UPTAKE OF HUMAN IMMUNODEFICIENCY VIRUS POST-EXPOSURE PROPHYLAXIS AND ASSOCIATED FACTORS AMONG HEALTHCARE WORKERS IN DAR ES SALAAM, TANZANIA

Halima Ally Tahir, MD

Master of Public Health

Muhimbili University of Health and Allied Sciences

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By

Halima Ally Tahir, MD

A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Public Health of Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance, by Muhimbili University of Health and Allied Sciences, a dissertation titled ***Uptake of Human Immunodeficiency Virus Post-Exposure Prophylaxis and Associated Factors Among Healthcare Workers in Dar es salaam, Tanzania***, in partial fulfilment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

_____

Dr. Candida Moshiro

(Supervisor)

Date: _____

_____

Dr. Mucho Mizinduko

(Supervisor)

Date: _____

DECLARATION AND COPYRIGHT

I, **Halima Ally Tahir**, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature..... Date.....

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ABSTRACT

Background: Human immunodeficiency virus (HIV) infection is one of the diseases of public health concern. Occupational exposures result in 4% of all HIV infection among health care workers (HCWs). HIV post-exposure prophylaxis (PEP) guidelines exists for post-exposure management. There is limited up-to-date comprehensive data on the uptake of HIV PEP and the associated factors among healthcare workers in Dar es Salaam, Tanzania. We assessed the specific factors associated with HIV post exposure prophylaxis among HCWs in this locale.

Objectives: The study aimed to determine the uptake and associated factors with HIV PEP among HCWs in tertiary hospitals in Dar es salaam, Tanzania for the year 2022/2023.

Materials and Methods: A healthcare facility-based cross-sectional study involving 302 HCWs was conducted at the national referral hospital and the three regional referral hospitals in Dar es salaam, Tanzania. Data was collected through an interviewer-administered questionnaire. Modified Poisson regression analysis was done to identify factors associated with HIV PEP uptake.

Results: We recruited 302 participants. The HIV PEP uptake was 14.6%. Reasons for not initiating or completing the dose included medication side effects (46.6%), source patient testing negative (37.2%), and feeling that the 4-week dose was unnecessary (16.3%). Ages 31 years and greater (adjusted prevalence ratio (aPR)=0.37; 95% CI: 0.20-0.65), and being female (aPR=0.09; 95% CI:0.04-0.22) were associated with a lower PEP uptake. Hailing from the surgery department (aPR=2.95; 95% CI:1.17-7.48) and a positive attitude towards HIV PEP (aPR=6.41; 95% CI: 1.15-35.62) is associated with a higher PEP uptake.

Conclusions and Recommendations: This study demonstrates that the utilization of HIV PEP following occupational exposure among HCWs is low. These results provide a basis for improving the HCWs attitude towards HIV PEP by normalizing the use of PEP, by leadership endorsement, and by addressing myths and misconceptions. Also, further studies covering different regions as well as private hospitals are needed for comparison and to get a more accurate bigger picture.

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ABBREVIATIONS

3TC	Lamivudine
ARRH	Amana Regional Referral Hospital
ART	Anti-retroviral Therapy
DTG	Dolutegravir
FTC	Emtricitabine
HCW	Health-care Worker
HIC	High Income Country
HIV	Human Immunodeficiency Virus
IRB	Institutional Review Board
LMIC	Low-and Middle-Income Countries
MNH	Muhimbili National Hospital
MoH	Ministry of Health
MRRH	Mwananyamala Regional Referral Hospital
MUHAS	Muhimbili University of Health and Allied Sciences
PEP	Post-exposure Prophylaxis
SSA	Sub-Saharan Africa
TOF	Tenofovir
TRRH	Temeke Regional Referral Hospital
TZS	Tanzanian Shillings
WHO	World Health Organization

DEFINITIONS

Exposure - contact with potentially infectious blood, tissue, or body fluids in a manner that allows for possible transmission of Human Immunodeficiency Virus (HIV) and therefore requires consideration of post-exposure prophylaxis (PEP).

HIV PEP Uptake – the timely (within 72 hours of possible exposure to HIV) receipt of a 28-day course of highly-active antiretroviral drugs for PEP.

Post-Exposure Prophylaxis (PEP) – taking medication to prevent a disease, e.g. HIV, after a possible exposure.

CHAPTER ONE: INTRODUCTION

1.1 Background

Human immunodeficiency virus (HIV) infection is one of the diseases of public health concern. Due to the nature of the workplace, healthcare workers (HCW) are at increased risk for occupational exposures to HIV, and are among the people the World Health Organization (WHO) has identified as being at risk of contracting HIV (1). Occupational exposures can be in the form of exposure to sharps (e.g., needle-stick injuries) (2), and/or splash injuries (e.g., blood splash to eyes) (3). Occupational exposures result in 4% of all HIV infections among HCWs, of which 90% occur in low-income countries and are preventable (4).

HCWs in several low-income countries are particularly at danger due to the high prevalence of HIV infection in these nations and thus meaning more exposure to patients with HIV. In 2021, 38.4 million people were living with HIV globally, with Sub-Saharan Africa (SSA) having the highest numbers. Tanzania is among the SSA countries and accounted for 4.4% of the people living with HIV (5).

Before the development of effective antiretroviral therapy (ART), a review of prospective studies of seroconversion following occupational contact to an HIV-infected source revealed that 20 of 6135 HCWs who experienced percutaneous exposure developed HIV (6); and compared to other health service providers, medical doctors and nurses are thought to be the group most at risk of needle-stick injuries due to the increased contact time with patients (7).

The potential for serious repercussions of coming into contact with infected people's bodily fluids motivated the creation of policies and procedures intended to lower the risk of HIV transmission among HCWs (8). The Tanzanian Ministry of Health (MoH) also created HIV Post-exposure prophylaxis (PEP) guidelines, which say that any exposed HCW should have access to services inside the same facility (9). A local PEP facilitator (a staff member especially tasked with preserving records of exposures and advising exposed HCWs) recommends the exposed individual to the closest facility when on-site assistance is not available. Management of the exposure site, exposure reporting, evaluation of the infection risk, delivery of PEP when

necessary, follow-up, and counselling are all included in post-exposure management. PEP medications must be administered within two hours of exposure and no later than 72 hours. The recommended post-exposure regimen is a triple combination therapy – Tenofovir (TDF), Lamivudine (3TC)/ Emtricitabine (FTC), and Dolutegravir (DTG).

In a study done in 2017 at the rural districts of Tanzania, only 11.7% of the HCWs who were exposed to HIV reported using PEP. This influenced greater dissemination of PEP guidelines and training of HCWs so as to make sure that HCWs are aware of PEP services and can quickly access them (10).

Recent data on the uptake of PEP among HCWs is lacking. To reduce risk, institutions and healthcare professionals must keep track of and enhance measures of prevention and treatment of HIV among HCWs. Hence, there is a need to assess the current level of HIV PEP uptake.

1.2 Problem Statement

Despite alarming rates of occupational exposure to HIV among HCWs, PEP services are not being used by HCWs at a high enough rate. A study by Makhado & Davhana-Maselesele in South Africa showed that only 29% of healthcare workers who went through an HIV-exposure scare sought for PEP (11). The problem is even more serious in other Sub-Saharan Africa countries where the uptake is even less ranging from as little as 4% in Kenya (12).

In Tanzania, rural Dodoma, utilization of HIV PEP among the exposed HCWs was only 11.7% (10). Mponela et al reported in 2009-2010 in Mbeya, Tanzania that only 14 of 102 (14%) exposed HCWs completed the 4 weeks dose of PEP (7). Another study conducted in Singida district council in 2013 found that amongst 121 exposed HCWs, only 23.1% completed HIV PEP (21).

Studies in Tanzania have reported that the poor uptake of HIV PEP among the HCWs is due to inadequate knowledge on HIV PEP and measures to be taken after an exposure, negative attitudes towards the HIV PEP which are often associated with concerns about the safety and

side effects of the drugs used in HIV PEP, and inferentially limited access to the HIV PEP (10). This contributes to increased incidence of HIV among HCWs.

