

How do Primary Health Care Workers Perceive and Practice Post Exposure Prophylaxis for HIV in Enugu State?

Uzochukwu BSC^{1-3*}, Sibeudu FT⁴, Ughasoro MD^{3,5}, Okwuosa C³ and Onwujekwe OE^{2,3,6}

¹Department of Community Medicine, University of Nigeria, Enugu Campus, Enugu, Nigeria

²Department of Health Administration and Management, University of Nigeria Enugu Campus, Enugu, Nigeria

³Health Policy Research Group, University of Nigeria Teaching Hospital, Enugu, Nigeria

⁴Department of Nursing Science, Nnamdi Azikiwe University, Nnewi, Nigeria

⁵Department of Paediatrics, University of Nigeria Enugu Campus, Enugu, Nigeria

⁶Department of Pharmacology and Therapeutics, University of Nigeria Enugu Campus, Enugu, Nigeria

*Corresponding author: Uzochukwu Maduka D, Health Admin and Management, FWACP, University of Nigeria, Enugu Campus, Enugu, Nigeria, Tel: 2348060388863; E-mail: kakatitis@yahoo.co.uk

Received date: August 02, 2014; Accepted date: November 19, 2014; Published date: November 25, 2014

Copyright: © 2014 Uzochukwu, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Background: Healthcare providers are in constant risk of exposure to Human Immunodeficiency Virus (HIV) during their routine practice. This makes it paramount to evaluate their knowledge, attitude and practice of Post-Exposure Prophylaxis (PEP). Since this will determine their likely line of action if exposed to HIV. Therefore, this study aimed to determine their level of knowledge, attitude and practice of PEP among Primary health care workers in Enugu State.

Method: The study was a descriptive cross sectional study conducted in Enugu state, South East Nigeria. Data were collected from 129 health workers in 10 primary health centers using questionnaire adopted from the US guideline for the management of occupational exposure. Data was analysed using SPSS

Result: About 86% (111/129) had knowledge of PEP, 92.2% (119/129) agreed that PEP reduces the risk of occupational HIV and 29% (38/129) treated themselves with PEP on exposure aggressively, while 71% (91/129) were not serious with PE treatment. On their practice of PEP, 17.8% (23/129) were frequent, 26.4% (34/129) practice is sometimes, 27.9% (36/129) were regular and 27.9% (36/129) do not practice PEP.

Conclusion: The gap between the impressive knowledge or attitude on PEP by the healthcare workers and their poor practices is unacceptable. A study to determine factors that contribute to the poor practices can provide solution on how to improve on their practice and therefore, reduces the risk of getting infected when exposed to HIV.

Keywords: Human Immune Deficiency Virus (HIV); Post Exposure Prophylaxis (PEP); Health workers; Knowledge; Attitude and practice

Introduction

Human Immunodeficiency Virus (HIV) is a disease of public health importance, especially in sub-Sahara Africa countries including Nigeria [1,2]. The endemicity of the disease in this region has increased the risk of contracting HIV especially by healthcare providers, thus one of the main occupational hazard faced by healthcare providers practicing in this locality. The coming in contact with HIV infected blood products and/or body fluids remain the major occupational exposure to this disease [3-5].

A healthcare provider who is any person working in any health facilities is at the risk of coming in contact with contaminated medical materials and infective body products. The risk of HIV infection increases if a percutaneous injury; needle stick or medical sharp injuries, or contamination of break in skin or mucus membrane has occurred. The risks differ with different exposures [6,7]. Although there are multiple factors that influence the risk of post-exposure HIV

transmission [8], but for a percutaneous or mucus membrane exposure, the probable risks are 0.3% [9] and 0.09% [10] respectively.

The prevention of exposure has remained the most important strategy for a reduction in occupational HIV infection, essentially though observation of universal precautions [11] and taking necessary precautions to prevent injuries caused by infected medical sharp instruments and devices. However, adherence to universal precautions has been noted to be generally poor especially in developing countries [12,13]. Therefore, occupational exposure still occur and when it does occur, immediate management of the exposure and institution of post-exposure prophylaxis where indicated [14].

The PEP strategy has different components: source patient HIV testing, correct combination of 2 or 3 anti-retroviral agents and commencing treatment within 72 hours of exposure, appropriate timing and duration of treatment, monitoring and management of drug toxicity, follow-up and post-exposure HIV testing [15]. In view of the above stated, it is paramount that healthcare providers are knowledgeable on PEP strategies and are able to act promptly and effectively when occupation exposure occurs. An action that has been noted to decrease the risk of HIV infection by approximately 80% [16].

