

**EFFECT OF CLINICAL COACHING ON THE HEALTH WORKERS' KNOWLEDGE,
ATTITUDES, AND PRACTICE TOWARDS THE USE OF THE PATIENT HEALTH
QUESTIONNAIRE-9 TOOL IN HIV CARE AT ATIAK HCIV IN AMURU DISTRICT,
NORTHERN UGANDA**

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RM18M11/021

**A DISSERTATION SUBMITTED TO THE FACULTY OF PUBLIC HEALTH, NURSING
AND MIDWIFERY IN PARTIAL FULLFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF DEGREE OF MASTER OF SCIENCE IN NURSING SCIENCE OF UGANDA
CHRISTIAN UNIVERSITY**

January, 2024



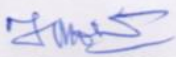
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Declaration

I hereby declare that my dissertation is original and has not been published and/or submitted for any other degree award in any other University or institution before.

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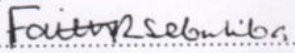
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Dedication

This document is dedicated to my parents: Mr. Cons Arapa and Mrs. Susan Arapa for your pursuit and academic aspirations you always inculcated in us. You will forever remain in my heart.

Acknowledgement

Undertaking this study has been a life-changing experience in my academic journey. I thank everyone who has been there for me in terms of encouragement, motivation and ensuring that this work come to an end. In a special way, I thank Professor Karen B. Drake who has been with me from the initial concept of this paper and all her time to ensure the best come out of me. Dr. Faith Sebuliba, you have always challenged my thinking, encouraged me and kept me focused as we journey together to make my dream come true; I appreciate you, Dr. Ketty Holt, your encouragement, constructive feedback and proof-reading skills can never be forgotten in my academic life and I am glad for your support.

I also want to thank my parents who opened for me the door to education world! Daddy and Mummy, your parental endeavor and compassionate care you rendered for me to see who I am today can never be taken slightly. I will always remain indebted with no better word to appreciate you! My wife and children, thank you for always being there for me and understanding me in the academic struggle.

I also want to thank my classmates who made it a fun while faced with academic hardship, and supporting me in coming up with clear thoughts to make this program a success.

Lastly, I want to thank all the health workers from Atiak HCIV who voluntarily accepted and participated in my study till the end. May the Almighty God reward you!

Abstract

Background: Worldwide depression is a concern especially in people living with HIV. In low- and middle-income countries, its identification continues to be difficult in lower level healthcare facilities. Specific assessment tools for depression such as Patient Health Questionnaire-9 (PHQ-9) are accessible tools that can be implemented to support and improve detection in clinical settings. Health workers in lower level facilities are not trained to use the PHQ-9 tool, and yet they are in a better position to screen and improve depression detection. Addressing the knowledge, attitudes, and practices of healthcare workers using clinical coaching strategy can increase the efficacy of the PHQ-9 tool. This study aimed to analyze the effect of clinical coaching on the knowledge, attitude, and practices of health workers towards the use of the PHQ-9 assessment tool in an HCIV in Northern Uganda.

Method: A one group pretest-posttest cross-sectional study that employed consecutive sampling was used among 34 health workers. A 5-hour clinical coaching interventions were implemented, and a structured self-administered questionnaire used to collect data pre-and post-interventions. Descriptive statistics and the significance in the observed difference were assessed with SPSS version 22.

Result: There was a significant difference before ($M=70.8$, $SD=3.3$) and after ($M=90.6$, $SD=2.6$) the coaching intervention on knowledge, $t(33) = 11.4$, $p < 0.001$, a significant improvement in the scores for before ($M= 3.32$, $SD=0.42$) and after ($M=3.58$, $SD=0.31$) clinical coaching intervention in attitude; $t(9) = -4.77$, $p = 0.001$, and a significant improvement in the optimal practice scores from the baseline (58.8%) and after clinical coaching intervention (85.3%), $p = 0.023$. **Conclusion:** Generally there were noticeable

improvement on the knowledge, attitude and practices of health workers regarding the use of PHQ-9 tool after clinical coaching intervention.

Key words: Knowledge, attitude, practices, clinical coaching, PHQ-9, and depression screening.

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Chapter One: Introduction

Depression is a worldwide issue that is thought to impact 280 million people worldwide, or 3.8% of the total population (Global Health Data Exchange, 2021). It is the single biggest cause of disability worldwide (WHO, 2016). According to Liu et al. (2018), there has been a recent 50% increase in the incidence. More incidence reported after 2020, perhaps because of the coronavirus pandemic or other current events, such as health professionals' awareness (Moreno-Agostino et al., 2021; Nochaiwong et al., 2021). Between 30.88% and 49.79% of HIV patients in Sub-Saharan Africa suffer from depression (Ayano, Solomon, & Abraha, 2018; Kemigisha et al., 2019). According to Bernard, Dabis, and Rekeneire (2017), depression is twice to four times more common in clients with HIV/AIDS and other chronic diseases. HIV depression can have a detrimental impact on quality of life by causing noncompliance with antiretroviral medication. But nurses and paramedical health workers have not been very good at identifying depression (Craven & Bland, 2013), especially in low- and middle-income countries (LMICs) (Dadi, Miller, Azale, & Mwanri, 2021).