There is limited up-to-date comprehensive data on the uptake of HIV PEP and the associated factors among healthcare workers in Dar es Salaam, Tanzania. While some studies have addressed PEP utilization in various regions, the specific factors associated with HIV post exposure prophylaxis among HCWs in this locale remain underexplored. Addressing these gaps will provide an update and thus inform on strategies to improve PEP utilization among HCWs in Dar es Salaam, ultimately enhancing occupational safety and reducing HIV transmission risk.

1.3 Conceptual Framework

When there is an increase in knowledge on a particular issue, it often leads to a better understanding and transforms the attitude of an individual into a positive outcome. Knowledge on PEP precedes a positive attitude and eventually lead to greater uptake of PEP among exposed healthcare workers.

The demographic characteristics, including age, sex, and education level, cadre of the HCW, department HCW is working, as well as the years of experience may influence the decision to take PEP after exposure to HIV. Research suggests that women, in general, tend to be more proactive about healthcare compared to men (38). Therefore, female healthcare workers are more likely to seek PEP after HIV exposure (7).

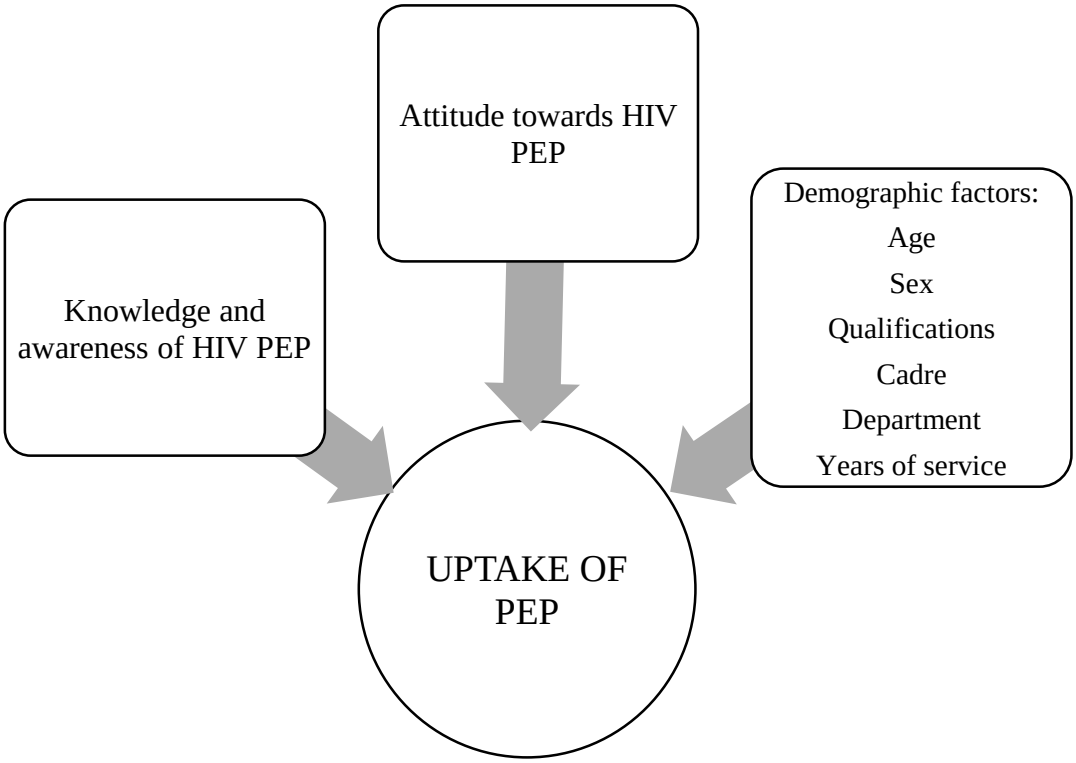


Figure 1: Conceptual Framework for factors associated with HIV PEP uptake

1.4 Rationale

The result from this study sheds light on and provides a basis for understanding the factors affecting uptake of HIV PEP and thus has the potential to advise on further actions to be taken to maintain or increase uptake of HIV PEP among HCWs.

Also, findings from this study will inform the development of targeted interventions aimed at improving PEP uptake among healthcare workers. These interventions could address specific barriers identified in the study such as negative attitude. Healthcare facilities could also use the study findings to enhance training programs for staff members, ensuring they are knowledgeable about PEP guidelines and feel empowered to seek PEP when necessary.

The study could contribute to promoting a culture of occupational health and safety within healthcare settings, emphasizing the importance of timely PEP uptake in preventing HIV transmission.

Policymakers could use the study findings to develop or revise policies related to occupational health and safety in healthcare settings. This might include ensuring access to PEP medications, streamlining reporting procedures for exposure incidents, and implementing supportive measures for healthcare workers.

The study could inform the development of comprehensive guidelines and protocols for PEP administration and follow-up care in healthcare facilities, based on the identified factors influencing uptake.

Future research could build upon the findings of this study by conducting longitudinal assessments of PEP uptake among healthcare workers, tracking changes in uptake rates over time and exploring the effectiveness of interventions. Further qualitative research could delve deeper into the experiences, perceptions, and decision-making processes of healthcare workers regarding PEP uptake, providing rich insights that complement quantitative findings.

1.5 Research Questions

1.5.1 Primary Research Question

What is the uptake of HIV PEP and its associated factors among exposed health-care workers in Dar es salaam?

1.5.2 Secondary Research Questions

i. What is the uptake of HIV post-exposure prophylaxis among exposed health-care workers in Dar es salaam?
ii. What are the reasons for HIV-exposed healthcare workers in Dar es salaam to not use PEP?
iii. What are the factors affecting PEP uptake among exposed health-care workers in Dar es salaam?

1.6 Broad Objectives

To determine uptake of HIV post-exposure prophylaxis and its associated factors among exposed health-care workers in Dar es salaam for the year 2022/2023.

1.7 Specific Objectives

i. To determine the uptake of HIV post-exposure prophylaxis among exposed health-care workers in Dar es salaam.
ii. To describe the reasons why HIV-exposed HCWs in Dar es salaam did not use HIV post-exposure prophylaxis.
iii. To analyse the factors affecting HIV post-exposure prophylaxis uptake among the exposed health-care workers.

CHAPTER TWO: LITERATURE REVIEW

2.1 Uptake of HIV PEP among exposed HCWs

A crucial strategy for limiting HIV transmission among HCWs who are occupationally exposed to HIV is taking PEP for HIV. In high income countries such as Greece, among 188 documented occupational exposures, 89.9% utilized PEP (13). In London, 74% of the exposed HCWs reported a comparable high PEP uptake rate. (2).

PEP uptake among HCWs in low- and middle-income countries is, however, still below par for a variety of reasons. These include, among other things, lack of information, poor perception of risk, lack of confidentiality, and unfavorable working conditions. A study involving all government healthcare centres and hospitals in Thika area of Kenya found that, PEP uptake among HCWs reporting exposure was just 4%, despite a high rate of contact to blood/body fluids at work (33). On the other hand, a survey of HCWs in Uganda revealed an uptake of 21.5% among workers who had been exposed. (14).

Few studies have been done in Tanzania, with uptake ranging between 11.7% to 23.1% during 2010-2013. Mponela et al reported in a study conducted in 2009-2010 in Mbeya, Tanzania that 14 of 102 (13.7%) exposed HCWs completed the 4 weeks dose of PEP (7). Another study conducted in Singida district council in 2013 found that amongst 121 exposed HCWs, only 23.1% completed HIV PEP (21). In a study conducted in rural Dodoma in 2013, utilization of HIV PEP among the exposed HCWs was 11.7% (10).

The current uptake of HIV PEP in Tanzania is not known. Therefore there is a need to assess whether there has been an increase, a decrease or if it has maintained the same level.

2.2 Reasons for not using HIV PEP

The availability and accessibility of HIV PEP are critical factors in the uptake of this intervention by HCWs. Several studies have identified challenges related to the availability and accessibility of HIV PEP, including stock-outs of medications, inadequate infrastructure, and limited awareness of PEP guidelines among HCWs.

