

PREVALENCE OF, AND ATTITUDE TOWARDS, NEEDLE-STICK INJURIES BY NIGERIAN GYNAECOLOGICAL SURGEONS

ER Efetie, HA Salami

Department of Obstetrics and Gynaecology, National Hospital, Abuja, Nigeria.

ABSTRACT

Health care workers who have occupational exposure to blood and other potentially infectious materials are at increased risk for acquiring blood-borne infections. The emotional impact of a needle-stick injury can be severe and long lasting, even when a serious infection is not transmitted.

Objective: To assess the prevalence and attitude towards needle-stick injuries by Nigerian gynaecological surgeons.

Methodology: A cross-sectional study was conducted at the 40th Annual General Meeting and Scientific Conference of the Society of Gynaecology and Obstetrics of Nigeria (SOGON) held in Ibadan, southwest Nigeria from the 23rd to the 26th of November 2005. Data was collected using a self-administered questionnaire.

Results: Seventy two questionnaires out of a hundred administered were finally analysed. Sixty-five (90.3%) respondents had experienced needle-stick injuries in the workplace. This occurred in the majority of cases (86.2%) during suturing. Only 9.2% of those experiencing a needle-stick injury took the correct or appropriate action afterwards. Consultants were not significantly more likely than Residents to take appropriate actions after needle-stick injuries ($p > 0.10$, $X^2 = 2.11$, 1df). Fifty-two (80%) of those with needle-stick injuries did not report the incident to the appropriate office. Only 26 (37.1%) of 70 respondents indicated the presence of a needle-stick policy in their centres.

Conclusion: The prevalence of needle-stick injuries among sampled Nigerian gynaecological surgeons is high. Majority are either unaware or do not take appropriate actions after exposure to hazardous body fluids from needle-stick injuries, either through first-aid steps or post-exposure prophylaxis. All health institutions should have a working needle-stick policy in their centres, and health care workers continually educated on it.

Key words : needle-stick, injury, Nigeria, Gynaecological surgeons. (Accepted 30 January 2008)

INTRODUCTION

Needle-stick injury means the partial introduction into the body of a health care worker, during the performance of his or her duties, of blood or other potentially infectious material by a hollow-bore needle or sharp instrument, including, but not limited to needles, lancets, scalpels, and contaminated broken glass.

Health care workers who have occupational exposure to blood and other potentially infectious materials are at increased risk for acquiring blood-borne infections. The acquired immunodeficiency syndrome (AIDS) caused by the human immunodeficiency virus (HIV); hepatitis due to hepatitis B virus (HBV) or hepatitis C virus (HCV) are of primary significance to health care workers¹. Needle-stick injuries result in at least 1000 new cases of health care workers diagnosed with HIV, HCV,

and HBV every year in the United States of America². Everyday, thousands of health care workers in developing nations like Nigeria experience needle-stick injuries¹. From these sharp injuries, there have been thousands of cases of HIV seroconversion among health care workers and equally, thousands have become infected with Hepatitis B³. Infections with each of the pathogens named above are potentially life threatening and preventable. The emotional impact of a needle-stick injury can be severe and long lasting, even when a serious infection is not transmitted.

Health care workers from all disciplines are prone to receive needle-stick injuries including gynaecologists, general surgeons, anaesthesiologists, nurses, laboratory technicians, cleaning staff, etc. However, it has been reported that physicians are much less likely to report such injuries than other health care workers³. With this background, and in view of the global HIV pandemic and the growing importance of hepatitis B and C viral infections, this

Correspondence: Dr ER Efetie
E-Mail:efenae@yahoo.com

article assesses the prevalence and attitude towards needle-stick injuries by Nigerian gynaecological surgeons.

MATERIALS AND METHODS

A cross-sectional study was conducted at the 40th Annual General Meeting and Scientific Conference of the Society of Gynaecology and Obstetrics of Nigeria (SOGON) held in Ibadan, southwest Nigeria from the 23rd to the 26th of November 2005. Data was collected using a self-administered questionnaire.

The questionnaires were administered to residents and consultants practicing obstetrics and gynaecology in Nigeria who attended the conference. Questions were asked apart from bio-demographic data, on the occurrence of needle-stick injuries, settings of such occurrences, instruments involved and measures taken afterwards. Questions were also asked on precautions taken against occurrence of needle-stick injuries.

The responses were entered into the computer using Epi Info 2002 version. These responses were analyzed with descriptive statistics for continuous variables and percentages for categorical variables.

RESULTS

One hundred questionnaires were administered and 76 (76%) were returned. Out of these 4 were excluded because they were filled by nurses, leaving 72 for analysis. The ages of the respondents ranged from 30-66 with a mean of 40.13+/-7.95 years. Fifty-nine (81.9%) were male. Sixty-two (86.1%) were Christians while 10 (13.9%) were Moslems. Consultants were 29 in number (40.3%) while 43 (59.7%) were resident doctors. Majority (77.8%) practiced in tertiary centres like Teaching hospitals, Specialist hospitals or Federal medical centres while 7 (9.7%) practiced in General hospitals and 9 (12.5%) were in private practice.

