THE IMMEDIATE RESULTS OF IMPLEMENTATION OF OPTIMIZED PROVIDER INITIATED TESTING AND COUNSELLING IN NJOMBE REGION, TANZANIA

Helena Haule, BSc

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By

Helena Haule

A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the Degree of Master of Science (Project Management, Monitoring, and Evaluation in Health) of

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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 entitled; **‘‘The Immediate Results of Implementation of Optimized Provider Initiated Testing and Counselling in Njombe Region’’,** in (partial) fulfilment of the requirements for the Degree of Master of Science (Project Management, Monitoring, and Evaluation in Health) of Muhimbili University of Health and Allied Sciences.

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Dr. Mangi J. Ezekiel

Supervisor

_____

Date

_____

Alphoncina Kagaigai

Co-Supervisor

_____

Date

DECLARATION

AND

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

S**ignature**……. **Date** …….

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To all my colleagues and friends who contributed to the production of this dissertation and many others who may have not been mentioned here, God bless you.

DEDICATION

I dedicate this dissertation to my parents Kaspar and Asumpta Haule, my children Daudi and Derrick. They have supported and encouraged me through the ups and downs of the busy years of this course. I deeply appreciate them.

ABSTRACT

Background: The Joint United Nations Programme on HIV/AIDS (UNAIDS) set the famous '90-90-90 global targets by 2020. To achieve this, it is vital to ensure that a significant number of people are tested. Thus, the implementation of Optimised Provider Initiated Testing and Counselling (o-PITC) is being implemented.

Objective: This study aimed to examine the immediate results of implementing o-PITC and establish the factors that might influence Healthcare Workers (HCWs) compliance to o-PITC guidelines.

Methodology: Observational research design was employed to reach four health facilities found in the Njombe region. Participants were purposively and randomly selected. A total of 386 patients records were extracted from selected facilities; also 20 HCWs, 1 member from Council Health Management Team (CHMT) and 1 officer from the United States Agency for International Development (USAID) Boresha Afya project were in-depth interviewed; and 71 cases of o-PITC services were observed. Descriptive and inferential statistics were analysed for quantitative data, while qualitative data were analysed using the content analysis technique.

Results: About 80% of HCWs complied with o-PITC guidelines. The number of HCWs determines the implementation of o-PITC, the number of patients at OPD, availability of testing kits, supportive supervision. Also, patient demographics such as gender, level of education and socio-economic status were linked with acceptance of o-PITC among patients.

Conclusion: The immediate results of implementing o-PITC is affected by multifaceted factors related to facility, HCWs, and patients.

Recommendations: HCWs should follow the HIV guides provided, but more critical training, supportive supervision should be provided. Also, HIV testing should be promoted to the broader community.

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LIST OF ABBREVIATIONS

AGPAHI	Ariel Glaser Paediatric AIDS Healthcare Initiative
AIDS	Acquired immune Deficiency Syndrome
ANC	Antenatal Clinic
ART	Antiretroviral Therapy
BCPE	Bukoba Combination Prevention Evaluation
NBS	Tanzania National Bureau of Statistics
CDC	Centre for Disease Control
CHMT	Council Health Management Team
DACC	District AIDS Controlling Coordinator
DC	District Council
DHIS2	District Health Information System 2
DMO	District Medical Officer
DQA	Data Quality Assessment
DQA	Data Quality Assessment
FGD	Focused Group Discussion
GoT	Government of Tanzania
HC	Health Facility
HCWs	Healthcare Workers
HIV	Human Immunodeficiency Virus

HIVST	HIV Self Testing
HMIS	Health Management Information System
HTS	HIV Testing Services
ICAP	International Centre for AIDS Care and Treatment Program
IDI	In-Depth Interviews
IRB	Institutional Review Board
M&E	Monitoring and Evaluation
MDH	Management and Development for Health
MoHCDGEC	Ministry of Health Community Development Gender, Elderly and Children
NACP	National AIDS Controlling Programme
ODK	Open Data Kit
OPD	Open Patient Department
PEPFAR	The United States President's Emergency Plan for AIDS Relief
PLHIV	People Living with HIV
PMTCT	Prevention of Mother to Child Transmission
QI	Quality Improvement
RCH	Reproductive and Child Health
RHMT	Regional Health Management Team
SPSS	Statistical Package for Social Sciences
SSA	sub-Saharan African

TACAIDS	Tanzania Commission for AIDS
TC	Town Council
UNAIDS	The Joint United Nations Programme on HIV/AIDS
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

DEFINITION OF TERMS

Healthcare HIV Testing Services (HTS): This includes the full range of HIV counselling (pre-test information and post-test counselling); linkage to appropriate HIV prevention, treatment and care services, and other clinical and support services; and coordination with laboratory services to support quality assurance and the delivery of correct results. In this regard, the study examined how patients are being provided with HTS services.

Optimised PITC (o-PITC): This is an HIV testing intervention that requires healthcare providers to initiate HIV counselling and testing for patients attending health facilities for further medical attention. To complement HIV testing, optimized-PITC was introduced to enhance the provision of HIV counselling and testing to all patients attending Outpatient Department (OPD) and Reproductive and Child Health (RCH) clinics. Therefore, this study measured the process and procedure employed by HCWs in ensuring the successful implementation of o-PITC services.

Healthcare Worker's (HCW's) Compliance: This is the ongoing process, whereas HCW meets or exceeds all the legal, ethical, and professional standards applicable as stipulated in health guidelines, in this context, HTS guidelines and o-PITC guides. Hence, in this study, the observations were made to see whether HCWs comply with the requirements and procedures stipulated in HTS and o-PITC guidelines.

Immediate Results: This term is sometimes referred to as outputs. Itrelates to the direct products or deliverables of programme activities, such as the number of counselling sessions completed, the number of people reached, and the number of materials distributed (The Joint United Nations Programme on HIV/AIDS [UNAIDS] 2010). In this study, immediate results of o-PITC entail the number of people offered o-PITC services, o-PITC eligibility rates, acceptance rate and testing rates.

Optimised PITC Eligibility Rates: This refers to the proportion of the total number of OPD patients screened for HIV testing against the total number of patients screened for HTS. To get the o-PITC eligibility rate, the study used data from o-PITC registers from January to December 2020 to see what o-PITC was testing rates from the selected facilities.

Optimized PITC Testing Rates: This refers to the proportion of the total number of OPD patients who received HIV testing among all the eligible for o-PITC. This was examined by analysing the patient's record abstracted from o-PITC registers from January to December 2020 to observe the o-PITC testing rates from the selected facilities.

CHAPTER ONE

1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

This study examined the immediate results of implementing optimized provider initiative testing and counselling in the Njombe region. The present chapter offers the background of the study, conceptual framework, statement of the problem, the rationale of the study, research question, and objectives.

1.2 Background to the Study

Human Immunodeficiency Viruses (HIV) continues to be a significant health concern worldwide and the primary cause of death among young adults in Africa (Bizuwork et al., 2018). Thus, achieving epidemic control and ending the Acquired Immune Deficiency Syndrome (AIDS) requires global efforts. To achieve this goal, UNAIDS set the famous "90-90-90 global targets" aiming to diagnose 90% of all HIV positive people, provide Antiretroviral Therapy (ART) for 90% of those diagnosed and achieve viral suppression for 90% of those treated by 2020 (UNAIDS, 2014; Gona, 2020).

HIV/AIDS continues to have devastating health effects globally, affecting over 37.7 million people (UNAIDS, 2020). Several initiatives have been put forward to curb the burden of HIV/AIDS, such as introducing ART treatment and prevention measures, yet approximately there is over 2 million newly HIV infection each year across the globe (ibid). In sub-Saharan African (SSA) countries, the HIV burden is worse than other regions, with the SSA occupied by more than 1 billion people, which is the epicentre of the HIV/AIDS pandemic. HIV/AIDS is among the leading cause of death in SSA countries (Gona *et al.,* 2020).

Expansion of treatment coverage and preventive measures has somehow played a vital role in reducing HIV incidences. However, one step to curb the HIV pandemic is for people to know their HIV status to be enrolled in ART care and treatment as soon as possible. Studies by (Sultan *et al.,* 2019) ascribed that people who are enrolled and adhere to ART care and treatment have a high odds of reducing their viral loads. In the same view, Eisinger *et al.* (2019) ascertained that when an HIV patient has a low viral load, the chance

of infecting another person is relatively low. The important thing here is for people to know their HIV status. In other words, it is said that one of the best HIV preventions is for people to know their HIV status through testing and then early initiation and adherence to ART which substantially contribute to viral load suppression. Precisely, this is what the UNAIDS goal calls for. The current global HIV/AIDS trends show that approximately 81% of people with HIV globally knew their HIV status in 2019 (UNAIDS, 2020). In SSA, it is estimated that more than 60% of people do not know their HIV status (UNAIDS, 2020). In other words, this means that people who are infected with HIV/AIDS are not aware that they have been infected. This creates the burden in controlling the HIV pandemic since those who are unaware of being infected with HIV/AIDS miss the opportunity for early detection and enrolment into care and treatment; consequently, play a role in the spreading of HIV (Ogbo et al., 2017 and Kiene et al., 2015). Tanzania is not far from other countries regarding the proportion of people who knew their HIV status, which accounts for only 83% (UNAIDS, 2020).

To increase the number of people who know their HIV status, HIV testing is an essential gateway. Knowing their status facilitates manageable implementations of HIV prevention, treatment, care, and supportive services. In this regard, World Health Organization (WHO) introduced different strategies and guidelines for HIV Testing Services (HTS), including HIV self-testing (HIVST), Voluntary Counselling and Testing (VCT) and Provider Initiated Testing and Counselling (PITC). All these HTS strategies have been developed with the hope to increase the rate of HIV testing, which feeds into the first 90 of UNAIDS targets (Ogbo et al., 2017).

Concerning PITC, countries have put efforts forward to increase the number of people who know their HIV status. To achieve this, UNAIDS, World Health Organisation (WHO) and the Centre for Disease Control (CDC) recommend a PITC strategy for all patients aged above 13 years. PITC refers to a routine offering of HIV testing and counselling for all patients who visit a health facility by a health professional (exceptionally in HIV endemic communities), regardless of the presenting symptoms, and without a separate written consent (UNAIDS/WHO, 2007). The PITC strategy has been successfully implemented in several countries. For example, studies from Mexico, Nigeria, Sierra Leone, South Africa,

and Uganda found out that, PITC strategy has contributed to an increased number of people who accepted HIV testing services, and those who were found to be positive were linked to ART care (Weigel et al., 2009; Okechukwu et al., 2016; Kassa et al., 2020; Leon et al., 2010; Wanyenze et al., 2008).

To achieve this ambitious UN goal, it is vital to ensure that a significant number of people are tested and know their HIV status. According to ICAP[1], people knowledge and awareness of their HIV status is the key to succeeding in the ambitious global goals that respond to fighting against the HIV pandemic. The overarching goals of HIV testing are to make HIV testing for those who need it, deliver accurate and timely results, and link clients to appropriate ART care and treatment. To improve the slow uptake of HIV counselling and testing, the World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) have developed draft guidelines on PITC. Despite the significant scale-up of HTS services, yet a significant number of people remained unaware of their HIV status (UNAIDS, 2014). Thus, there was a high need for a strategic mix of adequate facility and community-based HTS, linkage, ART delivery, and ART retention interventions tailored to the global target of controlling the HIV pandemic.

Likewise, Tanzania had an accelerated action plan for HTS to reach 95% of PLHIV who know their status by 2020. Thus, in 2007, the Tanzania Ministry of Health and Social Welfare adopted the PITC strategy whereas, the government issued the PITC guideline in 2008 to guide PITC operations in the country (National AIDS Controlling Programme [NACP], 2007). The rationale for adopting the PITC strategy aimed at scaling up HIV testing in the country by using different approaches so that those who need to access treatment with ARVs can do so early before they develop AIDS (ibid). Despite the PITC strategy's adaptation, the evidence suggested a poor increase in the number of people testing for HIV. Several empirical studies have reported the factors behind the poor performance of PITC in Tanzania to include poor knowledge on counselling among HCWs, lack of privacy at the health facilities and unwillingness of patients. Also, there are

[1] ICAP Approach to Strategic HIV Testing retrieved from Url: https://icap.columbia.edu/wp-content/uploads/ICAP_Approach_to_Strategic_HIV_Testing_20Julyl17.pdf on 24/01/2020 at 17:33

some institutional barriers, such as limited HCWs and a lack of guidelines (Marwa and Anaeli, 2020; Cham et al., 2019; Frumence and Nathanaeli, 2017; Manongi et al., 2014).

Since PITC and other testing approaches had little contribution in increasing the number of patients who test for HIV and linkage into ART care and treatment for those identified as HIV positive; therefore, the ministry of health in Tanzania, together with ICAP at Columbia University, developed new HTS strategy. This newly HTS strategy was the Bukoba Combination Prevention Evaluation (BCPE), aiming to achieve 90-90-90 (MacKellar *et al.,* 2019). Initially, BCPE was 2.5 years intervention running between 2014 and completed 2017. It was implemented in the lake zone part of Tanzania, Bukoba municipality, just to be precise. The baseline data of BCPE showed a high prevalence of undiagnosed HIV infection and very low ART coverage. After completing the intervention in 2017, there was an indication of promising results, which showed that BCPE might achieve 90-90-90 in Bukoba municipality (MacKellar *et al.,* 2019).

Following the success of the BCPE intervention, in 2018, ICAP envisaged scale-up the intervention in other nine regions supported Centre for Disease Control-Tanzania (CDC). Also, facility implementing partners, Ariel Glaser Paediatric AIDS Healthcare Initiative (AGPAHI) and Management and Development for Health (MDH), were taken on board to test the intervention into a facility setting. BCPE was then rolled out to 208 facilities for testing. In 2019, BCPE facility-based testing and linkage interventions were approved as new service delivery models by the Tanzania Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC). Hence, it scaled up to all regions supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) who funded different implementing organizations such as MDH, AGPAHI and Deloitte Tanzania for scale-up interventions (MacKellar *et al.,* 2019). After scaling up BCPE, the new term was coined, i.e., optimized PITC (o-PITC) or enhanced PITC to include the efforts implemented to other regions, not just BCPE. Even though both names of the intervention are still being used interchangeably. Just to be consistent, in this study, the researcher used o-PITC rather than BCPE, even though they both mean the same thing.

The o-PITC services are currently monitored closely as one of the key HTS strategies that help promote the attainment of the WHO triple 90's goal. Eight critical stages guide the implementation of o-PITC, including group pre-test counselling, screening for prior HTS, HIV test, patient resume the place in clinic queue, HIV results if positive provided in the presence of expert counsellor, post-test counselling if positive, patient resume the place in clinic queue, and escort to HIV care if positive.

Even though o-PITC has been implemented across the country, the performance is uneven across the regions and facilities. As of December 2020, statistics from Health Management and Information System (HMIS) monthly portal[2] showed that some regions had poorly performed on HTS services in Tanzania, and these regions included Njombe with 54% and Mtwara with 52%, whereas the regions did not meet the HTS targets. On this note, it was worthwhile for this study to examine the immediate results and of implementing o-PITC in the Southern zone under the USAID Boresha Afya project while assuming the case study of the Njombe region.

[2] HMIS Monthly Portal retrieved from URL https://hmis.reachproject.or.tz/MonthlyPortal/ on 22/01/2021 at 15:28

1.3 Statement of the Problem

Globally the burden of HIV remains high, with more than 30 million people being affected, most of whom are in SSA countries, including Tanzania. In responding to this, UNAIDS has reset triple 95 goals to help track the progress of controlling the HIV pandemic and hopeful end AIDS (UNAIDS, 2020). In achieving this triple 95 goal, several interventions have been implemented, including o-PITC. However, despite the implementation of o-PITC, there is a limited number of people who know their HIV status. For instance, recent statistics show that Tanzania has only achieved 83% out of 95% targets of people living with HIV know their status (UNAIDS, 2020). The efforts to control the HIV pandemic could be lost in vain if a significant number of people living with HIV do not know their status, which will make them delay ART initiation, and the consequence of this could be an increased rate of HIV transmissions.