A study conducted in France in 2022 indicated that HIV PEP is available and accessible to individuals who require it (27). However, a study conducted in the United States in 2018 found that access to PEP was limited due to high costs and lack of insurance coverage (28).

In a mixed study conducted in Southwest Ethiopia, lack of provider-initiated HIV counselling and testing was mentioned as one of the reasons of not resorting to PEP use (18). Research in Nigeria reported that access to PEP among family physicians was sub-optimal, despite a good understanding and awareness of HIV PEP, suggesting limited accessibility (29).

In a study conducted in Singida District Council, Tanzania, 58.1% of the respondents reported the availability of someone to administer HIV PEP 24/7. However, only 20.5% of them reported daily access to HIV PEP service (21).

Other reasons for not using HIV PEP that have been mentioned by healthcare workers include fear of medication side effects, source patient testing negative, as well as fear of prejudice. The medications used in PEP regimens can have side effects, ranging from mild to severe. Some healthcare workers may be hesitant to subject themselves to potential adverse effects, especially when the risk of HIV transmission is perceived to be low. In a qualitative study conducted in Pwani and Dodoma regions of Tanzania, healthcare workers cited that the fear of side effects of HIV PEP discouraged exposed individuals from reporting and being prescribed PEP. (36)

Additionally, healthcare workers may fear potential stigma and discrimination from colleagues or superiors if they disclose their exposure and decision to use PEP. Concerns about being perceived as a risk to patient safety or facing judgment from peers may influence the decision-making process. In a study conducted in South West Ethiopia, 36.6% of the respondents reported not using PEP due to fear of stigma, discrimination and judgement from colleagues. (37)

Studies evaluating the reasons why HCWs in Tanzania resort to not using HIV PEP are limited.

2.3 Factors associated with HIV PEP uptake

Several socio-demographic factors have been associated with HIV PEP uptake in different settings. Key socio-demographic variables include age, gender, professional experience, educational background, job role, and the specific healthcare setting. The interplay of these factors introduces a nuanced dimension to the understanding of healthcare workers' decisions to adopt HIV PEP, reflecting the diverse and dynamic nature of the healthcare landscape.

However, in a study conducted in Southeast Ethiopia, Bosena Tebeje and Chernet Hailu found that PEP utilization was not associated with age nor sex nor any of the other sociodemographic factors (professional experience and healthcare setting) (18). In contrast, Mponela et al reported that females are more likely to use PEP than males in their 2009-2010 study in Mbeya (7).

Another factor associated with HIV PEP uptake is knowledge on HIV PEP. In general, literature indicates that HCWs' knowledge of HIV PEP is deficient in many situations. The indications for HIV PEP, the timeframe for its administration, and its possible side effects are among of the most commonly stated knowledge gaps (7, 17). Studies conducted in Malaysia and India, indicated that HCWs have either fair or poor knowledge on PEP (15, 16). In Ethiopia, Bosena reports that 83.9% of HCWs had inadequate knowledge of PEP for HIV (18), which is similarly observed in Nigeria where Paulinus et al reported limited awareness and inadequate knowledge of HIV PEP among HCWs (19). According to a study evaluating determinants of HIV infection risk among health care workers in sub-Saharan Africa, inadequate PEP knowledge puts health care workers at higher risk for HIV infection since it reduces their use of PEP. (20). Studies conducted in Singida and Mbeya, Tanzania, found that having PEP knowledge was significantly associated with using PEP (21, 7). In a study conducted in rural Dodoma in 2013, Mabwe et al reported that PEP use was about 13 times more prevalent among individuals with HIV occupational exposure who were familiar with PEP procedures than it was among those who weren't. (10).

Attitude towards HIV PEP has also been found to be associated with HIV PEP uptake. Negative attitudes are often associated with concerns about the safety and side effects of the drugs used in HIV PEP. Positive attitudes, on the other hand, are often associated with a belief in the

effectiveness of HIV PEP in preventing HIV transmission. A study conducted in Iran found that HCWs had positive attitudes towards HIV PEP, with 80% of the participants reporting that they would take HIV PEP in the event of an occupational exposure (23). Esum et al reported that good attitude towards HIV PEP is significantly associated with PEP compliance and that 76.9% of HCWs in Cameroon had a good attitude towards HIV PEP (24).

There is very limited data on the factors associated with HIV PEP uptake both globally and in Tanzania. Therefore, this study tapped into that information to check for this association (if any) among the HCWs. A comprehensive exploration of these factors is essential for crafting targeted interventions, training programs, and policies tailored to the specific needs and preferences of healthcare professionals, fostering a more effective and responsive approach to HIV prevention within the healthcare workforce.

CHAPTER THREE: METHODOLOGY

3.1 Study design

This was a health-facility based cross-sectional study.

3.2 Study setting

The setting for this study is four public hospitals in Dar es salaam including MNH, a national tertiary hospital which also serves as a teaching hospital to Muhimbili University of Health and Allied Sciences among other universities in the region. MNH has 2700 employees among which 300 are doctors and specialists, 900 are registered and enrolled nurses, and the rest are allied health professionals and supporting staff.

The other hospitals that were included are Mwananyamala, Amana and Temeke Regional Referral Hospitals, which are government owned facilities under the Ministry of Health. Mwananyamala hospital serves a population of more than 2,200,000 people residing in Dar es Salaam Kinondoni and Ubungo municipals and the surrounding areas. Amana hospital serves a population of about 1,220,611 people and receives patients from private and government centers from Ilala Municipal Council and neighboring Municipal Councils (Temeke, Ubungo, Kigamboni and Kinondoni). The hospital has 222 registered and enrolled nurses, 81 doctors and specialists, and 134 allied health professionals and supporting staff. Temeke hospital, with a total of 400 employees, serves a population of more than 1,101,209 people residing in Temeke district and surrounding areas. All facilities had copies of the national PEP guidelines and a local PEP facilitator available.

3.3 Study population

The study population included HCWs who reported to have had a potential exposure to HIV within the past 1 year, particularly medical doctors, nurses, and laboratory personnel, providing services at the selected facilities and departments of interest (emergency medicine, obstetrics and gynaecology, and surgery). The departments of interest were chosen due to their higher potential risk of occupational exposure due to the nature of their interaction with clients/patients, in comparison to the other departments (34).

3.4 Inclusion and exclusion criteria

3.4.1 Inclusion criteria

i. Eligible HCWs employed at the selected facilities.
ii. HCWs who have had a potential occupational exposure to HIV within the past 1 year.

3.4.2 Exclusion criteria

i. HCWs with a known HIV-positive status.
ii. HCWs who are not able to provide informed consent or complete the study procedures for any reason.
iii. HCWs not willing to participate.

3.5 Sample size

Sample size was calculated using Kish and Leslie formula; $n = \frac{p(1-p)z^2}{e^2}$, and a 20% non-response rate (7) where;

n=the required minimum sample size

e=margin of error (4%)

p=estimated uptake of 11.7% (10),

z=standard normal deviate corresponding to 95% confidence level=1.96,

Therefore, the sample size was 310 HCWs.

3.6 Sampling technique

All HCWs at the departments of interest (emergency medicine, obstetrics and gynaecology, surgery, and diagnostic services) who met the inclusion criteria and were conveniently available during the data collection period were included.

3.7 Study Variables

3.7.1 Dependent variables

The dependent variable was the uptake of HIV PEP. Uptake of HIV PEP refers to the timely receipt (within 72 hours) of a 28-day course of antiretroviral drugs following exposure to HIV. This is a binary categorical variable (Yes/No).

3.7.2 Independent variables

Independent variables were:

Age: categorized as 30 and below and above 30 years;

Sex: recorded as male or female;

Education level: recorded as diploma, or bachelor's degree and higher;

Job category: recorded as doctor, nurse or lab personnel;

Knowledge of HIV PEP: what is known by the HCW regarding PEP and all procedures to follow once a HCW is exposed as stipulated by the Tanzania national infection prevention and control guidelines for healthcare service. Level of knowledge was assessed by asking 10 questions. Of those ten questions, two had multiple repsonses and a maximum score of 5 points and 3 points each. The overall maximum score was 16 points. A total score of 0-10 was graded as having "inadequate knowledge" while 11-16 was graded as having "adequate knowledge".

