LGJDX ISSN No: 1008-0562 Journal Of Liaoning Technical University Natural Science Edition

PRACTICE OF HIV POST-EXPOSURE PROPHYLAXIS AMONG PRIMARY HEALTH CARE WORKERS IN SOUTH-EAST NIGERIA

OKORIE-UFERE, Kate Ifeoma
Faculty of Nursing, Lincoln University College, Malaysia

Dr. REGIDOR III Poblete Dioso
Lincoln University College, Malaysia

Dr. MURTADHO, Alao
Lincoln University College, Malaysia

ADENIYI, Sarafadeen Diran
Lincoln University College, Malaysia

OYEKALE, Adesola
Department of Chemical Pathology
Ladoke Akintola University of Technology, Ogbomoso

OBONG, Glory (Ph.D)
Department of Nursing,
Rhema University, Aba, Abia State

Abstract

This study aims to assess the practice of HIV Post-Exposure Prophylaxis (PEP) among Primary Health Care Workers in South-East Nigeria. A cross-sectional survey was conducted among 400 healthcare providers, including medical doctors, nurses, and laboratory scientists, using a stratified sampling technique to ensure equal representation. Data were collected using a specially designed questionnaire, the "Post-Prophylaxis Practice Questionnaire (PPQ)," which gathered respondents' biodata and practices regarding occupational HIV PEP. The study found that a significant majority of healthcare workers adhere to PEP protocols, with notable variations based on professional role and years of experience. Experienced healthcare workers demonstrated higher adherence to PEP practices, emphasizing the importance of experience and professional training. The study also identified gaps in training and knowledge, particularly among less experienced workers and certain professional groups. Although most respondents reported access to personal protective equipment and adherence to infection control measures, the findings suggest the need for continuous training and reinforcement of PEP protocols. The study concludes that targeted interventions are necessary to address these gaps, ensuring that all healthcare workers are adequately protected and prepared to manage occupational HIV exposure. Recommendations include enhanced training programs and regular monitoring to improve compliance with PEP practices.

Keywords: Practice, HIV, Post-Exposure Prophylaxis, Healthcare Workers

Introduction

Healthcare workers (HCWs) in many countries, including Nigeria, are at significant risk of occupational exposure to HIV and other blood-borne infections. Nigeria, which has one of the highest burdens of HIV/AIDS globally, with 1.4% of the population living with HIV, is particularly affected (Iloanusi et al., 2019). Globally, tens of thousands of HCWs are accidentally exposed to blood-borne pathogens daily (WHO, 2017). The World Health Organization (WHO) and the International Labour Organization (ILO) recommend the use of HIV Post-Exposure Prophylaxis (PEP) as a critical intervention to prevent HIV transmission following such occupational exposures (Thomas et al., 2015). When administered promptly, PEP has been shown to reduce the risk of HIV infection by up to 81%.

Despite these recommendations, healthcare workers remain at a considerable risk, with approximately 2.5% of global HIV infections occurring among HCWs due to occupational exposure (Domkam et al., 2018). The risk, though low, is significant, particularly for those who come into contact with blood or other potentially infectious body fluids during the course of their work. This highlights the urgent need for effective PEP practices and strict adherence to infection control protocols to protect HCWs and reduce the incidence of HIV transmission within healthcare settings..

PEP is typically withheld from patients who seek medical assistance more than 72 hours after being exposed to HIV or who are not at high risk of HIV transmission. When exposed to possibly infectious goods or fluids, PEP is not a substitute for adopting and following to common sense safety practices. The use of PEP after exposure is backed by the fact that in retrospective case-controlled studies, administering PEP reduced the risk of HIV infection by roughly 81% among healthcare workers who were exposed to HIV via needle stick injuries. Aminde et al (2015) define post-exposure prophylaxis as administration of current antiretrovirals to reduce the risk of getting infected with HIV after transmission took place.1 It has also been shown beneficial following the openness post-prophylaxis that is routinely employed nowadays. Despite this, post-openness prophylaxis (Enthusiasm) is not employed regularly, particularly in the lowest and middle class nations that have high risk of HIV like Nigeria. A study conducted by Esin and others 2011 was aimed at examining the level of knowledge that clinicians hold with regard to post exposure prophylaxis for HIV infection at the Federal medical centre in Gombe town which is situated in the Northern Nigeria. Ninety percent of respondents were not aware that sero-conversion through contact with mucosal membrane was more than the risk associated with needle sticks. Furthermore, the inquiry further found out that medical practitioners with no fundamental understanding of what should be done such when to start the therapeutic treatment or for how long patients should take their drugs following an accidental poke of the needle. It is particularly worrisome how some doctors in this research are represented as having access to addictive drugs yet did nothing to stimulate Eros nor sought help.