Although some scholars have focused on linking the results of HIV testing initiatives and the factors which influence Healthcare Workers (HCWs) compliance (Marwa and Anaeli, 2020; Ogbo, 2017; Kumari, 2018; Manongi *et al.,* 2014), they did not particular demonstrate how HCWs are complying with o-PICT. Equally, there is no consensus on the factors which influence o-PITC. For instance, Frumence and Nathanaeli (2017) argued that the availability of providers influences PICT, while; Marwa and Anaeli (2020) revealed that inadequate training on PITC among HCWs to be the reason behind the implementation of PITC rather than a mere number of HCWs. Also, little is known on factors that influence HCWs compliance of o-PITC in the context of Tanzania. In other words, this is to say; these factors differ across geographical location or timeframe.

Apart from that, the studies found that linkage and adherence to ART care and treatment for those found positive is low (Lailulo et al., 2020; Tun et al., 2019; Kim et al., 2018). For instance, Rentsch *et al.* (2018) revealed that only 10% of patients tested for HIV positive through PITC were linked to ART. This void caught the attention of this study, which intended to examine the factors affecting compliance to o-PITC among HCWs found in health facilities in the Njombe region, Tanzania.

1.4 Conceptual Framework

This study aimed to explain the factors that may hinder the compliance of o-PITC among HCWs and how they affect the immediate results of o-PITC services. Thus, to reveal the factors for compliance of o-PITC services and immediate results of o-PITC, this present study uses the conceptual framework presented in figure 1.1 below. The conceptual framework comprises three interrelated variables, namely, independent variables, which show factors related to HCWs compliance with o-PITC. These factors can influence the intermediate variable, which in this context is HCW's compliance with o-PITC. Therefore, the study anticipated that when there is a compliance of o-PITC among HCWs, then the immediate intended results of o-PITC will be achieved. Thence, the dependent variable is the immediate results of o-PITC. Therefore, this conceptual framework states individual and institutional factors that may influence HCWs to implement o-PITC at the respective facilities. In so doing, eligible clients for o-PITC identified and accepted the HIV testing, which helps identify new HIV positive clients to be linked into HIV care and treatment. All these help achieve UNAIDS triple 90 goals and control of the HIV pandemic in the long run.

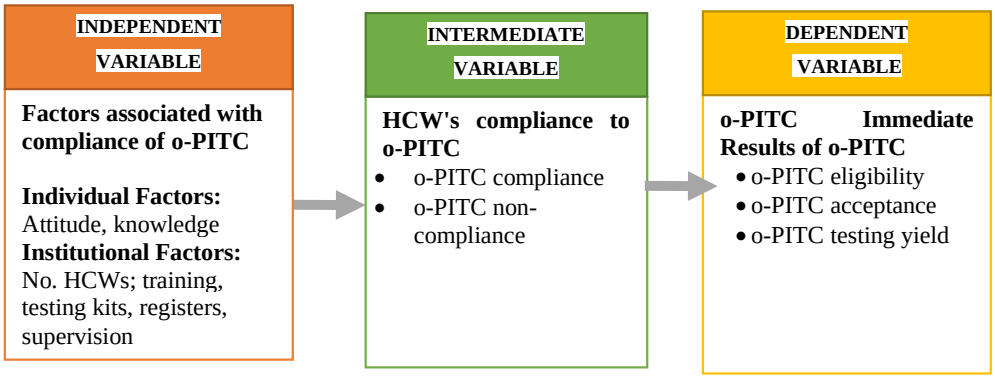


Figure 1: Conceptual Framework of Immediate Results of o-PITC

Source: Adopted and modified from Bizuwork *et al.* (2018)

The conceptual framework above illustrates three interrelated variables, namely independent variables, which influence one after the other. The arrow represented in the conceptual framework shows the nature of the direct or relationship between the variables of interest. Thus, the left box shows two different individual and institutional factors that influence the intermediate variables of o-PITC the second box from the left side.

The intermediate variable is o-PITC compliance and o-PITC non-compliance among HCWs. This implies that HCWs must comply with the implementation of o-PITC based on the driving forces or factors, as illustrated in the first box from the left side. The intermediate variables from the second box help to influence the dependent variables shown in the third box. It is anticipated that for o-PITC services to achieve the desired results, then HCWs must comply with implementing the o-PITC services. The reason behind the implementation of o-PITC services is to get as many eligible people as possible so they can be offered HIV testing, whereas those found positive are expected to be enrolled into ART care and treatment to control the spread of the HIV pandemic. In this regard, the dependent variables measured by this study include the number of patients eligible for o-PITC, which results in the high number of o-PITC acceptance rate, and a probably significant number of o-PITC testing yield and linkage to ART care for those found positive.

1.5 The Rationale of the Study

This study is beneficial in several ways and different stakeholders. First, better and quality healthcare is the right for all people. Thus, carrying out this study contributes to understanding strategies for improvement in the provision of o-PITC. The study's findings shed light on health facilities and HCWs to understand the factors that affect their compliance to existing health guidelines, HIV Testing Services (HTS) guidelines in this context; subsequently, the study longs to influence Quality Improvement (QI) of HIV care and services.

Also, to policymakers and decision-makers, especially those found at Council Health Management Team (CHMT), Regional Health Management Team (RHMT) and ministerial levels, the study provides them with the insights on compliance of o-PITC, henceforth, the results of this study provide the evidence to be used in informed decision making or designing and development of different policies and strategies on prevention of HIV.

Lastly but equally important, this study is of significance and contributes to the world of public health and project management by filling the knowledge gap on the studies of HIV prevention interventions, especially o-PITC intervention in Tanzania. Therefore, this study contributes to the extent to which HCWs comply with HIV guidelines and the underlying factors behind such compliance.

1.6 Main Research Question

The main research question that guided this study was the immediate results of o-PITC intervention in the Njombe region, Tanzania.

1.6.1 Research Questions

The following specific research questions guided this study.

i. What is the compliance of o-PITC on guidelines among HCWs in the selected health facilities in the Njombe region, Tanzania?
ii. What factors influence the compliance of o-PITC among HCWs in the selected health facilities in the Njombe region, Tanzania?
iii. What are the immediate results of HCWs' compliance to o-PITC guidelines in the selected health facilities in the Njombe region, Tanzania?

1.7 Objectives

1.7.1 Broad Objective

The study's main objective was to assess the immediate results of o-PITC intervention in the Njombe region, Tanzania.

1.7.2 Specific Objectives

The specific objectives which guided this study were.

i. To examine the compliance of o-PITC guides among HCWs in the selected health facilities in the Njombe region, Tanzania.
ii. To examine the factors influencing the compliance of o-PITC among HCWs in the selected health facilities in the Njombe region, Tanzania.
iii. To examine the immediate results of HCWs' compliance to o-PITC guidelines in the selected health facilities in the Njombe region, Tanzania.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter is organized into five main sections. The first section is the present one about introduction, whereas sections two to four discuss empirical results based on the three specific objectives that guided this study. Furthermore, last but not least, section six provides a knowledge gap derived from the reviewed works of literature.

2.2 Factors influencing the implementation of Optimized PITC among HCWs

Several scholars have ventured into analyzing different factors affecting compliance of o-PITC. In the proceedings paragraphs, the works of these scholars are discussed in detail. It is, however, worthwhile to note that these studies are different across geographical boundaries and timeframes.

Marwa and Anaeli (2020) studied perceived barriers towards PITC in a paediatric clinic in two regional hospitals, namely Mwananyamala and Temeke hospitals found in Dar es salaam, Tanzania. They employed a cross-sectional exploratory study design, whereas 19 HCWs were interviewed. The results of the study showed that health providers faced six significant challenges, including inadequate training on PITC among healthcare providers, little practice of PITC provision, inability to appropriately counsel patients due to little knowledge, poor attitude of healthcare providers in providing PITC, shortage of healthcare providers, and little motivation and incentives among healthcare providers. These challenges were factors that pose a threat to health providers to provide PITC services adequately. Thus, the study concluded that if healthcare providers were to observe the requirement of PITC and comply with the PITC guideline, these challenges are to be addressed.

Frumence and Nathanaeli (2017) conducted a qualitative study in one urban and one rural district health facility found in the Njombe region, Tanzania. The study aimed at assessing the institutional factors affecting PITC services. Different data collection methods were employed, including In-Depth Interviews (IDIs) and Focused Group Discussions (FGDs) with healthcare providers who were purposively selected. The findings revealed that the

provision of PITC is being affected by several factors, including lack of adequate health staff in health facilities both in number and skills, lack of adequate infrastructure, and erratic shortage of supplies. The same was observed by Bott *et al.* (2014), who revealed that limited PITC services in Burkina Faso, Kenya and Uganda were factored by staff shortages, high workloads, lack of supplies, and inadequate infrastructure they expressed concerns about accidental exposure.

Again, Davyduke *et al.* (2015), in their study, showed that the reason for poor compliance of PITC services among HCW was associated with both individual and institutional factors. It was noted that nurses were not complied to provide PITC services due to lack of awareness on PITC policy, inadequate training and support, shortage of human resources for health within the facilities, lack of private room for PITC. Therefore, the study argued that, for PITC to be successfully implemented by nurses and other HCWs should be adequately oriented on PITC policies, and supportive supervision should be regularly given. Also, community sensitization should be encouraged so people can be aware of PITC services.

2.3 Compliance of Optimized PITC among HCWs

Ahmed *et al.* (2016) analyzed how providers influence the implementation of PITC in Botswana. The study used a qualitative approach to gather information from HCWs found within 15 health facilities purposively. Generally, the results of this study found out that most of the HCWs were resistant primarily to offer and deliver PITC as outlined in the guideline. In other words, this is to say that HCWs were not complying with the requirement of PITC guidelines. The main reasons for such resistance were that they felt it was overwhelming to provide PITC, while they felt unmotivated. These findings imply that HCWs attitudes play a crucial role in HCWs to compliance with services provided. Hence the design of the HIV prevention programme should take this on board if these programmes are to be successfully implemented and contribute to controlling the HIV pandemic.

Also, Davyduke *et al.* (2015) ventured to study the opportunities for strengthening PITC for HIV in Namibia. The study employed cross-sectional across four health facilities found in Khomas and Erongo regions, Nambia. Observation and qualitative methods were used to analyze whether providers offered PITC services or missed the opportunity. The study findings identified that PITC in Namibia was delivered mainly by lay counsellors operating in designated rapid testing rooms located in health facilities and found many missed opportunities for HIV testing through this model. At the same time, nurses did not see PITC as an integral part of their work.

Inghels *et al.* (2020) studied the practices and obstacles to PITC among healthcare providers in Côte d'Ivoire. The study revealed that the practice of providing PITC depended on the medical profession. It was noted that midwives had more odds of practising PITC compared to nurses and physicians. However, the number of patients diagnosed through PITC seemed low compared to the number of patients seen in consultation. Among midwives, the high number of proposed tests suggests routine proposals resulting from their frequent contact with pregnant women, of whom a systematic HIV screening and testing is recommended. These findings imply that midwives are more likely to offer PITC services than other medical professionals since they must routinely screen and test for HIV. All pregnant women attend Antenatal Clinic (ANC) clinic as a part of Prevention of Mother to Child Transmission (PMTCT).

2.4 Immediate Results of Optimized PITC Services

MacKellar *et al.* (2018) assessed methods, outcomes, and costs of the BCPE peer-delivered, linkage case management program between 2014-2017. A study was conducted in Bukoba municipality, Tanzania. The data were gathered from CTC registers and monthly summary forms from 11 facilities found within the Bukoba municipality, whereas patients records on HTS services offered were documented. The findings of this assessment showed that 88% of study participants were newly HIV diagnosed as the result of implementing BCPE, and 83% of those diagnosed HIV positive were directly escorted to CTC by either foot or car, while others were provided with telephone support and appointment reminders. Also, the study observed that there was an increase in clients who initiated ART (i.e., 47% in 2015, 67% in 2016 and 86% in 2017), resulting in the

successful implementation of BCPE. The study then concluded that implementing BCPE help to increase HIV testing and linkage to care for that diagnosed HIV positive.

Also, Abdurahman *et al.* (2015) ventured into examining the acceptance of PITC among outpatient clients in selected health facilities in Harar town, eastern Ethiopia. A cross-sectional design that utilized a mixed approach was employed to collect data from 3 governmental health facilities and one university teaching hospital. Data were gathered from patients attending OPD. The study results showed that 70.6% of clients accepted PITC, and only 39.4% of clients had heard of PITC in the outpatient department service. It is, however, essential to note that clients who first heard about PITC in OPD had a significant association with accepting PITC services. Thus, the study confirmed that the PITC services help to increase HIV-related diagnosis, treatment, and care. Since most people interviewed only knew about Voluntary Counselling and Testing (VCT), which is voluntary as its name suggests. Furthermore, before being exposed to PITC services, most people had self-trust that they did not have HIV, so there was no need for HIV services.

Consistently, Fikadu *et al.* (2016) observed the same when studying utilization of PITC services Among Adult OPD patients from 4 public health facilities of Wonchi Woreda, found in Ethiopia. The study systematically reached a total of 392 OPD patients. It was noted that most OPD patients (78.4%) accepted PITC services offered to them. It was also revealed that only a few (38.3%) patients were unaware of PITC services before. It was further revealed that PITC helps patients diagnosed positive for HIV to be linked to ART care and treatment quickly. Lastly, but equally important, the study highlighted that PITC helps raise awareness on HIV transmission, prevention, testing and treatment.

Furthermore, Ogbo *et al.* (2017) ventured on the assessment of PITC offered to OPD and Antenatal Care (ANC) found in patients who attended Idekpa general hospital found in Benue state, Nigeria. The study was conducted on all patients who attended OPD and ANC clinics for six months from the selected health facilities. The study showed that the PITC strategy was highly acceptable and feasible and increased the number of patients who tested for HIV by 5% compared to VCT. Moreover, it was noted that PITC was associated with increased referral for early ART treatment among patients who tested positive for HIV. Likewise, Yumo *et al.* (2019) concurred that o-PITC significantly increases the

number of children and adolescents tested for HIV, HIV positivity yield, and ART enrolments in Cameroon.

2.5 Knowledge Gap

The reviewed empirical literature has shed light on the compliance, factors, and immediate results of PITC services across different geographical locations. However, these studies vary in terms of the results observed. For instance, Ahmed *et al.* (2016) showed that HCWs are not complying with PITC guidelines in providing PITC services. While Davyduke *et al.* (2015) and Inghels *et al.*(2020) suggested that there are different odds of HCWs to offer PITC as required, and their medical professions are detecting this. Inghels *et al.*(2020) revealed that midwives are more likely to comply with PITC services, while Davyduke *et al.* (2015) put forward lay counsellors. Also, the literature reviewed showed no consensus as to what factors are influencing PITC compliance among HCWs. Again, the majority of empirical studies focus on examining the general PITC services and not optimized PITC. It is within this void that the present proposed study found a knowledge gap. Also, another gap is that few studies (MacKellar *et al.*, 2018 and Yumo *et al.*, 2019) on the same topic, i.e., o-PITC, have been done in the context of Tanzania. Therefore, to fill this knowledge gap, the proposed study will investigate o-PITC results and factors influencing HCWs compliance with o-PITC guidelines while analyzing the recent o-PITC data.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

This study adopted an observational research design to examine HCWs compliance with o-PITC and the immediate outcomes of o-PITC services. The observational research design refers to a study where researchers observe the participant behaviours in their natural settings (Hoffmann and Lim 2007). The appropriateness of selecting this design is based on its ability to gather data from naturally occurring social situations. Arguably, observational studies play a significant role in healthcare, including studying the use and effects of medicines or health interventions such as o-PITC in this context. This is to say that the observational research design helped this current study to analyze HCWs' compliance to o-PITC intervention and examine the immediate results derived from HCWs compliance with o-PITC guidelines. This argumentation is supported by Cohen et al. (2007), who argued that observation research design looks directly at what is taking place in the situation rather than relying on second-hand accounts. In this context, observing how HCWs provided o-PITC services enabled the study to conclude its effects on the immediate results of o-PITC services.

Consequently, this study used a mixed approach, i.e., the process of data collection incorporated both quantitative and qualitative approaches. The use of a mixed approach enabled the study to thoroughly triangulate gathered information and data related to the factors influencing compliance of HCWs on o-PITC. On the same note, it enabled the study to measure the immediate results of HCWs' compliance to o-PITC guidelines. In so doing, this study examined the lived experiences of HCWs and their compliance in the provision of o-PITC; services while at the same time the study quantitatively analyzed the immediate results of the o-PITC services.