Attitude towards HIV PEP: assessed by asking a series of four "Yes/No/Not sure" questions, where respondents that score 50% and below were considered to have a "negative attitude" and those that score above 50% were considered to have "positive attitude";

Nature of exposure: recorded as needle stick injury or splash injury.

3.8 Data collection tools and methods

Data were collected using an interviewer-administered questionnaire with 30 closed-ended questions (Appendix I). The questions were developed from reviewing different literature as there was no validated tool. To ensure the validity and reliability of data, the questionnaire was pretested in addition to the training of the research assistants (3 junior medical doctors). The questionnaire consisted of socio-demographics, knowledge and attitude on HIV PEP, HIV PEP uptake, and reasons for not using PEP. A list of healthcare workers from each department was obtained and they were approached individually and asked if they had experienced an HIV occupational exposure in the past year. Those who reported to have been exposed were then interviewed in an area that ensured confidentiality.

3.9 Data management plan

The data was collected using KoboCollect, a mobile data collection platform, and then transferred to Stata in a password-protected computer. This data was backed up in an external hard drive to protect against loss of data. For confidentiality purposes, no information enabled the interviewee to be identified. After completion of the study, the data were moved to the School of Public Health and Social Sciences for safe storage and disposal.

3.10 Data analysis

The collected data was checked for completeness and exported into Stata version 18 for subsequent analysis. Categorical variables were summarized as the frequency with proportions, while continuous variables were summarized using measures of central tendency, i.e., mean or median, depending on the skewness of the data. Bivariate analysis using a Chi-square test was used to examine the association between demographic factors and PEP uptake, the association between knowledge on HIV PEP and PEP uptake, as well as association between attitude towards HIV PEP and PEP uptake. Using the software application STATA, Modified Poisson regression was conducted to examine independent factors associated with uptake of PEP. Variables with a p-value of less than 0.2 in the bivariable analysis were included in the

multivariable model. Prevalence ratios with corresponding 95% confidence intervals were used to determine the strength of associations. A p-value less than 0.05 was considered statistically significant.

3.11 Ethical considerations

The study was conducted after receiving ethical clearance from Muhimbili University of Health and Allied Sciences – Institutional Review Board through the office of the Director of Research, Publication, and Innovation (DRPI). Additionally, approval from the executive director of the selected facilities was sought before the study was conducted. Participation was voluntary, individual consent was sought verbally and through writing. Confidentiality and privacy were observed towards the patient's information whereby there were no names recorded, but numbers were used instead. The information gathered is not accessible to anyone not authorized.

CHAPTER FOUR: RESULTS

4.1 Sociodemographic characteristics of exposed HCWs

A total of 302 HCWs were interviewed after being identified to have experienced HIV exposure within the past one year. Majority of the study participants were females, with a male to female ratio of 1:2.1. Slightly more than half (53.6%) of the participants were aged above 30 years (mean=32.6±6.05 years). Most (80.5%) of the participants had a bachelors' degree or higher qualification. Slightly more than half of the participants were doctors (58.3%), from the Obstetrics and Gynecology department (36.8%), with >2 years of service (85.1%). Most of the participants (83.8%) had adequate knowledge. Also, four in five (82.5%) of the participants had a positive attitude towards HIV PEP (Table 1).

Table 1 Characteristics of HCWs exposed to HIV in the past 12 months (n=302)

Characteristics	Frequency	Percent
Age		
≤30 years	140	46.4
>30 years	162	53.6
Sex		
Male	97	32.1
Female	205	67.9
Qualification		
Diploma	59	19.5
Bachelor's degree and higher	243	80.5
Cadre		
Doctor	176	58.3
Nurse	100	33.1
Lab personnel	26	8.6
Department		
EMD	105	34.8
Obstetrics and Gynecology	111	36.8
Surgery	60	19.9
Lab	26	8.6
Years of Service		
≤2	45	14.9
>2	257	85.1
Knowledge on HIV PEP		
Adequate	253	83.8
Inadequate	49	16.2
Attitude towards HIV PEP		
Positive	249	82.5
Negative	53	17.6

4.2 Uptake of HIV PEP among exposed HCWs in Dar es salaam

Of the 302 recruited HCWs, 170 (56.3%) initiated PEP after exposure but only 44 (14.6%) completed the 4 weeks dose timely. Therefore, the uptake of HIV PEP among exposed HCWs was 14.6%.

None of the 302 participants reported to have received HIV PEP training. A total of 254 HCWs (84%) were exposed via splash injury while 48 HCWs (16%) experienced needle-stick injury.

4.3 Reasons for Not Receiving Full Dose of HIV Post-Exposure Prophylaxis

Out of the 258 respondents who didn't complete the 4 weeks' dose of PEP, 46.5% reported that it was due to the medication side effects, 37.2% reported that the source patient tested negative at the time, and 16.3% reported that they didn't complete the dose because they felt that the 28-day course is unnecessary.

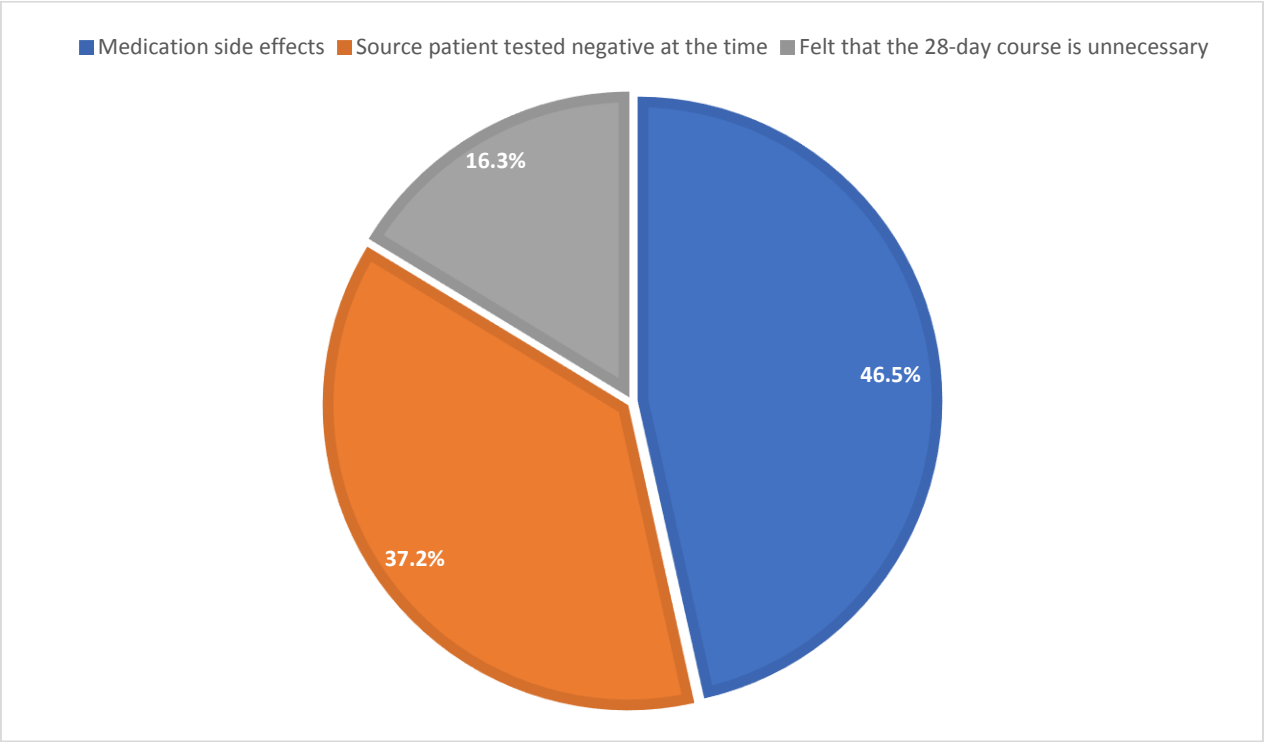


Figure 2: Reasons for not receiving a full dose of HIV PEP

4.4 Factors associated with HIV PEP uptake

Table 2 presents bivariable analysis of the factors associated with HIV PEP uptake among exposed HCWs in Dar es salaam. Findings from the bivariable analysis revealed PEP uptake to be associated with age. Participants with ages above 30 years old (PR=0.36; 95% CI: 0.20-0.67) were less likely to take PEP compared to the younger age group. The female HCWs had a 93%

lower prevalence of PEP uptake as compared to their male counterparts (PR=0.07; 95% CI: 0.03-0.17). Participants from the surgery department had an almost 5 times higher prevalence of PEP uptake as compared to those from the EMD (PR=4.67; 95% CI: 1.93-11.30). Findings revealed no statistical association between PEP uptake and qualification, cadre, years of service, knowledge on HIV PEP, and attitude towards HIV PEP (Table 2).