According to research by Nwankwo and Aniebue (2011), there have been minimal data on HIV transmission in working spaces in Nigeria, and few medical clinics in the nation have stringent detailed and follow up protocols with reference to occupational perforations via needle sticks. Therefore, the subject of the safety of treating and operating on HIV-positive patients is more disturbing for medical students. Towards this goal, special focus was put on family nurses' attitudes and knowledge of PEP following openness for HIV. By and large, most of Nigerian family specialists were aware of HIV post-exposure prophylaxis and its efforts targeted at avoiding transmission of HIV. They will require extra HIV post-exposure prophylaxis education or training to improve practice and prevention.

Currently, HIV illness is considered a chronic condition due to the usage of antiretroviral medicines. This indicates that persons living with the HIV virus would have to get regular medical treatment (Aminde, Mwacharo & Nyabola, 2015). It should be pointed out that HIV infection affects their own health and it might lead to failure of or diminished functioning of global healthcare system. As such, health personnel in endemic areas have a probability of catching HIV owing to their employment (2012).

Accordingly, doctors participated in this study by Esin and colleagues (Eisen, 2011), albeit at risk for HIV transmission, showed a very poor level of information, nearly zilch related open up prophylaxis and HIV contamination (Excitement). This entails deficit in information about HIV PEHP for healthcare personnel at high risk of exposure. They should know what steps to take and in case of exposure to certain risk factors at employment. According to Odongkara et al, 10.3 percent of clinical personnel in North Uganda claimed they were exposed to HIV while at work (2012). This shows that persons who are looking after those infected with HIV have a significant likelihood of contracting the disease. The physicians could not estimate whether or not they were likely to encounter HIV in a day's job, despite the vast number of residents afflicted with the infection. It was also reported that, medical care providers did not have willingness or skills to help HIV infected people who sought medical attention fearing acquiring of the illness through touch. Because they are uninformed of how HIV spreads in the workplace, healthcare personnel may not take HIV post-exposure prophylaxis as regularly as they should.

One of the major concerns why individuals don't utilise HIV prophylaxis following word disclosure analysis is anxiety. Medical staff in Malawi are concerned that they may face scorn and criticism after being exposed to infections in their employment.Partners, patients, and community members may hesitate to seek therapy from such an employee due to the expectation that the professional should safeguard them from the infection.Adhering to prescriptions may provide obstacles, and the cost of HIV counteracting medications may make it difficult to implement Kick for both medical care providers and patients.This poses a barrier to the implementation of HIV prevention, as the majority of healthcare personnel lack exposure to post-exposure prophylaxis.A recent research indicates that healthcare professionals possess knowledge of post-exposure prophylaxis in the context of HIV, but only a small number actively utilise it, and an even smaller number have a comprehensive understanding of its application.Physicians' nurses must possess a thorough understanding of post-exposure prophylaxis against HIV, since

they are required to be knowledgeable about HIV/AIDS prevention and treatment, as well as adhere to safety rules in order to provide high-quality care.Thus this study aims to assesspractice of HIV Post-Exposure Prophylaxis among Primary Health Care Workers in South-East Nigeria.

Research Methods

This is a cross-sectional survey study among healthcare providers from selected hospitals in South-East Nigeria.The sample size for the study is 400 primary health workers in South-East Nigeria, comprising of 125 medical doctors, 188 nurses and 87 laboratory scientists/technologists. The sample size was first computed using the equation developed by Cochran (1963:75). The computation was done as follow:

$$n = \frac{Z^2 pq}{e^2}$$

$$n = \frac{(1.96^2)(0.5)(0.5)}{0.05^2} = \frac{0.9604}{0.0025} = 384.16$$

$\therefore n = 400$ (to the nearest hundred).

The researcher employed a multistage selection technique, which included stratified, proportional, and basic random sample methods, to choose participants for this quantitative investigation. The 400 study participants were categorised into three distinct groups: physicians, certified nurses, and laboratory researchers. The study employed a stratified sampling strategy to choose participants, ensuring that primary healthcare professionals treating HIV-positive patients in the area were represented equally in the sample. This approach led to more accurate estimations of parameters. The stratification approach adheres to the random selection principle since it allows for the drawing of a probability sample from each group.

The tool used for data collection is a specially designed questionnaire called the "Post-Prophylaxis Practice Questionnaire (PPQ)". Section A was utilised to gather data on the respondents' biodata, including their gender, precise occupation, and duration of professional experience. The instrument is divided into two sections: Section A and Section B. The data were used to establish connections between respondents' information and the practice of occupational HIV transmission. Section B, however, was utilised to collect data on respondents' behaviours concerning occupational HIV post-exposure prophylaxis.

