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Case Study

## Perceived risk of HIV infection among Midwives working in the labour wards.

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Accepted March 26<sup>th</sup>, 2014

### ABSTRACT

Health workers are at risk of being infected with Human Immunodeficiency Virus (HIV) and other blood-borne pathogens because of their exposure to blood and body fluids. The purpose of the study was to investigate into the perception of risk factors of HIV infection through exposure to blood and body fluids and other health hazards among midwives working in labour wards. Using in-depth interviews, qualitative data were collected from eight midwife participants from the labour wards of a district hospital and a Polyclinic in Accra. Enquiries were made about modes of exposure to body fluids, participants' perceptions of risk of HIV infection after exposure, and precautions available for preventive measures. The findings indicate that the midwives perceived themselves to be at risk of acquiring HIV and other blood borne diseases. There was lack of knowledge on procedures to report any incident that jeopardised the life of the participants as a result of an exposure. The participants rarely follow the directions of universal precautions of infection prevention because of lack of resources. Some midwives were considering leaving the work while others had left the profession because of the occupational hazards and the risk of being infected with HIV. Recommendations are made for provision of resources for infection prevention in the labour wards by management of hospitals.

**Key Words:** Amniotic fluid, HIV infection, labour wards, midwives, occupational risk, universal precautions.

### INTRODUCTION

Health workers in performing their professional duties are exposed to blood and other body fluids of patients. This may occur as a result of splashes and spraying of blood and body fluids or by needle pricks and from sharp instruments (Aisien & Shobowale, 2005: 76; Davies, Khan, Ghauri & Ranaboldo, 2007: 2). There is documentation on transmission of HIV to health workers as a result of occupational exposure to blood and body fluids of HIV/AIDS patients in the United States, United Kingdom, France and other higher income countries (Do et al 2003; Roni, 2007).

An estimated 2.5% of HIV infections among health workers worldwide have been attributed to occupational exposure (WHO, 2002). In Ghana, there is a very high risk of infection among doctors, nurses and midwives because of several reasons such as inadequacy of protective materials during deliveries. The highest HIV prevalence rate is recorded among the 25-29 year age group (Ghana Health Service, 2005: 8) in Ghana. This constitutes a sexually active and child bearing age group. HIV/AIDS infection rate among pregnant women is reported to be high, particularly in Africa where about 40% of pregnant women are said to be infected with the virus (Mathe, Rigo, Sontag & Gerard, 2008; Makin, Forsyth, Visser, Sikkema, Neufeld & Jeffery, 2008: 910).

The strategies employed to minimize the risk of occupational transmissions of HIV to health workers include the use of gloves, gowns, aprons, boots, masks and goggles. Precautions are also taken to prevent injuries caused by sharp instruments or devices. Studies have however shown that not all health workers follow the principles of the universal precaution (Hesse, Adu-Aryee, Entsua-Mensah & Wu, 2006: 5). This increases the risk of contracting HIV at work places. The risk of HIV and other blood borne infections are much higher in workers in delivery and emergency rooms (WHO (2003). This potential risk of midwives being infected with HIV due to occupational exposure has been investigated in Ethiopia, Nigeria and Zambia (Dieleman, Bwete, Maniple, Bakker, Namaganda, Odaga & van der Wilt, 2007: 2).

In Ghana most of the published studies emphasize epidemiology and surveillance, awareness, knowledge about transmission, attitudes and practices that lead to spread of the HIV/AIDS epidemic, challenges and strategies of combating the epidemic within the country (Hesse et al, 2006: 2). The risk of occupational exposure and the potential for

HIV infection could generate fear in midwives and highly discourage them from continuing to practise midwifery. This fear could also discourage potential persons from pursuing a career in midwifery, as well as lead to discriminatory attitudes against clients suspected to be HIV positive. Investigating the risk of occupational transmission of HIV infection among Ghanaian midwives becomes necessary.