Table 2: Bivariable analysis of the factors associated with the HIV PEP uptake among HCWs exposed to HIV in the past 12 months (n=302)

Variable	Total	HIV PEP Uptake n (%)	PR	95% CI	P – value
Age group (years)					
≤30	140	31 (22.14)	Ref		
≥31	162	13 (8.02)	0.36	0.20-0.67	0.001
Sex					
Male	97	38 (39.18)	Ref		
Female	205	6 (2.93)	0.07	0.03-0.17	<0.001
Qualification					
Diploma	59	12 (20.34)	Ref		
Bachelor's degree and higher	243	32 (13.17)	0.65	0.36-1.18	0.156
Cadre					
Doctor	176	22 (12.50)	Ref		
Nurse	100	16 (16.00)	1.28	0.71-2.32	0.417
Lab personnel	26	6 (23.08)	1.85	0.83-4.13	0.135
Department					
EMD	105	6 (5.71)	Ref		
Obstetrics and Gynecology	111	16 (14.41)	2.52	1.02-6.21	0.044
Surgery	60	16 (26.67)	4.67	1.93-11.30	0.001
Lab	26	6 (23.08)	4.04	1.42-11.53	0.009
Years of service					
≤2	45	8 (17.78)	Ref		
>2	257	36 (14.01)	0.79	0.39-1.58	0.504
Knowledge on HIV PEP					
Inadequate	49	4 (8.16)	Ref		
Adequate	253	40 (15.81)	1.94	0.72-5.18	0.187
Attitude towards HIV PEP					
Negative	53	3 (5.66)	Ref		
Positive	249	41 (16.47)	3.29	0.98-11.06	0.055

Key: PR: Prevalence Ratio, Ref: Reference Category

Some factors were further analysed by multivariable analysis and found that HCWs aged 31 years and greater (aPR=0.37; 95% CI: 0.20-0.65), and being female (aPR =0.09; 95% CI:0.04-0.22) were negatively associated with PEP uptake. Also, HCWs hailing from the surgery department (aPR=2.95; 95% CI:1.17-7.48) were almost three times more likely to take PEP as compared to their colleagues from the EMD. Lastly, participants with a positive attitude towards HIV PEP (aPR=6.41; 95% CI: 1.15-35.62) were more than 6 times more likely to take PEP (Table 3). Not only that but also, we found that there is no statistically significant association between PEP uptake and differing qualifications, different cadres, and different levels of knowledge on HIV PEP (Table 3).

Table 3: Multivariable analysis of the factors associated with the HIV PEP uptake among HCWs exposed to HIV in the past 12 months (n=302)

Variable	Univariable analysis			Multivariable analysis		
	PR	95% CI	P – value	aPR	95% CI	P – value
Age group (years)						
≤30	Ref			Ref		
≥31	0.36	0.20-0.67	0.001	0.37	0.20-0.65	0.001
Sex						
Male	Ref			Ref		
Female	0.07	0.03-0.17	<0.001	0.09	0.04-0.22	<0.001
Qualification						
Diploma	Ref			Ref		
Bachelor's degree and higher	0.65	0.36-1.18	0.156	1.38	0.42-4.56	0.594
Cadre						
Doctor	Ref			Ref		
Nurse	1.28	0.71-2.32	0.417	1.72	0.53-5.58	0.369
Lab personnel	1.85	0.83-4.13	0.135	2.29	0.85-6.19	0.102
Department						
EMD	Ref			Ref		
Obstetrics and Gynecology	2.52	1.02-6.21	0.044	1.99	0.96-4.10	0.063
Surgery	4.67	1.93-11.30	0.001	2.95	1.17-7.48	0.022
Lab*	4.04	1.42-11.53	0.009	1	-	-
Knowledge on HIV PEP						
Inadequate	Ref			Ref		
Adequate	1.94	0.72-5.18	0.187	1.04	0.30-3.63	0.956
Attitude towards HIV PEP						
Negative	Ref			Ref		
Positive	3.29	0.98-11.06	0.055	6.41	1.15-35.62	0.034

Key: aPR: Adjusted Prevalence Ratio, Ref: Reference Category, *: Omitted in multivariable analysis because of co-linearity.

CHAPTER FIVE: DISCUSSION

The main aim of this study was to determine the uptake of HIV PEP and its associated factors among exposed HCWs in the public hospitals in Dar es Salaam. The factors studied included the HCWs sociodemographic characteristics (age, sex, qualification, cadre, department, and years of service), knowledge and awareness of HIV PEP, as well as attitude towards HIV PEP. The PEP uptake among the exposed HCWs was 14.6%. This is lower compared to findings from another region, which reported a PEP uptake of 23.1% in 2013 (21). This observed variation may be subject to differences in data collection methods, i.e. self-administered questionnaire vs interviewer-administered questionnaire. The low uptake in our study can also be explained by the other major finding from the study in which none of the HCWs had ever undergone PEP training, even though most had adequate knowledge on HIV PEP. In a study conducted more than ten years ago in Mbeya, Tanzania, more than 50% of HCWs had reported receiving PEP training (7). This decrease in frequency of HIV PEP training for HCWs may be attributed to the shift of focus from HIV to other diseases with higher risk perception such as COVID-19 and Hepatitis, and assumption that HCWs have become proficient regarding PEP and the measures to take after occupational exposure. Overall, the uptake of PEP among HCWs in developing nations is still lagging compared to the developed nations (32).

The most commonly reported reason for not receiving a full dose of HIV PEP, cited by almost half of the respondents, was medication side effects such as fatigue, nausea, diarrhea, headache and nightmares. This finding underscores the importance of addressing the tolerability and adverse effects of PEP medications. HCWs may experience adverse reactions which can significantly impact their ability to adhere to or initiate the prescribed regimen. Efforts to minimize side effects through better drug selection, dosage adjustments, or supportive care interventions are warranted to enhance PEP adherence among HCWs (39).

Another notable reason for incomplete PEP uptake, reported by slightly more than a third of the respondents, was the source patient testing negative for HIV at the time of exposure. This highlights a common misconception among HCWs that a negative HIV test result in the source patient eliminates the risk of HIV transmission (40). However, it is essential to recognize that

acute HIV infection or false-negative test results can occur, necessitating continued PEP adherence until HIV transmission is definitely ruled out. Therefore, educational interventions targeting HCWs are crucial to dispel myths and reinforce the importance of completing the full course of PEP regardless of the source patient's HIV status at the time of exposure.

HIV PEP uptake was found to be influenced by several factors. These are age, sex, department you work in, and attitude towards the regimen. To start with, having a positive attitude towards HIV PEP was the strongest independent predictor of PEP uptake. Those with a positive attitude towards PEP were more willing to complete the full course of treatment to ensure their safety. This is in-line with other studies where it was found that good attitude towards HIV PEP is significantly associated with PEP compliance (24).

Another major predicting factor for completion of PEP dose was working in the surgical department. This could be accounted for by the dynamics of the surgical department and how well-defined their protocols are.