The Scientific and Ethical Committee of the appropriate Federal Medical Centres were approached and obtained approval. Prior to their involvement, explicit and transparent information was provided to each participant, and their consent was obtained. The researcher, accompanied by two study assistants, visited several health facilities and

hospitals to distribute copies of the instrument. Prior to distributing the instrument to its personnel, the researcher received consent from the management of the health institutions and/or hospitals. To formally introduce the researcher and research assistants to the management of primary health care institutions and/or hospitals, they provided a valid identity and a copy of the ethical clearance.

The data was analysed using SPSS version 28. The instrument duplicates were collected, evaluated, and compiled in order to analyse the data. Following the completion of data cleansing, a univariate analysis was conducted, and the findings were reported in the form of a percentage. Frequency tables, graphs, and charts were employed to illustrate the frequency distribution of both the dependent and independent variables. The degree of connection between dependent and independent categorical variables was assessed using the Chi-square test, Phi, Cramer, and Contingency Coefficients at a 95% level of confidence.

Results

Table 1: Socio demographic characteristics of the respondents

Variable	Categories	Frequency	Percent
Age group	20 – 29	57	14.3
	30 – 39	97	24.3
	40 – 49	116	29.0
	50 – 59	86	21.5
	60 – 69	44	11.0
Sex	Male	218	54.5
	Female	182	45.5
Religion	Christianity	213	53.3
	Islam	125	31.3
	Traditional	20	5.0
	Others	42	10.5
Tribe	Yoruba	93	23.3
	Igbo	74	18.5
	Hausa	146	36.5
	Others	87	21.8
Marital Status	Married	215	53.8
	Single	124	31.0
	Separated	35	8.8
	Widow	17	4.3
	Divorced	9	2.3
Educational level	Tertiary	400	100.0
Year of Practice	>10years	50	12.5
	1year	55	13.8
	2-3years	175	43.8
	4-10years	120	30.0

How long have you work in the current department	>10 years	72	18.0
	>2 years	132	33.0
	2-4 years	119	29.8
	5-10 years	77	19.3
Have you being exposed to Occupational HIV before	Yes	109	27.3
	No	125	31.3
	I don't know	166	41.5

Table 1 illustrates the distribution of respondents across various age groups. The largest proportion of respondents, 116 individuals (29.0%), were aged between 40 and 49 years. This suggests that a significant portion of the respondents are middle-aged, which may reflect a more experienced workforce. The second-largest age group is 30-39 years, comprising 97 respondents (24.3%), followed by those aged 50-59 years with 86 respondents (21.5%). The youngest age group, 20-29 years, makes up 14.3% (57 respondents), while the smallest group is the 60-69 years age range, representing 11.0% (44 respondents). This age distribution highlights that the respondents are predominantly within the working-age population, with fewer participants in the older age bracket.In terms of gender, the respondents were almost evenly split, with a slight male majority. Males accounted for 54.5% (218 respondents), while females comprised 45.5% (182 respondents). This distribution suggests a balanced gender representation among the respondents, which could influence the study's outcomes regarding attitudes and practices, especially in gender-sensitive areas such as healthcare.

The respondents' religious affiliations were predominantly Christian, with 213 individuals (53.3%) identifying as such. Islam was the second most common religion, with 125 respondents (31.3%). A small proportion of respondents identified with traditional religions (5.0%), and 10.5% (42 respondents) identified with other religious beliefs. This distribution aligns with the religious demographics typical of many regions in Nigeria, where Christianity and Islam are the predominant religions.The tribal affiliation of the respondents shows a diverse ethnic composition. The Hausa tribe was the most represented, accounting for 36.5% (146 respondents) of the sample. Yoruba respondents made up 23.3% (93 individuals), while Igbo respondents accounted for 18.5% (74 individuals). Additionally, 21.8% (87 respondents) belonged to other ethnic groups. This diversity in tribal representation may influence the study's findings, especially in the context of cultural attitudes towards healthcare practices.

Most respondents were married, with 215 individuals (53.8%) reporting this status. Single respondents made up 31.0% (124 individuals), while smaller proportions were separated (8.8%, 35 respondents), widowed (4.3%, 17 respondents), or divorced (2.3%, 9 respondents). The high proportion of married respondents might suggest a stable family structure, which could influence healthcare decision-making and responsibilities.All respondents had attained tertiary education (100.0%, 400 respondents). This uniformity in educational level suggests a highly educated sample, which is essential in understanding and implementing complex healthcare practices, such as those related to HIV post-exposure prophylaxis (PEP).