3.2 Study Setting

This study was conducted in the Njombe region, which is one of 31 administrative regions in Tanzania. Njombe region comprises six administrative councils, including Njombe TC, Njombe DC, Wanging'ombe DC, Makete DC, Makambako TC and Ludewa DC. Njombe

region is in the Southern Highlands Zone of Tanzania, below the equator between latitudes 80 40' and 100 32'. It shares borders with the Iringa region to the North; Morogoro region to the East; Mbeya region to the West; Ruvuma region to the South and the Republic of Malawi via Lake Nyasa to the Northwest (Ministry of Finance and Planning, Tanzania National Bureau of Statistics [NBS], and Njombe Regional Secretariat, 2020).

The reason for selecting the Njombe region as the study area was its high HIV prevalence, which was about 11.4% compared to other regions supported by the USAID Boresha Afya Southern zone program. These other regions include Ruvuma (5.6%), Iringa (11.3%), Morogoro (4.2%), Lindi (0.3%) and =Mtwara (2%) (Tanzania Commission for AIDS [TACAIDS], 2018). Poor performance on HTS services was another reason for selecting the Njombe region as the study site. Njombe had scored 54% and was ranked second from the last regions in Tanzania after Ruvuma, which had a 52% score in terms of HTS performance. According to monthly HTS data submitted to the Health Management and Information System (HMIS) monthly portal.[3].

Regarding the health facilities profile of the Njombe region, there are a total of 127 facilities supported by the USAID Boresha Afya Southern Zone project and ten reported performances on o-PICT services in December 2020. Consistently the study was done in four health facilities, including Makete hospital, Njombe district hospital, Njombe HC, and Ilembula referral hospital. The reason for selecting these facilities as study areas were based on PITC services' performance reported in 2020 (See Section 3.4 for more details on selecting these facilities).

3.3 Study Population

This study intended to reach a different population of interest, including OPD patients who received o-PITC services in 2020 and those attending OPD in the selected health facilities during the dates of data collection. This group was selected because o-PITC services are conducted in entry points for most patients in the health facilities. Thus, OPD patients who received o-PITC helped to identify whether HCWs complied with o-PITC guidelines or

[3] HMIS Monthly Portal retrieved from URL https://hmis.reachproject.or.tz/MonthlyPortal/ on 22/01/2021 at 15:28

not. Furthermore, HCWs involved in the provision of o-PITC services in the selected health facilities were part of the study population. This population was selected following the main objective, which sought to examine how HCWs comply with the implementation of o-PITC guides.

The other population reached by the study were members of CHMT who oversee HIV intervention, o-PITC. Since the study aimed to assess the o-PITC intervention, which is implemented under the USAID Boresha Afya project. The study also interviewed the project officials who could respond to the support provided to HCWs and see whether such support affect HCW's compliance to o-PITC guidelines.

3.4 Sampling Techniques

Given the fact that this study was conducted to a different population of interest hence, the sampling technique was two-fold, namely, purposively sampling and simple randomly sampling (Mason, 2002). At the very first stage, the Njombe region was purposively selected due to the poor performance of HTS services compared to other regions with a performance rate of 54%. It was understood that the Njombe region has nine facilities reported to have HTS services as of December 2020. That being the case, this study was conducted in 4 out of 9 health facilities implementing o-PITC in the Njombe region. Based on the study design, which was structured as an observational study; therefore, two (2) health facilities with a good performance score on o-PITC and two (2)others with poor performance scores were observed on how they implement o-PITC services. The performance of o-PITC services was measured by comparing the number of patients accepted HIV tested after being offered o-PITC services against the number of OPD patients attending the respective facility (see Table 3.1).

Table 3.1: List of Sampled Health Facilities found in Njombe Region

District	Health facility	o- PITC Eligibility Rate	o- PITC Testing Rate	o- PITC Testing Yield	Sampled
Makete DC	Bulongwa Hospital	10%	53%	0.0%	No
Makete DC	Makete Hospital	0%	0%	0.0%	Yes
Makete DC	Ikonda District Hospital	9%	97%	8.6%	No
Njombe DC	Mtwango Dispensary	10%	100%	12.5%	No
Njombe TC	Luponde Dispensary	59%	100%	4.8%	No
Njombe TC	Njombe District Hospital	30%	100%	2.6%	Yes
Njombe TC	Njombe HC	41%	100%	6.5%	Yes
Wanging'ombe DC	Kipengere Health Centre	34%	100%	2.1%	No
Wanging'ombe DC	Ilembula Refer. Hospital	7%	87%	3.0%	Yes

Source: HMIS Monthly Portal, (December 2020)

3.4.1 Qualitative Sampling

After obtaining the health facilities, the next step was purposively selection of study participants, i.e., HCWs, members of CHMT and focal person of USAID Boresha Afya project. There scientific justification behind the selection of this sampling technique was that it helped the study reach eligible informants, i.e., HCWs and members of CHMT who were knowledgeable and experienced with o-PITC service with whom the study was able to obtain rich and in-depth information regarding the study questions.

The inclusion criteria of the study participants were HCWs from the selected health facilities who were involved in the implementation of o-PITC, members of CHMT from selected districts who were involved on HTS and USAID Boresha Afya project officials who were working in the Njombe region and with the knowledge and experience of o-PITC services.

3.4.2 Quantitative Sampling

The second technique was a simple random sampling that targeted many patients who attended the OPD services at the selected health facilities during the interview. The random

selection was informed by picking random numbers given to patients upon their consent to be included in PITC services offered by lay counsellors at OPD triage. Given that each patient was given a number upon arrival to the OPD triage, the study used the even numbers to select the study participants randomly. The rationale for suggesting this technique was to equip the study to reach different patients who were offered o-PITC services. Also, this technique gave patients an equal chance of being selected. More importantly, it helped the study determine whether HCWs were complying with o-PITC guidelines as far as screening of patients before offering HIV tests was concerned.

The inclusion criteria for patients were only those who attended OPD at the selected health facility between January and December 2020. While patients from other departments apart from OPD and those of OPD but not within the study's selected timeframe were not considered part of this study.

3.5 Sample Size

3.5.1 Sample Size for Quantitative Component

The sample size for quantitative was captured from the population of interest, which was the OPD patients who attended the selected health facilities between January to December 2020. Data from DHIS2 showed that there was a total of 126,768 OPD patients registered during the study period across the four facilities. However, the following parameters were employed to derive the usual sample size (See Table 3.2).

Table 3.2: Sample Size Parameters

Variable	Parameter
Prevalence of outcome/Dependent variable	50.0%
Desired precision	0.5
Power of the study	95.0%
Z score	1.96
No response	10%

With the given parameters for the calculation sample size for the quantitative approach, the study sample recruited 382.942˜383 out of 126,768 patients who received OPD services from the selected health facilities found in the Njombe region. The decision to reach this sample of OPD patients was determined by the Krejcie and Morgan (1970) formula to determine sample size from the given population, which stated that.

$$\mathbf{S}=\frac{\chi^2 NP(1-P)}{C^2(N-1)+\chi^2 P(1-P)} \quad \textbf{(1)}$$

Whereas s = the required sample size,

X^2=the table value of chi-square from z score value,

N=the population size,

P=the population proportion

C=the degree of accuracy (i.e., desired precision).

At 95% confidence level with the degree of freedom 1 the chi-square value is (X^2) =3.841 and margin of error/degree of accuracy or desired precision of 0.05 and population proportion (P) of 0.5 we would arrive at the sample size (S) 382.942˜383 from the population size (P) of 126,768. Whereby, this could be expanded into the formula as follows.

$$\boldsymbol{S=\frac{3.841*126768*0.5*0.5}{((0.05*0.05)*(126768-1))+(3.841*0.5*0.5)}} \quad \textit{(2)}$$

$$\boldsymbol{S=\frac{121728.972}{317.87775}} \quad \textbf{(3)}$$

From the above computation, the study, therefore, reaches 382 patients for the quantitative component. Moreover, the Probability Proportionate to Size (PPS) was considered to get the minimum sample size for each selected health facility based on the number of OPD patients reported by the facility between January and December 2020. At this point, it is worth mentioning that several OPD patients reported were 72,578; 14,063; 21,548 and 18,579 for Makete hospital, Njombe district hospital, Njombe HC and Ilembula referral hospital, respectively. Hence, the PPS for each facility is as follows.

$$n_0\ of\ participants\ from\ Makete\ hospital = \frac{72578\sqrt{ó383}}{126768} = 219.27\ldots\ldots\ldots\ldots\ldots \quad (4)$$

$$n_0\ of\ participants\ from\ Njombe\ district\ hospital = \frac{14063\sqrt{ó383}}{126768} = 41.48\ldots. \quad (5)$$

$$n_0\ of\ participants\ from\ Njombe\ HC = \frac{21548\sqrt{ó383}}{126768} = 65.10\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (6)$$

$$n_0\ of\ participants\ from\ Ilembula\ referral\ hospital = \frac{18579\sqrt{ó383}}{126768} = 56.13 \quad (7)$$

3.5.2 Sample Size for Qualitative

Mason (2002) stipulated that there is no specific sample size of qualitative study as in the quantitative study. However, the researcher is advised to gather information until the level of saturation is reached. Thus, the process of data collection was continued until no new insight emerged. Despite this, the selection of participants should be made so that the selected participants have rich information on the topic under the study. In this regard, the sample size for the qualitative component of this study was 22 participants, including 20 HCWs (i.e., 5 HCWs from each selected health facility), 1 USAID Boresha Afya officer responsible for PITC services, and 1 member from CHMT.

Table 3.3: Sample Size Distribution

District name	Facility name	Quantitative sample size	Qualitative sample size
Makete DC	Makete Hospital	219	5 HCWs
Njombe TC	Njombe District Hospital	48	5 HCWs
Njombe TC	Njombe HC	60	5 HCWs
Wanging'ombe DC	Ilembula Referral Hospital	59	5 HCWs
Njombe TC	USAID Boresha Afya	-	1 key informant
Njombe TC	CHMT	-	1 key informant
Total		386	22

3.6 Data Collection Methods and Tools

The study triangulated both primary and secondary data types. In contrast, primary data were obtained from HCWs, USAID Boresha Afya project officer and members of CHMT through key informant interviews. In contrast, secondary data involved the abstraction of facility data from facility o-PITC registers and reports for the last 12 months prior to the study.

3.6.1 Facility Checklist and Data Abstraction Questionnaire

The study aimed at analyzing the immediate results of o-PITC. Therefore, to capture the data which responded to that objective, the study employed a facility data abstraction questionnaire. This questionnaire (see appendix 2) was framed in a way that corresponds to the information documented on o-PITC registers found at the selected health facilities. The time frame for abstracted data was the past 12 months, i.e., January to December 2020. Other main issues captured through this tool included but were not limited to the following number of OPD clients, number of HCWs available at the facility, availability of PITC tools and equipment such as registers, screen forms and HIV testing kits.

The facility checklist captured the availability of o-PITC guidelines, PITC training and PITC supportive supervision, which play a significant role in ensuring o-PITC compliance.

The importance of using facility checklist and data abstraction as a tool for data collection helped the study to analyze how institutional factors affect HCWs compliance with o-PITC guidelines and the immediate results from the selected health facilities.

One checklist was used per one facility, and during the process of filling this checklist. Different HCWs were included with the assistance of the facility in charge. In other words, this is to say that, since the checklist had different parts of information to be captured; hence each part was filled by responsible HCWs who is more knowledgeable about it. For example, questions related to the number of OPD patients screened and provided with o-PITC service were filled by the facility's PITC focal person. HIV testers filled questions related to the availability of HIV testing kits. In contrast, questions related to administrative issues such as the number of HCWs available, PITC training provided, and supportive supervision conducted were responded to by the facility in charge.

The average time to fill this tool took not less than 3 hours as the tool was passed from one provider to another. Moreover, there was a need of retrieving the registers or reports to verify the response provided.

3.6.2 In-Depth Interviews

Another method of data collection that was used was In-Depth Interviews (IDIs). This is a form of an interview that involves a conversation between two people, i.e., one as interviewer and the other as the interviewee, whereby the interviewer initiate the conversation through asking questions or central theme regarding the subject under the study (Cannell and Kahn, 1968; Ritchie & Lewis 2003; Charmaz, 2006).

The importance of using this method lies in its strength to produce inter-relation, which is not exclusively subjective (interviewee) or objective (interviewer) rather than inter-subjective. This gives the interviewer room to probe more and the interviewee to respond accordingly (Cohen *et al*., 2007). Also, another advantage of IDI is that it is vested upon its ability to gather new ideas based on interviewees' knowledge and experiences on the provision of o-PITC services. In so doing, it helped the study to reveal the subjective meaning and perceptions of the problem under study (ibid).

The interview guide grounded this method (see appendix 3), framed with open-ended questions based on specific objective number two, which guided this study. The use of open-ended questions gave room for probing and study participants to answer the question while reflecting the reality of their day-to-day provision of o-PITC services. The guide was prepared using English and then translated into Swahili for easy familiarisation and communication with respondents.

The participants to be reached through this method include HCWs from selected health facilities, members of CHMT, and USAID Boresha Afya project officials. All participants who fall under this method were independently interviewed at their working premises, i.e., offices, after scheduling a strategic appointment to interfere with the routine tasks. Each interview ranged between 30 to 60 minutes, and three interviews were conducted per day, whereas notes were taken using online data collection software, i.e., Open Data Kit (ODK).

3.6.3 Participant Observation

Also, the study observed the flow of OPD patients who were offered o-PITC services to try to see if HCWs were complying with all the o-PITC steps stipulated in the o-PITC guideline. The observations of HCWs as they provided o-PITC service to OPD patients employed a passive approach. Passive observation entails that the researcher is removed from or minimally interferes in the studied setting (Genkova, 2020). In this study, passive observation was employed to notice the extent to which HCWs complied with o-PITC guidelines to avoid influencing their behavioural change. The strength of the passive observation approach is that it helped to countercheck Hawthorne effects among study participants. The data and information gathered under this method utilized a participant observation guide (See appendix 4).

It is also important to note that this approach has some shortfalls, like at some point observing might be biased when observing HCWs during provision of this o-PITC services. To overcome this, the observation was done during the entire period of data collection. In the same vein, the study observed that at least 20 per cent of the patients offered o-PITC services. This helped to naturized the observer's bias.

3.6.4 Desk Review of Documents

In addition to the information gathered from the previous data collection methods. This study also used documentary review to gather secondary data and information related to the subject under the study. This method reviewed different published and unpublished empirical studies, policies, strategies, and project reports related to o-PITC. The rationale for using this method was for triangulation of primary and secondary data before providing conclusions on the specific research question of this study. Also, this method has the advantage of gathering information that could be captured by methods that gathers primary data and information (Mogalakwe, 2006).

3.7 Validity and Reliability of the Study

Upheld on the quality of data and information gathered by this study was of paramount importance. This was done by ensuring the adequacy and relevance of data collected and the appropriateness of tools and instruments, which could be assessed by four principles of data quality, namely, trustworthiness, applicability, consistency, and neutrality of the study findings generated (Frambach et al., 2013). In this study truth value of the qualitative findings was considered by promoting credibility. The credibility was assured through methodological triangulation, including in-depth interviews, observations, and documentary reviews. Also, using different categories of study participants ensured adherence to the credibility of the information gathered. Likewise, for the quantitative component, trustworthiness issues were considered by using a representative sample size with the desired precision of 0.5. These enable the study to acquire a fuller and holistic perspective of the problem being studied.

To ensure the rigour and robustness applicability of the findings, transferability and external validity for qualitative and quantitative was taken into equal considerations. Transferability refers to how the findings can be applied in different settings (Frambach et al., 2013). This was done through the adoption of purposive sampling to select the study sites and key informants. This gave the study the power to capture the real-life experience of HCWs in the provision of o-PITC services within the selected facility settings. Whereas applicability of quantitative findings was achieved using random sampling of the OPD patients gave patients an equal chance of being selected to see whether they have been

offered o-PITC services. Also, construct validation, i.e., predicted relationships between the dependent variables (i.e., compliance to o-PITC guidelines) and independent factors such as some HCWs and patients. Moreover, ecological generalization of the study findings with other resonated empirical results from other contexts and settings was used to uphold the principle of applicability of the findings.