Depressed clients receiving HIV care are more likely to have non-adherence to antiretroviral treatment (Ekat et al., 2020), missing follow-up (Zuniga, Yoo-Jeong, Dai, Guo, & Waldrop-Valverde, 2016), higher HIV viral load, and substance addiction (Schumacher et al., 2013). In order to achieve mental health, depression screening and regular mental health education are essential for the HIV/AIDS care population (Passchier, Owens, Wickremsinhe, Bismilla, & Ebuanyi, 2018). If medical professionals are better equipped to identify depression, this might be feasible (Adewuya et al., 2017).

In clinical settings, the PHQ-9 assessment tool provides a summary of depression symptoms that any healthcare professional can use to diagnose, classify, and even track the consequences or treatment outcomes of depression (Kroenke & Spitzer, 2001).

Clinical coaching intervention, which offers more support and structured instruction in the clinical situation, may improve the efficacy of the PHQ-9 assessment tool. Therefore, the purpose of this study is to investigate how clinical coaching affects health workers' knowledge, attitude, and practices about the use of the PHQ-9 evaluation tool in HIV care settings.

Background of the Study

Depression is described by the Diagnostic Statistical Manual of Mental Disorders, 5th edition (DSM-V), as “a condition that manifests with persistent depressed mood, loss of interest in pleasurable activities, forgetfulness, appetite and weight changes, low level of concentration, and sleep disturbances among other depressive features that occur for at least two weeks” (American Psychiatric Association, 2013, p.160). According to Global Health Data Exchange (2021), an estimated global prevalence of depression was reported to be about 280 million people which translates to 3.8% of the global population (WHO, 2017). It has been noted that the prevalence of depression has increased in the recent past from 1990 to 2017 at a rate of about 50% (Liu et al., 2017). This has been made worse by the presence of the Covid-19 pandemic (Moreno-Agostino et al., 2021; Nochaiwong et al., 2021). Depression is very common among clients with chronic illnesses like HIV/AIDS, and this can lead to poor health care outcomes (Abas, Ali, Nakimuli-Mpungu, & Chibanda, 2014). Clients with HIV-related depression report specific

symptoms like forgetfulness, and low adherence to anti-retroviral (ARVs) treatment, follow-up, and continuity of care is common among this group of clients (Zuniga et al., 2016).

In Africa, the prevalence of depression among those with HIV is still high, ranging from 31% to about 50% (Abadiga, 2019; Adeoti, Dada, & Fadare, 2018; Ayano, Solomon, & Abraha, 2018; Kemigisha et al., 2019; Zimasa, Teke, & Abaver, 2020). It has been noted that depression is under diagnosed among HIV/AIDS clients in low and middle-income countries (LMICs) (Dadi et al., 2020; Craven & Bland, 2013), and thus has a direct association with financial difficulties, loneliness, stressful lives, and poor adherence to treatment (Rodkjaer, Laursen, Balle, & Sodemann, 2010). It may also be associated with poor social support, HIV-related perceived stigma, and low clusters of differentiation (CD4) cell count (Abadiga, 2019; Bernard et al., 2017; Duko, Geja, Zewude, & Mekonen, 2018).

The clients are also more likely to have increased HIV viral loads and substance abuse (Schumacher et al., 2013), missed follow-up visits (Zuniga et al., 2016), non-adherence to ARVs (Ekat et al., 2020), and at the very worst, may result in suicide (World Health Organization, 2017). According to Abas et al. (2014), depression may impact negatively on anti-retroviral treatment (ART) adherence, disease progression, and increase mortality level if not identified early. However, the knowledge, attitudes, and practices of health workers have a direct influence in mitigating the depression prevalence. For example, one study noted that when the health workers were provided with a high level of knowledge, their recognition of depression improved (Adewuya et

al., 2017), but on the other hand, a low level of knowledge can prolong the burden (Kumar & Shoba, 2014; Turki et al., 2020).

Several depression case identification tools like the PHQ-9 have been developed both in clinical care practice and research settings (Hirschtritt & Kroenke, 2017; Meader et al., 2011). This has demonstrated significant benefits of accessibility to mental health care and depression screening for the HIV/AIDS population when routine assessments are implemented (Schumacher et al., 2013).

Uganda Ministry of Health has noted depression to be the major mental disorder among the non-communicable diseases in HIV/AIDS clients (Ministry of Health Uganda, 2016). The ministry also strongly recommends that screening with PHQ-9 should be done by the staff which have been trained to use the tool. Screening using this tool may begin by asking the first two questions (about persistent depressed mood and loss of interest in pleasurable activities), and this is viewed as a preliminary screen. If one or both questions are answered positively, then the entire PHQ-9 questionnaire should be given (Kroenke & Spitzer, 2001). The use of this tool targets the general adult and adolescent population of 12 years and above.

The PHQ-9 tool has demonstrated a high level of accuracy, validity, and reliability in identifying depression as noted by Indu, et al. (2018). The PHQ-9 is a tool that may be administered at every patient visit and also to quantitatively monitor those already on follow-up care for depression (Zimmerman, 2019). It may be used to screen for depression in many other chronic conditions like infertility (Maroufizadeh, Omani-Samani, Almasi-Hashiani, Amini, & Sepidarkish, 2019). This tool has been previously

used in Uganda to support depression identification (Nakku et al., 2016; Ssebunnya et al., 2019).