The majority of respondents had 2-3 years of practice experience, accounting for 43.8% (175 individuals). A significant number had 4-10 years of experience (30.0%, 120 individuals), while smaller proportions had more than 10 years of experience (12.5%, 50 individuals) or only 1 year of experience (13.8%, 55 individuals). This variation in years of practice indicates a mix of experience levels, which could impact the respondents' attitudes and competence regarding PEP.Regarding tenure in their current department, 33.0% (132 respondents) had worked for more than 2 years, and 29.8% (119 respondents) for 2-4 years. Fewer respondents had been in their current department for more than 10 years (18.0%, 72 respondents) or 5-10 years (19.3%, 77 respondents). This distribution suggests a relatively stable workforce with varying degrees of experience within their specific departmental roles.

A significant proportion of respondents (27.3%, 109 individuals) reported having been exposed to occupational HIV, while 31.3% (125 individuals) had not experienced such exposure. Notably, 41.5% (166 individuals) were unsure or did not know if they had been exposed. This uncertainty may indicate gaps in awareness or reporting mechanisms related to occupational exposure, which could affect the adoption and effectiveness of PEP practices among healthcare workers.

Table 2: Practices on infection prevention control on post exposure prophylaxis for HIV/AIDS

Variable	Yes	No	I don't know
Does your organization developed and distributed written policies for the management of occupational exposure	372(93.0)	11(2.8)	17(4.3)
Have you use personal protective equipment when anticipating contact with patient blood and body fluid	342(85.5)	48(12.0)	10(2.5)
Is hand washing in your practice routine after contact with infected patients	351(87.8)	34(8.5)	15(3.8)
Is there proper handling and disposing of sharp instrument after and before use	367(91.8)	23(5.8)	10(2.5)
Have you ever been placed on HIV PEP after needle stick injury	373(93.3)	9(2.3)	18(4.5)
Screening of patients are being done to detect colonization even if no evidence of infection	370(92.5)	18(4.5)	12(3.0)
Personal protective equipment are always accessible	371(92.8)	15(3.8)	14(3.5)
Our hospital monitors patients with urinary catheters for infection and gives feedback on urinary tract infection rates	350(87.5)	19(4.8)	31(7.8)

We shake linens out to release dust from the linen	353(88.3)	38(9.5)	9(2.3)
Have you been trained on IPC	336(84.0)	56(14.0)	8(2.0)
Do you have up to date knowledge on IPC	332(83.0)	49(12.3)	19(4.8)

Written Policies for Occupational Exposure Management

A significant majority of respondents, 372 (93.0%), indicated that their organization had developed and distributed written policies for managing occupational exposure. Only a small proportion of respondents, 11 (2.8%), reported that their organization had not established such policies, while 17 respondents (4.3%) were unsure. This suggests that most healthcare organizations represented in the study prioritize formalized protocols for managing occupational exposure, which is crucial for effective infection control and PEP adherence.

Use of Personal Protective Equipment (PPE)

A large proportion of respondents, 342 (85.5%), reported using personal protective equipment when anticipating contact with patient blood and body fluids. However, 48 respondents (12.0%) did not use PPE, and 10 respondents (2.5%) were unsure. The high adherence to PPE use reflects a strong compliance with standard infection control practices, although the presence of non-compliant individuals highlights areas for potential improvement.

Hand Washing Practices

Most respondents, 351 (87.8%), reported that hand washing was a routine practice after contact with infected patients. Meanwhile, 34 respondents (8.5%) did not routinely wash their hands, and 15 respondents (3.8%) were unsure. The high rate of hand washing among respondents suggests good compliance with one of the most fundamental infection prevention measures. However, the non-compliance and uncertainty among a small portion of respondents indicate the need for further education and reinforcement of hand hygiene practices.

Handling and Disposal of Sharp Instruments

The vast majority of respondents, 367 (91.8%), reported proper handling and disposal of sharp instruments before and after use. However, 23 respondents (5.8%) did not adhere to this practice, and 10 respondents (2.5%) were uncertain. Proper disposal of sharp instruments is critical in preventing occupational exposure to HIV and other bloodborne pathogens, so the high compliance rate is encouraging, though efforts should be made to address the lapses reported by some respondents.

Placement on HIV PEP after Needle Stick Injury

An overwhelming majority, 373 respondents (93.3%), reported having been placed on HIV PEP after a needle stick injury. Only 9 respondents (2.3%) had not been placed on PEP, and 18 respondents (4.5%) were unsure. This indicates that most healthcare workers who experience needle stick injuries are promptly managed with PEP, reflecting good organizational practices in response to occupational exposure.