Also, younger age increased the prevalence of PEP uptake. The younger the HCW, the more likely he/she is to initiate and complete PEP for HIV. This may be due to having a stronger sense of responsibility for their health and thus being more proactive, and/or being more attuned to the potential risk associated with exposure.

Lastly, contrary to our hypothesis and other studies (7), the results showed that compared to females, male individuals were more likely to complete a 4 weeks' dose of HIV PEP after an incident. This may be due to psychological factors where males probably have a higher perceived susceptibility to HIV, or a greater sense of responsibility for their health, or even face lesser social pressure or stigma when taking these medications.

The present study has several strengths and limitations which should be considered when interpreting the results. First, our study assessed both the magnitude of HIV PEP uptake as well as the factors associated with HIV PEP uptake while other previous studies have looked at the magnitude of HIV PEP uptake only. Second, our study used a sample of HCWs from the largest public hospitals in Tanzania. Third, we considered arrays of factors influencing use of HIV PEP,

which could help shape interventions. However, PEP initiation and adherence was self-reported, which is subject to social desirability bias. These may have given us a bigger uptake percentage than the reality. Secondly, we asked participants to report if they had ever faced possible HIV exposure within the past one year, and this might have introduced recall bias. Another limitation was that the study was conducted in public hospitals only and in one region only, and thus may not reflect the full picture of PEP uptake in the country.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The utilization of HIV PEP following occupational exposure among HCWs is still concerningly low. Factors influencing the uptake include age, sex, the department you work in, and attitude towards HIV PEP. Educational qualifications, cadre, years of experience, and knowledge on HIV PEP were not associated with uptake.

6.2 Recommendations

Based on the study finding, we recommend the following:

- Improving the HCWs attitude towards HIV PEP by promoting a culture where the use of PEP is seen as routine and responsible following occupational exposure to HIV. Also, through utilizing peer networks and role models within healthcare settings to advocate for PEP and thus provide peer influence and support; by leadership endorsement where leaders and supervisors within the healthcare organizations openly support and encourage the use of PEP so as to validate the importance of PEP and create a supportive environment for its use.
- Combating myths and misconceptions about PEP through targeted education campaigns. Addressing fears or misunderstandings about side effects, effectiveness, or lomg-term consequences can help reshape attitudes towards PEP.
- Further studies covering different regions as well as private hospitals are needed for comparison and to get a more accurate bigger picture.

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APPENDICES

Appendix I: Data Collection Tool (English Version)

Participant number ……

Interview Date …/…/2023

SOCIODEMOGRAPHICS

1. Gender:

a) Male

b) Female

2. Age: ……years

3. Qualification:

a) Diploma

b) Bachelor's degree

c) Master's degree

d) PhD holder

4. Cadre:

a) Doctor

b) Nurse

c) Health attendant

d) Other. Specify ……

5. Years of service …….
6. Hospital you are working in ……
7. Department that you work in ……

AWARENESS & KNOWLEDGE

8. Have you ever heard about PEP?

a) Yes

b) No

9. Are the PEP guidelines available in your facility?

a) Yes

b) No

c) I don't know

10. Have you ever read the PEP guidelines?

a) Yes

b) No

11. Have you ever attended HIV PEP training?

a) Yes

b) No

12. What are the constituents of effective post-exposure management? *(Tick yes/no where appropriate)*

YES NO

a) Management of exposure site

b) Exposure reporting

c) Assessment of infection risk

d) Appropriate treatment

e) Follow up and counselling

f) I don't know

13. What does management of exposure site entail?

a) Washing wounds and skin sites that have been in contact with blood or body fluids

b) I don't know

c) Others. Specify ……

14. What are the components of PEP?

a) It is a single drug entity

b) It is a combination of 2 drugs

c) It is a combination of 3 drugs

d) It is a combination of more than 3 drugs

e) I don't know

15. What PEP regimens do you know?

a) TLD

b) TLE

c) Others. Specify ……

16. What is the ideal period of initiation of PEP? …… days

17. What is the duration of PEP? ……days

ATTITUDE

18. Do you believe that PEP works?

a) Yes
b) No
c) Not sure

19. Do you think PEP is important?

a) Yes
b) No
c) Not sure

20. Do you believe that training of PEP is important?

a) Yes
b) No
c) Not sure

21. Do you think there should be PEP guideline in work areas?

a) Yes
b) No
c) Not sure

UPTAKE

22. What was the nature of your exposure?

a) Splash injury

b) Needle-stick injury

23. Did you report the incidence to the concerned hospital personnel?

a) Yes

b) No *(skip to qn25)*

24. Did you receive any counselling?

a) Yes

b) No

25. Is there a person available to administer HIV PEP 24/7?

a) Yes

b) No

c) Not sure

26. Was PEP ever initiated?

a) Yes *(skip to qn28)*

b) No

27. What was the main reason why PEP was not initiated? *(THE END)*

a) Unavailability

b) Web of bureaucracy

c) Lack of awareness on hospital procedures on PEP
d) Lack of awareness and information about PEP
e) The source patient tested negative for HIV
f) Felt it was unnecessary
g) Fear of prejudice
h) Worry about side effects
i) Others. Specify ……

28. How long after incidence was PEP initiated?
a) Within 1 day
b) Within 2 days
c) Within 3 days
d) More than 3 days

29. Did you complete the dose?
a) Yes *(THE END)*
b) No

30. What was the main reason for not completing the dose?
a) Unavailability
b) Web of bureaucracy
c) The source patient tested negative for HIV
d) Medication side effect e.g., fatigue, nausea, diarrhoea, headache, nightmares
e) Busy schedule
f) Stigma
g) Belief that the 28-day course is unnecessary
h) Others. Specify ……

Appendix II : Data Collection Tool (Swahili Version)

Nambari ya mshiriki ……

Tarehe ya Mahojiano .../…/2023

SOCIODEMOGRAPHICS

1. Jinsia:

a) Mwanaume

b) Mwanamke

2. Umri: Miaka ……

3. Kiwango cha elimu:

a) Diploma

b) Shahada ya kwanza

c) Shahada ya Uzamili

d) Mwenye PhD

4. Kada:

a) Daktari

b) Muuguzi

c) Mhudumu wa afya

d) Nyingine. Bainisha ……

4. Miaka ya huduma …….

6. Hospitali unayofanyia kazi ……

7. Idara ambayo unafanya kazi ……

UFAHAMU NA MAARIFA

8. Je, umewahi kusikia kuhusu PEP?

a) Ndiyo

b) Hapana

9. Je, miongozo ya PEP inapatikana katika kituo chako?

a) Ndiyo

b) Hapana

c) Sijui

10. Je, umewahi kusoma miongozo ya PEP?

a) Ndiyo

b) Hapana

11. Je, umewahi kuhudhuria mafunzo ya PEP?

a) Ndiyo

b) Hapana

12. Je, ni vipengele gani vya usimamizi bora baada ya kudhurika? (*Weka alama ya ndiyo/hapana inapofaa*)

	NDIYO	HAPANA
a) Usimamizi wa sehemu iliyodhurika		
b) Kuripoti taarifa ya hatari ya uwezekano wa kupata maambukizo		
c) Kuchunguza hatari ya kupata maambukizi		
d) Tiba ifaayo		
e) Ufuatiliaji na ushauri		
f) Sijui		

13. Usimamizi wa sehemu iliyodhurika unahusisha nini?

a) Kusafisha sehemu iliyodhurika kwa sabuni na maji tiririka

b) Sijui

c) Nyingine. Bainisha ……

a) Ni dawa moja tu

b) Ni mchanganyiko wa dawa 2

c) Ni mchanganyiko wa dawa 3

d) Ni mchanganyiko wa dawa zaidi ya 3

e) Sijui

15. Je, unajua dawa gani za PEP?

a) TLD

b) TLE

c) Nyingine. Bainisha ……

16. Je, ni kipindi gani mwafaka cha kuanzishwa kwa PEP? Siku ……

17. Je, PEP inastahili kumezwa kwa muda gani? Siku ……

MTAZAMO

18. Je, unaamini kuwa PEP inafanya kazi?

a) Ndiyo

b) Hapana

c) Sina uhakika

19. Je, unafikiri PEP ni muhimu?

a) Ndiyo

b) Hapana

c) Sina uhakika

20. Je, unaamini kuwa mafunzo ya PEP ni muhimu?

a) Ndiyo

b) Hapana

c) Sina uhakika

21. Je, unadhani kuwe na mwongozo wa PEP katika maeneo ya kazi?

a) Ndiyo

b) Hapana

c) Sina uhakika

UTUMIAJI

22. Je, ulidhurika kwa njia gani?

a) Kwa kumwagikiwa na majimaji ya mwili

b) Kwa kujichoma na sindano

23. Je, uliripoti tukio hilo kwa wafanyakazi husika wa hospitali?

a) Ndiyo

b) Hapana (ruka hadi qn25)