However, it will be an unacceptable assumption to conclude that healthcare providers practicing in Nigeria, as well as other developing countries, are knowledgeable on PEP strategies. As at the time of this study, our literature review was could not identify any study that evaluated the knowledge, attitude and practice of healthcare providers on PEP strategies. This revealed dearth in data, was what our study aimed to provide. The outcome of this study will identify any deficit in knowledge and practice which health programme managers will find relevant in design of any intervention aimed to improve PEP activities in health facilities.

Methods

Study area

The study was carried out in Enugu metropolitan in Enugu State, southeast Nigeria. It is made up of 3 local government Areas namely Enugu North, Enugu South and Enugu East L.G.A accounting for 22% of Enugu state population. Enugu metropolitan has 23 primary health care centers of which 10 are selected randomly for the study.

Design

The study was a descriptive cross sectional study carried out from January 2009 to December 2009 on primary health care workers.

Data collection

Data were collected with interviewer administered questionnaire from 129 categories of health workers from the 10 primary health centers who consented to the interview. The questionnaire was developed based on the major components of the updated US public health service guidelines for the management of occupational exposure to HIV and recommendation for post-exposure prophylaxis. The component were: definition of post-exposure prophylaxis, antiretroviral agent (ARA) for PEP, treatment and drug interaction of ARA, selection of HIV PEP regimen, management of exposure and time and duration of PEP, post-exposure testing. Based on these components, their knowledge, attitude and practice of post exposure prophylaxis for HIV among primary Health care workers were collected.

Data Analysis

Data entry and analysis were done using statistical package for social sciences (SPSS) variables from the data, variables like, respondents exposure to patients body fund, type of body fluid, route of exposure, frequency of exposure and intervention; knowledge of post exposure prophylaxis (PEP) and how often the respondents practice (PEP) provision and accessibility of PEP the primary health centers were analyzed.

Ethical consideration

Ethical approval was obtained from Ethics and Health Research Committee of University of Nigeria Teaching Hospital, Enugu, Nigeria before this study was commenced. A written consent was obtained for each healthcare providers before participating in the study.

Result

Out of the 129 healthcare providers surveyed, 86.8% (112/129) were female and majority (51.9%) of the respondents were within the age range of 31-45 years as shown in Table 1. Majority (85.3%, 110/129) were nurses and higher percentage (44.2%; 57/129) had practiced as healthcare provider for 5 years or less. Majority 91.4 (105/129) practiced in a health care facility located in urban areas.

Variables	n=129	%
Gender		
Male	112	86.8
Female	17	13.2
Age (years)		
16-30	38	29.4
31-45	67	51.9
46-60	24	17.7
Cadre		
Nurses	110	85.3
Doctor	7	5.4
Others	12	9.3
Location of work place		
Urban	105	91.4
Rural	24	18.6
Period practiced (years)		
1-5	57	44.2
6-10	28	21.7
11-15	12	9.3
≥ 16	32	24.8

Table 1: Demographic characteristics of the respondents.

All (100%) of the healthcare providers studied have been exposed to a patient's body fluid. Majority (93%) were exposed to blood product, and needle stick injury was the commonest (36.4%) as shown in Table 2. Frequent exposure occurred in 6.2% (8/129) of the respondents, while 54.3% (70/129) had a rare exposure. The commonest intervention instituted was washing with soap and plenty of water (42.6%) and washing with antiseptics (34.9%).

Variables	N=129	%
Route of exposure		
Needle stick	47	36.4
Intact Skin	38	29.5
Through an open wound	20	15.5
Splash to eye into nose mouth	19	14.7

Puncture of skin by wide bore needle	3	2.3
Injury during surgical procedure	2	1.6
<i>Frequency of such exposure</i>		
Very often	8	6.2
Often	51	39.5
Rerely	70	54.3
<i>Interventions given in such occurrences</i>		
Wash with soap and planting of water	55	42.6
Wash with antiseptics	45	34.9
Allowed blood to freely flow from site of injury	22	17.1
Take drug	3	2.3
Go for medical counseling	4	3.1

Table 2: Exposure to patient’s body fluid, type of body fluid, route of exposure, frequency of exposure and intervention.

From the figure below 128 (99.2%) of respondent were aware of contracting blood borne pathogen on being exposed while 0.8% do not know.