Knowledge, attitudes, and practices of health workers on the available HIV-related depression identification tools have affected the ability to recognize depression. Knowledge of health workers regarding identification and management of depression has been noted to be low with over 60% reported with inadequate knowledge in some studies (Kumar & Shoba, 2014; Mulango, Atashili, Gaynes, & Njim, 2018). This calls for education and trainings of staff to improve depression care in primary health care settings.

In some studies, attitudes of health workers can make them feel incapable to assess depression symptoms, and this could interfere with the identification of depression (Adewuya et al., 2017; Ola, Crabb, Adewuya, Olugbile, & Abosede, 2014; Zhuang, Wong, Cheng, & Pan, 2017). Health workers' practices also play a critical role and are still observed as an important component in handling clients with depressive features. These are explained by some research studies done to understand how the knowledge, attitudes and practices could influence depression recognition. For example, a study done by Adewuya et al. (2017) in Nigeria to evaluate the health provider level of knowledge, experience, competence, attitude, and perceived challenges in managing depression within the primary care setting identified challenges of a heavy work schedule at 68.5%, and lack of competence by a health provider at 67.5% as the major practice issues. Nollett et al. (2020), while examining the barriers among health workers in screening for depression among low vision clients, noted that limited time constraints and a low level

of confidence resulted in poor practices towards screening for depression in this population.

Depression is very common in a primary health setting among HIV-positive clients, and yet it is under-detected (Bernard et al., 2017; Fekadu et al., 2022). While there is no literature about depression detection in Uganda, I have personally observed that most health facilities do not screen for mental health problems among clients with chronic diseases like HIV/AIDS. This has been made worse by the absence of a screening tool and the limited knowledge of health workers on depression. Furthermore, the Uganda Ministry of Health has noted depression to be the major mental disorder among the other co-occurring diseases in HIV/AIDS, and screening should be done with a standardized tool (Hirschtritt & Kroenke, 2017) like PHQ-9 by the staff that has been trained to use the tool (Ministry of Health Uganda, 2016).

Several educational interventions to improve depression identification have been in place to help address the cost effectiveness of screening. Formal training, and presentations have been the preferred ways for building the capacity of health workers (Turki et al., 2020). Another way to improve knowledge, attitudes, and practices is peer coaching (Schwellnus & Carnahan, 2014).

Having focused interventional strategies may help improve health workers' ability to identify the clients with depression symptoms early for appropriate actions (Dadi et al., 2020). The first step may involve the use of a simple tool that can support the health care team to identify specific symptoms relevant in diagnosing depression. This may be performed using a standardized tool like the PHQ-9 (Hirschtritt & Kroenke, 2017), and

targeting clients with chronic conditions such as HIV (Mashaba, Moodley, & Ledibane, 2021). Secondly, engaging health service providers with the screening tool (PHQ-9) through clinical coaching may be successful.

Clinical coaching, a new innovative approach has been identified and recommended as an effective strategy to improve competencies of nurses and midwives (Faithfull-Byrne et al., 2017). Clinical coaching will be used in this study to improve health workers knowledge, attitudes, and practices on the use of the PHQ-9 tool. Previous studies also support that coaching of health care providers improved the quality of care, self-confidence, and health service over time (Manzi et al., 2017; Rassbach et al., 2018; Utrilla, Grande, Lorenzo, Jaen, & Cadiz, 2015; World Health Organization, 2018).

However, in Uganda, there is a paucity of literature about the use of clinical coaching with no study currently supporting clinical coaching for the use of the PHQ-9 tool. This study aims to identify the effect of clinical coaching on the health workers' knowledge, attitudes, and practices regarding the use of the PHQ-9 depression assessment tool in HIV-positive clients.

Problem Statement

Depression is one of the most common complications among HIV-positive clients that is often missed by health workers. Clients in HIV care describe symptoms of depression as depressed mood, forgetfulness, changes in appetite and sleep, little energy, and loss of interest in activities of daily living (APA, 2013). These symptoms limit their adherence to ARVs treatment, follow-up, and continuity of care among this group of clients. It has been noted that depression is under diagnosed among HIV-positive clients,

and this has a direct association with their financial difficulties, loneliness, stressful lives, and poor adherence to treatment. This may be addressed with the use of the PHQ-9 tool.

The PHQ-9 is a multipurpose tool that has been developed for assessing, and classifying the severity of depression symptoms (Kroenke & Spitzer, 2001). It is now recommended by the Ministry of Health Uganda, and the World Health Organization to screen for depression in HIV/AIDS care and has been shown to be successful in other healthcare settings (MoH, 2016; WHO, 2018). This tool can discriminate between the depressed and non-depressed clients with HIV. The PHQ-9 screening tool is not well utilized among health workers in Uganda, and this could be directly associated with their levels of knowledge, attitudes and practices. Coaching is a collaborative approach used to increase the effectiveness of learning that has been used in many settings to improve staff knowledge and skills. This strategy may be applicable in scaling-up utilization of the PHQ-9 screening tool, and may improve a patient's clinical outcome in this study. The aim of this study was to identify the effect of clinical coaching on knowledge, attitudes, and practices of health workers regarding the use of the PHQ-9 depression screening tool in a HIV care setting, at a health center four (HCIV) in a district of northern Uganda.

Study Purpose

The purpose of this study was to evaluate the effect of clinical coaching on the health workers' knowledge, attitudes, and practice towards the use of the PHQ-9 depression assessment tool in a HIV care setting at a HCIV in a district of northern Uganda.

