

A COMPARATIVE STUDY OF AWARENESS AND ATTITUDE TO NOSOCOMIAL INFECTIONS AMONG LEVELS OF HEALTH CARE WORKERS IN SOUTHWESTERN NIGERIA

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ABSTRACT

Introduction: Hospital acquired infections (HAIs) continue to be a threat to hospital admissions and workers thus contributing to mortalities and morbidities. Complexity and type of services rendered by health facilities may determine health worker's attitude towards combating these infections. The objective of this study is to compare knowledge, attitude and practice of HAIs among health workers at the three levels of health care in Southwestern Nigeria.

Methods: - This descriptive, comparative cross sectional study was carried out among 273 health workers in Osogbo in Southwestern Nigeria, using multistage sampling method. Pre-coded semi structured self administered and pre-tested questionnaires were administered on sampled health workers. Data was analyzed using the SPSS software 13.0

Results: - All health care workers at the three levels have good awareness that patients could be a source of HAIs. Awareness of common HAIs, awareness of hospital staffs and equipments and the environment as sources of transmission of HAIs were good for health care workers in both tertiary and secondary level care, but poor among primary health care workers.

There was poor awareness of presence of hospital policy on HAI and presence of hospital committee on infection control among health care workers at the three levels of health care, but this is worst among primary health care providers. More health care workers in tertiary care has reported themselves to staff clinics when sick, more always washed their hands before and after touching clients and equipments while more has also ever notified HAIs before, when compared to secondary and primary.

Attitude towards willingness to report HAIs was better in both secondary and tertiary health care workers. There is a good attitude towards readiness to wear protective devices, towards washing of hands before and after touching patients and self reporting to staff clinic when sick among health care workers at the three levels of care

Conclusion: Good knowledge and attitude, but poor practice characterizes nosocomial infections among tertiary and secondary level health care workers in Osogbo. These indices are worst and ranges from fair to poor among health workers at the primary health care level. Routine seminars on factors associated with occurrence of nosocomial infections could help to improve awareness and reduce its prevalence in our hospital settings

KEYWORDS:-Nosocomial or hospital acquired infections (HAIs), Infection control committee, Health care workers (HCWs), Primary health centers (PHC)

INTRODUCTION

Nosocomial or hospital acquired infections (HAIs) is a serious global public health issue, causing the suffering of about 1.4 million people across the world at any given time (WHO 2007). Susceptibility to these infections has been associated with use of invasive devices, extremes of age, immune status and infection control practices (Haley et al 1985, Emori and Gayness 1995, Vincent et al 1995). They often increase costs of health care both for patients and health services alike (Coello et al 1993, McCuckin et al 1999, Kim et al 2001).

Many nosocomial infections are caused by pathogens transmitted from one patient to another, by way of health care workers who have not washed their hands, or who don't observe simple hospital hygiene measures, and also between patients (Horn et al 1988). Consequently, it is important to note that approximately one-third of hospital-acquired infections may be preventable (Comptroller and Auditor General 2000), and that their rates can be reduced by up to one-third if healthcare workers comply with guidelines issued by their hospitals and notable regulating bodies such as the Centers for Disease Control (Larson 1988, Pittet et al 2000). However, compliance rarely exceeds 50%. (Bischoff et al 2000, Maury et al 2000, Moongtu et al 2000, Pittet et al 1999 and Graham 1990, Larson 1992) Failure in compliance has been a root cause for the increased incidence of nosocomial infections, despite adoption of various strategies at various institutional levels (Lynch and White 1993).

With low compliance among health care workers as regards best practices and prevention in their day to day work, and the spread of multi-drug resistance coupled with the fact that poor compliance is associated with lack of awareness among personnel (Meengs 1994), a study on knowledge, attitude and practice of nosocomial infections is long overdue. In addition, most of the invasive procedures take place at the secondary and tertiary levels of care, and this may predisposes their clients and health workers more to nosocomial infections. The complexity and availability of human resources and protective measures may also differ depending on the level of health care. The objective of this study is to determine and compare knowledge, attitude and practice of HAIs among health workers at the three levels of health care in Southwestern Nigeria.

METHODS.

This descriptive, comparative cross sectional study was carried out among health care workers in Osun State in Southwestern Nigeria. The state has two teaching hospitals, six general hospitals and numerous private hospitals and primary health care centers. All these health care facilities admit patients at one time or the other and employ various cadres of health workers relevant to their settings. Clinically related health care workers who have spent at least a year in their health facility were recruited into this study.

With a calculated sample size of 273, multistage sampling method was used in selecting respondents into this study. Questionnaires were proportionately allocated to each level of care before sampling commenced.