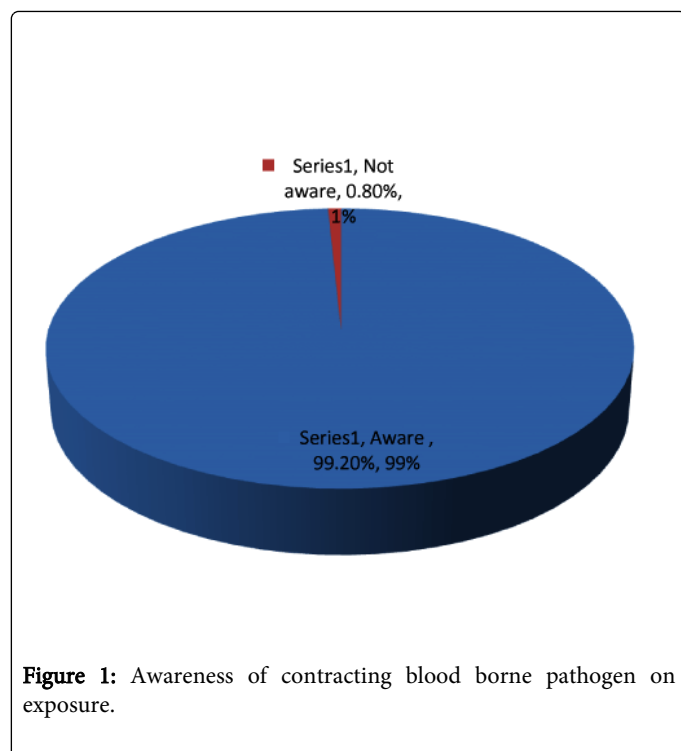


Figure 1: Awareness of contracting blood borne pathogen on exposure.

From the Table 3, 86% of respondent know about PEP while 18% do not know about PEP, 23% practice it frequently 34% practice it some time, 36% rarely practice PEP and 36% does not practice PEP. According to the respondents 22.5% of other health care workers practice PEP, 24.8% practice it some times, 24% rarely practice it and 28.7% do not practice PEP.

From Table 4, 4.7% of respondents said that PEP is provided in their place of work, 93% of respondent said that it is not provided and 1.6% do not know whether it is provide. 2.3% said that PEP is very accessible in their place of work. 92.2% of respondent agree that PEP reduces the risk of occupational acquired HIV and HBV, 7% do not agree and 0.8% do not know whether PEP for HIV and HBV reduces the risk occupational infection.

Variables	N=129	%
<i>Knowledge</i>		
Yes	111	86.0
No	18	14.0
<i>How often the respondent practices PEP</i>		
Frequently	23	17.8
Some time	34	26.4
Rarely	36	27.9
Does not	36	27.9
<i>How often other health workers practices PEP</i>		
Frequently	29	22.5
Some time	32	24.8
Rarely	31	24.0
Does not	31	28.7

Table 3: Knowledge of post exposure prophylaxis (PEP) and how often the respondents or any other primary health care worker practice PEP.

Variables	N=129	%
<i>Provision of PEP services</i>		
Yes	6	4.7
No	121	93.8
Don't know	2	1.6
<i>Accessibility of PEP services</i>		
Very accessible	3	2.3
Accessible	3	2.3
Not accessible	123	95.3
<i>Whether PEP reduces risk of infection</i>		
Yes	119	92.2
No	9	7.0
Don't know	1	0.8

Table 4: Provision and accessibility of pep in health center.

From the Table 5, 3.1% of respondents said that zidovudin is provided, 0.8% said that lamivudin is provided 95.3% said that no HIV drug is provided and 0.8% said that other antiviral drugs are provided.

94.5% of respondents said that no hepatitis B Post exposure prophylaxis drug is provided, 3.9% said that hepatitis B vaccine is provided and 1.6% said that hepatitis B immunoglobulin is provided.

From the Table 6, 20.1% of respondents believe that occupational acquired HIV and HBV can be reduced through careful and protective practices by health workers, 7.8% said that it is through enlightenment campaign, creation of awareness and education of health workers, 58.1% suggested government intervention through provision of steady PEP drugs and facilities, 4.7% also suggested avoidance of careless sexual practice, risk behavior and unnecessary attachment to patients and exposed persons.