Research Question

What is the effect of clinical coaching on health workers' knowledge, attitudes, and practice regarding the use of the PHQ-9 assessment tool in a HIV care setting at a HCIV in a district of northern Uganda?

Research Objectives

- To identify the effect of clinical coaching on the knowledge of health workers regarding the use of the PHQ-9 assessment tool in a HIV care setting at a HCIV in a district of northern Uganda.
- To determine the effect of clinical coaching on the attitudes of health workers regarding the use of the PHQ-9 assessment tool in a HIV care setting at a HCIV in a district of northern Uganda.
- To describe the effect of clinical coaching on the practice of health workers regarding the use of PHQ-9 assessment tool in a HIV care setting at a HCIV in a district of northern Uganda.

Significance of the Study

The new knowledge generated from this study is expected to contribute to service improvement for both the service providers and consumers. It is expected that a health worker may gain the required competencies, and become self-confident after clinical coaching to handle clients with depressive symptoms in HIV/AIDS care clinics or at any client encounter. This is one form of supporting health care providers such as clinical officers, nurses, midwives, and general doctors with limited psychiatric experience or with no prior or recent training in mental health. The study will identify the knowledge,

attitudes, and practices' gaps among the health workers during the pre-test data collection. It will then identify areas for in-service training that may be replicated in other health care settings to address the competencies and professional development for staff working in HIV care clinics. Knowledge and skills gained by health workers from the study maybe generalizable in handling depression in other chronic diseases other than HIV. The study findings may also guide the healthcare team in formulating relevant protocol appropriate for depression screening, conducting support supervision, and ensuring practice adherence in HIV/AIDS care settings. It may also guide the review of curriculum in nursing schools when content review is needed.

Clients may gain several benefits from this study. For example, treatment adherence and follow-up care may improve since depression that interferes with care outcomes will have been identified and addressed by the competent health care team. Also, it may promote the client's satisfaction with the healthcare service provisions as a result of addressing the mental health needs. Furthermore, it is believed that it may significantly increase access to mental health care by clients in need that have been missing in HIV routine care services. This may be possible when depression screening is fully adapted, and integrated by the health facilities that provide HIV care services. This can make the clients to be engaged in socio-economic programs where they live leading to the transformation of their families, and the community at large.

Justification of the study

Depression prevalence is still high, and worse among HIV-positive clients as it is estimated to be 2-4 times (Bernard et al., 2017). Its identification has remained low in developing countries with only about 10% being reported by primary care workers, of

which nearly half of clients remain undetected perhaps due to few shortages of mental health personals (Chin et al., 2014). Knowledge, attitude and practices of health workers has a direct influence on their ability to improve depression care that begins with identification. Various strategies have been put in place to address the knowledge, attitude and practices gaps, however, it seems less effective in addressing specific health worker's needs. However, the investigator thought to evaluate the effectiveness of clinical coaching strategy in addressing knowledge, attitude and practice gaps in depression recognition.

Conceptual Framework

The Clinical Coach Framework developed by Faithfull-Byrne et al. (2017) was used to guide clinical coaching towards the use of the PHQ-9 assessment tool in screening for depression among HIV-positive clients at a HCIV in a district of northern Uganda. This framework was developed in Queensland, Australia to facilitate clinical learning and professional development for nurses and midwives at the point-of-care. The idea was borrowed from sports science to further promote personal and professional development among nurses in clinical settings before it became an innovative tool across health service providers in the same region. The framework has four major concepts: context of coaching, purpose for clinical coaching, clinical coaching skills, and the framework outcome for clinical coaching (Faithfull-Byrne et al., 2017).

Context of coaching. Settings where the coaching will take place need to be defined. This is the first step in the clinical coaching framework, and it occurs at the

point-of-care. It involves three areas: the actual clinical site/context, real time educational intervention, and support for clinical educator roles (Faithfull-Byrne et al., 2017).

Actual clinical site. The setting for the coaching session needs to be clear at the beginning. It provides the details about the place where the coaching activity occurs. In the framework, it refers to the specific clinics where the nurses and midwives care for clients. Clinical coaching is mandated to be performed in the clinical settings within the health facility as opposed to classrooms or other settings (Faithfull-Byrne et al., 2017).

Real-time educational intervention. The coaching is carried out as the nurses and midwives perform their normal daily duties. A coach needs to structure the coaching activities to be consistent with what the learners do. It's a way of building confidence in this category of health workers, and to enable them to provide effective health services in their natural environment where all the processes of care occur (Faithful-Byrne et al., 2017).

Infrastructure to clinical educator roles. Need to support evidence-based practice at the point of care has resulted in the evolvement of clinical coach roles for nurse educators. Creating an environment for the organization to support service improvement, and promote learning for the nurses and midwives has taken a center stage. This was the main emphasis for utilizing nurse educators in supporting clinical learning for nurses and midwives at the point of care. There was also a need to promote a culture of learning in addressing the performance gaps (Faithfull-Byrne et al., 2017; Kimberly et al., 2020).

Purpose of clinical coaching. Coaching should be specific to the set goals that guide the coachee and the coach. This is the main aim for the coaching intervention to occur. It focuses on the two major areas in this framework, and this includes promoting professional workplace development of each nurse, and promoting learning culture development (Faithfull-Byrne et al., 2017).