For tertiary and secondary levels of care, a teaching hospital and a general hospital was chosen by simple random sampling employing simple balloting in stage 1. Questionnaires were proportionately allocated to each of these hospitals.

In stage two and for each health facility, a list of categories of health workers were obtained from the hospital administrative unit, and two (Doctors and nurses) were conveniently chosen; the main reason being that the concept of HAIs was clinical in nature. Questionnaires were proportionally allocated according to the ratio of the total number of health care workers on the group list. In stage three, a systematic sampling of one in three health workers were selected and these health workers were located wherever they exist in the hospital and subjected to the research instruments until the number of questionnaires allocated to the group got exhausted.

For primary level of care, ten out of 30 local governments were chosen at random in stage one. In stage two, three PHCs from the list of PHCs obtained from local government headquarters were selected by simple random sampling. In stage three, the three most senior health care workers were conveniently chosen per PHC as respondents to the questionnaires.

Pre-coded semi structured self administered questionnaires was administered on sampled health care workers. Questionnaires were pre-tested among ten health care workers in a nearby general hospital in neighboring Oyo state. About three visits to each of secondary and tertiary level facilities and ten visits to the PHCs were made over a period of one month including weekends in order to meet the health workers on rotational duty.

Study variables include their knowledge of HAIs as well as attitude and practice of HAIs and preventive measures. Ethical issues were settled at the levels of the ministry of health, the management of selected hospitals and PHCs, the health workers as well as the ethical review committee of LAUTECH teaching Hospital, Osogbo.

Data was analyzed using the SPSS software version 13.0 after sorting out the questionnaires. Consistency of data entered were done by double entry and random checking. Data was presented in forms of frequency tables. Association between categorical variable were done using chi-square test at a level of significance of $P < 0.05$.

RESULTS.

Table 1 shows that doctors constitutes 24(26.3%) of respondents studied in tertiary level of care, 15(16.4%) in secondary and 2(2.2%) in primary level of care. Nurses constitutes 67(73.6%) of respondents studied in tertiary, 76(83.5%) in secondary and 89(97.8%) in primary level of care. It also shows that 32(35.1%) of tertiary care workers studied has put in less than 5 years into practice as compared to 44(48.3%) among primary. Also 59(64.8%) of tertiary care workers has put in 5 years and above as compared with 53(58.2%) of secondary and 59(64.8%) of primary level of care health workers.

Table 2 shows that 83(91.2%), 72(79.1%) and 60(65.9%) of tertiary, secondary and primary level health workers respectively were aware of patients as a possible cause of HAIs. Similar patterns occurred for other possible routes of transmission of HAIs. Awareness of hospital policy on HAIs was poor at all levels of health care with 31(34.1%) for tertiary, 30(32.9%) for secondary and 2 (2.2%) for primary. A pattern of poor awareness of the presence of hospital infection control committee occurred at the three levels of health care with 36(39.6%), 18(19.7%) and 1(1.1%) at tertiary, secondary and primary levels respectively.

Only 12(13.2%) of tertiary has ever notified cases of HAIs compared with 4 (4.4%) of secondary and 1 (1.1%) of primary level. More of tertiary level health care workers 64(70.3%) always reports self to staff clinic when sick compared to 40 (43.9%) of secondary and 12(13.2%) of primary. Table 2 also shows that more of tertiary level health workers 79(86.8%) always wash their hands before and after handling patients and specimen compared to 62(68.1%) of secondary and 40(43.9%) of primary.

More of secondary level health workers 68(74.7%) were ready to always report themselves to staff clinic when sick compared to 52(57.2%) of tertiary and 40(43.9%) of primary. Similar pattern followed for readiness to always wear protective devices on duty. Readiness to notify HAIs were higher among tertiary health workers 85(93.4%) as compared to secondary 78(85.7%) and primary 42(46.1%) respectively. Eighty nine (97.8%) of health workers at tertiary level are ready to always wash hands before and after procedures as compared to 75(82.4%) of health workers at secondary level and 78(85.7%) of health workers at the primary level respectively. Among tertiary care respondents, there is no significant association between ever reported HAIs or willingness to report and awareness of hospital policy on HAIs and awareness of presence of infection control committee in the hospital($P=0.14$)

DISCUSSIONS

All health care workers at the three levels have good awareness that patients could be a source of HAIs. Awareness of common HAIs, awareness of hospital staffs and equipments and environment as sources of transmission of HAIs is good for health care workers in both tertiary and secondary level care but poor among primary health care workers. In a similar study, only 16.8% of respondents knew the complete definition of nosocomial infection and sixty-nine per cent of health care workers knew that contact is the most common mode of transmission (Raka et al 2006) .