HIV PEP drugs	N=129	%
Zidovudin	4	3.1
Lamivudin	1	0.8
Others	1	0.8
Non	123	95.3

Table 5: Drug for post exposure prophylaxis.

Options on how to reduce occupational HIV and HBV	N=129	%
Careful and protective practices by health workers	26	20.1
Enlightenment campaign creation of awareness and education of health workers	10	7.8
Government intervention through provision of steady PEP drugs and facilities etc	75	58.1
Avoid careless sexual practices risk behavior and unnecessary attachment to patients	6	4.7
Proper treatment and careful follow up of patients and exposed persons	12	9.8

Table 6: Suggestion on how health work could reduce occupational acquired HIV and HBV.

Discussion

From our result, 99.2% of the respondents were aware of contacting blood borne pathogens when exposed to patient’s fluid and 86% knew about post-exposure prophylaxis. The high level of awareness of contacting pathogens from patient fluid may contribute to high level of knowledge of post exposure prophylaxis for HIV in the study area. The proportion of nurses (56.6%) and doctors (27.9%) in this study may have contributed in the level of awareness because studies revealed that nurses adhere to universal precautions more than doctors [17-19] and majority of doctors were not aware of CDC guideline on universal precaution against blood borne pathogen [19]. This is consistent with the findings in Uganda that showed that 95% of health workers were aware of post exposure prophylaxis with nurses having highest percentage [20].

In our study, all the respondents have been exposed to patient’s body fluid but the routes of exposure differ: open wound (15.5%); intact skin (29.5%); splash to the eye (14.7%); needle stick (36.4%); puncture of skin by wide bore needle (2.3%); injury during surgical procedure (1.6%). Risk of contracting infection is dependent on the

integrity of the exposed site; the type and volume of body fluid and viral load. Needle stick has the greatest percentage showing the importance of needle safety in patients care to reduce approximately 1 million health workers that suffer needle stick injuries each year. The percentages of injury during surgical procedure can be attributed to the type and number of surgical procedures that can be done in the primary health care centers. This was evidenced in the study which was done in a hospital setting and found out that 82.9% of staff were exposed to patient’s fluid through percutaneous injury. There is also greater percentage of doctors in the hospital setting who will be exposed to percutaneous injuries while carrying out their duties [20]. In our study, 70 (54.3%) were rarely exposed 51 (39.5%) were exposed often and 8 (6.2%) were exposed very often. This is contrary to other findings on post exposure prophylaxis after occupational and non-occupational exposure of HIV where 21% were exposed very often [21] however non occupational exposure may contribute to the frequency of the exposure.

In our study, after exposure to HIV, approximately 30% will ensure they take necessary treatment, which is not good enough comparing the level of exposure health workers in developing country’s experience. Moreover, the attitude of health workers on being exposed influences the outcome of exposure. It was noted that post exposure prophylaxis should be commenced preferably one hour after exposure but up to 2 weeks after exposure one may still commence the treatment and still benefit. However, some authors linked it to absence of written standing orders procedure regarding to needle stick in hospital, stigmatization which is still common in developing countries and no availability of PEP drugs. This is consistent with some studies were only 28% had sought advice for PEP after exposure [14] and 7% in another study [22].

This study also revealed that approximately 94% of the respondents agreed that there is no provision or access to PEP in the health centers. In this study, we tried to find out why the primary health care workers have varying attitude on being exposed to body fluid, we found out that 95.3% primary health care workers do not have prophylaxis provide in their health centers. The unavailability of this all important prophylaxis may be the reason why majority of the health workers interviewed do not seek for prophylaxis after exposure. The inaccessibility of HIV prophylaxis could explain the poor attitude to post exposure prophylaxis for HIV.

This study, found out that majority of the respondents (92.2%) agreed that PEP reduces the risk of occupational acquired HIV but only 12.8% frequently practiced it when they are exposed. This could be the implication of unavailability of PEP drug (95.3%); poor accessibility to post prophylaxis drugs (95.3%) experience by the health workers and some factors like stigmatization There is in line with findings in Malugo hospital in Uganda where 61% believed PEP can work but only 28% had ever sought advice on Post exposure prophylaxis which was linked to stigmatization, unavailability of PEP with no standard system set up to make it easy for one to go through the process [22].

Conclusion

There is overwhelming knowledge of PEP for HIV in the study area but its practice is very poor. Therefore, there is need for adequate provision of PEP drugs and materials for universal precaution; explicit guideline for PEP therapy and proper recording of information concerning PEP in the work place.