Consistency of the study tools and generated data was another quality criterion emphasized when this study was conducted. The logical flow and connection of all sections from the study objectives and questions, literature review, conceptual model, design, and methodology to establish consistency and coherence of the findings (Chapman, 2005). More importantly, the qualitative interview was conducted until the point of saturation was reached. This is to say; the probing questions were asked until no new insights emerged. At the same time, the study adopted Cronbach's Coefficient Alpha with a value of not less than 0.8 to measure the internal consistency of quantitative data (Bonett & Wright, 2014). Additionally, the Swahili language, which all study participants well understood, promoted the consistency of questions and the similarity of the responses shared during the interview.

Furthermore, the value-neutrality in terms of confirmability for the qualitative component and objectivity for the quantitative component was conceivable due to several ways. Firstly, knowledge generation occurred within the context of narratives and observations of which the researcher engaged with the study participants and methodological reflexivity and data-informed analysis. Again, close discussion with my supervisors ensured that I did not impose personal biases during data analysis. Nonetheless, different empirical findings were used for conformity of disconformity (see chapter 5, which offers a detailed discussion of the study findings).

3.8 Data Management and Analysis

Data management began at the first stage of questionnaire design, whereas the study adopted the questions from other empirical studies, and the observation questions were constructed from the o-PITC guide and facility-based reporting tools. After developing data collection tools, all research assistants were trained on the study instruments and

methodologies. Data collection tools were translated where necessary to enable both research assistants and respondents to have a common understanding of the questions posed by the study. Data were gathered through online software called ODK. More critical, prior to actual fieldwork, a pre-test of all study instruments was conducted at Ikonda hospital, and modifications were made based on the findings from the pre-test.

For the qualitative component, all interviews were documented through notes taken during the interview. Soon after the interviews, notes were expanded on the same date the interview was conducted to avoid the loss of critical information. After expanding notes, they were translated from Swahili to English. The analysis of qualitative data assumed a content technique. All expanded notes were read several times during analysis while observing the patterns and taking codes of the emerging vital contents. This encompasses shorten of information without losing their quality as stipulated by (Charmaz 2006 and Mason 2002). The results were presented in narratives, and quotations were used to illustrate the findings.

Whereas quantitative data gathered through ODK were exported to Microsoft Excel for performing data cleaning before further analysis process, which was done by using a computerized software called Statistical Package for Social Sciences (SPSS) version 23 (i.e., quantitative data) whereas both descriptive (including frequency distributions and mean averages) and inferential statistics (including chi-square, correlations, and regression) were computed. See Table 3.4 summaries analysis plan for the quantitative component.

Table 3.4: Quantitative Data Analysis

S/N	Objective	Data analysis	Data presentation
1	To examine o-PITC compliance among HCWs in the selected health facilities found in the Njombe region.	**Data source:** Observation checklist and IDI guides **Quantitative analysis:** Composite variable was computed, including eight steps presented in the o-PITC guideline (See Figure 2.1 in Chapter 2). Each step complied was coded as 1 and 0 for non-compliance. The total sum was then divided by 8 to get the average compliance—descriptive analysis on HCWs compliance to o-PITC steps.	Frequency tables
2	To examine the factors influencing the compliance of o-PITC among HCWs in the selected health facilities found in the Njombe region.	**Data source:** Facility checklist; observation form, and IDI guides **Quantitative analysis:** Pearson coefficient correlation factors. Independent variables included the number of counsellors, HIV testers, OPD patients, and service delivery time were analyzed against dependent variable compliance of HCWs on o-PITC guidelines. A P-value less than 0.05 was used to determine the relationship. Bivariate and multivariate analyses were used to assess the relationship between independent variables, i.e., the number of counsellors, HIV testers, OPD patients and time of service delivery and the dependent variable, i.e., the overall score of HCWs compliance. Odds ratio and P-value less than 0.05 were used to explain the significance of the relationship.	Frequencies table and graph
3	To examine the results of o-PITC services in the selected health facilities found in the Njombe region.	**Data source:** Patient registers and IDI guides. **Quantitative analysis:** Descriptive statistics of o-PITC results, including the number of patients offered, eligible, tested and positivity rates. Bivariate Regression analysis was performed to identify the immediate results of o-PITC across OPD patients characteristics. Independent variables included were gender, age and name of facility attended: odds ratio and P-value less than 0.05 were used to explain the significance of the relationship.	Frequency Tables

3.9 Pre-Testing

Before actual fieldwork, the study tools were pre-tested in one health facility found in the Njombe region, i.e., Ikonda hospital. The pre-test was necessary to help the study identify any gaps related to the data collection tools to be used. The results from the only gap identified were that Ikonda hospital had only aggregated the number of OPD patients who received o-PICT services. Based on this, the researcher made deliberate efforts to contact the sampled facilities to ensure they had o-PICT registers with detailed information of OPD patients. After confirming the existence of these registers, therefore, no change was made to the data collection tools. Additionally, during the pre-test, when observing the HCWs who were providing o-PICT services, it was noted that they were afraid, thinking that they were being evaluated; hence some of them tried to adjust the behaviour by following all the steps of o-PICT guidelines. This compelled the researcher to adjust to covert observation.

3.10 Ethical Considerations

Ethical clearances were obtained from the Muhimbili University of Health and Allied Sciences Institutional Review Board (IRB) research review committee. Official permission to conduct the study in the respective districts (study area) was attained from respective authorities, i.e., District Medical Officers (DMOs) and study hospitals. Informed consent was obtained from patients and workers who participated in the interviews. Permission to record the interviews were also obtained from key informants. No identifier is quoted in the report; neither are participants names or personal identities disclosed or shared by anyone. (Sharpe *et al*.1992).

CHAPTER FOUR

4.0 FINDINGS AND RESULTS OF THE STUDY

4.1 Social Demographics Characteristics of Study Participants

This section presents the socio-demographic characteristics of the study participants; a total of 386 records of patients who received o-PITC services between 01/01/2020 and 31/12/2020 were extracted from o-PITC registers in the selected health facilities in the Njombe region. Most participants (54.4%) were females, while 45.6% were males. Less than a third (30.8%) of patients were aged between 15 to 24 years old. Furthermore, the study managed to reach HCWs from each selected health facility. The majorityof the HCWs were above 30 years old.

Regarding HCWs' positions, the study interviewed 5 clinicians, 9 nurses and 7 linkage expert counsellors. Moreover, the study recruited and interviewed a member of CHMT from Njombe TC and project officer from USAID Boresha Afya project, who oversees the implementation of the o-PITC intervention in the Njombe region. Table 4.1 summarises these findings.

Table 4.1: Social Demographic Characteristics of Study Participants

Population	**Makete hospital**	**Njombe district hospital**	**Njombe HC**	**Ilembula referral hospital**	**Total**
Patients	**219**	**48**	**60**	**59**	**386**
Male	100 (25.9%)	20 (5.2%)	27 (7.0%)	29 (7.5%)	176 (45.6%)
Females	119 (30.8%)	28 (7.3%)	33 (8.5%)	30 (7.8%)	210 (54.4%)
<15 years	1 (0.3%)	8 (2.1%)	17 (4.4%)	2 (0.5%)	28 (7.3%)
15 – 24 years	79 (20.5%)	13 (3.4%)	13 (3.4%)	14 (3.6%)	119 (30.8%)
25 – 49 years	95 (24.6)	20 (5.2%)	23 (6.0%)	27 (7.0%)	165 (42.7%)
> 49 years	44 (11.4%)	7 (1.8%)	7 (1.8%)	16 (4.1%)	74 (19.2%)
HCWs	**5**	**5**	**5**	**6**	**21**
Male	3	2	2	3	10
Female	2	3	3	3	11
25 – 30 years	1	1	3	2	7
> 30 years	4	4	2	4	14
Clinician	1	1	1	2	5
Nurse	2	2	2	3	9
Linkage expert	2	2	2	1	7

Source: Field Data (2021)

4.2 Compliance of o-PITC Guides among HCWs

The compliance of o-PITC was measured by observing whether HCWs were following the 8 steps stipulated by the o-PITC implementation guideline. Failure of HCWs to follow a particular step was considered a lack of compliance. In this regard, the compliance with o-PITC guides among HCWs' was assessed by observing 71 OPD patients who were offered PITC services during the day of data collection. The cascade of o-PITC guides to identify which step within the guide was mainly complied with and not. On this note, the study revealed that HIV testing is conducted in a private room, and HIV positive clients escorted to the CTC were highly complied by HCWs.

Surprisingly, an essential step of initiation of o-PITC, i.e., group pre-counselling, was poorly complied with only 37 (52.1%) compliance of o-PICT cases observed. Also, the provision of HIV results in front of expert linkage counsellor was not adequately complied 41 (57.7%). Table 4.2 summarizes the compliance of all the steps in detail.

Table 4.2: Summary of o-PITC Guides Compiled by HCWs

Steps	**o-PITC guides**	**Complied**		**Non-complied**	
		N	**%**	**N**	**%**
1	Group pre-counselling	37	52.1	34	47.9
2	Patient screened for prior HTC	65	91.5	6	8.5
3	HIV testing is conducted in a private room	71	100	0	0
4	Patients resume places in the clinic queue	62	87.3	9	12.7
5	HIV results provided in front of the counsellor	41	57.7	30	42.3
6	Post-testing counselling by a counsellor	30	73.2	11	26.8
7	Patients resume places in the clinic queue	40	97.6	1	2.4
8	HIV positive clients escorted to the clinic	3	100	0	0

Source: Field Data (2021)

For HCWs to comply with the o-PITC guide, eight steps presented in Table 4.2, he or she was supposed to observe all the steps found with the guide. The study revealed that about 57 (80.3%) of observations made complied with o-PICT guidelines, while only 14 (19.7%) did not comply. When cross-tabulation was computed across the surveyed facilities, it was found out that, in Makete hospital, 43.7% of compliance with o-PITC guides equivalent to 31 cases of o-PICT observed, while Ilembula hospital had the least rate of compliance 8.5%, equivalent to 6 cases of o-PITC observed. However, this difference was observed not to be statistically significant, X^2=7.434, df=3 and p-value=0.059. The summary of HCWs compliance on the o-PITC guide is provided in Table 4.3.

Table 4.3: HCWs Compliance to o-PITC Guide across Facilities in Njombe Region

Name of facility	Complied		Non-complied		Total	
	N	**%**	**N**	**%**	**N**	**%**
Makete hospital	31	43.7	3	4.2	34	47.9
Njombe hospital	8	11.3	2	2.8	10	14.1
Njombe HC	12	16.9	4	5.6	16	22.5
Ilembula hospital	6	8.5	5	7.0	11	15.5
Total	**57**	**80.3**	**14**	**19.7**	**71**	**100**

Source: Field Data (2021)

To gain more insights into HCWs compliance on the o-PITC guide, respondents were asked to explain the main steps taken when they implement o-PITC services during the interview. The findings from the interviews were not far from what was captured during observation (See Table 4.2 and 4.3). Respondents adequately explained only a few significant steps such as group counselling, testing and escorting HIV positive patients to ART care and treatment clinics. Some of the narration captured to justify this are presented below.

> *"…the common steps undertaken during provision of o-PITC include pre-counselling, screening for eligibility, HIV testing, post-counselling and other procedure like linkages into ART care and treatment and further follow, i.e., ART early retention…".* ***(IDI HCW//2021)***

Another HCW shared similar views from Ilembula Referral Hospital, who narrated the following.

> *PITC involves pre counselling, screening and testing all patients attending OPD for other services…".* ***(IDI HCW//2021)***

In supporting the comments from HCWs, respondents from USAID Boresha Afya supported the above narration by commenting on the following.

"…encountering the patient, expert linkage counsellor introduces Optimized PITC to the patient, CHW seeks consent from the patient, and when the patient agrees, CHW uses National HTS screening tool to conduct screening. The patient eligible for HIV testing is escorted to the HTS room, where the nurse will be available to conduct HIV testing services. For HIV+ clients, results are given with the presence of expert linkage counsellor who will escort the patient to CTC for linkage and HIV-patient is provided with HIV prevention services according to their risk…". ***(IDI/USAID Boresha Afya/2021)***

4.3 Factors Influencing the Implementation of o-PITC

This section provides results related to the second objective of this present study which aimed to examine the factors influencing the implementation of o-PITC among HCWs in the selected health facilities. In responding to this, the present study employed different methods such as facility checklist, observation and IDIs to gather the information, highlighting different factors that influence the provision of o-PITC as presented in the proceeding paragraphs.

Findings from observation showed that the implementation of o-PITC was determined by four main factors, including the number of expert linkage counsellors, number of OPD patients, number of HIV testers and time o-PITC was offered. The results of this study revealed that more than half of o-PITC cases observed, 36 (50.7%) to precisely, was due to the presence of more than 2 expert linkage counsellors compared to when there were just 2 expert linkage counsellors 17 (23.9%) or when there was single expert linkage counsellor 4 (5.6%). This difference was found to be statistically significant with X^2=13.939, p-value=0.001. Also, the study revealed that when OPD patients were between 10 to 20, the more o-PITC was successfully carried 33 (46.5%). While only 18 (25.4%) and 6 (8.5%) of cases observed successful carried o-PITC services when OPD patients ranged from 21 to 50 and more than 50 patients respectively.

Likewise, the findings showed that 36 (50.7%) of o-PITC cases observed had successfully complied when the facility had more than 5 HIV testers compared to the facility with few HIV testers (X^2=10.867, p-value=0.004). Another vital factor found to affect the compliance of o-PITC was the time the service was offered. It was found out that 27 (49.3%) of o-PITC cases were more like to be complied by HCWs during the morning, compared to other times the services were offered. The difference in the time o-PITC was offered was found to be statistically significant with X^2=7.623, p-value=0.022. See Table 4.5 for more details.

Table 4.4: Descriptive Summary of Factors for o-PITC Compliance among HCWs

Variables	**o-PITC compliance N=57**	**o-PITC non-compliance N=14**	**X^2**	**P-value**
# Of expert linkage counsellor				
1 counsellor	4 (5.6%)	6 (8.5%)	13.939	0.001
2 counsellors	17 (23.9%)	5 (7.0%)		
More than 2 counsellors	36 (50.7%)	3 (4.2%)		
# Of OPD patients				
10 to 20 patients	33 (46.5%)	3 (4.2%)	12.545	0.002
21 to 50 patients	18 (25.4%)	4 (5.6%)		
More than 50 patients	6 (8.5%)	7 (9.9%)		
# Of HIV testers				
1 to 2 testers	6 (8.5%)	6 (8.5%)	10.867	0.004
3 to 4 testers	15 (21.1%)	5 (7.0%)		
More than 5 testers	36 (50.7%)	3 (4.2%)		
Time of service provision				
Morning	35 (49.3%)	3 (4.2%)	7.623	0.022
Noon	16 (22.5%)	7 (9.9%)		
Evening	6 (8.5%)	4 (5.6%)		

Source: Field Data (2021)

A further analysis was performed using the Pearson correlation coefficient (r) to determine whether the relationship existed between the identified factors and compliance of o-PITC. The study results revealed that both the number of expert linkage counsellors (r=0.454, p-value=0.000), number of HIV testers (r=0.642, p-value=0.059) and time o-PITC was offered (r=0.320, p-value=0.007) were significant and positively correlated with the implementation of o-PITC services in the surveyed health facilities found in Njombe region. Table 4.6 summarises these findings.

Table4.5: Pearson Coefficient Correlation on o-PITC Compliance and Related Factors

Variables		**Complied**	**# Of Couns.**	**# Of OPD patients**	**# Of HIV testers**	**Time of observe**
Complied	r	1				
	p-value					
	N	71				
# Of Couns.	r	.454**	1			
	p-value	0				
	N	71	71			
# Of OPD patients	r	-0.017	0.078	1		
	p-value	0.89	0.517			
	N	71	71	71		
# Of HIV testers	r	.642**	0.264	0.029	1	
	p value	0	0.059	0.839		
	N	52	52	52	52	
Time of observ	r	.320**	0.033	-0.099	0.174	1
	p value	0.007	0.783	0.412	0.219	
	N	71	71	71	52	71
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: Field Data (2021)

The findings from Table 4.6 imply that the more expert linkage counsellors are available when o-PITC is offered, the probability of the o-PITC being offered/implemented so does the number of HIV testers. This signifies that the number of HCWs available during the implementation of o-PITC help carry the tasks or activities of the o-PITC services.