Professional workforce development. Promotion of professional development for nurses and midwives was the key that contributed to the proliferation of the clinical coaching concept. In response to the changing practices and professional demand for quality in healthcare provision, there is a need for the nurses and midwives to revise how their services are delivered (Faithfull-Byrne et al., 2017).

Learning culture development. The framework was aimed at challenging the midwives and nurses to take up the lifelong learning attitudes with the guidance of clinical educators. Challenging the team to look for current information that supports the overall practice is critical. This may inspire them to promote their own learning, and it may be embraced by every midwife or nurse as part of their career development (Faithfull-Byrne et al., 2017).

Clinical coaching skills. A coach needs to have specific qualities to enable effective coaching delivery. These include the ways that clinical coaching is delivered to the intended participants to enable them learn. A number of clinical coaching skills are also presented in this framework, and they include: coaching processes, facilitation skills, practice development principles, adult learning strategies, person-centeredness, coaching mantras, clinical assessment tools, supported practice frame work, and specific clinical

coaching accountabilities. Each of the individual skills are described here (Faithfull-Byrne et al., 2017).

Coaching processes. The coach needs to understand how the session might be delivered depending on the goals and settings. This is the way clinical teaching and learning are delivered in the clinical environment. It involves the skills of assessing the learning environment, and preparing the learners for the practical sessions (Faithfull-Byrne et al., 2017).

Facilitation skills. The approach to sharing information between the coach and the learner is one area for the framework. These are the ways that guide how other learning delivery strategies are structured to achieve the learners' objectives or outcomes. It involves all the support provided by the coach to help the learner achieve their individual learning goals. The coach encourages and empowers the learner in the learning process. The coach must ensure a non-threatening environment that fosters staff learning (Faithfull-Byrne et al., 2017).

Practice development principles. The availability of new evidence, and demand for practice change often challenge our daily practice performance. This is another skill emphasized in this theoretical framework that builds the basis in which a coach can deliver clinical coaching to learners. It evaluates the performance gaps and then generates the areas for improvement. This could occur in accordance with the set standards and guidelines from the institution, government or professional regulating bodies to ensure a coach remains within the performance and practice standards during the coaching process (Faithfull-Byrne et al., 2017).

Adult learning strategies. Learning by adults is always driven by need in any practice improvement strategy. The use of adult learning strategies is another one of the skills supporting clinical coaching. The principles of adult learning emphasize the learner-centered paradigm where the learners know what they need to learn, and how best to learn it. These may occur in the form of helping the participants take their own roles in learning. These include setting goals, active listening, collaborating, asking constructive questions, and giving constructive feedback with learners at the center. The coach can also challenge the learners to be independent, and totally accountable for their individual learning (Faithfull-Byrne et al., 2017).

Person-centeredness. A coach needs to identify the values and individual uniqueness of every learner. It is another skill the coach may use in clinical coaching. This puts the learner as the main focus during the coaching session. A learner should be aware of their learning needs and address the areas where they feel incompetent. During coaching, a learner must set their own goals and work towards meeting them as the coach gives guidance when needed (Faithfull-Byrne et al., 2017).

Coaching mantras. The use of strong statements that challenge the learner to be independent is an area for the coach to embrace as a critical skill. The use of various coaching mantras or proverbs to reinforce learning is another facilitation skill. Mantras that relate to the clinical situation or environment will help to engage the learners within their clinical practice and skills development. This helps the learners to focus on the outcome of the coaching session, and stimulate them to take up individual roles of learning for their future professional development (Faithfull-Byrne et al., 2017).

Clinical assessment tools. The use of a clinical assessment tool contributes to the coaching skills. It is used as a guiding tool in accomplishing the learning objectives during the coaching session. Using a tool or a checklist helps to facilitate learning by emphasizing the key steps that must be followed by the learners. It enables the learners to master complex concepts within a short time and avoid making mistakes as reference material is at hand. The assessment tool may also be used to measure the agreed performance or behavioral skills that are set by the institution or professional regulating bodies (Faithfull-Byrne et al., 2017).

Supported practice framework. The use of a supported practice framework in coaching facilitation is another skill that can be utilized by the coach. Some organizations have their own practice framework that may be incorporated as part of the skills in strengthening clinical coaching. This may be developed when there is need for practice to change due to availability of existing evidence. A learner can set their own learning goals, perform and then a coach may give constructive feedback based on the standard expectations (Faithfull-Byrne et al., 2017).

Specific clinical coaching accountabilities. Lastly, the framework also uses specific coaching accountabilities skills when interacting with the learners. This encourages the coach to take on the responsibility of ensuring each participant being coached learns by the end of the session. A coach needs to ensure that all the required materials critical in spurring learning are available. In the clinical settings, the accountability also focuses on the safety of the learners and the clients (Faithfull-Byrne et al., 2017).

The framework outcomes. Outcome is one critical area that guides what the coach would like to see at the end. Any planned coaching session must have an overall outcome at the end as a measure of achievement. These are the overall improvements expected as the coach strives to support the learners in the learning process. An example could be overall patient care improvement, and it is measured on a set of indicators as the overall competencies. In this framework, a number of outcomes were identified and they include improved learning climate, specific clinical coaching outcomes, improved patient care, and improved team development across the services and with clinical educators, and lastly learning trajectories for registered nurses' clinical facilitation and learning skills (Faithfull-Byrne et al., 2017).

