Knowledge, attitude and practice of maternity unit staff in Jos Metropolis to universal precautions against HIV

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Abstract

Background: Health care workers in maternity units are exposed to potentially infectious body fluids in the course of their duties. The study assessed the knowledge, attitude and practice of maternity unit staff in Jos Metropolis regarding Universal Precautions (UP) against the background of the high HIV seroprevalence in Plateau state, Nigeria.

Methods: A cross sectional descriptive study carried out among maternity unit staff in Jos, Nigeria. A pretested, structured, anonymous questionnaire on knowledge, attitude and practice on universal precautions concerning HIV was administered to a sample of 230.

Results: A total of 202 questionnaires were completed and returned giving a response rate was 87.8%, 68.5% of the respondents were female and 31.5% male; 63 of the respondents were physicians while 139 were non physicians. 52 (82.5%) physicians and 113 (81.3%) non physician cadre staff correctly identified UP in the context of labour ward practice to apply to blood, vaginal secretions and liquor. 54 (85.7%) of the physicians and 87 (62.6%) identified that UP involved use of barrier methods. Being a physician conferred knowledge of correct use of barrier methods..

Conclusion: A majority of the respondents demonstrated correct knowledge of practice of UP . There was no significant difference in knowledge between physician and non physician cadre of labour ward staff with regard to correctly identifying the fluids that UPs apply to. Physician cadre of labour ward staff in Jos metropolis was associated with the correct identification of barrier methods that UPs apply to.

Keywords HIV, Universal precautions, Maternity unit staff, Jos.

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Introduction

Occupational exposure to blood and body fluids presents a risk to maternity unit staff for transmission of blood borne infections including the Human Immuno-deficiency Virus (HIV) has been isolated in blood, vaginal secretions and amniotic fluid[1]. These are all fluids that maternity unit staff are exposed to in the course of their duties.

Estimates by the World Health Organization (WHO) are that about 3 million Health Care Workers are exposed to blood borne viruses each year (2million to Hepatitis B, 900,000 to Hepatitis C and 300000 to HIV).Developing countries especially those in the sub Saharan account for the highest prevalence of HIV infections in the world and also record the highest incidences of occupational exposures[1].

Serial HIV sentinel surveillance reports indicate an increasing trend of HIV infection in Nigeria[2]. HIV seropositivity rates among antenatal clinic clients rose from 1.4% in 1992 to 5.8% in 2001[2] .Current antenatal sero prevalence for Plateau State are 7.7% ranking the state among sixth highest states in Nigeria with the burden of HIV [3] .This implies increased exposure of health personnel to the virus during the process of delivery.

In Jos, the incidence of HIV positive women in the delivery room rose from 0.08% of admissions in 1997 to 1.9% in 2003[3]. In Abeokuta, episiotomies were performed in 47.1% of HIV positive women in labour[4]. While it is evident that HIV screening is becoming acceptable to the antenatal population[5]; there appears to be insufficient data on the attitude of health care workers towards precautions against HIV infection at the workplace. Concerns about the occupational hazards of health care providers with respect to blood borne pathogens led to introduction of universal precautions in health care settings.

Universal precautions refer to use of barrier precautions, skin surface care in the event of contamination and prevention of injury from sharps[1]. Under the "universal precaution"principle, blood and body fluids from all persons should be considered as infected with HIV, regardless of the known or supposed status of the person[1,6-9].

Procedures used during the process of childbirth, managing the third stage of labour and general maternal care potentially generate large blood and body fluid

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droplets. This specific exposure may transmit the HIV virus. While resources for post exposure prophylaxis may be of benefit, avoiding occupational blood exposure is the primary means to prevent transmission of HIV in health care settings[14]. There appears to be insufficient data on the attitude of health care workers towards precautions against HIV infection at the workplace. This study therefore seeks to investigate the knowledge, attitude and practice of health care workers in maternity units in Jos metropolis against the background of high HIV seroprevalence values.

Materials and Methods

The study was carried out in the Jos Metropolis the capital of Plateau State between the months of March and April 2006. A pretested, structured, anonymous questionnaire on knowledge, attitude and practice on universal precautions against HIV was administered to a sample of 230 maternal unit staff. The questionnaire contained both open ended and closed questions.

The questionnaires were administered in the major hospitals (Jos University Teaching Hospital, Bingham University Teaching Hospital and Plateau State Specialist Hospital) in the metropolis as well as randomly selected primary health care centres and private hospitals. Randomization was done by assigning numbers to the hospitals and thereafter using a table of random numbers to choose which hospitals would be used for the study. Information was obtained on the subjects age, sex, type of hospital the subject was employed and designation. Each respondent was requested to fill the questionnaire independently within forty-five minutes of collection at the duty post where it was administered. The responses to knowledge of UP were regarded as adequate if the respondents chose the option that stated that UP applied to blood, vaginal secretions; needle disposal methods and handling soiled linen. Regarding UP practice, responses were adjudged to be correct when respondents chose the option that stated that UP included the use barrier methods and precautions while using sharps.

Analysis was done using Epi info 3.5.3, simple percentages and Odds ratios were calculated from the data generated from the responses.

Results

Study characteristics,

Two hundred and two questionnaires were completed and submitted out of total of 230 questionnaires that were administered. The response rate was 87.8%. The age range of the respondents was 23-59years, 68.5% of the respondents were female and 31.5% male. There were 63 physicians in the study; Fifty five percent (55%) were resident doctors. One hundred and thirty nine were non doctors consisting of community health officers (13.7%), nurses/midwives (71.9%) and orderlies (14.4%). Over 80% of the physicians and non physician cadre of labour ward staff correctly identified that universal precautions against HIV applied to blood, vaginal secretions and liquor.