Moreover, further analytical tests were performed, i.e., bivariate and multivariate analysis, to get a robust result. The bivariate analysis indicated number of expert linkage counsellor (p=0.029; OR=1.19; IC 95%: 0.81–1.73); number of HIV testers (p<0.001; OR =0.86; IC 95%:0.65–1.14) and time of o-PITC service provision (p=0.001; OR =1.57; IC 95%:1.03–

2.39) had significant likelihood for successful carrying of o-PITC. In addition, multivariate analysis of nested models indicated that having more expert linkage counsellors could be a significant predictive factor for implementing o-PITC (p = 0.024; OR = 0.25; IC 95%:0.08–0.84). See Table 4.7 for a detailed summary.

Table 4.6: Multivariate and Bivariate Analysis of Factor Influencing o-PITC Compliance among HCW in Njombe Region

Variables	**Bivariate**		**Multivariate**	
	OR (CI 95%)	**P-value**	**OR (CI 95%)**	**P-value**
# Of expert linkage counsellor				
1 counsellor		0.029*		0.024*
2 counsellors	1.19 (0.81–1.73)		0.25 (0.08–0.84)	
More than 2 counsellors	1.46 (1.10–1.93)		0.24 (0.07–0.83)	
# Of HIV testers				
1 to 2 testers		0.045*		
3 to 4 testers	0.86 (0.65–1.14)			
More than 5 testers	0.49 (0.24–1.04)			
Time of service provision				
Morning		0.041*		
Noon	1.18 (0.90–1.54)			
Evening	0.75 (0.28–2.03)			

Source: Field Data (2021)

A key informant further acknowledged the role of expert linkage counsellors in implementing the o-PITC intervention, who commented that expert linkage counsellors are an essential part of carrying out the o-PITC. Thus, their availability and knowledge are the keys to getting more OPD patients eligible for o-PITC and ensuring that those who are eligible are willing to accept HIV testing and counselling. This could be confirmed by the expert caught during the IDI conducted with one HCW who narrated the following.

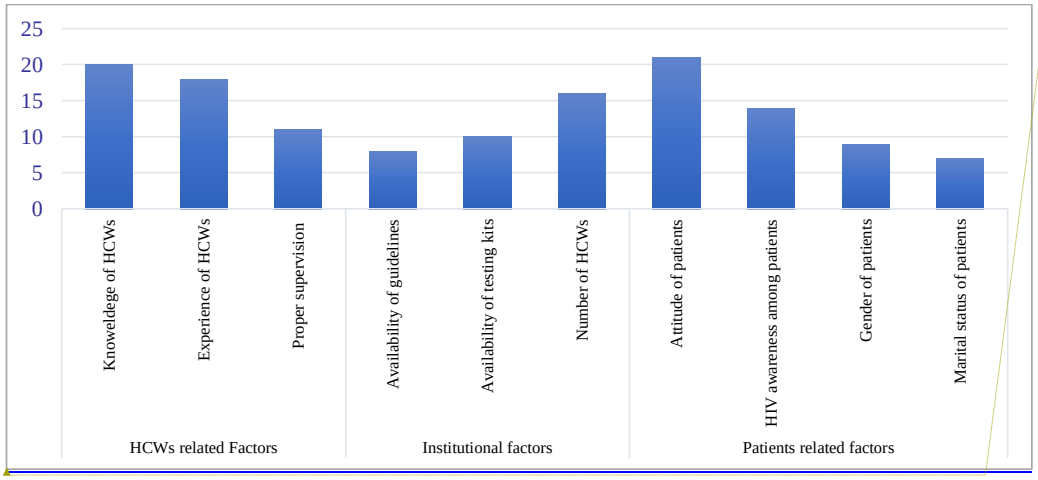
> *"…allocation of expert linkage counsellor at OPD triage is helping so much in the identification of clients for o-PITC before going to clinicians. Their availability helps to screen more clients and categories which are eligible, and which are not; hence they speed up the process of implementing o-PITC services…".* ***(IDI HCW/2021)***

In concomitant to the above, another HCW added that the number of expert linkage counsellors and their knowledge and experience matter were significantly when implementing o-PITC services.

> *"…the experience and work ethics of HCWs especially, expert linkage counsellors are a key determinant for getting eligible clients for PITC service. Some clients are so stubborn, and they are not easily convinced to accept HIV testing. This is where the experience and knowledgeable counsellor comes in by providing good counselling to these clients until they understand the importance of HIV testing…".* ***(IDI HCW/2021)***

Additionally, the most recurring factors that were identified capable of influencing successful implementation of o-PITC included knowledge of HCWs and experience of HCWs. The institutional factors identified were supportive supervision, availability of testing kits, availability of HIV guides and data collection tools for PITC and the number of HCWs allocated for o-PITC. More importantly, respondents suggested that the implementation of o-PITC is equally affected by other factors related to patients, such as their attitudes, HIV awareness, gender, and marital status. See Figure 4.1 for an illustration summary of the factors identified during IDIs.

Figure 4.1: Factors Influencing Implementation of o-PITC in Surveyed Facilities, Njombe Region



Source: Field Data (2021)

Consistently, during interviews with HCWs, it was identified that institutional factors such as availability of testing kits and o-PITC guidelines, screen forms and registers may limit HCWs to successful implementing o-PITC services. This was caught during the interview carried with HCW from Njombe HC.

> *"…availability of HIV and o-PITC guidelines, HIV testing kits and good working environment, and a good supportive supervision are among the factors which influence the provision of o-PITC services…".* ***(IDI HCW /2021)***

Again, another HCW suggested that supportive supervision has a significant role in the implementation of o-PITC services. Most study participants suggested that supportive supervision enables gathering feedback on what is working and not regarding the o-PITC. According to the guides, this helps shed light on what strategies to employ so HCWs can implement the o-PITC. Moreover, through supportive supervision, HCWs get the opportunity to be trained, capacitated and remain on the steps to follow to ensure the o-PITC is successfully implemented.

As mentioned earlier, patient-related factors also had their role in influencing the implementation of the o-PITC services. Thus, the study asked the respondent to identify challenges faced by offering o-PITC services to OPD patients. The most recurred factors or challenges related to patients were patients' attitudes regarding HIV testing. Most of the patients were reported to have a negative attitude. In the same vein, patients were not aware of HIV and o-PITC. This created difficulty among expert linkage counsellors who assume providing counselling and offering o-PITC service to patients.

Another patient factor that caught this study's attention was the socio-demographic status of the patient, mainly sex, marital status and education level, and geographical location. These factors were found to affect HCWs when conducting o-PITC services. For instance, males' patients, high educated patients, and those from the urban area had a high likelihood of resisting the o-PITC service offered by expert linkage counsellors. The following narration entails these in detail.

> *"...patients do differ, but adults with high education level are more likely to resist HIV testing at the first interaction, but after a series of counselling sessions they agree…".* ***(IDI HCW/2021)***

These results imply that HCWs, to implement o-PITC successfully, need to be knowledgeable enough on the o-PITC guides and counselling to make OPD patients interested and willing to agree with o-PITC services offered. Again, the availability of testing kits and o-PITC screening forms, guidelines and registers, and supportive supervision will help to strengthen the implementation of this service.

4.4 Acceptance of o-PITC Services

This section stretches to provide findings on the third objective of the study, which aimed at analyzing the rate of testing acceptance of o-PITC services in the selected health facilities. At first, the descriptive statistics of acceptance of o-PITC is presented, followed by inferential statistics, which aim to test the correlation across the socio-demographic characteristics of patients who agreed to be tested after being offered o-PITC.

This study extracted records such as sex and age of 386 OPD patients who were offered and accepted o-PITC services between 01/01/2020 to 31/12/2020. About 59.32% were eligible for HIV testing, and 99.56% of eligible clients agreed to HIV testing. At the same time, 13.15% of those tested were found HIV positive. Regarding gender, the results show that females were more open to accepting o-PITC services compared to males. This is revealed by 64.8% of eligible female patients compared to 52.8% of male patients. Likewise, in HIV testing, all females' eligible patients agreed to HIV testing, and 98.9% of males agreed. In terms of age group, the study revealed that most patients aged between 25 to 49 years accepted o-PITC than patients in other age groups. For the health facility, Makete hospital had high patients who were more likely to accept o-PITC than other health facilities. See Table 4.8 summarises these in much more detail.

Table 4.7: Descriptive of o-PITC Cascade per Respondents Characteristics

Variables	**Response**	**Offered N=386**		**Eligible N=229**		**Tested N=228**		**Positivity Rate N=30**	
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Sex	Male	176	45.6	93	52.8	92	98.9	12	13
	Female	210	54.4	136	64.8	136	100	18	13.2
Age group	<15	28	7.3	2	7.1	2	100	1	50
	15 – 24	119	30.8	72	60.5	71	98.6	5	7
	25 – 49	165	42.7	111	67.3	111	100	19	17.1
	> 49	74	19.2	44	59.5	44	100	5	11.4
Health facility	Makete hospital	219	56.7	165	75.3	165	100	13	7.9
	Njombe hospital	48	12.4	5	10.4	5	100	-	-
	Njombe HC	60	15.5	15	25	14	93.3	2	14.3
	Ilembula hospital	59	15.3	44	74.6	44	100	15	34.1

The statistical relationship of o-PITC acceptance was tested across the descriptive variables present in Table 4.8. Results from the bivariate analysis indicated that female patients had odd ratios of 1.19 to accept HIV testing over male patients. This relationship was found to be statistically significant (p-value=0.029, OR=1.19; CI 95%: 0.81 – 1.73). Also, the age of the patients and the health facility where patients were offered o-PITC had significant odds for acceptance of o-PITC. Below Table 4.9 shows these results.

Table 4.8: A Bivariate Analysis of Socio-demographic and Acceptance of HIV Testing

Variable	**Tested N=179**	**Not tested N=50**	**OR (95% CI)**	**p-value**
Male	32.8	7.9		0.029*
Female	45.4	14.0	1.19 (0.81-1.73)	
< 15 years old	0.9	-		0.028*
15 – 24 years old	22.7	8.7	2.41 (0.53-1.76)	
25 – 49 years old	38.0	10.5	8.16 (0.97-8.57)	
> 49 years old	16.6	2.6	1.73 (0.40-1.27)	
Makete hospital	52.4	19.7		0.045*
Njombe hospital	1.7	0.4	0.86 (0.65-1.14)	
Njombe HC	4.8	1.7	0.49 (0.24-1.04)	
Ilembula hospital	19.2	-	1.27 (0.90-1.79)	

Source: Field Data (2021)

The same results were observed from the interview with HCWs and other CHMT and USAID Boresha Afya project study participants. Evidence from the quantitative results indicated that females were more open to accepting HIV testing offered through o-PITC service compared to their counterparts' males. The same results were revealed through IDIs. Most respondents reported that females were more open and ready to listen to counselling, cooperate in screening and accepting HIV tests than males' patients.

> *"…it is tough to convince male patients to agree on HIV testing, especially when they are within the age of adolescents. They usually resist and do not want to listen to the group HIV counselling provided to them. Nevertheless, after several attempts, some of them agreed to be tested. When it comes to women, it is usually easy, and they are willing to listen and accept testing…"* ***(IDI HCW/2021)***

Apart from the gender and age of patients, also, the study respondents revealed that the attitude of patients, educational, economic status and geographical location plays a role in influencing the acceptance of HIV tests offered through o-PITC. It was said that patients from rural areas, low levels of education, and those with low economic status tend readily accept HIV testing compared to their counterparts. The respondent eloquently narrated this from USAID Boresha Afya during the interview.

> *"…attitude of patients varies according to age, sex, type of subpopulation, geographical location and socio-economic status. Women tend to access the service more than men because women tend to seek medical attention easily than men…."* ***(IDI USAID Boresha Afya/2021)***

The above excerpt was supported and complemented by narration made by another respondent who is a member of CHMT from Njombe TC. The following excerpt was captured during the interview.

> *"…adult clients accept behavioural risk assessment compared to adolescent age group. Clients with the low level of education from rural are more likely to answer screening question with fidelity compared with educated high school and above from urban areas as some are silly questions…"* ***(IDI CHMT/2021)***

4.5 Chapter Summary

The central objective of the study was assessing the immediate results of o-PITC intervention in the Njombe region, Tanzania. In measuring this objective, the study was guided by three specific objectives, which have been analyzed in this chapter. The first objective was on compliance with o-PITC, whereas the study revealed that more than eighty per cent (80%) of HCWs complied with o-PITC; however, during an interview with HCWs, some HCWs could not adequately explain all the steps of carrying o-PITC. In terms of the factors influencing the implementation of o-PITC, the study identified three categories: institutional, HCWs related, and patients related factors.

The institutional factors were supportive supervisions, availability of HCWs, testing kits and o-PITC guides and data collection tools); HCWs related factors included experience and knowledge of HCWs on o-PITC; while patients related factors were attitude, awareness on HIV testing; gender, age group, marital status, and geographical locations. The bivariate and multivariate analysis results showed that the number of expert linkage counsellors, HIV testers, and time of o-PITC service provision were significant factors for implementing o-PITC. Lastly, the chapter presented the findings on the third objective, which focused on examining the acceptance of o-PITC services; it was revealed that some patients accepted the services while others did not. The patient who had the most likelihood of accepting o-PITC services were females, adults, pregnant and lactating women, and those patients with low education levels, low economic status and from rural areas.

CHAPTER FIVE

5.0 DISCUSSIONS

5.1 Compliance of o-PITC Guides among HCWs

Compliance with the HIV guidelines and protocols is essential for ensuring the fight against HIV/AIDS. Lack of guideline compliance can lead to refraining from essential care, suboptimal patient outcomes and wasted resource (Joosen et al., 2019). In providing HIV care and services, there are several HIV guidelines developed by WHO and the government of Tanzania to ensure the standardized delivery of HIV services and care across all health facilities. Among those guidelines is the o-PITC guideline. This guide stipulates step by step walkthrough to HCWs on what and when they need to provide o-PITC service to the client. The guide has 8 steps that are supposed to have complied with HCWs. Successful observation of those steps creates compliance with the o-PITC. Thus, compliance with o-PITC was measured by observing whether HCWs are following the steps stipulated within the o-PITC guideline.

In responding to the first objective, the observation checklist and IDI guides were used to collect the data, whereas the results showed that HCW's complied with the stipulated guides of o-PITC. Similarly, a study conducted in Côte d'Ivoire showed that a significant number of HCWs were complying with PITC guidelines. This means that some HCWs did not follow the steps underlined within the PICT guideline (Inghels *et al.* 2020). Inversely, Fonner et al. (2020) studied country adherence to WHO recommendations to improve the quality of HIV diagnosis: a global policy review. According to WHO recommendations, the results showed that only 26% (n=24/91) of HIV testing guidelines had adhered to the guidelines stipulated for implementing PITC services. Also, Ahmed *et al.* (2016) found out that HCWs were not complying with the requirement of PITC guidelines in Botswana. The main reasons for such resistance were that they felt overwhelmed to provide PITC, while they felt unmotivated. Likewise, Davyduke *et al.* (2015), when studying opportunities for strengthening PITC for HIV in Namibia, found out that nurses did not see PITC as an integral part of their work; hence most of them did not comply with the guidelines.

Also, during data collection, it was revealed that some of the complied steps within the guide were taking HIV tests in the private rooms and escorting HIV positive patients to the CTC clinic. This demonstrates the reality caught during observation as some of the steps were skipped; for instance, group testing was barely done correctly by HCWS. Correspondingly, Marwa and Anaeli (2020) study showed little practice of PITC provision and inability to properly counsel patients. Again, this present study found that knowledge of o-PITC was vital in ensuring the compliance of the o-PITC services among HCWs. Much of muchness, the study was done in Kenya by Agutu et al. (2021) ascribed that provider barriers to PITC implementation included lack of HCW knowledge and confidence implementing guidelines. On the contrary, Marwa and Anaeli (2020), when studying perceived barriers towards implementation of PITC in two regional hospitals found in Dar es Salaam, Tanzania, opined that little practice of PITC provision was not only attributed by little knowledge possessed by HCW but also the poor attitude of healthcare providers in providing PITC and little motivation and incentives among healthcare providers.