The higher awareness rate obtained in this study among secondary and tertiary level health workers could be due to that majority are qualified and higher cadre medical personnel, and nosocomial infections could have been included as a topic taught in their medical curriculum, and usually features as part of on the job sensitization seminars and continuous medical education for health care workers. This poses a great prospect for control of nosocomial infections in Nigeria. A relatively low awareness among PHC workers could be due to that many workers there are health extension workers, and there are no Continuing Medical Education (CMEs) or seminars as part of their routine work or programs.

There is poor awareness of hospital policy on HAI and presence of hospital committee on infection control among health care workers at the three levels of health care, but this is worst among primary health care providers. This could be responsible for a low rate of notification of HAIs to the relevant authority seen in this study.

More health care workers in tertiary care has reported themselves to staff clinics when sick, more always washed their hands before and after touching clients and equipments while more has also ever notified HAIs before. This is comparable with another study in which only a little over one third of HCWs studied routinely used all barrier techniques such as gloves, masks, and protective eye-wear (Angelillo et al 1999). This holds a lot of prospect for the control of HAIs since it was reported that even hand washing alone was sufficient in reducing the incidence of nosocomial infections.

The poor practice of reporting and the good attitude towards notification of HAIs suggests that serial or routine on the job sensitization seminars to health workers could make a difference that could lead to a better practice of reporting of HAIs. This suggestion is supported by another study in which education sessions for health workers was found to improve knowledge and attitude scores of health workers towards nosocomial infections (Suchitra and Lakshmi 2007).

Attitude towards willingness to report HAIs is better in both secondary and tertiary health care workers. There is a good attitude towards readiness to wear protective devices, towards washing of hands before and after touching patients and self reporting to staff clinic when sick among health care workers at the three levels of care. This was better when compared with another study in which compliance of HCWs with the recommended hand washing practices remains low. In order to reduce the incidence of nosocomial infections, compliance with interventions are mandatory (Suchitra and Lakshmi 2007). In many settings, hand washing may be seen as a trivial issue that is not routinely taken serious, most especially in non surgical and non invasive sessions.

However, sensitization seminars without monitoring compliance of health workers most especially by concerned authority may not really translate into regular hand washing practices. Issues bothering on compliance with standard hospital practice could also be addressed if the infection control committees are up to its task, and with an enabling environment and policy backing health workers who are ready to notify cases of nosocomial infections.

CONCLUSION

Good knowledge and attitude, but poor practice characterizes nosocomial infections among tertiary and secondary level health care workers in Osogbo. These indices range from fair to poor among health workers at the primary health care level. Routine on site sensitization seminars organized for health care workers on factors associated with occurrence of nosocomial infections could help to reduce its prevalence in our hospital settings.

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Table 1:- Personal data of respondents

Personal data of respondents	Tertiary	Secondary	Primary
Age range in years			
20-39	39(42.8)	45(49.4)	39(42.8)
40-59	50(54.9)	46(50.5)	49(53.8)
60 and above	2(2.2)	0(0)	39(3.3)
Sex			
Male	21(23.0)	42(46.1)	8(8.8)
Female	70(76.9)	49(53.8)	83(91.2)
Occupation			
Doctors	24(26.3)	15(16.4)	2(2.2)
Nurses	67(73.6)	76(83.5)	89(97.8)
No of years put in practice			
1-5 years	32(35.1)	38(41.7)	44(48.3)
Above 5 years	59(64.8)	53(58.2)	47(51.6)

Table 2:- Comparism of awareness, attitude and practice of HAIs among the three levels of health care

Variables	Tertiary	Secondary	Primary
Aware of patients as possible causes of HAI	83(91.2)	72(79.1)	60(65.9)
Aware of hospital staffs as possible causes of HAI	77(84.6)	60(65.9)	18(19.7)
Aware of hospital environment as possible causes of HAI	59(64.8)	66(72.5)	30(32.9)
Aware of common examples of HAIs	53(58.2)	44(48.4)	12(13.2)
Aware of hospital policy on HAIs	31(34.1)	30(32.9)	2(2.2)
Aware of presence of infection control committee	36(39.6)	18(19.7)	1(1.1)
Ever notified a case of HAI	12(13.2)	4(4.4)	1(1.1)
Always reports self to staff clinic when ever sick	64(70.3)	40(43.9)	12(13.2)
Always wash hands before/after handling patients/specimens	79(86.8)	62(68.1)	40(43.9)
Ready to notify in the event of an HAI	85(93.4)	78(85.7)	42(46.1)
Ready to always report himself to staff clinic when sick	52(57.2)	68(74.7)	40(43.9)
Ready to always wear protective devices on duty	82(90.1)	88(96.7)	75(82.4)
Ready to always wash hands before and after procedures	89(97.8)	75(82.4)	78(85.7)

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