References

1. Jeff A, Slind J (1998) Updated US Public Health Service, Guideline for the Management of Occupational exposure to HBV, HCV, and HIV. *Centre for Disease Control and prevention* 21: 115-117.
2. AIDS and HIV information from AVERT.org. HIV and AIDS in Nigeria..
3. Ann JP, Jumbo E (2005) Post exposure prophylaxis to prevent HIV infection. *WHO/ILO Guideline* 5: 1-40.
4. Mark Cichocki (2009) Decreasing HIV risk with post exposure prophylaxis. *About.com guide*.
5. Landovitz RJ, Currier JS (2009) Clinical practice. Postexposure prophylaxis for HIV infection. *N Engl J Med* 361: 1768-1775.
6. Centers for Disease Control and Prevention (1998) Public Health Service guidelines for the management of healthcare workers exposures to HIV and recommendations for post exposure prophylaxis. *MMWR Recomm Rep* 47: 1-33.
7. US. Public Health Service (2001) Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis. *MMWR Recomm Rep* 50: 1-52.
8. Cardo DM, Culver DH, Ciesielski CA, Srivastava PU, Marcus R, et al. (1997) A case-control study of HIV seroconversion in health care workers after percutaneous exposure. *Centers for Disease Control and Prevention Needlestick Surveillance Group. N Engl J Med* 337: 1484-1490.
9. Bell DM (1997) Occupational risk of human immunodeficiency virus infection in healthcare workers: an overview. *Am J Med* 102: 9-15.
10. Ippolito G, Puro V, De Carli G (1993) The risk of occupational human immunodeficiency virus infection in health care workers. *Italian Multicenter Study. The Italian Study Group on Occupational Risk of HIV infection. Arch Intern Med* 153: 1451-1458.
11. Ooi C, Dayan L, Yee L (2004) Knowledge of post exposure prophylaxis (PEP) for HIV among general practitioners in northern Sydney. *Sex Transm Infect* 80: 420.
12. Centers for Diseases Control and Prevention (1994) Recommendation for the use of zidovudine to reduce prenatal transmission of human immunodeficiency virus. *MMWR* 43: 1-20.
13. Kermode M, Jolley D, Langkham B, Thomas MS, Crofts N (2005) Occupational exposure to blood and risk of blood borne virus infection among health care workers in rural north Indian health care settings. *AM J infect control* 33: 34-41.
14. Alenyo R, Fualal J, Jombere JJ (2009) Knowledge, attitude and practices of staffs towards Post-exposure prophylaxis for HIV infection at Mulago hospital in Uganda. *East Cent Afri J Surg* 14: 99-102.
15. Kuhar DT, Henderson DK, Struble KA, Heneine W, Thomas V, et al. (2013) Updated US public health service Guidelines for the management of occupational exposures to Human Immunodeficiency Virus and recommendations for postexposure prophylaxis. *Infection control and Hospital Epidemiology* 34: 875-892.
16. Gammon J, Morgan-Samuel H, Gould D (2008) A review of the evidence for suboptimal compliance of healthcare practitioners to standard/ universal infection control precautions. *J Clin Nurs* 17: 157-167.
17. Sadoh WE, Fawole AO, Sadoh AE, Oladimeji AO, Sotiloye OS (2006) Practice of universal precautions among healthcare workers. *J Natl Med Assoc* 98: 722-726.
18. Adimna ED, Ezeama C, Adimna JL, Asuzu MC (2009) Knowledge and practice of Universal precaution against blood borne pathogen among house officers and nurses in tertiary health institution in south east Nigeria. *Niger J Clin pract* 12: 398-402.
19. Aisien AO, Shobowale MO (2005) Health care workers' knowledge on HIV and AIDS: universal precautions and attitude towards PLWHA in Benin-City, Nigeria. *Niger J Clin Pract* 8: 74-82.
20. Stein AD, Makarawo TP, Ahmad MF (2003) A survey of doctors' and nurses' knowledge, attitudes and compliance with infection control guidelines in Birmingham teaching hospitals. *J Hosp Infect* 54: 68-73.
21. Tawfik L, Kinoti SN (2006) The impact of HIV/ AIDS on the health work force in developing countries. *World health Organisation*.
22. Larsen C, Lot F, Basselier B, Laporte A (2002) Surveillance of post-exposure prophylaxis for non-occupational exposure to HIV in France (July 1999- December 2001).