The above narration clearly shows a different level of knowledge on the guides for o-PITC to be followed by HCWs. The first expert showed high knowledge of how the o-PITC is being implemented, while the last excerpt had some doubts within it, as the respondent mentioned that all OPD patients are tested. However, this is doubtful since HIV counselling and testing is offered based on the voluntarism principle.

From these results, this study establishes that most of the HCWs have poor compliance with the guides of implementing o-PITC. Some of the steps, such as ensuring the patient has returned to the regular clinic queue, are ignored by most HCWs; this was seen from both observation and interview with HCWs. Such act of not paying attention to the patient who returns to their regular clinic queue could discourage most patients, especially when they are supposed to get back of the queue after receiving o-PITC services, given the fact that the reason for visiting the health facility was not o-PITC in the first place.

5.2 Factors Influence Implementation of o-PITC

Also, the study analyzed the factors which influence the implementation of o-PITC as the second objective for this study. The findings presented in the previous chapter showed that one of the factors that facilitate the implementation of o-PITC service was the number of HCWs such as expert linkage counsellors and HIV testers. Nevertheless, also, the number of OPD patients and time o-PITC service was offered. The Pearson coefficient correlation found that the number of expert linkage counsellors were significant and positively correlated with HCWs compliance to o-PICT guidelines. The bivariate analysis indicated that the number of expert linkage counsellors and HIV testers were significantly linkedwith the successful carrying of o-PITC services. The same results were observed by Inghels et al. (2020), who revealed that the presence of HIV counsellors was highly associated with the number of PITC services offered to patients. This signifies that if attention is givento the increasing number of HCWs, exceptionally expert linkage counsellors and HIV testers will help the facilities easily facilitate the provision of o-PITC to the high number of OPD patients without any delays. For instance, in this study, the problem observed was that some of the facilities had fewer expert linkage counsellors allocated to carry multiple tasks in ensuring that the service was delivered. This entails that few expert linkage counsellors cannot conduct group testing while at the same time being present when the provision of HIV results to patients is offered during the post-testing counselling and escorting patients who were found HIV positive to CTC. This is impossible for 1 or 2 expert linkages counsellors to ensure the o-PITC is implemented as planned, especially when there are many OPD patients.

This study found out that the health facilities in the Njombe region had a shortage of HCWs who would successfully oversee the implementation of o-PITC according to the o-PITC guidelines. Likewise, a study done by Marwa and Anaeli (2020) showed that among the challenges which hinder the implementation of PITC was the shortage of HCWs. Similar results were documented by Frumence and Nathanaeli (2017). They revealed that the limited number of HCWs, lack of infrastructure and shortage of supplies such as testing commodities affected the implementation of PITC services in health facilities found in the Njombe region. Similarly, Bott *et al.* (2014) revealed that the implementation of PITC

services in Burkina Faso, Kenya and Uganda were affected by staff shortages, high workloads, lack of supplies and inadequate infrastructure.

On the contrary, Mosadeghrad (2014) and Inghels et al. (2020) contemplated that excellent management of HCWs drives their satisfaction and loyalty. This shows that poor implementation of quality health services such as PITC results from heavy workloads that burden HCWs due to few numbers in their availability but lack of compensation packages and motivations. This resulted in impeded delivery of quality healthcare services, particularly in the public health sector. A study by Ngangue et al. (2017) added that lay counsellors were available in HIV testing and counselling in the studied health facilities found in Cameroon, but the problem was that most of them could not adequately implement HIV testing due to a lack of required knowledge.

Concurring on HCWs' knowledge on HIV testing and counselling to influence the practice of o-PITC, a study conducted in Côte d'Ivoire by Inghels et al. (2020) revealed that HCWs knowledge received through HIV training was associated with the successful implementation of PITC services. Based on these findings, the study establishes that if the o-PITC intervention is to be successfully implemented, it requires trained or knowledgeable HCWs who possess the capabilities to provide counselling to patients and convince them to agree on HIV testing. More importantly, the available HCWs for o-PITC should be provided with refreshment courses or HIV counselling and testing training. This will make them competent in screening eligible clients for o-PITC, hence ensuring timely provision of HIV testing.

Again, the study's findings revealed that the time when o-PITC is being offered influences the compliance of o-PITC guidelines among HCWs. For instance, it was observed that, during the morning, there was uptake of o-PITC services among OPD clients, unlike in the noon and even. The reason behind this could be during the morning, and most OPD patients have ample time to spend at the hospital to seek different health services, unlike even when they have limited time before returning home. Despite health facilities operating for 24 hours, it is also known that when it reaches the evening, most HCWs duties end (Mosadeghrad, 2014). Inversely, Leon et al. (2013) reported that time is among the factors affecting PICT implementation. Their study noted that in the longer

consultation times, which may account for the low-test coverage outcome, these longer hours could be observed in the morning or evening.

The study revealed that the availability of HIV guidelines, tools, and testing kits is vital for successfully implementing the o-PITC services. This is supported by another study done in the Njombe region, Tanzania, by Frumence and Nathanaeli (2017), who noted that lack of adequate infrastructure and erratic shortage of supplies affected the provision of PITC services. These results were in line with what has been reported by other scholars who opined that the influence of testing kits, guidelines, and supportive supervision affect the implementation of o-PITC. For example, (Inghels et al., 2020; Rogers et al., 2016; Medley et al., 2010; Bishnu et al., 2013) found inadequate HIV testing due to a shortage of testing kits and tools. Undoubtedly without HIV guidelines and testing kits, it will be impossible for HCWs to successfully carry o-PITC even when patients are ready to be enrolled into the service. When the guidelines and tools such as o-PITC registers and screening forms are available, it helps HCWs to follow the steps identified in the guidelines and use the tools to screen for eligible clients for o-PITC instead of offering the service to every person found in OPD triage. For example, a study done in Namibia reported that nurses were not aware of HIV testing and counselling policy. This acted as a barrier to nurses performing or initiating discussions about PITC (Davyduke et al., 2015).

Additionally, the availability of supportive supervision helps to provide capacity buildings and mentorship to HCWs providing o-PITC. Thus, the more supportive supervision is provided, the better the implementation of o-PITC, as these supportive supervisions will help gather the challenges faced by HCWs in implementing o-PITC services and provide the solutions accordingly. When HIV guidelines, testing kits, tools are in place, and supportive supervision is provided on a routine basis, it will undoubtedly result in the robust implementation of o-PITC services.

Other factors found to be significant influencing compliance of o-PICT among HCWs are the attitude of OPD patients, their awareness of HIV counselling and testing, and their socio-demographic characteristics. These results were not far from what was reported by Abdurahman et al. (2015), who ascribed that patients were aware of PITC and the overall knowledge on HIV testing and counselling. However, Ahmed et al. (2016) found that

patients in Botswana had a negative attitude towards PICT services offered to them due to fear of being found HIV positive, which will result in stigmatization. Likewise, a study done in Ethiopia revealed perceived negative attitudes toward HIV-positive results affected the implementation of PITC services. Such disparities can be attributed to the capacity of HCWs to provide pre-counselling services to patients. The entry point of convincing the patients for HIV testing is removing the negative attitudes they tend to have towards HIV results. Moreover, HCWs need to be knowledgeable and experienced in delivering HIV counselling to patients.

This study also revealed that patients with low economic status had high acceptance of o-PITC services than those with higher economic status. This could be attributed to the fact that health is well known to be expensive, and most people from low economic status know that they cannot afford healthcare and testing. That is why they are readily accepting when offered freed health services. This result differed from what was observed in South Africa, whereas the study done by Jooste et al. (2021) revealed that HIV testing uptake was 73.8% and 76.7% among low and high socio-economic status households, respectively.

Inversely, Gebresillassie et al. (2019) found out that patients who had a higher average monthly income were also more likely to accept o-PITC than those who had low average monthly income, which might be attributed to the fact that people with lower average monthly income are less capable of making autonomous decisions as they are financially dependent and are not empowered economically.

5.3 Acceptance of o-PITC Services

The third objective of this study was to examine the acceptance of o-PITC service. The reason for offering o-PITC services to OPD patients is to get eligible clients who accept HIV testing to identify people living with HIV and enrol e them into ART care and treatment. It is fair enough to put forward that acceptance of o-PITC services was measured by several OPD patients who were offered o-PICT and agreed to be tested for HIV. To measure this, the secondary data of OPD patients who were offered o-PITC services in 2020 were extracted. Nonetheless, the interviews with HCWs were used to complement why OPD patients accept o-PITC services.

This study found out that, HIV testing acceptance rate was high among female clients compared to males, while most clients were between the age of 25 to 49. Inversely to our findings, a study conducted in Ethiopia by Abdurahman et al. (2015) found that patients aged 24 – 34 were less likely to accept PITC services than clients between 15 – 24 years. The differences in study settings could explain this variation, time and focus of HIV testing and counselling campaigns.

Also, patients from rural areas were more accepting of o-PITC offered to them, unlike their counterparts from the urban areas. The variation in acceptability of PITC is also pronounced in different parts of African countries, with acceptability ranging from 81.9% in Ethiopia, 95% in South Africa, and 98.7% in Nigeria (Gebresillassie et al., 2019; Dalal et al., 2011; Okechukwu et al., 2016). This signifies that there is a somehow similar outcome of o-PICT acceptance among OPD patients across SSA countries.

The results from the bivariate analysis indicated that female patients had higher oddsof accepting HIV testing than male patients, and such a relationship was statistically significant. The relative higher acceptance of o-PITC could be partially explained by the gender of clients, whereas the majority were females. Moreover, their reason to accept PITC services could be that they were aware of HIV testing since it is standard care for PMTCT (Bintabara et al., 2021). The low acceptability of PITC among males has been shared by Manongi et al. (2014), who attributed that fear and stress involved HIV testing, particularly among male respondents. Also, another factor for acceptability of o-PITC is the level of education, whereas people with a low level of education are accepted more than those with higher levels. This could be partially explained by the fact that illiterate or unschooled patients might accept o-PITC services due to fear of questioning the services being offered; also, they fear the negative response from HCWs (Gebresillassie et al., 2019). A similar study conducted in Botswana found out that clients with a low level of education felt that they could not refuse PITC offered to them (Weiser, 2006).

5.4 Chapter Summary

The chapter has discussed the key findings of the study, following specific objectives which guided this study. From the discussion, there is clear evidence that HCWs compliance with o-PITC guides is not satisfactory enough as some of the steps with the guides are being missed. These could be due to several factors, such as the limited number of HCWs and their knowledge of o-PITC and other HIV guidelines. Generally, the chapter has discussed several factors affecting the implementation of o-PITC; these factors can be bracketed into three categories: institutional, HCWs related, and patient-related factors. Lastly, the chapter offered a discussion of acceptance of o-PITC services, and it was explicitly revealed that acceptance of o-PITC varies among patients, but generally, the ones who are more likely to accept are women, since most of them had a high chance of having prior knowledge of HIV counselling and testing gained from PMCTC health promotions in ANC clinics. Other groups of patients who were open to accepting o-PITC were patients with a low level of education, low economic status, adults, and those from rural areas.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary, conclusions, and recommendations of the study. The chapter is framed into six main sections. The first section is the present one which gives the chapter overview. Section two offer the summary of the study and findings; section three is about the study limitations, section four offers' conclusions of the study based on the findings and empirical results presented in the last two chapters; section five provides recommendation based on the essential findings and conclusion made, and the last chapter is winding by offering area for further studies which is structured in reflection on the study methodology employed and study findings.

6.2 Summary of the Findings

This study aimed to examine the immediate results of implementing o-PITC and establish the factors that might influence Healthcare Workers (HCWs) compliance on the o-PITC guideline. Three specific objectives namely guided the study; first to examine the factors influencing the compliance of o-PITC among HCWs in the selected health facilities found in the Njombe region; secondly, to examine o-PITC compliance among HCWs in the selected health facilities found in the Njombe region, and the third objective was to examine the results of o-PITC services in the selected health facilities found in Njombe region.

The study employed an observational research design to reach four health facilities in the Njombe region, including Makete hospital, Njombe hospital, Njombe HC and Ilembula referral hospital. Purposively and simple random sampling were used to reach the different populations of interest: HCWs, OPD patients, CHMT members, and an official from USAID Boresha Afya Southern Zone. A mixed approach was adopted, and different data collection methods were used, including facility data abstraction questionnaire, in-depth interview, participant observation and desk review of documents.

The study generally demonstrates that there is somehow high compliance of o-PITC among HCWs of the surveyed health facilities found in the Njombe region. However, this compliance was not across all the steps grounding the implementation of o-PITC; it was revealed that some of the steps had highly complied while others were not. For instance, the study found that HIV was tested in a private room as directed by the guide and patients who were found HIV positive were escorted to CTC and then resumed their regular clinic queue. At the same time, steps that were not highly complied with were group testing and HIV testing in front of an expert linkage counsellor. The empirical results show that this was attributed to a lack of enough HCWs, exceptionally expert linkage counsellors within the facility settings. There is also a shred of significant evidence showing that non-compliance of o-PITC guides among HCWs was attributed to a lack of knowledge on o-PITC.from the second objective,the study highlighted different factors which affect the implementation of o-PITC services. These factors could be grouped into three categories: institution factors, HCWs related factors, and patient-related factors.

The institutional factors that threaten the implementation of o-PITC were the number of HCWs dedicated to implementing o-PITC services within the facility. It is well known that most of the health facilities in the country lack HCWs. The problem becomes even worse when it comes to a specific delivery of service such as o-PITC. This study revealed that a limited number of HCWs were dedicated to implementing o-PITC compared to the ratio of HCWs for o-PITC. Apart from the limited number of HCWs for o-PITC, there is ample evidence that some facilities lag in implementing o-PITC due to the availability of HIV testing kits and guidelines. Another factor was the supervision of o-PITC services.

For the HCWs related factors, there is enough evidence to argue that most HCWs are working based on their daily experience of conducting HIV testing instead of following the guides provided for o-PITC. This made HCWs skip some of the steps. Additionally, the study noted that the implementation of o-PITC was also affected by the poor attitude of OPD patients who were reluctant to agree to o-PITC services when offered. Such negative attitudes could be the results of a lack of awareness of the importance of HIV testing. Other individual factors mentioned were gender, age, educational level, and marital status of patients.

The third objective of the study was to examine the testing acceptance of o-PITC services in the selected health facilities. The study's findings explicitly showed that more than half of OPD patients offered o-PITC were eligible, and those who were eligible accepted HIV testing. However, acceptance of HIV tests varied according to the gender and age of patients. Other factors which influence acceptance of o-PITC services were education level, economic status, marital status, and geographical location.

6.3 Study Limitations and Delimitation

The study was faced with several limitations that emanated from the methodology and design employed. Firstly, the study was conducted in health facilities settings. In this regard, the study purposively reached several key informants. Thus, due to the heavy workload and busy schedules of health workers, the researchers allowed flexibility so that some appointments were rescheduled to suit individual health workers convenience and work schedules. Also, the study was faced with a limited schedule of HCWs. However, this limitation was counterchecked by scheduling strategic appointments with HCWs and other key informants prior to the date of the interview to allow HCWs to arrange their routine work.

Another challenge emanated from the nature of the study, which assessed the compliance of HCWs on the provision of o-PITC services and the immediate results. Some HCWs were unwilling to participate in the study or share some of the information. However, this limitation was overcome by building good rapport at the beginning of interviews and assuring participants that the information they provided would remain confidential. In addition, the consent form clarified that the purpose of the study was for gaining academic credentials and not an official evaluation of the HCWs or facilities.

The implication of the study limitations on validity and reliability of the findings is that with the busy schedules of HCWs, it was somehow hard to ensure that the interviews reached the appropriate saturation level. In the same view, the observations of o-PITC services offered were affected by the limited time of data collection; hence dependability of the observation findings could somehow be questioned.