Sixty-five (90.3%) respondents had experienced needle-stick injuries in the workplace. This occurred in the majority of cases (86.2%) during suturing, and the suture needle was the instrument involved in the majority of cases in this group. Table 1 shows the clinical situation of needle-stick injury occurrence among respondents. On enquiry about recapping, majority (51.4%) admitted to recapping needles by hand. Fifty (69.4%) respondents indicated presence of special containers for safe disposal of sharps in their hospitals. When asked how often these were used, only 28(56%) indicated regular use of these special containers.

Table 2 shows the actions respondents took after occurrence of a needle-stick injury. There were multiple responses in 3 questionnaires. Only 9.2% of those experiencing a needle-stick injury took the correct or appropriate action afterwards.

All of those who took appropriate actions after needle-stick injuries such as chemoprophylaxis were in Tertiary centres, as opposed to General hospitals or Private practice. Consultants were not significantly more likely than Residents to take appropriate actions after needle-stick injuries ($p > 0.10$, $X^2 = 2.11$, 1df). Fifty-two (80%) of those with needle-stick injuries did not report the incident to the appropriate office in their centres. Only 26 (37.1%) of 70 respondents indicated the presence of a needle-stick policy in their centres. Half of the six respondents who took antiretrovirals after needle-stick injuries took triple and double therapy respectively.

When asked about precautions personally taken against needle-stick injuries, there were multiple responses. These included applying universal precautions, double-gloving, avoiding recapping, careful suturing, 'non-touch' technique, meticulous attention during surgical procedures. Majority (91.7%) indicated that they double-gloved during surgical procedures.

Table 1: Clinical Situation for Occurrence of Needle-Stick Injuries among Respondents.

Setting	Number	Percentage
Suturing	56	74.7
Recapping	12	16.0
Setting Intravenous Line	1	1.3
Injecting Percutaneously	1	1.3
Others	5	6.7
Total	75*	100

Table 2: Actions Taken after Needle-Stick Injuries.

Action	Number	Percentage
Expressed Blood, then Applied Methylated Spirit or Hypochlorite	28	41.2
Washed With Soap and Water only	15	22.1
No Action	14	20.6
Washed with Soap and Water, Applied Hypochlorite and Took Post-Exposure Prophylaxis	6	8.8
HIV Screening	3	4.4
Prayed to God	2	2.9
Total	68*	100

* There were multiple responses in 3 questionnaires.

DISCUSSION

Although there was an intention to administer a larger number of questionnaires, this could not be achieved due to logistic reasons. Due to this reason, the power of this study would be affected by the sample size. The gynaecologists sampled were those that attended the Annual National Conference of Nigerian gynaecologists. This was done in order to get a

representation from all parts of the country. Knowledge about needle-stick injuries and possible infection from blood-borne pathogens was hitherto often low, and risks under-estimated. The growing HIV pandemic and the growing importance of hepatitis B and C as infectious diseases has generated a lot of interest in needle-stick injuries and its consequences in contemporary surgical practice. Needle-stick injuries can be common, but they are often under-reported, and when levels of reporting have been examined, it is common for only a small proportion to be reported¹⁻⁴.

From this study, the prevalence of needle-stick injuries in the workplace among gynaecologists is high. This has implications for the risks of transference of HIV and other blood borne pathogens following occupational exposure. This is even so especially as not all patients undergo pre-operative screening for such pathogens, without prejudice to the issue of 'window-periods' in seroconversion. Previous reports have concerned general surgeons and ranged from 10.5% at the Obafemi Awolowo University, Ile-Ife, southwest Nigeria to 53% at the University of Nigeria Teaching Hospital, Enugu, southeast Nigeria⁵⁻⁶.

Most needle-stick injuries occurred during suturing and the suture needle was the instrument involved in the majority of cases. This is in agreement with the findings of Adegboye et al and Adesunkanmi et al in Ile-Ife^{4,5}. The latter study also demonstrated that the risks of needle-stick injuries were significantly increased if the operation was a major one and if the duration of the operation was more than one hour⁵. Although more than half of the respondents admitted to recapping needles by hand, this was not responsible for a significant number of needle-stick injuries, unlike the findings of Okeke in Enugu⁶.

Expressing blood from the site of injury and applying methylated spirit, hypochlorite or chlorhexidine solution was the main method of aftercare indicated by respondents, and it is noteworthy that 9.2% of the gynaecologists after a needle-stick injury received post-exposure prophylaxis. This is an important component of interventions to prevent transference of infection from hazardous body fluids to health care workers through needle-stick injuries. Another component is use of double gloves or combination of gloves. Previous studies have found a decrease in glove or skin perforations when these were used^{7,8}. It is noteworthy that majority of the gynaecologists sampled (91.7%) indicated they double-gloved during operations. However, fewer proportions (20% and 37.1% respectively) indicated either reporting needle-stick injuries to the appropriate offices for necessary action or the presence of a needle-stick policy in their health institutions.

In view of the sample size in this study, further work in this area is suggested, based on multi-centre studies.

CONCLUSION

The prevalence of needle-stick injuries among sampled Nigerian gynaecological surgeons is high. Majority are either unaware or do not take appropriate actions after exposure to hazardous body fluids from needle-stick injuries, either through first-aid steps or post-exposure prophylaxis. Continual education of health care workers on risks of, interventions to prevent needle-stick injuries and appropriate actions to prevent infection is advocated. Also all health institutions should have a working needle-stick policy in their centres. This should be documented, made available to all health care workers and placed in strategic locations boldly within each health facility.

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