### Problem Statement

In Ghana there is a dearth of literature on the risk of exposure to HIV infection among health workers. These exposures are bound to be more in the labour ward where, according to WHO (2003), the midwives are exposed more frequently to body fluids. This study therefore aimed at investigating the risk of exposure to HIV infection among midwives in two health facilities in Accra.

### AIM OF THE STUDY

The study aimed at exploring the possibility of HIV infection among midwives as a result of occupational exposure to body fluids in the labour wards and intervention measures employed to prevent or reduce the exposures.

### Research Questions.

The following research questions are answered in the research; what are the risk factors that warrant exposure to HIV infection among midwives?; what resources are available for midwives to protect themselves against exposure to blood and body fluids of patients?; what is midwives' level of adherence to universal precautions? And what is the reaction of midwives after exposure?.

### Definition of keywords/concepts

**Amniotic fluid:** Fluid around the foetus; **HIV infections:** exposure to Human Immunodeficiency Virus; **Labour wards:** rooms in hospital for delivery; **Midwives:** Health professionals licensed to practice midwifery; **Occupational risk:** danger connected with job; **Risk of exposure:** coming into contact with blood or amniotic fluid during delivery; **Universal precaution:** safe action taken by all.

### RESEARCH METHODOLOGY

#### Design

A qualitative descriptive explorative approach was used to explore the risk of occupational exposure to HIV infection among midwives who were practising in the labour wards.

#### Target Population

The total population of the midwives in the labour wards of a district hospital and a polyclinic was 25.

#### Method of Sampling and Sample Size

A non-probability purposive sampling technique was used to recruit eight participants. The criteria for inclusion were that a midwife must have practised midwifery for at least one year, and must be currently working in the labour ward.

#### Data Gathering Procedure

Data collection took place from February to May 2009. In-depth face-to-face, audio taped interviews were conducted with each participant. The interviews lasted between 45 and 60 minutes, conducted in English, at a time and venue convenient to each participant. The interviews were conducted using an interview guide. Demographic data collected at the beginning of the interview included age, length of time of practice as a midwife and length of practice in the current ward. During the interviews, participants were encouraged to talk freely and they expressed their views without interruption. During the interview sessions, the participants' subjective thoughts and feelings, body language and other non-verbal communication during the process were documented as field notes to serve as audit trail.

#### Ethical considerations

Ethical clearance was obtained from the Institutional Review Board (IRB) of the Noguchi Memorial Institute for Medical Research (NMIMR) at the University of Ghana. Each participant signed a consent form prior to being interviewed.

#### Data Analysis

Latent content analysis was employed to analyse the data (Mayan, 2001).

## FINDINGS

The findings are reported in themes and sub themes that emanated from the data collection and analysis. These are: **Risk of exposure:** Exposure to blood, exposure to amniotic fluids, and exposure to needle pricks; **Protective measures:** Lack of resources; **Actions taken by midwives after exposure to potential infection;** and **Reactions of midwives to exposures:** Fear, worry and sadness, shortage of midwives.

### Risk of exposure

The participants perceived themselves to be at risk of acquiring HIV and other blood borne infections as a result of their exposures to blood and body fluids of patients. The sub themes derived from risk of exposure are: exposure to blood; exposure to amniotic fluids; and exposure to needle pricks.

**Exposure to Blood:** The midwives accepted that the nature of their work as midwives exposed them to blood while on duty but at the same time not happy about the manner of contact to blood. The following were some of the accounts from participants:

*Yes, I remember one day in 2001, I conducted a delivery in the labour ward. After the baby came out, there was a gush of blood straight into my eyes. Luckily that day was general ward rounds so all the specialists and the junior doctors were in the labour ward. They immediately took my blood and that of the patient to the laboratory and my eyes were rinsed with normal saline. The patient was admitted until the result came out negative.*

*Every second, every minute, everyday you are exposed... When the baby is coming and you are not lucky blood or amniotic fluid will splash on you, even into your mouth... When the baby is out and you are cutting the cord or trying to put the baby at a safe place, before delivering the placenta, some of the mothers can push and before you realise you have blood all over you.*