Learning climate improvement. In this framework, promoting the culture of learning to support clinical development was one of the expected outcomes. Promoting the culture of learning will encourage safe and quality clinical care services after the coaching intervention. Consequently, patient care will be improved across the organization (Faithfull-Byrne et al., 2017).

Specific clinical coaching outcomes. The coach may target specific skills to be achieved by the learners after the coaching session. This aims at advancing special skills like emergency assessment skills for nurses working in emergency and trauma units, and pediatric resuscitation skills for nurses and midwives working in pediatric units among others. These skills must be identified earlier as guided by expected competencies for the organization and other professional bodies (Faithfull-Byrne et al., 2017).

Improvement in patient care. The critical reason for clinical coaching is to improve patient care across the various clinical units within the organization by nurses and midwives. Patients are advocating for quality services which should be centered to meet their health demands, and this triggers clinical knowledge and skills change by nurses and midwives to meet the need (Faithfull-Byrne et al., 2017).

Improve team development across the health service providers, and with the clinical educators. This outcome focuses on building more clinical educators with the coaching roles to have a learning culture and sustained clinical improvement. The number of preceptors with skills of supporting learning within the team through coaching also improved. Another area of focus in this outcome was a spirit of team building based on the organization's set indicators with the goal of performance improvement across all service points in an organization (Faithfull-Byrne et al., 2017).

Learning trajectories for graduate nurses' clinical facilitation, and learning skills. As the learning climate improved, some of the nurses and midwives took it positively and adapted their career paths to become clinical educators. This also strengthened their facilitation and learning skills which is key to professional development according to the framework (Faithfull-Byrne et al., 2017).

The Operationalization of the Conceptual Framework

The Clinical Coach Framework was adapted with permission (Appendix A) from Faithfull-Byrne et al. (2017) to guide this study which is directly related to clinical coaching for health workers in Uganda. It was a health facility-based study involving health workers at a HCIV in a district of northern Uganda. The framework utilized the

four components of the model which included: context of coaching, purpose for clinical coaching, clinical coaching skills, and the effects of clinical coaching.

Context of coaching. This involved the clinical setting where the practical clinical coaching was carried out. For this study, the coaching context occurred at the approved Health Center IV and it included the two components of health center/clinics and real time intervention as described in this section.

Health Center IV/Clinics. This was a Health Center IV facility study setting for clinical coaching on the use of the PHQ-9 tool. The health workers attached to this health facility routinely distribute themselves in many available clinics like Antiretroviral Treatment (ART) clinic, Mother-Baby Care clinic for HIV-positive mothers and their exposed babies, Antenatal clinic (ANC), Tuberculosis clinic, Post-natal clinics (PNC), and other units like Outpatient unit, Inpatient unit, and Adolescent and Friendly service unit among others. Coaching took place within the various units in the health facility where care were provided for people with HIV.

Real time intervention. In this context, the researcher delivered the coaching sessions during the working hours while the staff perform their daily routine activities. This was to enable them to practice as they learn how to use the tool, and it was aimed at providing a non-threatening environment since they are already familiar with the setting. The aim was to enable the health workers improve the skills and knowledge gap at the point-of-care, and when they feel the need to learn.

Purpose of coaching. The clinical coaching focused on professional workforce development. It involved identification of depression symptoms by health workers using

the PHQ-9 assessment tool. The clinical coaching here is defined as an ongoing, face-to-face process of influencing knowledge and attitudes, by which the coach and coachee collaborate to assist in achieving increased knowledge, improved attitudes in carrying out personal responsibilities, and a higher level of performance practices while integrating depression care using the PHQ-9 tool in HIV/AIDS care. It was a short-term intervention that involved sharing knowledge and skills that have been identified as necessary to improve care outcomes in HIV/AIDS care settings. In this study, the clinical coaching focused on the main area of professional workforce development which was consistent with the study objective of evaluating the change in knowledge, attitudes and practices of health workers.

Before the start of the clinical coaching intervention, study participants were introduced to learning tools comprising of a coaching guide, and the PHQ-9 assessment tool for early identification of depressive features in a patient with HIV disease. The clinical coaching was aimed to equip the health workers on the use of the PHQ-9 depression tool in identifying clients with HIV-related depression for proper and early referral or linkage to mental health care. The clinical coaching allowed an opportunity to evaluate the change in the level of knowledge, attitudes, and practices.

Depressive symptoms in HIV-positive clients manifest in unique ways like missing appointments, persistent low mood, forgetfulness, and loss of interest in pleasurable activities. This could lead to poor adherence to treatment, unsuppressed viral load, and worsening the comorbidity. This calls for vigilance by health care providers to

recognize it at an early stage, and offer appropriate interventions for effective functioning and a good quality of life.

Clinical coaching skills. The success of a coachee to learn depends on the various skills a coach can use. These skills are actions or ways coaching is delivered to the learners by the coach to support specific skills or address a knowledge gap, leading to an improvement in performance (Narayanasamy & Penney, 2014; Natasha, 2021). This was achieved through utilizing good communication skills, interpersonal relationships with clients, and other significant members in the care team. There are five skills of clinical coaching that were adapted from the Clinical Coach Framework that were used to support these coaching sessions. They included: coaching processes, facilitation skills, clinical assessment tools, adult learning strategies, and person-centeredness (Faithfull-Byrne et al., 2017).