24. Je, ulipokea nasaha na ushauri wowote?

a) Ndiyo

b) Hapana

25. Je, kuna mtoaji wa huduma za PEP kwa ajili ya VVU muda wote?

a) Ndiyo

b) Hapana

c) Sina uhakika

26. Je, PEP ilianzishwa?

a) Ndio (ruka hadi qn28)

b) Hapana

27. Ni sababu gani kuu iliyofanya PEP isianzishwe? (MWISHO)

a) Kutopatikana

b) Urasimu

c) Kutokuwa na uelewa juu ya taratibu za hospitali kuhusu PEP

d) Ukosefu wa ufahamu na taarifa kuhusu PEP

e) Mgonjwa wa chanzo alipima na kukutwa hana VVU

f) Alihisi kuwa sio lazima

g) Hofu ya ubaguzi

h) Wasiwasi kuhusu madhara

i) Nyingine. Bainisha ……

28. PEP ilianzishwa muda gani baada ya ajali kazini?

a) Ndani ya siku 1

b) Ndani ya siku 2

c) Ndani ya siku 3

d) Zaidi ya siku 3

29. Je, ulikamilisha dozi?

a) Ndio (MWISHO)

b) Hapana

30. Ni ipi sababu kuu ya kutokamilisha dozi:

a) Kutopatikana

b) Urasimu

c) Mgonjwa wa chanzo alipimwa na kukutwa hana VVU

d) Athari za dawa k.m., uchovu, kichefuchefu, kuhara, maumivu ya kichwa, ndoto mbaya.

e) Ratiba yenye shughuli nyingi

f) Unyanyapaa

g) Imani kwamba kozi ya siku 28 sio lazima

h) Nyingine. Bainisha ……

Appendix III : Consent form (English Version)

Informed Consent Form

Study Title

Human Immunodeficiency Virus Post-Exposure Prophylaxis: Factors Affecting Uptake Among Healthcare Workers in Dar es salaam

Introduction

I am Halima Tahir, a graduate student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing a Masters in Public Health (MPH). I'm a researcher conducting a study titled "Human Immunodeficiency Virus Post-Exposure Prophylaxis: Factors Affecting Uptake Among Healthcare Workers in Dar es salaam."

Invitation to Participate

I urge you to participate in the research because you are one among the healthcare workers in Dar es salaam who have experienced an HIV occupational exposure. You will be interviewed regarding the post exposure prophylaxis for HIV if you accept to participate in this study. This will take approximately thirty (30) minutes in total.

Purpose of the Study

HIV is one of the diseases of public health concern, and healthcare workers are among the group of people named by World Health Organization to be at risk of being infected through occupational exposures. This study aims to determine the current uptake and factors affecting uptake of HIV PEP among HCWs in the National Hospital and the Regional Referral Hospitals in Dar es salaam. Practically, the study findings will shed light on the current status of HIV PEP uptake and provide basis for understanding the factors affecting uptake and thus have the

potential to advise on further actions to be taken to maintain or increase uptake of HIV PEP among exposed HCWs.

Privacy and Confidentiality

I can guarantee you the utmost secrecy and that your data will only be used for research purposes. The study team will gather the data in an anonymous manner by assigning each participant with an ID code, meaning your name will not appear on any questionnaire. Moreover, the data collected will be stored in an encrypted electronic file protected by a password.

Possible Risks

There are no anticipated risks related to taking part in this study.

Right to Participate in the Study

You have a right to voluntarily participate in this study. You have the choice whether to participate in this study, moreover, you are entitled to revoke your consent to participate without prior announcement.

Contact Person

If you have any questions about this study, you can get in touch with the lead researcher:

Halima Tahir

Phone number +255 684 055 500

Any inquiries should be directed to:

Dr Nahya Masoud

Director of the MUHAS Directory of Research, Publications and Innovations

Box 65001, Dar es Salaam, Tanzania,

Telephone number +255-22-2150302/6

If you consent to taking part in this study, please sign this form.

I …… voluntarily provide my consent to participate in this study after understanding everything relating to this study.

Participant signature……..... Date of interview……

Researcher signature ……....……. Date ……

Appendix IV : Consent form (Swahili Version)

Fomu ya Idhini Iliyoarifiwa

Kichwa cha Utafiti

Tiba Kinga Dhidi ya Virusi vya Ukimwi baada ya Kudhurika: Mambo yanayoathiri Utumiaji kati ya Wahudumu wa Afya jijini Dar es salaam.

Utangulizi

Mimi, Halima Tahir, mwanafunzi anayesomea Shahada ya Uzamili ya Afya ya Umma (MPH) pale Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili (MUHAS). Mimi ni mtafiti ninayefanya utafiti uliyopewa jina la "Tiba Kinga Dhidi ya Virusi vya Ukimwi baada ya Kudhurika: Mambo yanayoathiri Utumiaji kati ya Wahudumu wa Afya jijini Dar es salaam".

Mualiko wa Kushiriki

Ninakuomba ushiriki katika utafiti kwa sababu wewe ni mmoja kati ya wahudumu wa afya jijini Dar es salaam ambao wamekabiliwa na uwezekano wa kudhurika na VVU mahali pa kazini. Ikiwa utakubali kushiriki katika utafiti huu, utahojiwa kuhusu tiba kinga dhidi ya VVU baada ya kudhurika. Hii itachukua takriban dakika thelathini (30) kwa jumla.

Madhumuni ya Utafiti

VVU ni moja ya magonjwa yanayosumbua afya ya umma, na wafanyikazi wa afya ni miongoni mwa kundi la watu waliotajwa na Shirika la Afya Ulimwenguni kuwa katika hatari ya kuambukizwa kupitia kudhurika mahala pa kazi. Utafiti huu unalenga kubainisha hali ya sasa ya maambukizi na mambo yanayoathiri upatikanaji wa tiba kinga ya VVU kati ya HCWs katika Hospitali ya Taifa na Hospitali za Rufaa za Mkoa wa Dar es salaam. Kiuhalisia, matokeo ya utafiti yatatoa mwanga juu ya hali ya sasa ya utumiaji wa tiba kinga dhidi ya VVU na kutoa

msingi wa kuelewa mambo yanayoathiri utumiaji na hivyo kuwa na uwezo wa kushauri juu ya hatua zaidi za kuchukuliwa ili kudumisha au kuongeza utumiaji wa tiba kinga ya VVU kati ya wafanyakazi wa afya.

Faragha na Usiri

Ninakuhakikishia usiri wa hali ya juu na kwamba maelezo yako hayatatumika kwa kitu kingine chochote isipokuwa madhumuni ya utafiti. Timu ya utafiti itakusanya taarifa wa namna ya usiri, kwa kumpa kila mshiriki nambari ya utambulisho, ikimaanisha kwamba jina lako hallitaonekana katika dodoso lolote. Zaidi ya hayo, data iliyokusanywa itahifadhiwa katika faili ya kielektroniki iliyolindwa na nenosiri.

Hatari Zinazotarajiwa

Hakuna hatari zinazotarajiwa zinazohusiana na kushiriki katika utafiti huu.

Haki ya Kushiriki katika Utafiti

Una haki ya kushiriki kwa hiari katika utafiti huu. Una chaguo la kushiriki katika utafiti huu, zaidi ya hayo, una haki ya kubatilisha idhini yako ya kushiriki bila tangazo la awali.

