms of hazards among the respondents. Among all respondents 200 (80%) mentioned low income as the major problem affecting them.

Figure 1. Prevalence of various forms of hazards.

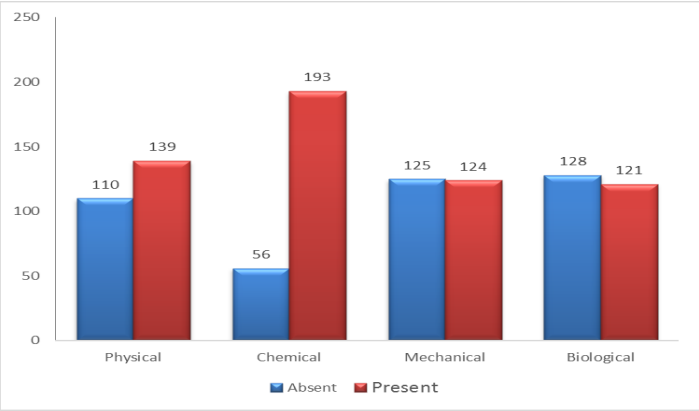

Table II shows the association between socio-demographic and occupational characteristics. None of the characteristics has any significant association with physical hazards (p>0.05).

Table II Association between Socio-demographic and Occupational Characteristics with Physical Hazards

Socio-demographic Characteristics	Physical Hazards		Chi-square	p-value
	Present n (%)	Absent n (%)		
Sex Male Female	 12(63.2) 127(55.2)	 7(36.8) 103(44.8)	0.449	0.503
Age 20-29 30-39 ≥40	 34(65.4) 73(53.7) 32(52.5)	 18(34.6) 63(46.3) 29(47.5)	2.462	0.292
Marital Status Single Married Others	 28(66.7) 98(52.4) 13(65.0)	 14(33.3) 89(47.6) 7(35.0)	2.006	0.571
Highest Level of Education Primary Junior Secondary School Senior Secondary School Tertiary	 32(58.2) 18(62.1) 79(55.6) 10(43.5)	 23(41.8) 11(37.9) 63(44.4) 13(56.5)	2.006	0.571
Time spent at Work daily <8 hours ≥8 hours	 89(57.1) 50(53.8)	 67(42.9) 43(46.2)	0.255	0.613
Time spent Standing daily <5 hours ≥5 hours	 79(57.7) 60(53.6)	 58(42.3) 52(46.4)	0.419	0.518
Time spent Sitting daily <5 hours ≥5 hours	 107(57.5) 32(50.8)	 79(42.5) 31(49.2)	0.865	0.352

Table III shows the association between socio-demographic and occupational characteristics with chemical hazards. Chemical hazards affected 182(79.1%) females compared to 11(57.9%) of the males (p=0.03). Among those who spent <5 hours sitting at work daily 150(80.6%) had exposure to chemical hazards compared to 43(68.3%) of those that spent ≥5 hours. (p=0.04).

Table IV shows the association between socio-demographic and occupational characteristics with mechanical hazards. Mechanical hazards affected 118(51.3%) female compared to 6 (31.6%) males though not statistically significant. Also 33(60%) of those with primary education had mechanical hazards compared to 9(39.1%) of those with tertiary education. (p=0.02). Mechanical hazards occur more in cleaners sitting for <5hours while working daily 100(53.8%) than in those with ≥5hour 24 (38.1%). (p=0.03).

Table V shows the association between socio-demographic and occupational characteristics with biological hazards. Among those with primary education 29(52.7%) had biological hazards compared to 14(60.9%) of respondents with tertiary education.

(p=0.048). Biological hazards occur more in respondents sitting for <5hours while working daily 99(53.2%) than in those with ≥5hour 22(34.9%). (p=0.01).

Table III The Association between Socio-demographic and Occupational Characteristics with Chemical Hazards

Sociodemographic Characteristics	Chemical Hazards		Chi-square	p-value
	Present N (%)	Absent N (%)		
Sex Male Female	11(57.9) 182(79.1)	8(42.1) 48(20.9)	4.540	0.033
Age in years 20-29 30-39 ≥40	41(78.8) 107(78.7) 45(73.8)	11(21.2) 29(21.3) 16(26.2)	0.649	0.723
Marital status Single Married Others	30(71.4) 145(77.5) 18(90.0)	12(28.6) 42(22.5) 2(10.0)	2.681	0.262
Highest Level of Education Primary Junior Secondary School Senior Secondary School Tertiary	47(85.5) 24(82.8) 107(75.4) 15(65.2)	8(14.5) 5(17.2) 35(24.6) 8(34.8)	4.823	0.185
Time spent at Work daily <8 hours ≥8 hours	126(80.8) 67(72.0)	30(19.2) 26(28.0)	2.545	0.111
Time spent Stand-ing daily <5 hours ≥5 hours	100(73.0) 93(83.0)	37(27.0) 19(17.0)	3.566	0.059
Time spent Sitting daily <5 hours ≥5 hours	150(80.6) 43(68.3)	36(19.4) 20(31.7)	4.145	0.042

Discussion

This descriptive study is designed to examine the workplace hazards of hospital cleaners in a tertiary health institution in Southwestern Nigeria. Female workers accounted for the majority (92.4%) of the respondents. Other studies have also shown that majority of hospital cleaners are female [9, 10]. Over half of the respondents were in the productive age of life. More than half of the cleaners had at least secondary school education. This shows that they were not illiterates and are also trainable. Though evidence of adequate training relevant to the cleaning job was not available.