Knowledge and practice of UP

Eighty five percent (85%) of the doctors and 63% of other non physician labour ward staff properly identified what universal precautions were (OR = 1.08; 95% CI: 0.49-2.36). One hundred and twenty two (88%) of the non physician labour ward staff versus fifty three (85%) of the physician labour ward staff knew proper needle disposal methods (OR=3.58; 95% CI:1.63-7.86). Regarding the practice of Universal precautions, 56% of the doctors and 41% of other non physician labour ward staff used protective barrier methods always. (OR= 31.7 95% 13.84-72.75)

Forty nine of the physician staff (78%) and 25 (18%) of non physician labour ward staff had potentially infectious patients' blood/ body fluids in contact with their skin in the course of their practice (OR = 15.96 ;95% CI ;7.65-33.28). With respect to disposal of used needles and scalpels in puncture resistant containers, 45 (73%) of physicians and 87 (63%) of the non physician labour ward staff disposed of such items by using puncture resistant containers (OR = 1.49 95% CI ; 0.78-2.84) while 6 (10%) of the physicians and 16 (12%) of the labour ward staff recapped needles before disposal (OR= 0.81; 95% CI 0.30-2.17).

Discussion

The results of this study show that there appears to be adequate knowledge about the body fluids that universal precautions against HIV infection apply to. Fifty two of the (82.5%) of the respondents that were physicians correctly identified such precautions to apply to blood, vaginal secretions and liquor.

One hundred and thirteen (81.3%) of the non physician cadre of labour ward staff also correctly identified the fluids universal precautions refer to. This suggests that maternity unit staff in Jos are well informed about the fluids that may transmit the virus in the course of patient care.

Adequate awareness was demonstrated by a high proportion of doctors and other health care workers with regards to the fact that universal precautions involve the use of barriers protective methods and precautions against injury by sharp instruments. Fifty four (85.7%) of the physicians were aware that barrier methods were part of the universal precautions to protect against HIV infection in the labour ward while 87 (62.6%) were aware of the same precaution but being a physician conferred a higher likelihood of being aware of this precaution (OR 3.58 ; 95% CI = 1.63 - 7.86)

Previous studies have shown that health care workers are well informed on the risks of occupational exposure to HIV[13]. This was supported by the findings in this study. Such studies have also noted that, their

practice often falls short of standard. This was supported by the relatively low percentage (56%) of the doctors who reported use of barriers methods for all patients irrespective of their HIV status. Thirty percent (30%) in fact used such protective methods only for patients they adjudged to be at risk of HIV infection.

This is contrary to the universal precaution principle which stipulates that blood and body fluids from all persons should be considered as infected with HIV, regardless of the known or supposed status of the person [1,6-,9,15,16]. Sixty two percent (62%) of the nurses in this study used surgical gloves while handling body fluids always while 60% orderlies in the study and 89% of the community officers used surgical gloves always while handling patients' body fluids.

Partial compliance has been reported in similar studies in India[17] and the United Kingdom[18]. In this study, Forty nine (77.8%) of the physicians and 25 (18%) had potentially infectious body fluids in contact with their skin in the course of their labour ward practice. (OR = 15.96; 95% CI = 7.65 - 33.7) in the course of patient care with physicians more likely to be exposed to potentially infectious body fluids. This may indicate that physicians in this study were more involved in activities in the work place that generated blood and potentially infectious body fluids and indicates a high level of exposure at the work place against the background of sub optimal practice of universal precautions and high sero-prevalence of HIV.

The suboptimal practice of universal precautions reported in this study agrees with other observations and surveys in Nigeria and other parts of Africa[16,19,20] even though it remains difficult to ascertain just how many health care workers in Africa have acquired HIV due to suboptimal practices at the workplace[21].

In this study , being a physician was associated with knowledge of correct use of barrier methods (OR 3.58; 95% CI = 1.63-7.86) and physicians were also more likely to use surgical gloves always (OR 31.7; 95% CI 13.84 -72.75) ;this agrees with findings in a similar study in Idi-Araba Lagos[22]. Other studies have found an association between inadequate universal practice techniques such as unsafe handling and disposal of sharps to be commoner among private health care providers than public health workers, and among those working in rural settings than urban centres[23]. This was not an association this study sought not investigate.

Other studies have attributed non compliance to universal precautions among health workers to the belief that adhering to universal precautions increased work load and added to the pressure of carrying out clinical duties[18]; other reasons for non compliance include a perceived reduction in dexterity while using surgical gloves and absence of penalties at the work place with non compliance[24].

It is very important that health care worker are knowledgeable about the risks of blood borne pathogens at the work place and universal/standard precautions that can reduce such risks. All the respondents considered universal precautions to be an important issue and said they ensured their subordinates observed these precautions at the work place.

The limitations of this study are that the use of questionnaires as a tool to investigate occupational exposure retrospectively may have introduced recall bias. The varied work environments of the subjects who worked in different levels of health care in the public and private sector may have influenced the responses and results obtained. This may restrict interpretation and application of the results as well. The results may however form the basis for future research.

Conclusion

Based on our findings, it is recommended that regular workshops and continuing medical education seminars on prevention of HIV by appropriate practice of universal precautions should be targeted at health workers in maternity units. An institution based surveillance system for hospital acquired infections including HIV as well as regular audits by a dedicated team of trained occupational safety and health (OSH) personnel that will directly observe UP practice periodically may be of benefit.

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