Mawasiliano

Iwapo una maswali yoyote yanayohusiana na utafiti huu, unaweza kuwasiliana na mtafiti mkuu

Halima Tahir

Nambari ya simu +255 684 055 500

Maswali yoyote yanapaswa kuelekezwa kwa:

Dr Nahya Masoud

Mkurugenzi wa Saraka ya Utafiti, Machapisho na Ubunifu ya MUHAS

Box 65001, Dar es Salaam, Tanzania,

Nambari ya simu +255-22-2150302/6

Ukikubali kushiriki katika utafiti huu, tafadhali saini fomu hii.

Mimi ……, kwa hiari yangu, natoa idhini yangu ya kushiriki katika utafiti huu baada ya kuelewa kila kitu kinachohusiana na utafiti huu.

Sahihi ya mshiriki …… Tarehe ya mahojiano……

Sahihi ya mtafiti ……. Tarehe ……

Appendix V: Ethical Clearance Letter

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/1810 Date: 19/07/2023

MUHAS-REC-07-2023-1810
HALIMA TAHIR
SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: HUMAN IMMUNODEFICIENCY VIRUS POST-EXPOSURE PROPHYLAXIS: FACTORS AFFECTING UPTAKE AMONG HEALTHCARE WORKERS IN DAR ES SALAAM

Reference is made to the above heading,

I am pleased to inform you that the Chairperson has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 19/07/2023
EXPIRATION DATE OF APPROVAL: 19/07/2024

STUDY DESCRIPTION:
Purpose:
The purpose of this facility-based cross-sectional study is to determine the current uptake and factors affecting uptake of HIV PEP among exposed HCWs in Dar es salaam for the year 2022/2023.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided:
https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014903.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain data transfer agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain material transfer agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country,
8. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.



Dr. Nahya Salim Masoud,
Chairperson, MUHAS Research and Ethics Committee

Appendix VI : Letters permitting the collection of data

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH

MUHIMBILI NATIONAL HOSPITAL

In reply please quote;

Ref. No.: MNH/CRTCU/Perm/2023/453 **Date: 31st July, 2023**

Head of Department,

- Emergency Medicine
- Obstetrics and Gynaecology
- Surgery

Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH.

Name of Student	**Halima Ally Tahir**
Title	**"Human Immunodeficiency Virus Post-Exposure Prophylaxis: Factors Affecting Uptake Among Healthcare Workers in Dar es Salaam".**
Institution	Muhimbili University of Health and Allied Sciences
Supervisors	Dr.Candida Moshiro (MUHAS)
Co - Supervisor	Dr. Jona Rugemalila (MNH)
Period	31st July, 2023 to 30th August, 2023

Approval has been granted to the above mentioned student to collect data at MNH. **A final study report should be lodged with Clinical Research, Training and Consultancy Unit.** Dissemination of study findings to MNH stakeholders shall be overseen by **Dr. Joan Rugemalila (**MNH) Co – supervisor.

Kindly ensure that the student abide to the ethical principles and other conditions of the research approval.

Sincerely,

Dr. Jessie Mbwambo
Head of Clinical Research, Training and Consultancy Unit

c.c DSS, DMS
c.c Dr. Joan Rugemalila
c.c **Halima Ally Tahir**

Upanga West, Kalenga Street, Plot No. 10480/3, P.O. BOX 65000, Dar es Salaam, Tanzania.
Telephone: +255-22-2151367-9, Telephone: +255-22-2151351-2
Email: info@mnh.or.tz, Website: www.mnh.or.tz

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF HEALTH

Telephone Address:

Telephone: 022-2760500

Mwananyamala Regional
Referral Hospital,
P.O.Box 61665
Dar es Salaam.

RE: NO.: MA. 239/240/01/102

DATE: 31st July, 2023

Director,
Postgraduate Studies,
MUHAS,
P.O.BOX 65001,
Dar es Salaam.

RE: HALIMA TAHIR TO CONDUCT HER RESEARCH IN MWANANYAMALA REGIONAL REFERRAL HOSPITAL

The captioned subject refers

2. May you be informed that your prescribed request for your bonafide student **Halima Tahir** to conduct her Research in our Institution through your letter dated **25th July, 2023**, is asserted.

3. The Institution charges **50,000/=**, as a Research fee each 4 weeks spent. The payments are to be made upon reporting.

4. May she report to the Administration and HR department head for further instruction.

Thanks.

MWANANYAMALA HOSPITAL
P O Box 61665
DAR ES SALAAM.

Dr. Mkiwa Akida
RESEARCH COORDINATOR
FOR: MEDICAL OFFICER INCHARGE
MWANANYAMALA REGIONAL REFERRAL HOSPITAL

COPY:
Head of Int. Medicine - **MWANANYAMALA REGIONAL REFERRAL HOSPITAL**

Student - **Report to the head of Int. Medicine**

JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA AFYA.
HOSPITAL YA RUFAA YA MKOA YA TEMEKE
Baruapepe:temekerh@afya.go.tz,S.L.P 45232 Dar es Salaam,Simu 0222856007

Kumb. Na: MOH TRRH/RSC /4/9/06 **2/8/2023**

Halima Tahir
Muhimbili University of Health and Allied Sciences
S.L.P 65001
Dar es salaam

YAH; OMBI LA KUFANYA UTAFITI KUHUSU "HUMAN IMMUNODEFICIENCY VIRUS POST-EXPOSURE PROPHYLAXIS: FACTORS AFFECTING UPTAKE AMONG HEALTHCARE WORKERS IN DAR ES SALAAM."(RESEARCH)

Tafadhali husika na kichwa cha habari hapo juu.

Nimepokea barua yako ya tarehe 25/7/2023 kuhusu ombi lako la kufanya utafiti (research) katika taasisi yetu kuhusu **"HUMAN IMMUNODEFICIENCY VIRUS POST-EXPOSURE PROPHYLAXIS: FACTORS AFFECTING UPTAKE AMONG HEALTHCARE WORKERS IN DAR ES SALAAM"**
Ombi lako limekubaliwa utatakiwa kulipa ada ya utafiti kiasi cha **Tshs.100000/=**Hivyo wasiliana na mhasibu wa mapato wa hospitali **Ndug Lusajo Nsajigwa** kwa namba za simu 0717959495 ili akupatie contol number kwa ajili ya malipo ya ada hii ili uweze kuruhusiwa kufanya utafiti.

Kny: MKURUGENZI MSAIDIZI
HOSPITALI YA RUFAA YA MKOA WA TEMEKE

Asnte kwa ushirikiano.

Husna Msangi
Kny: MKURUGENZI
HOSPITALI YA RUFAA YA MKOA YA TEMEKE

Nakala: KIONGOZI (OBGY,SURGERY,EMD)
Mhasibu wa Mapato - Toa **control Number** kwa malipo

UNITED REPUBLIC OF TANZANIA
MINISTRYOF HEALTH

DAR ES SALAAM REGION
ADDRESS: "HEALTH"
PHONE: 022 – 2861903

AMANA REGIONAL REFERRAL HOSPITAL
P.O. BOX. 25411
DAR ES SALAAM.

IN REPLY PLEASE QUOTE

REF. NO. MOHCDGEC/ARRH/R.1/XVI/47

27/07/2023

Director, Postgraduate Studies

MUHAS,

P.O. Box 65001,

DAR ES SALAAM

Re: PERMISSION FOR DATA COLLECTION

Refer to your letter dated 25th July, 2023 which requested us to allow Halima Tahir to conduct research and collect data in our institution.

We are here to acknowledge your request with the following conditions that she must submit the results of her research after completion of analysis in order the hospital to make use of the data's to solve hospital problems.

Regards.

For:
MEDICAL OFFICER I/C
AMANA REGIONAL REFERRAL HOSPITAL
P. O. Box 25411
DAR ES SALAAM

Dr. Rose Ntambuto
FOR: MEDICAL OFFICER INCHARGE
AMANA REGIONAL REFERRAL HOSPITAL