Coaching processes. A coach needs to determine how the learners can get the information required to achieve the learning goals. These are the ways learning occurs as the coach empowers the coachee. It included activities such as establishing rapport by introduction of myself, and interacting with them on how we may proceed to build trust in the learners, and understanding the clinical environment by inquiring about how each unit operates, and the researcher observed the nature of activities in the facility. I later asked every participant to set their own goals and each worked towards achieving them in the specified period of time. The researcher would meet later with participants to share their experiences on how it went using the coaching script (Appendix B). I was able to utilize the principles of good communication during the learning sessions such as actively

listening, giving constructive feedback, and providing encouragement using verbal and non-verbal cues (Faithfull-Byrne et al., 2017; McCormack et al., 2009).

Facilitation skills. A coach should be competent in empowering the learners to get engaged and motivated to learn. As part of this study, I presented myself enthusiastically, included humor, and created a real-life scenario as I introduced myself and the coaching sessions to the participants. Each participant was warmly welcomed and I was sensitive to their emotions and feelings while interacting with them in the learning process. During the sessions, I would repeat myself in case the information is not clear to the participant, ask him or her for clarity, and I would request the participant to share their thoughts and feelings on content that seems unclear again. An organized interaction between myself and a learner using the script (Appendix B) was used to guide the process of communication during each coaching session. These comprises of activities such as setting personal goals, asking questions, giving constructive feedback and providing support as the learner takes on the role of meeting their learning needs. The researcher was able to provide an enabling environment to the learners by motivating them, encouraging them, and challenging them to think as they strived to accomplish their set goals (Faithfull-Byrne et al., 2017; McCormack et al., 2009).

The clinical assessment tools. Participants need to be given adequate information on the specific areas of coaching. These consisted of reference materials, and any other vital documents that would enable them succeed during the coaching session like comprehensive HIV care card. The assessment tools I used here were able to cover all the areas intended to be measured, and I presented document which comprises of depression

symptoms, HIV-related depression, risk factors, and prevention (Appendix C). The document also included the advantages of screening, client categories for depression screening, whom to screen, and how often to carry out the screening. A larger group of participants were taught on how often to screen for depression during the learning session. The PHQ-9 tool was also presented to the participants before the coaching process began (Appendix D).

The PHQ-9 is a multipurpose tool that has been recommended for use by the general health workers and the clients themselves. The trained healthcare personnel have the ability to identify, diagnose, and classify the severity of depression using the tool. It is also used to monitor the treatment outcome for clients already diagnosed, and being treated for depression. The PHQ-9 tool was provided to the study participants and the investigator would provide more guidance on its use through role plays and case scenarios as they administered it. This was to strengthen the participants' communication skills with a focus on suspected clients with depression, and how to formulate the questions. The researcher introduced the tool, and taught the staff how and when to apply it, and how to interpret the scores for appropriate management of depression in HIV-positive clients.

Adult learning strategy. Adults play a significant role in facilitating their own learning. Adult learning emphasizes the principle of learner centeredness, where the investigator will engage with each participant to identify their own learning needs and work towards it. A document was presented to the participants in large groups at the start to help facilitate learning prior to coaching sessions. Checking on the study participants'

prior knowledge, attitude and practices in depression identification was done. Understanding their prior feelings, emotions and experiences on depression identification, challenges, and how each one has tried to address it were explored by investigator during the learning session.

Effective communication strategies were used as facilitation skills involving goal setting, asking questions, and giving constructive feedback for each individual. I would perform onsite demonstrations of attitudes to the study participants through role-playing among the participants, and case studies that resemble the real situations on the PHQ-9 assessment tool. These would occur in the form of observing their emotions, feelings, myths and misconceptions, values and beliefs. Asking the participants to share their feelings and emotions during the scenario execution would build the basis for our learning. The document for prior coaching incorporated the attitudes and also addressed the current practice gaps. Practices of active listening was done at the initial stage of coaching in small groups. They were challenged by changes in the clinical environment and their learning were triggered by their need to know as supported by evidence. During the didactic presentation prior to real coaching activities, participants were encouraged to share their experiences and provide suggestions for addressing them with the help of challenging questions and constructive feedback from the coach as guided by the coaching script were implemented.

Person-centeredness. Individuals learn differently, and a coach needs to be skillful in identifying those differences. It works on the principle of individually unique learning. Every learner may need a different approach to understand the content. The

coach worked with each of the participant to explore their unique values, empower the person, and challenged their thinking in an attempt to address issues of depression recognition. Coaching in this study started with a group teaching about depression, how it relates to HIV/AIDS, and the use of the PHQ-9 assessment tool before a one-on-one or small group session. A number of clinical coaching skills were employed in this study to enrich the study participants. It was a collaborative effort between the researcher and each study participant at the point of care. In case the learner needed further assistance, it was provided by the coach when the need would arise.

The effect of clinical coaching. Coaching was aimed at change in the three areas of knowledge, attitudes and practices. The health workers' ability to identify depression symptoms in clients with HIV using the PHQ-9 tool in relation to their knowledge, attitude and practices was measured. This was the overall evaluation of a coaching intervention in the use of the PHQ-9 depression screening tool to identify depression symptoms as a measure of change in knowledge, attitudes, and practices over the study period. The general rationale for depression identification and understanding of consequences if not recognized was measured as well. Three areas of interest have been described here included change in the knowledge, attitudes, and current practices within the clinical settings.