Table IV The Association between Socio-demographic and Occupational Characteristics with Mechanical Hazards

Sociodemographic Characteristics	Mechanical Hazards		Chi-square	p-value
	Present n(%)	Absent n(%)		
Sex Male Female	6(31.6) 118(51.3)	13(68.4) 112(48.7)	2.731	0.098
Age in years 20-29 30-39 ≥40	27(51.9) 69(50.7) 28(45.9)	25(48.1) 67(49.3) 33(54.1)	0.512	0.774
Marital Status Single Married Others	18(42.9) 96(51.3) 10(50.0)	24(57.1) 91(48.7) 10(50.0)	0.987	0.611
Highest Level of Education Primary Junior Secondary School Senior Secondary School Tertiary	33(60.0) 20(69.0) 62(43.7) 9(39.1)	22(40.0) 9(31.0) 80(56.3) 14(60.9)	9.737	0.021
Time spent at Work daily <8 hours ≥8 hours	84(53.8) 40(43.0)	72(46.2) 53(57.0)	2.736	0.098
Time spent Standing daily <5 hours ≥5 hours	72(52.6) 52(46.4)	65(47.4) 60(53.6)	0.925	0.336
Time spent Sitting daily <5 hours ≥5 hours	100(53.8) 24(38.1)	86(46.2) 39(61.9)	4.621	0.032

About half of the respondents had exposure to physical, chemical, mechanical, or biological hazards. It is worth mentioning that at least 4 out of every 5 cleaners complained that their income is low. In a study conducted where casualization of employment is predominant in Nigeria namely the oil and gas, banking and telecommunications sectors contract staff, like casual workers are not union members and they receive lower wages and fewer benefits [11]. Work related stress was found in 83.3% of health workers in a study carried out in another tertiary hospital in western Nigeria. However, all health care workers were included in it [12].

This study shows that none of the socio-demographic and occupational factors was significantly associated with the physical hazards. Working for longer hours did not have effect on exposure to physical hazard. A study conducted in the United

States showed that working for longer than 12 hours in a day is associated with increased hazards rate [13]. The cut off used in this study was 8 hours which is the usual duration of a shift for most of the cleaning staff. However, they are permitted to leave before 8 hours if they complete their assigned job for the day. More proportion of males were involved in physical hazards. They had at least one of the following; excessive noise, excessive light, heat and cold or vibration from working equipment. This could be due to more male involvement in hazardous task at work. This is contrary to the Philippines where male employees were given more preference for supervisory positions than the women [14].

Table V The Association between Socio-demographic and Occupational Characteristics with Biological Hazards

Sociodemographic Characteristics	Biological Hazards		Chi-square	p-value
	Present n (%)	Absent n (%)		
Sex Male Female	6(31.6) 115(50.0)	13(68.4) 115(50.0)	2.384	0.123
Age in years 20-29 30-39 ≥40	26(50.0) 67(49.0) 28(45.9)	26(50.0) 69(50.7) 33(54.1)	0.243	0.886
Marital status Single Married Others	18(42.9) 92(49.2) 11(55.0)	24(57.1) 95(50.8) 9(45.0)	0.909	0.635
Highest Level of Education Primary Junior Secondary School Senior Secondary School Tertiary	29(52.7) 19(65.5) 59(41.5) 14(60.9)	26(47.3) 10(34.5) 83(58.5) 9(39.1)	7.909	0.048
Time spent at Work daily <8 hours ≥8 hours	81(51.9) 40(43.0)	75(48.1) 53(57.0)	1.853	0.173
Time spent Standing daily <5 hours ≥5 hours	68(49.6) 53(47.3)	69(50.4) 59(52.7)	0.132	0.716
Time spent Sitting daily <5 hours ≥5 hours	99(53.2) 22(34.9)	87(46.8) 41(65.1)	6.313	0.012

Mechanical and biological hazards were more in those with primary education. More educated people who are likely to be placed at better duty posts are less likely to have mechanical and biological hazards. Chemical hazards affected more females in this survey. A study among workers in the manufacturing sector in the Philippines shows that women are more vulnerable to occupational hazards. Double hazards from both work and household responsibilities is also commoner in women [15, 16]. Among those who spent <5 hours sitting at work daily four out of five were involved in chemical hazards these were chemical containing liquid and fumes. Spending more time at work seems to have given the staff more expertize. Hospital cleaners like other health personnel such as nurses are at the risk of work-place hazards [9, 17, 18].

Conclusion

Cleaners working in the hospital are exposed to a lot of physical, chemical, mechanical, and biological hazards, similar to what is experienced by some health care workers.

Recommendation

Further studies is needed to know the injury and accidents this categories of workers are exposed to as well as their health seeking behavior.

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