Screening for Colonization

A majority of respondents, 370 (92.5%), indicated that screening of patients to detect colonization, even in the absence of infection, is performed. Conversely, 18 respondents (4.5%) reported that this was not done, and 12 respondents (3.0%) were unsure. The high rate of screening suggests a proactive approach to infection prevention, although the existence of non-compliant or uncertain respondents suggests areas where practices can be standardized or improved.

Accessibility of Personal Protective Equipment (PPE)

Most respondents, 371 (92.8%), indicated that personal protective equipment was always accessible, while 15 respondents (3.8%) reported that it was not, and 14 respondents (3.5%) were unsure. The widespread accessibility of PPE is essential for the prevention of occupational exposure and the safety of healthcare workers.

Monitoring of Patients with Urinary Catheters

A significant number of respondents, 350 (87.5%), reported that their hospitals monitor patients with urinary catheters for infection and provide feedback on urinary tract infection (UTI) rates. However, 19 respondents (4.8%) indicated that this monitoring was not done, and 31 respondents (7.8%) were unsure. This practice is crucial for preventing healthcare-associated infections, particularly UTIs, and the high rate of monitoring is a positive indicator, though the uncertainty among some respondents points to a need for better communication or training.

Handling of Linens

A high percentage of respondents, 353 (88.3%), reported that they do not shake linens to release dust, which is a good infection control practice. However, 38 respondents (9.5%) admitted to shaking linens, and 9 respondents (2.3%) were unsure. This practice can lead to the spread of infectious agents, so the reported compliance is encouraging, though the non-compliance suggests an area for further training.

Training on Infection Prevention Control (IPC)

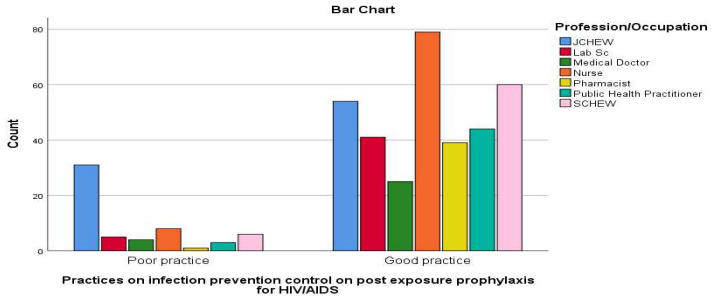
A large proportion of respondents, 336 (84.0%), reported having received training on infection prevention control. However, 56 respondents (14.0%) had not received such training, and 8 respondents (2.0%) were unsure. The high training rate is crucial for ensuring that healthcare workers are equipped with the necessary knowledge and skills to prevent infections, though the 14.0% without training highlights a gap that needs to be addressed.

Up-to-Date Knowledge on IPC

Finally, 332 respondents (83.0%) reported having up-to-date knowledge on infection prevention control, while 49 respondents (12.3%) did not, and 19 respondents (4.8%) were unsure. This suggests that most respondents are well-informed about current IPC practices, but there is a need to ensure that all healthcare workers have the most current information to effectively manage infection risks.

Test of Hypotheses

Ho1: There is no statistically significant relationship between level of practice of occupational HIV post exposure prophylaxis and field of profession of the primary health care workers in South-East Nigeria.



x^2= Pearsons` Chi square =44.272

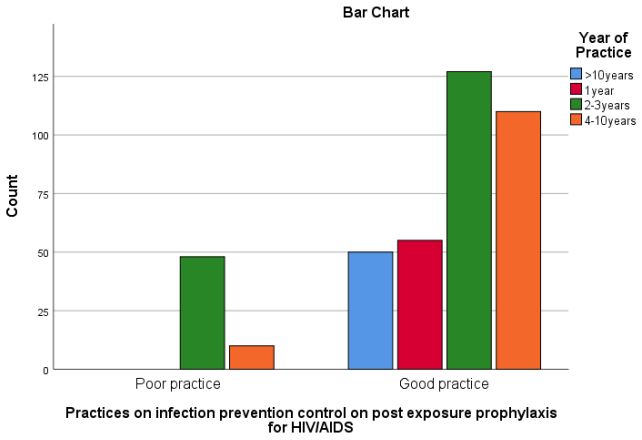
Df-degree of freedom =6

***P*-Probability value=0.000**

From the above there isstatistically significant relationship between level of practice of occupational HIV post exposure prophylaxis and field of profession of the primary health care workers in South-East Nigeria. (x^2 =44.272, *P*- 0.000) tested at p<0.05 Hence the hypothesis which state that" There is no statistically significant relationship between level of practice of occupational HIV post exposure prophylaxis and field of profession of the primary health care workers in South-East Nigeria." is rejected as p<0.05

Ho2: The coefficient of relationship between level of practice of occupational HIV post exposure prophylaxis and year of experience of the primary health care workers in South-East Nigeria is not statistically significant.