6.4 Conclusions

The study concludes that o-PITC interventions implemented in the Njombe region under USAID Boresha Afya Southern Programme are satisfactory, with some HCWs complying with the o-PITC guidelines while others are not. The compliance of health services should be to some of HCWs but all, so based on what was observed, it is fair enough to argue that controlling of HIV pandemic could not be achieve some of HCWs and other HIV/AIDS stakeholders such as health facility management team, CHMT and organizations implementing HIV/AIDS project will not take responsibility to ensure that the compliance of HIV guidelines strictly adheres.

It is further concluded that the successful implementation of o-PITC services is not only affected by HCWs at the front line providing the services. Instead, it is determined by multifaceted factors, including institutional and patient-related factors. Thus, when HCWs have been empowered with capacity, tools, and skills, they can successfully initiate HIV counselling and testing for patients. Undoubtedly, when HCWs are capacitated and supported, they can convince patients for testing and HIV positive will be identified and enrolled into ART care and treatment.

Regarding the acceptance of o-PITC among OPD patients, the study concludes that most people are still unwilling to take HIV tests. This is so because the findings showed that some patients had negative attitudes towards HIV testing, which might depend on patients' socio-demographic characteristics. However, the role played by HCWs especially, expert linkage counsellor who initiate negotiations for HIV testing with patients through counselling, is an essential factor towards patients' acceptance of o-PITC services. Therefore, the study concludes that acceptance of OPD patients with o-PITC services being offered depend on the extent and capacity among HCWs to provide HIV counselling.

Lastly, the overall conclusion of this study is that pre-group counselling is the vital entry point of convincing patients to agree to the o-PITC offered. However, the work does not end there but follows all the o-PITC steps stipulated in the guideline regardless of how HCWs know HTS services or experience. Following the o-PITC guide will help HCWs quickly provide excellent and friendly services to the patients and attract more patients.

6.5 Recommendations

Based on the findings in chapter four and the discussion made in chapter five with the above conclusions, recommendations herein are intended to address the implementation of the o-PITC intervention. These recommendations are addressed in cognition to specific actors responsible for the implementation of the intervention in question. It is also noteworthy to explain that whilst these recommendations are made for this specific project, they can also be valuable to inform other HIV interventions.

6.5.1 Recommendation to HCWs

HCWs are significant actors in implementing o-PITC service since they are on the ground level of service delivery. Thus, the following recommendation is essential to the HCWs.

- It was seen that some of the HCWs skip some of the o-PITC steps. This is because most of them provide services based on experience and not how the guidelines are instructed. Based on this backdrop, this study recommends that HCWs revisit HIV guidelines and then deliver the services based on the guidelines' requirements.
- Also, the study calls for HCWs to observe all o-PITC guides when offering the service to the patients, especially ensuring that the patient has returned to his or her regular clinic queue without any interruptions. Failure to do so will make other OPD patients ignore o-PITC services and focus on their regular clinics.
- The study recommends that HCWs build a learning spirit to help them understand HIV testing and counselling skills. They can utilize the knowledge gained by other HCWs through on-job training and mentorships.

6.5.2 Recommendations to CHMT

The following are recommendations specifically dedicated to CHMT who are coordinating HIV interventions at the district level. This study believes that their contributions are of paramount importance in the successful implementation of o-PITC. Thus, to strengthen the o-PITC services and HIV programme, the following are being recommended.

- It was revealed that HCWs, at some point they skip to follow the guides of o-PITC and given the fact that, it was also revealed that supportive supervisions are essential in promotion compliance to HCWs in service delivery.

Therefore, this study recommends that CHMT conduct routine supportive supervisions dedicated explicitly to o-PITC and HIV testing.

- It is also recommended that CHMT provide routine capacity building and training of o-PITC to HCWs. This will help to remind HCWs on how to use and apply the provided o-PITC guidelines.

6.5.3 Recommendations to USAID Boresha Afya

The following recommendation is made to USAID Boresha Afya, the leading implementer of the HIV programme in the Njombe region.

- USAID Boresha Afya should see the value of creating synergies with CHMT and the facility management team to ensure the provision of capacity building training of HCW dedicated to the provision of o-PITC services.
- It is advised that routine and extensively M&E should be conducted to identify the challenges HCWs in delivering o-PITC services. More importantly, the M&E visitation should have data quality assessments, including supervision on complying with o-PITC guidelines.
- Also, USAID Boresha Afya could develop a community sensitization approach to promote HIV testing and counselling to the general communities. Such health promotion may help raise awareness on the importance of HIV testing, reducing resistance from OPD patients who are offered o-PITC services.

6.5.4 Recommendations to General Public

- The public tends to ignore the HCWs when talking to them in triage areas, especially when the announcements are about HIV. Therefore, they should pay attention and be open-minded to what HCWs tell them and stop self-stigmatization and fear of the results.

6.6 Area for Further Studies

This study calls for further studies related to o-PITC to be carried out to bridge the knowledge gaps and limitations encountered in carrying this study. This study only focused on the role HCWs, but at some point, the results showed that patients also play a vital position in determining the implementation of o-PITC. In this regard, it is therefore recommended that a further study be carried that will include both HCW and patients to examine the immediate results of o-PITC adequately. Again, due to the limited time frame used to carry this study and the fact that the study was informed by observational design, further studies are suggested to use an extensive period in collecting the data.

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APPENDICES

Appendix I: Consent Forms

ENGLISH VERSION

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF RESEARCH AND PUBICATIONS, MUHAS

Informed consent form

ID-NO | | | | |

Consent to Participate in a Study

Greetings!

My name is Helena Haule, I am a student at Muhimbili University of Health and Allied Sciences pursuing Master of Science in Project Management and Monitoring and Evaluation on Health.

Purpose of the study

The purpose of this study is to examine the immediate results following implementation of optimized provider-initiated HIV counselling and Testing in Njombe region

What Participation Involves

If you agree to join the study, you will be interviewed face to face with me to answer a series of questions prepared for this study; this will take not more than 60 minutes for one interview.

Confidentiality

I assure you that all the information collected from you will be kept confidential. Your name will not be written on any questionnaire or in any report/documents that might let someone identify you. Confidentiality will be observed, and unauthorized persons will have no access to the data collected. And the information collected during interview will be analysed by using identification number. If, this study is published or presented at a scientific meeting, names and other information that might identify you will not be used.

Right to Withdraw and Alternatives

Taking part in this study is voluntary. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty.

Risk

No harm is anticipated to you because of participating in this study

Benefits

You will derive no direct benefit from participating in this study; however, the results of this study will provide valuable information regarding optimized PITC services in Tanzania

In Case of Injury

We do not anticipate that any harm will occur to you.

Whom to contact

Thank you for taking time to read this information letter. If you have any question regarding this study, you may contact Helena Haule, mobile number; 0713 496260. In case you have questions regarding your rights as a participant, you may contact Dr. Bruno Sunguya, Director of research at MUHAS, P.O. Box 65001, Dar-es-Salaam, mobile number +255685 217272 and Dr Mangi J. Ezekiel, mobile number 0713 788811 or Alphoncina Kagaigai, mobile number 0718 566497 from MUHAS who are supervising this study.

Signature:

Do you agree?

Participant agrees ……...…Participant does NOT agree...……

I …… have read the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant ……

Signature of Research Assistant……Date of signed consent……

Kiambatanisho Cha II: Fomu Ya Ridhaa

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA UTAFITI NA UCHAPISHAJI

Namba ya Utambulisho

Ridhaa ya kushiriki katika utafiti

Habari! Jina langu ni Helena Haule. mwanafunzi katika Chuo Kikuu cha Tiba na Afya shirikishi Muhimbili, ninasoma shahada ya pili ya uzamili katika fani ya uongozi wa miradi na ufuatilia wa afya.

Dhumuni ya ushiri

Dhumuni la utafiti huu ni kutaka kufahamu matokeo ya utekelezaji wa huduma zilizoboreshwa kwa mtoa huduma kuanzia upimaji na ushauri nasaha wa VVU mkoani Njombe.

Kushiriki kunahusisha nini?

Ukikubali kushiriki katika utafiti huu utahitajika kutumia muda usiozidi wa dakika 60. kwaajili ya kujibu maswali utakayoulizwa na mtafiti.

Usiri

Ninakuhakikishia kuwa habari zote zitakazo kusanywa kutoka kwako zitahifadhiwa kwa siri. Jina lako halitaandikwa kwenye dodoso lolote au katika ripoti / nyaraka zozote zinazoweza kumfanya mtu kukutambua. Usiri utazingatiwa na watu wasioidhinishwa katika utafiti huu hawataweza kupata taarifa iliyokusanywa. Na taarifa iliyokusanywa wakati wa mahojiano itachambuliwa kwa kutumia nambari ya kitambulisho. Ikiwa, utafiti

huu umechapishwa au kuwasilishwa kwenye mkutano wa kisayansi, majina na habari zingine ambazo zinaweza kukutambulisha hazitatumika.

Haki ya Kujiondoa na Njia mbadala

Kushiriki katika utafiti huu ni uchaguzi wako, una uhuru wa kukubali au kukataa kushiriki katika utafiti huu. Pia unaweza kuacha kushiriki katika utafiti huu muda wowote utakapojisikia hivyo hata kama umeshakubali kushiriki. Kukataa kushiriki au kuacha kushiriki katika utafiti huu hakutakufanya upate adhabu yoyote.

Madhara

Hatutegemei kwamba utapata madhara yoyote ya kimwili kwakushiriki katika utafiti huu

Faida

Hautapata faida ya moja kwa moja kutokana na kushiriki katika utafiti huu; Walakini, matokeo ya utafiti huu yatatoa habari muhimu kuhusu huduma bora za upimaji wa VVU nchini Tanzania

Madhara

Hatutegemei kwamba utapata madhara yoyote ya kimwili kwa kushiriki katika utafiti huu

Mawasiliano

Asante kwa kuchukua muda kusoma barua hii ya ridhaa hii. Ikiwa una swali lolote kuhusu utafiti huu unaweza kuwasiliana na Helena Haule, kwa nambari ya simu; 0713 496260. Ikiwa una maswali juu ya haki zako kama mshiriki, unaweza kuwasiliana na Dk Bruno Sunguya, Mkurugenzi wa utafiti kwa anuani hii MUHAS, P.O. Box 65001, Dar-es-Salaam, au nambari ya simu +255685 217272 na Dk Mangi J. Ezekiel, nambari ya simu 0713 788811 au Alphoncina Kagaigai, nambari ya simu ya 0718 566497 kutoka MUHAS ambao wanasimamia utafiti huu.

Sahihi

Je umekubali?

Mshirikia amekubali…… Mshiriki Hajakubali…….……

Mimi.....nimesoma maelezo ya fomu hii. Maswali yangu yamejibiwa. Nimekubali kushiriki katika utafiti huu.

Sahihi ya mshiriki……

Sahihi ya shahidi (kama mshiriki hawezi kusoma) …….

Sahihi ya mtafiti……

Tarehe ya ukubali wakushiriki…….……Tarehe_____

Appendix III: Facility Checklist and Data Abstraction Questionnaire

ENGLISH VERSION

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBICATIONS, MUHAS

INTRODUCTION		
01	Questionnaire number	☐☐☐
02	Date of the interview	Date: dd/mm/yyyy
03	Region	1. Njombe
04	District name	1. Makete DC 2. Njombe TC 3. Wanging'ombe DC
05	Name of the hospital	1. Ikonda Hospital 2. Njombe District Hospital 3. Njombe Health Center 4. Ilembula Referral Hospital
06	Name/ ID of the Data Collector	
PATIENTS RECORDS		
10	Date o-PITC was offered ***Use o-PITC registers from January to December 2020***	Date: dd/mm/yyyy
11	Sex of patient	**1.** Male **2.** Female 77.No response

12	What was the age of patient in years? ***NB: Write 0 if the age is less than 1 year*** ***Write 999 if age was not documented***	**Age: _____**
13	Was patient eligible for PITC?	**1.** Yes **2.** No **77.** No response
14	Did patients accept HIV testing services?	**1.** Yes **2.** No 77. No response
15	What were the results of HIV testing?	1. Positive 2. Negative 3. No response
FACTORS INFLUENCING COMPLIANCE OF OPTIMZIED PITC AMONG HCWs		
20	Working hours of health facility	**Opening hours: _____** **Closing hours: _____**
20a	How many hours is OPD providing service in this facility per day?	**Hours: _____**
20b	How many hours are optimized PITC provided in this facility per day?	**Hours**
20c	How many days in a week does the facility provide OPD services?	**Number of days: _____**
20d	How many days in a week does the facility provide optimized services?	**Number of days: _____**
21	Number of OPD patients	**2020 (Months)**

	registered in this facility during the previous year according to the below criteria	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
21a	Male patients												
21b	Female patients												
21c	Adults (15+ years)												
30d	Paediatrics (<15 years)												
31	What is the total number of HCWs found in this facility for the last 12 months?	**HCWs #: _____**											
32	What is the total number of HCWs dedicated to providing o-PITC for the last 12 months?	**HCWs #: _____**											
33	How many HCWs have been trained on o-PITC for the last 12 months?	**HCWs #: _____**											
34	Were the optimized PITC registers available between January to December 2020? ***Please tick if the register was available in each month.***	**2020 (Months)**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
34a	Available												
34b	Not available												
35	Were the optimized PITC screening forms available between January to December 2020? ***Please tick the appropriate response on each month.***	**2020 (Months)**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
35a	Always available												
35b	Sometimes available												
35c	Not available at all												

36	Did you ever run out of the HIV testing kits in last year between January and December 2020?	1. Yes 2. No 3. Mot sure											
37	Have the following tools ever run out of stock during the last 12 months? ***Please tick the appropriate response on the refereed month.***	**2020 (Months)**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
37a	Uni-GoldTM HIV												
37b	SD Bioline HIV/Syphilis Duo												
38	Have you received any o-PITC supportive supervision over the last one year?	**1.** Yes **2.** No **3.** Am not sure 77. No response											
38a	How many o-PITC supportive supervision were provided?	**Number of visits: _____**											
38b	How many o-PITC supportive supervision visits were documented?	**Number of visits: _____**											

Kiambatanisho cha IV: Dodoso la uangalizi wa kituo na ukuchukuaj taarifa

SWAHILI VERSION

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA UTAFITI NA UCHAPISHAJI

UTANGULIZI		
01	Nambari ya dodoso	☐☐☐
02	Tarehe ya mahojiano	Tarehe: ss/mm/mmmm
03	Mkoa	**1.** Njombe
04	Jina la wilaya	**1.** Makete DC **2.** Njombe TC **3.** Wanging'ombe DC
05	Jina la kituo cha afya	**1.** Hospitali ya Ikonda **2.** Hospitali ya wilaya Njombe **3.** Kituo cha afya Njombe **4.** Hospitali ya rufaa Ilembula
06	**Jina/ Msimbo wa mkusanya taarifa**	
TAARIFA ZA MGONJWA		
10	Tarehe mhudumu ametoa upimaji na ushauri nasaha wa VVU ***Tumia rejesta za o-PITC kuanzia mwezi wa 1 mpaka 12 mwaka 2020***	Tarehe: ss/mm/mmmm
11	Jinsi ya mteja	**1.** Mwanume **2.** Mwanamke 77.Hakuna jibu

12	Upi ni umri wa mgonjwa katika miaka? ***Angalizo: Andika 0 iwapo umri ni chini ya mwaka mmoja au 999 kama umri haujaandikwa***	**Umri: _____**
13	Alikuwa mgonjwa anayestahiki kupata huduma za upimaji?	**1.** Ndio **2.** Hapana **77.** Hakuna jibu
14	Je, mgonjwa alipata huduma ya vipimo vya VVU?	**1.** Ndio **2.** Hapana **77.** Hakuna jibu
15	Yapi yalikuwa majibu ya upimaji wa VVU?	1. Chanya 2. Hasi **77.** Hakuna jibu
MAMBO YANAYOPELEKEA WATOA HUDUMA KUFUATA MUUNGOZO WA UPIMAJI WA VVU		
20	Saa za kazi katika kituo cha afya	**Muda wa kufungua:** **_____** **Muda wa kufunga:** **_____**
20a	Ni masaa mangapi kituo kinatoka huduma za wagonjwa wa nje kwa siku?	**Idadi ya masaa: _____**
20b	Kwa siku, ni masaa mangapi kituo kinatoa huduma zilizoboreshwa za mtoa huduma kuanzisha upimaji na ushauri nasahaa wa VVU?	**Idadi ya masaa: _____**
20c	Ni siku ngapi katika wiki kituo kinatoa huduma kwa wagonjwa wa nje?	**Idadi ya siku: _____**
20d	Kwa wiki, ni siku ngapi kituo kinatoa huduma zilizoboreshwa za mtoa huduma kuanzisha upimaji na ushauri nasahaa wa VVU?	**Idadi ya siku: _____**