*It is not only when you are conducting deliveries that you are exposed to blood. There are times when you are even setting up an intravenous line for a patient and because the person is in so much pain, she may not cooperate with you. She may shake the hand where the cannula can come out of the vein, and you may have blood splashing all over you. You may get blood on your face.*

**Exposure to amniotic fluid:** Midwives were also frequently exposed to liquor amino which was mentioned as the most common body fluid that pours on midwives. In the words of one midwife:

*As a midwife, you will always have amniotic fluid pouring on your face, your body, everywhere. It can even pour into your dress and make you wet. You only go and change the dress, rinse it, and come back to work.*

#### **Another declares:**

*Most of the times it is amniotic fluid which is pouring on us...when you are rupturing the membranes the amniotic fluid sometimes just splashes on you when you are not expecting it.*

**Exposure to needle pricks:** Exposure occurs to the participants through needle pricks, particularly when they are suturing episiotomies. The risk of being pricked by a needle is higher when the patients are not cooperative during the process. One midwife stated:

*Because of HIV and hepatitis, we are careful as midwives but sometimes the patient may be confused and struggle when you are suturing so you can get pricked by the needle.*

#### **Another recounted:**

*Yes, the needle can prick you because at times the patients do not cooperate with us during the suturing of episiotomy. You will talk to them, give them the xylocaine infiltration to make the place numb but some of them will still be struggling and in the process, you the midwife can be pricked with the needle.*

### Protective Measures

The participants expressed concerns about lack of logistics and inadequate supply for infection prevention. They explained that they could have prevented most of the exposures they face if there were adequate supplies of protective material. A participant said:

*Yes, if we have a lot of protective materials, we can prevent most of the exposures to blood and the body fluids.*

Looking very sad, another participant expressed similar concerns about the lack of supplies. She said:

*There are times that you wear the gloves to deliver and then you realise later that there are holes in them or they got torn while you were working with them. So we have the habit of putting on two or three gloves at a time so that if one is torn the other one can protect you. There are times too the number of gloves is few. In such situation there is no way that you will say you will put on two or three gloves to attend to one patient. That will mean that you will not have any to use for the other patients or you won't attend to them till you have a new supply of gloves. So you just put yourself at risk, put on single gloves and work.*

One participant explained how non availability of goggles exposed their faces to blood splashes: *We are supposed to use goggles, which we don't even have. You see that even if you use your own spectacles at the end of the day when you bring it out you see traces of blood on it. It means without the goggles those traces of blood are getting into your eyes and could be a source of infection.*

In a tone that depicts her frustration, a participant recounted that there were times they lacked even parazone, soap and water in the ward:

*Parazone is the most important thing we need in the maternity units. However, there are times that we can't even get the parazone. Sometimes, for the whole month, we are supplied with just one gallon of parazone and we conduct about 300 to 400 deliveries in a month. So it is not enough. Sometimes we don't get even soap to wash our hands with. At times we are short of water so we have to ask the patients' relatives to go and bring water before we can wash our hands after deliveries and before we can bath the babies.*

When asked whether they feel well protected against exposures to blood and body fluids of patients, one said:

*No, I must say no, because at times even if you are wearing the long boots with apron because the aprons are not that long you can have blood pouring onto your feet.*

From her experiences over the three years that she had practised in the labour ward, one participant doubted whether anything could be done presently to protect them against the blood and body fluids they are exposed to. She stated:

*These exposures, I doubt if they could be prevented. It seems as if the exposures to blood, amniotic fluid and body fluids are part of midwifery. As a midwife I don't like the fact that I am always exposed to these things. If there could be any technology that could protect us, I will be very grateful.*

### **Actions taken by midwives after exposures to potential infection**

The midwives in some circumstances virtually did nothing when exposed to body fluids as they occur unexpectedly. Participants sometimes washed the part of the body exposed or if it were a needle prick squeezed the area for blood to ooze out from the affected site as a means of prevention. The following were some of the views expressed:

*What can you do than to go and clean yourself? All the dress you put on is soaked with blood so you look for a gown, remove the soiled one and soak it in parazone solution before washing it.*

*What I do if I see blood on my skin is to remove my gloves quickly and go under the tap and wash the area, before coming back to continue with the work. For the needle pricks, you and the patient must be screened.*

### **Reporting of Exposures**

Though the participants were unanimous that they were frequently exposed to blood and body fluids of clients, they hardly reported the exposures to the hospital management. Some of the midwives seemed unaware of any procedures regarding reporting of occupational hazards. The following were some of the responses:

*Whom will I go and report to that during a delivery I infected myself? I don't know and I haven't seen any of my seniors reporting to anybody. That is our job. I have to protect myself but I have realised that there is no way that I can protect myself because whatever I put on during the deliveries I will have blood and amniotic fluid splashing or pouring on me. I haven't heard anybody that if something happens to you during deliveries you must report.*

*Hmmm, as for this place we don't report anything. It was at one of the tertiary hospitals that I saw a midwife reported an exposure. A needle that was used for an HIV positive patient pricked a midwife so she reported to her in-charge and her blood was taken to the lab and she was to do another test six months later.*

*Well I don't know. But I personally I've had a thousand and one needle pricks but I have never reported to anybody and I have never been screened. We just laugh over it and you just pray that nothing will happen to you. We believe we were doing our work with a clean conscience so we pray that God protects us. That was what has kept us going.*

### Reactions of Midwives to Exposures

The possibility of being infected with HIV and other pathogens following exposure to blood and body fluids of patients has led to varying reactions among the participants.

**Fear, worry and Sadness:** The fact that one could get infected with HIV through exposure to the blood and body fluids of patients make the midwives sad and generate a lot of fear in them. All the midwives reported some form of emotional problems of fear, sadness, worry or some form of anxiety at work. Some of them resigned to the situation and were looking up to God's protection. One of them said:

*Well, if you had an exposure while conducting a delivery, you feel happy that you have delivered the woman. She had her baby and she is in good condition but you feel sad because of the risk that you face.*

#### **Another participant said:**

*I do not allow fear of being infected affect my work. I feel that I am not working for any human being. I am working for my God and whosoever I take care of is like taking care of my God that I serve. With that at the back of my mind, I always want to nurse every patient the way I will want to be nursed if I am also in bed because I can contract any of these diseases from anywhere.*

*Shortage of Midwives: Participants recounted that they have a heavy workload because of the shortage of midwives in the labour ward. Below were responses from participants:*

*The staff situation is not encouraging. It is not very easy getting the midwives. Even the few midwives that we have are running away from the labour ward because of the fear of infections and the nature of the work.*

*We are short of staff so actually in the mornings we get four midwives on duty but for the afternoon shift it's only two midwives and the afternoon shifts are rather very hectic.*

*Because of the shortage, we can't provide focus care on the patients, like the midwife staying with the client throughout the labour period. You can't do it because we are only two and there are about five or six patients in labour, how can you cope?*

## DISCUSSION

One major finding of the study was exposure of the midwives to blood and body fluids of their clients daily in labour wards through splashes of blood and amniotic fluid during deliveries, and by needle pricks. These modes of exposure support the findings of others (Davies et al, 2007: 3).

Exposure to blood and amniotic fluid was the most common modes reported by participants in this study. No exposure incidents resulting from accidental needle pricks or cuts when handling soiled instruments were reported as was the case in other studies (Davies et al, 2007: 2). The participants' perception of the risks of being infected with HIV through occupational exposure was high. The high occupational risk of HIV infection was reported by Tawfik & Kinoti (2006: 8) among health workers in some African countries such as Swaziland, Mozambique and Zambia. The similarity between this current study and the report of Tawfik & Kinoti might be that these African countries and Ghana are low income countries where resource constraints are a hindrance to health workers' adherence to infection prevention practices.