LGJDX
ISSN No: 1008-0562
Journal Of Liaoning Technical University
Natural Science Edition



Practices on infection prevention control on post exposure prophylaxis for HIV/AIDS * Year of Practice Crosstabulation						
Count						
		Year of Practice				Total
		>10years	1year	2-3years	4-10years	
Practices on infection prevention control on post exposure prophylaxis for HIV/AIDS	Poor practice	0	0	48	10	58
	Good practice	50	55	127	110	342
Total		50	55	175	120	400

x^2= Pearsons` Chi square =45.082

Df-degree of freedom =3

***P*-Probability value=0.000**

From the table above there isstatistically significant relationship between level of practice of occupational HIV post exposure prophylaxis and year of experience of the primary health care workers. (x^2 =44.272, *P*- 0.000) tested at p<0.05 Hence the hypothesis which state that" The coefficient of relationship between level of practice of occupational HIV post exposure prophylaxis and year of experience of the primary health care workers in South-East Nigeria is not statistically significant." is rejected as p<0.05

Discussion

The findings presented in Table 1 offer insightful data on the demographics and practices related to infection prevention control, particularly concerning post-exposure prophylaxis (PEP) for HIV/AIDS among healthcare workers in South-East Nigeria. The results underscore the critical importance of organizational policies, personal protective equipment (PPE) usage, and training in mitigating occupational exposure to HIV. Below is a detailed discussion of the key findings, supported and contrasted by references from the provided literature.

The distribution of respondents across various age groups reveals a significant representation of middle-aged individuals, with 29.0% aged between 40 and 49 years, followed by 24.3% aged 30-39 years, and 21.5% aged 50-59 years. The predominance of respondents in these age brackets suggests that the workforce is primarily composed of individuals with substantial professional experience, which may positively influence the adherence to infection prevention practices. Similar findings were reported by Umoh et al. (2020), who highlighted that age and experience play pivotal roles in healthcare workers' compliance with PEP protocols, as more experienced workers tend to have better adherence due to their familiarity with the risks associated with occupational exposure.

The gender distribution among respondents was nearly balanced, with males slightly outnumbering females (54.5% vs. 45.5%). This balanced representation may contribute to the overall reliability of the study's findings, particularly in gender-sensitive areas like healthcare. Research by Oche et al. (2018) supports the notion that gender distribution can influence healthcare practices, with female healthcare workers often demonstrating higher adherence to infection control protocols due to their perceived vulnerability and protective instincts.

The respondents' religious affiliations were predominantly Christian (53.3%), followed by Islam (31.3%), reflecting the religious demographics typical of Nigeria. This religious diversity may impact the respondents' attitudes towards healthcare practices, including the management of occupational exposure to HIV. Eyong et al. (2022) emphasized the role of cultural and religious beliefs in shaping healthcare workers' attitudes towards HIV prevention and treatment, suggesting that these factors should be considered when developing and implementing PEP protocols.The tribal affiliation data show a diverse ethnic composition, with Hausa (36.5%), Yoruba (23.3%), and Igbo (18.5%) being the most represented. This ethnic diversity is crucial, as cultural attitudes towards healthcare can vary significantly among different tribes. Sagoe-Moses et al. (2001) pointed out that cultural beliefs and practices could either enhance or hinder adherence to infection prevention measures, depending on how these practices align with the prescribed healthcare protocols.The high proportion of married respondents (53.8%) may indicate a stable family structure, potentially influencing healthcare decision-making. The 100% tertiary education attainment among respondents suggests a highly educated workforce, which is critical for understanding and implementing complex healthcare practices like PEP. Ajibola et al. (2014) noted that higher educational levels among healthcare workers are associated with better knowledge and adherence to PEP guidelines, reinforcing the importance of education in infection prevention.

The variation in years of practice among respondents, with a significant proportion having 2-3 years (43.8%) or 4-10 years (30.0%) of experience, indicates a workforce with a mix of experience levels. This variation can impact the respondents' competence and attitudes towards PEP, as those with more experience may be more familiar with the necessary protocols. Eticha and Gemeda (2019) observed that healthcare workers with more years of experience are generally more knowledgeable and compliant with PEP practices, underscoring the need for continuous education and training across all experience levels.

A notable finding is that 27.3% of respondents reported having been exposed to occupational HIV, while 41.5% were unsure. This uncertainty highlights potential gaps in awareness or reporting mechanisms related to occupational exposure. Iloanusi et al. (2019) emphasized the importance of robust reporting and monitoring systems to ensure that healthcare workers are aware of their exposure status and can promptly access PEP when necessary.