21	Ipi ni idadi ya wateja wa magonjwa ya nje walioandikishwa kwa mwaka uliopita kulingana na vipengele tajwa	**2020 (Miezi)**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
21a	Wagonjwa wa kiume												
21b	Wagonjwa wa kike												
21c	Watu wazima (Miaka 15 na kuendelea)												
30d	Watoto (Chini ya miaka 15)												
31	Je kulikuwa na watoa huduma wa afya wangapi katika kituo hiki kwa mwaka uliopita?	**Idadi wa watoa huduma wa afya:** _____											
32	Je kulikuwa na watoa huduma wa afya wangapi waliokuwa wanatoa huduma zilizoboreshwa za mtoa huduma kuanzisha upimaji na ushauri nasahaa wa VVU?	**Idadi wa watoa huduma wa afya:** _____											
33	Katika kipindi cha miezi 12 iliyopita, kuna watoa huduma wa afya wangapi walipewa mafunzo ya huduma zilizoboreshwa za mtoa huduma kuanzisha upimaji na ushauri nasahaa wa VVU?	**Idadi wa watoa huduma wa afya:** _____											
34	Je kwa mwezi 1 hadi 12 mwaka 2020, rejesta za utambuzi kwa utoaji huduma zilizozoboreshwa za upimaji na ushauri na **nasahaa** zilikuwepo? ***Tafadhali weka vyema katika jibu na mwezi husika***	**2020 (Miezi)**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
34a	**Zimepatikana**												
34b	**Baadhi zimepatikani**												
34c	Hazipatikani kabisa												
35	Je kwa mwezi 1 hadi 12 mwaka 2020, fomu za utambuzi kwa utoaji huduma zilizozoboreshwa za upimaji na ushauri na nasaha zilikuwepo? ***Tafadhali weka vyema***	**2020 (Miezi)**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**

	katika jibu na mwezi husika												
35a	Muda wote **zilipatikana**												
35b	**Zilipatikana** mara nyingine												
35c	**Hazikupatikani** kabisa												
36	Katika kipindi cha mwezi 1 hadi wa 12 mwaka 2020, **Je kituo kimewai** kuishiwa na vitendanishi vya VVU?	1. Ndio 2. Hapana 3. Sina uhakika											
37	Je ni vitendanishi gani ambavyo viliisha katika miezi 12 iliyopita? ***Tafadhali weka vyema katika jibu na mwezi husika***	**2020 (Miezi)**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
37a	Uni-GoldTM HIV												
37b	SD Bioline HIV/Syphilis Duo												
38	Katika mwaka uliopita, mlipata usimazi angalizia juu ya huduma zilizoboreshwa za mtoa huduma kuanzisha upimaji na ushauri **nasahaa** wa VVU?	**1.** Ndio **2.** Hapana **3.** Sina uhakika 77. Hakuna jibu											
38a	Je, mlipata usimazi angalizia mara ngapi juu ya huduma zilizoboreshwa za mtoa huduma kuanzisha upimaji na ushauri **nasahaa** wa VVU?	**Idadi ya matembeleo: _____**											
38b	Je, ni **simamizi**ngapi juu ya huduma zilizoboreshwa za mtoa huduma kuanzisha upimaji na ushauri **nasahaa** wa VVU **zilizo** rekodiwa?	**Idadi ya matembeleo: _____**											

Appendix V: In-Depth Interview Guide for Healthcare Worker

ENGLISH VERSION

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBICATIONS, MUHAS

PART 1: INTRODUCTION

Date of interview: _____

Name of hospital: _____

Name of interview: _____

Gender: _____

Age: _____

Profession: _____

Years of experience: _____

PART 2: FACTORS FOR COMPLIANCE OF OPTIMIZED PITC GUIDELINES

1. Can you tell me what is optimized PITC services? *Probe: If ever received PITC trainings and if YES, what was taught?*
2. What are the factors influencing your compliance to optimized PITC in this health facility? *Probe: HCW's knowledge and attitude towards HIV testing.*
3. *What are the attitudes of patients towards provision of optimized PITC services? Probe: Different categories of patients i.e., age groups (adults and pediatrics), marital status, level of education, current sexual activity, geographical locations etc.*

PART 3: HCW's COMPLIANCE ON OPTIMIZED PITC GUIDELINES

1. What are you doing to ensure that all patient attending OPD are aware of optimized PITC? *Probe: How HCW screen OPD patients to be offered optimized PITC*
2. Can you explain the steps which you are using to conduct optimized PITC?
3. At what time are you providing optimized PITC to patients attending this health facility? *Probe: The number of hours that health facility is providing OPD services then ask whether optimized PITC is provided during morning, noon, evening, and night hours according to number of hours OPD services are provided.*

PART 4: OPTIMIZED PITC TESTING RATES

1. What are the challenges related to patient's acceptance of HIV testing?
2. What categories of patients are more likely to accept HIV testing? *Probe: Different categories of patients i.e., age groups (adults and pediatrics), marital status, level of education, current sexual activity, geographical locations etc.*

Kiambatanisho cha VI: Muongozo wa mahojiano na mtoa huduma wa afya

SWAHILI VERSION

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA UTAFITI NA UCHAPISHAJI

SEHEMU YA 1: UTANGULIZI

Tarehe: _____

Jina la hospitali: _____

Jina la mhojiwa: _____

Jinsi: _____

Umri: _____

Kada: _____

Miaka ya uzoefu: _____

SEHEMU YA 2: MAMBO YANAYOPELEKEA WATOA HUDUMA WA AFYA KUFUATA MUONGOZO WA UPIMAJI NA USHAURI NASAHAA WA VVU

1. Je unajua nini juu ya huduma zilizoboreshwa za muhudumu wa afya kuanzisha upimaji na ushauri nasahaa wa VVU? *Dodosa: Kama amewahi kupokea mafunzo juu ya huduma hizo na nini alijifunza?*
2. Je ni mambo gani yanayopelekea watoa huduma wa afya kufuata muongozo wa muhudumu wa afya kuanzisha upimaji na ushauri nasahaa wa VVU katika kituo hiki? *Dodosa: Mitazamo ya watoa huduma za afya juu ya upimaji wa VVU?*
3. Je ipi ni mitazamo ya wagonjwa juu ya huduma boreshwa ya muhudumu wa afya kuanzisha upimaji na ushauri nasahaa wa VVU? *Dodosa: Makundi tofuti ya wagonjwa kwa kuzingatia umri (Watoto kwa watu wazima), hali ya ndoa, kiwango cha elimu, ushiriki wa ngono hivi karibuni, makazi n.k*

SEHEMU YA 3: UTII WA MUONGOZO WA UPIMAJI KWA WATOA HUDUMA WA AFYA

1. Ni kitu gani waga unafanya kuakikisha kwamba wangonjwa wa nje wote wanaulewa juu ya huduma boreshwa ya muhudumu wa afya kuanzisha upimaji na ushauri nasahaa wa VVU? *Dodosa: Ni namna gani watoa huduma wa afya wanachunguza wagonjwa wa nje wakupewa huduma ya upimaji na ushauri nasahaa wa VVU.*
2. Je, unaweza kuelezea hatua unazochukua katika utekelezaji wa huduma boreshwa ya muhudumu wa afya kuanzisha upimaji na ushauri nasahaa wa VVU?
3. Je ni muda gani ambao kituo hiki kinatoa huduma boreshwa ya muhudumu wa afya kuanzisha upimaji na ushauri nasahaa wa VVU? *Dodosa: Idadi ya masaa huduma za wagonjwa wa nje utolewa kituoni, kisha uliza kama huduma boreshwa ya muhudumu wa afya kuanzisha upimaji na ushauri nasahaa wa VVU zinatolewa asubuhi, mchana, jioni na usiku ukilinganisha na muda wa huduma za magonjwa ya nje.*

SEHEMU YA 4: KIWANGO CHA UPIMAJI WA VVU

1. Je ni changamoto zipi zinazohusiana na wagonjwa kukubali upimaji wa VVU?
2. Je, ni kundi gani la wagonjwa wanakubali kupima VVU kirahisi? Dodosa: Makundi tofuti ya wagonjwa kwa kuzingatia umri (Watoto kwa watu wazima), hali ya ndoa, kiwango cha elimu, ushiri wa ngono hivi karibuni, makazi n.k

NASHUKURU KWA MUDA WAKO ULIOTUMIA KUJIBU MASWALI

Appendix VII: Participant Observation

ENGLISH VERSION

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBICATIONS, MUHAS

SECTION 1: INTRODUCTION		
1	Date of the interview	Date: dd/mm/yyyy
2	District name	**1.** Makete DC **2.** Njombe TC **3.** Wanging'ombe DC
3	Name of the hospital	**1.** Ikonda Hospital **2.** Njombe District Hospital **3.** Njombe Health Center **4.** Ilembula Referral Hospital
4	Name/ ID of the Data Collector	
SECTION 2: GENERAL OBSERVATION		
5	How many Expert Client Linkage Counsellor are available at OPD waiting areas?	**HCW #: _____**
6	Is there are private space in OPD for screen patients	1. Yes 2. No
7	Is there any private room for HIV testing	1. Yes 2. No
8	Are screening tools/form available and used?	1. Yes, available and used 2. Yes, available but not in use

		3. Not available
SECTION 3: HCW's COMPLIANCE OF OPTIMIZED PITC STEPS ***From step 2 observe to at least 10% of patients who were provided pre-test counselling as indicate in step 1***		
Step 1	Group pre-testing counsel have been conducted by provider in OPD waiting area?	**1.** Yes **2.** No
Step 2	HCW screen patients for prior HTC in private space for in the OPD waiting area?	**1.** Yes **2.** No
Step 3	Nurse counsellor (i.e., tester) is conducting HIV test in private room?	**1.** Yes **2.** No
Step 4	Patients has been provided HIV results in the presences of Expert Client Linkage Counsellor for those found HIV positive?	**1.** Yes **2.** No
Step 5	Post-testing counselling (for those found HIV positive) has been provided by Expert Client Linkage Counsellor in the private room	**1.** Yes **2.** No
Step 6	Patients resumes places in clinic queue. Patient may see clinician at this stage depending on the length of queue	**1.** Yes **2.** No
Step 7	Patients who found HIV positive is escorted to HIV care clinic	**1.** Yes **2.** No

Kiambatanisho Cha VIII: Uangalizi Wa Watoa Huduma Wa Afya

SWAHILI VERSION

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA UTAFITI NA UCHAPISHAJI

SEHEMU YA 1: UTANGULIZI		
1	Tarehe ya mahojiano	Date: dd/mm/yyyy
2	District name	**1.** Makete DC **2.** Njombe TC **3.** Wanging'ombe DC
3	Jina la hospitali	**1.** Hospitali ya Ikonda **2.** Hospitali ya wilaya Njombe **3.** Kituo cha afya Njombe **4.** Hospitali ya rufaa Ilembula
4	**Jina/msimbo wa** mkusanya taarifa	
SEHEMY YA 2: UANGALIZI WA JUMLA		
5	Kuna watoa huduma wangapi wa afya wa upimaji na ushauri nasaha wa VVU waliopo kliniki ya wagonjwa wa nje?	**Idadi ya watoa huduma wa afya: _____**
6	Kuna eneo la faragha lilitongwa katika kliniki ya wagonjwa wa nje kwa ajili ya uangalizi wa wagonjwa juu ya huduma za upimaji na ushauri nasahaa wa VVU?	1. Ndio 2. Hapana
7	Kuna eneo la faragha lilitengwa kwa ajili ya upimaji wa VVU?	3. Ndio 4. Hapana

8	Kuna fomu za uangalizi wa wagonjwa kwa ajili ya huduma za upimaji na ushauri nasahaa wa VVU?	1. Ndio, zipo na zinatumia 2. Ndio, zipo lakini hazitumiki 3. Hazipo
SEHEMY YA 3: UFUATAJI WA HATUA ZA HUDUMA BORESHWA YA MUHUDUMU WA AFYA KUANZISHA UPIMAJI NA USHAURI NASAHAA WA VVU ***Kuanzia hatua ya pili chunguza walau 10% ya wagonjwa wote walipewa ushauri wa awali kama inavyooneka kwenye hatua ya 1***		
Hatua 1	Ushauri wa upimaji wa kikundi umefanywa na mtoa huduma katika eneo la kusubiri la kliniki ya wagonjwa wa nje?	**1.** Ndio **2.** Hapana
Hatua 2	Mtoa huduma anachunguza wagonjwa kwa ajili ya ushauri wa awali wa upimaji wa VVU katika sehemu faragha iliyopo eneo la kusubiria kwenye kliniki ya wagonjwa wa nje?	**1.** Ndio **2.** Hapana
Hatua 3	Nesi (mpimaji) anachukua vipimo vya VVU katika chumba faragha?	**1.** Ndio **2.** Hapana
Hatua 4	Mgonjwa anapewa majibu ya upimaji wa VVU akiwepo mtoa huduma wa jamii kwa wale waliokutwa na maabukizi chanya ya VVU.	**1.** Ndio **2.** Hapana
Hatua 5	Ushauri baada ya vipimo vya VVU (kwa wale waliogundulika na maambukizi ya VVU) umetolewa na mtoa huduma wa majumbani kwenye chumba faragha.	**1.** Ndio **2.** Hapana
Hatua 6	Wagonjwa wanarudi tena kwenye foleni. Mgonjwa anaweza kuonna naa mtabibu katika hatua hii kulingana na urefu wa foleni	**1.** Ndio **2.** Hapana
Hatua 7	Wagonjwa ambao walipata VVU wanasindikizwa kwenye kliniki ya matibabu na matunzo ya VVU	**1.** Ndio **2.** Hapana

Appendix IX: Ethical Clearance

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR - RESEARCH AND PUBLICATIONS

Ref. No DA 282/298/01 .C/ Date: 28/05/2021

MUHAS.REC-05-2021-649

Helena Kaspar Haule.
MSc - PMMEH,
School of Public Health and Social Sciences, MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: IMMEDIATE RESULTS FOLLOWING IMPLEMENTATION OF OPTIMIZED PITC IN NJOMBE REGION

Reference is made to the above heading.

I am pleased to inform you that the Chairman 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: 28/05/2021
EXPIRATION DATE OF APPROVAL: 27/05/2022

STUDY DESCRIPTION:

Purpose:
The purpose of this (Cross sectional study) study is to assess the compliance of 0-PITC among HCWs in Njombe region, Tanzania.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://jrb.muhas.ac.tz/storage/Certificates/Certificate%20-%20555.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 Ill 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/.

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research & Publications
Box 65001

Dr. Bruno Sunguva
Chairman, MUHAS Research and Ethics Committee

Cc: Director of Postgraduate Studies

Appendix X: Introduction Letter

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

S'TUI)IES

Ref. No. HD/MIJun,665/2018 1 st June, 2021

REGIONAL MEDICAL OFFICER,
P.O BOX 668,
NJOMBE-TANZANIA.

Re: INTRODUCTION LETTER

The bearer of this letter is Helena Kaspar Haule (HD/MUHn.665/2018), a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MSc. Project Management Monitoring and Evaluation In Health.

As part of her studies she intends to do a study titled: "IMMEDIATE RESULTS FOLLOWING IMPLEMENTATION OF OPTIMIZED PITC IN NJOMBE".

The research has been approved by the Chairman of University Senate.

Kindly provide her with the necessary assistance to facilitate the conduct of her research.

We thank you for your cooperation,
ok HealtÖ

Ms. Victoria Mwaluko

For: DIRECTOR, POSTGRADUATE STUDIES

cc: Dean, Schoql of Public Health and Social Sciences, MUHAS.
cc: Helena Kaspar Haule

9 United Nations Road; Upanga west; P.O. Box 65001, Dar Es Salaam: Tel. GILine: +255-22-2150302/6; Ext. 1015;
Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;web:https://www.muhas.ac.tz