It was found that universal precautions for infection prevention did not reflect in practice or adherence to the universal precautions because of lack of resources and logistics. Lack of material and human resources required for practice of the universal precautions, or where available, their inadequate supply was reported by the participants as hindering their adherence to the universal precautions. This finding supports previous research findings (Hesse et al, 2006: 4) as being responsible for health workers' partial or total non-adherence to the universal precautions.

It was found that reporting of occupational exposures was very rarely done among the study participants. This and the reasons participants gave for the non-reporting were similar to the findings reported by other researchers. For example, participants did not report exposures because they believed nothing could be done about the exposures. There was also lack of time, lack of knowledge about the reporting procedures (Hesse et al, 2006:3).

The possibility of acquiring HIV infection following occupational exposure was a source of worry to the participants. In the absence of adequate supplies of resources to protect themselves against exposure to blood and body fluids of



patients, the thought of being potentially at risk of HIV infection haunted the participants. Some of them reported becoming sad when they had to work. A similar finding was reported (Dieleman et al. 2007: 6). Dieleman et al further found that participants find working in the labour ward to be very busy and hectic. They had a very heavy workload to deal with everyday because of the shortage of midwives. They attributed the shortage of midwives to, among other factors, as midwives not willing to practise in the labour ward because of the rampant occupational exposures encountered during their practise.

The shortage of midwives and the attendant heavy workload led to emotional stress and fatigue, fear, anger and frustration among the midwives. The fear of being infected with HIV after occupational exposure had compelled some participants to consider leaving the labour ward or leave the profession altogether. These support earlier studies (Dieleman et al. 2007: 5) where the fear of being infected with HIV following occupational exposure had discouraged many nurses from wanting to pursue a career in midwifery.

## CONCLUSION AND RECOMMENDATIONS

Investigating the risk of exposure to HIV infection among midwives in the two health facilities revealed that occupational exposure to the blood and body fluids of clients was a major occupational hazard faced by midwives. The main modes of exposures were through splashes of blood and amniotic fluid, and needle pricks. Participants believed they face a high risk of being infected with HIV through these exposures. The potential risk of being infected with HIV as a result of these exposures had led to some of them considering leaving the profession. Though they were conversant with the universal precautions of infection prevention, they lacked the requisite human and material resources to adhere to the universal precautions to protect themselves. The need for adequate supplies of resources for infection prevention in adequate quantities was paramount to all participants.

Based on the findings of the study, the following recommendations have been made:

- Provision of resources (e.g. gloves, goggles, boots, parazone) for infection prevention in the labour wards must be a top priority of management.
- In-service education on infection prevention should be a regular event and management must ensure that all the staff benefit from it and inputs are provided to ensure effectiveness of the training programme.
- Midwives who repair episiotomies need to be specially trained to equip them with the skills needed to perform this procedure without much pain to the clients.
- Education on the procedures for reporting occupational exposures and relevance of post exposure prophylaxis must be intensified to ensure all midwives are conversant with them so as to encourage exposure reporting. Data gathered through accurate reporting of exposures could be used to lobby the health authorities for funds to procure the needed logistics for practice of the universal precautions. It will also help in identifying exposure victims for post exposure prophylaxis.
- The prevailing situation whereby midwives who are occupationally exposed only pray and rely on God's intervention for protection after exposures is not good enough. A well manned counselling unit could be attached to the exposure reporting centre to offer professional counselling services to victims in addition to provision of post exposure prophylaxis.
- Postings to the labour wards could be regulated so that each midwife practises in the labour ward for a specified period of time. When this is done no group of midwives will remain in the labour ward for a very long time and no midwife will feel she is going to spend her entire working life in the labour ward.

## LIMITATIONS OF THE STUDY

The small sample size and the fact that participants were recruited from only two health facilities is a limitation of the study. The findings could therefore not be generalised to all midwives or all health institutions as the participants were not randomly selected. Notwithstanding, the direct quotes from the participants and the description of the setting could fit similar contexts.

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