The data show that 93.0% of respondents indicated that their organization had developed and distributed written policies for managing occupational exposure. This high percentage reflects a strong organizational commitment to infection prevention, which is essential for the effective implementation of PEP. According to the "Updated Guidelines for Antiretroviral Postexposure Prophylaxis" (2016), written policies are critical in standardizing responses to occupational exposure and ensuring that healthcare workers are adequately protected.

The reported use of PPE by 85.5% of respondents is encouraging, as PPE is a fundamental component of infection control. However, the 12.0% who did not use PPE and the 2.5% who were unsure highlight areas for potential improvement. Tebeje and Hailu (2010) stressed the importance of ensuring that all healthcare workers have access to and consistently use PPE to prevent occupational exposure to HIV and other infections.

Hand washing is reported as a routine practice by 87.8% of respondents, indicating good compliance with this essential infection prevention measure. However, the non-compliance reported by 8.5% of respondents suggests the need for further education on the importance of hand hygiene. Mathewos et al. (2013) identified hand washing as one of the most effective ways to prevent the spread of infections, emphasizing the need for consistent practice among healthcare workers.

Proper handling and disposal of sharp instruments were reported by 91.8% of respondents, which is crucial in preventing needlestick injuries and subsequent HIV exposure. Merchant (2005) highlighted the risks associated with improper handling of sharp instruments, noting that strict adherence to disposal protocols is necessary to protect healthcare workers from occupational exposure.

The high proportion of respondents who reported having received training on infection prevention control (84.0%) and having up-to-date knowledge (83.0%) is a positive indicator of the overall preparedness of the healthcare workforce. However, the 14.0% who had not received training and the 12.3% who did not have up-to-date knowledge

highlight areas where further efforts are needed to ensure that all healthcare workers are adequately trained and informed. Thomas et al. (2015) emphasized the importance of continuous training and education in maintaining high standards of infection prevention and ensuring that healthcare workers are equipped to manage occupational exposure effectively.

The findings from the study indicate that while there is generally good adherence to infection prevention control practices among healthcare workers in South-East Nigeria, there are still areas that require improvement, particularly in ensuring consistent use of PPE, proper hand hygiene, and comprehensive training on IPC. The statistically significant relationships between the level of practice of occupational HIV PEP and both the field of profession and years of experience underscore the importance of targeted interventions to enhance compliance among healthcare workers. The rejection of the null hypotheses in this context further supports the need for tailored strategies to improve PEP practices, ensuring the safety and well-being of healthcare workers

Conclusion

The study reveals that healthcare workers in South-East Nigeria generally demonstrate a high level of adherence to occupational HIV post-exposure prophylaxis (PEP) practices, with significant variations influenced by their professional roles and years of experience. The findings highlight that more experienced workers and those in specific professional fields are more likely to adhere to PEP protocols, reflecting the importance of experience and professional training. Additionally, a considerable number of healthcare workers reported exposure to occupational HIV, but the widespread use of personal protective equipment and adherence to infection control measures indicate a strong organizational commitment to safety.

Despite the overall positive adherence to PEP practices, the study identifies gaps in training and knowledge, particularly among less experienced healthcare workers and certain professional groups. The presence of organizational policies for managing occupational exposure is a positive finding, yet the need for continuous training and reinforcement of these policies is emphasized. The study concludes that targeted interventions are necessary to address these gaps, ensuring that all healthcare workers are adequately protected and well-equipped to handle occupational HIV exposure..

Recommendations

In line with the findings of this study, the following recommendations is speculated.

1. Enhanced Training Programs: Healthcare institutions should implement continuous, comprehensive training programs focused on infection prevention and control, with a particular emphasis on HIV post-exposure prophylaxis (PEP). This training should target less experienced healthcare workers and specific professional groups that showed lower levels of adherence. Implementation Responsibility: Hospital administrators and public health departments.

2. Regular Monitoring and Audits: Conduct regular audits and monitoring of compliance with PEP protocols and infection control practices. These audits should be used to identify areas of non-compliance and provide immediate feedback to healthcare workers, ensuring that all protocols are strictly followed. Implementation Responsibility: Quality assurance teams within healthcare institutions.

3. Improved Reporting and Awareness Systems: Establish or strengthen systems for reporting occupational exposure to HIV and ensure that healthcare workers are fully aware of these reporting mechanisms. Additionally, efforts should be made to increase awareness about the importance of PEP among healthcare workers who may be uncertain about their exposure status. Implementation Responsibility: Occupational health units within healthcare institutions.

4. Policy Reinforcement and Accessibility: Ensure that all healthcare workers have easy access to written policies regarding occupational exposure and PEP. These policies should be regularly updated and reinforced through workshops and seminars, making sure that all staff members are familiar with the protocols. Implementation Responsibility: Hospital management and infection control committees

References

Ajibola, S., Akinbami, A., Elikwu, C., Odesanya, M., & Uche, E. (2014). Knowledge, attitude and practices of HIV post exposure prophylaxis amongst health workers in Lagos University Teaching Hospital. *The Pan African Medical Journal*, *19*. https://doi.org/10.11604/pamj.2014.19.172.4718

Announcement: Updated Guidelines for Antiretroviral Postexposure Prophylaxis after Sexual, Injection-Drug Use, or Other Nonoccupational Exposure to HIV - United States, 2016. (2016). *MMWR. Morbidity and Mortality Weekly Report*, *65*(17), 458. https://doi.org/10.15585/mmwr.mm6517a5

Eticha, E. M., & Gemeda, A. B. (2019). Knowledge, Attitude, and Practice of Postexposure Prophylaxis against HIV Infection among Healthcare Workers in Hiwot Fana Specialized University Hospital, Eastern Ethiopia. *AIDS Research and Treatment*, *2019*, 7947086. https://doi.org/10.1155/2019/7947086

Eyong, E. M., Ngwe, N. Y., Nfuksai, C. N., Niba, L. L., & Jane-Francis, A. (2022). Prevalence of Occupational Exposure to HIV and Factors Associated with Compliance with Post-Exposure Prophylaxis Among Health Workers of the Biyem-Assi, Buea, and Limbe Health Districts of Cameroon Maternal and Child Health and AIDS. *International Journal of Maternal and Child Health and AIDS*, *11*(1), e557. https://doi.org/10.21106/ijma.557

Iloanusi, S. H., Mgbere, O. O., Abughosh, Susan. M., & Essien, E. J. (2019). HIV Non-Occupational Post Exposure Prophylaxis in Nigeria: A Systematic Review of Research Evidence and Practice. *International Journal of Maternal and Child Health and AIDS*, *8*(2), 101–119. https://doi.org/10.21106/ijma.287

Mathewos, B., Birhan, W., Kinfe, S., Boru, M., Tiruneh, G., Addis, Z., & Alemu, A. (2013). Assessment of knowledge, attitude and practice towards post exposure prophylaxis for HIV among health care workers in Gondar, North West Ethiopia. *BMC Public Health*, *13*, 508. https://doi.org/10.1186/1471-2458-13-508

Merchant, R. C. (2005). Update on emerging infections: News from the Centers for Disease Control and Prevention. Antiretroviral postexposure prophylaxis after sexual, injection-drug use, or other nonoccupational exposure to HIV in the United States. *Annals of Emergency Medicine*, *46*(1), 82–86. https://doi.org/10.1016/j.annemergmed.2005.04.005

Oche, O. M., Umar, A. S., Gana, G. J., Okafoagu, N. C., & Oladigbolu, R. A. (2018). Determinants of appropriate knowledge on human immunodeficiency virus postexposure prophylaxis among professional health-care workers in Sokoto, Nigeria. *Journal of Family Medicine and Primary Care*, *7*(2), 340–345. https://doi.org/10.4103/jfmpc.jfmpc_32_17

Sagoe-Moses, C., Pearson, R. D., Perry, J., & Jagger, J. (2001). Risks to health care workers in developing countries. *The New England Journal of Medicine*, *345*(7), 538–541. https://doi.org/10.1056/NEJM200108163450711

Tebeje, B., & Hailu, C. (2010). Assessment of HIV Post-Exposure Prophylaxis Use Among Health Workers of Governmental Health Institutions in Jimma Zone, Oromiya Region, Southwest Ethiopia. *Ethiopian Journal of Health Sciences*, *20*(1), 55–64.

Thomas, R., Galanakis, C., Vézina, S., Longpré, D., Boissonnault, M., Huchet, E., Charest, L., Murphy, D., Trottier, B., & Machouf, N. (2015). Adherence to Post-Exposure Prophylaxis (PEP) and Incidence of HIV Seroconversion in a Major North American Cohort. *PLoS ONE*, *10*(11), e0142534. https://doi.org/10.1371/journal.pone.0142534

Umoh, V. A., Jombo, H. E., Ekpo, O., & Amanari, C. O. (2020). Knowledge, Attitude and Practice of HIV Post-Exposure Prophylaxis among Medical Doctors in a Tertiary Hospital in Nigeria. *West African Journal of Medicine*, *37*(1), 19–25.

1.