Knowledge. The focused was on knowledge of depression and its recognition using the PHQ-9 assessment tool. This involved the change in knowledge and understanding of symptoms of depression as listed in the PHQ-9 tool, its application to HIV-positive clients to screen for symptoms, and interpretation in the process of

managing depressed clients by a health worker in lower healthcare settings, including consequences if not identified. The introduction of the PHQ-9 assessment tool provided specific skills on how to identify clients in need of further depression care.

Attitude. Attitudes towards major depression, and the use of the PHQ-9 assessment tool was the key area of focus here. Attitudes are the overall behaviors and feelings exhibited by health workers towards handling clients with symptoms of depression, using effective verbal and nonverbal communications skills in the process of screening for depression using the PHQ-9 tool, and the appropriate actions within the HIV/AIDS care settings. The clinical staff were encouraged to voluntarily ask the first two questions in the PHQ-9 tool to empower the clients with symptoms of depression to describe what they are going through, and check the responses for further action. In this study, the attitude was categorized as positive, moderately negative and strongly negative. Positive attitude portrays total belief in the tool, willingness to use the PHQ-9 assessment tool and accepting to link or support the clients with depressive symptoms. Moderately negative attitude portrays some willingness to embrace the concepts of using the PHQ-9 assessment tool or support the clients undergoing depressive symptoms, and strongly negative attitude indicate unbelieve or unwillingness to use the PHQ-9 tool to identify and support the clients with depressive features.

Practice. The practices related to depression identification using the PHQ-9 assessment tool was another effect for clinical coaching in the study. These are the routine activities performed by the healthcare personnel using the PHQ-9 tool while providing services to HIV/AIDS clients in regards to addressing depression as a

complication among these clients. The coaching sessions were used as a reminder for staff to consider asking specific depression related questions in their routine service provision. It was expected to promote personal and professional development which is a pre-requisite for clinical staff who provide direct client care services and a requirement by professional regulatory bodies in Uganda. Generally, the practice were graded as good, fair or poor practice. A good practice indicates their reported application of applying the concepts in one's daily practice roles consistently. However, fair practice indicate some application of concepts with some desired need for improvement, and poor practice on the other hand demonstrated their report of lesser period of applying the concepts in daily routine care.

The Conceptual Framework for Depression Screening using the PHQ-9 Depression Tool

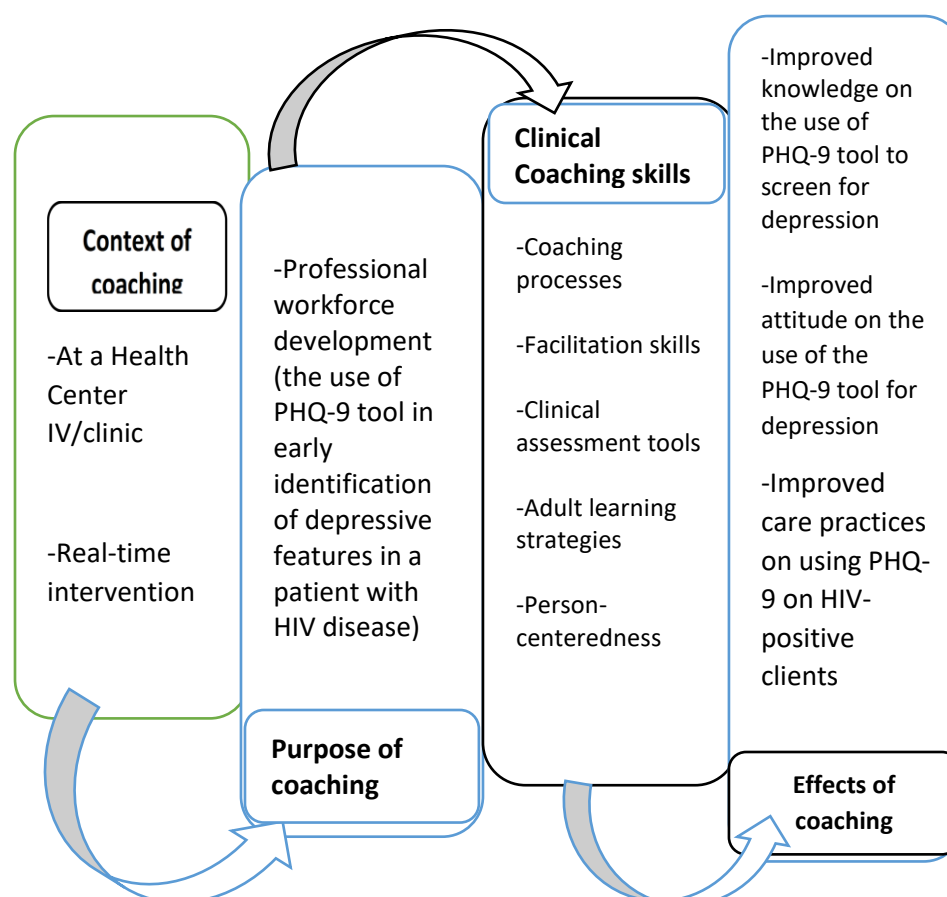


Figure 1: A model for Clinical Coach Framework: Adapted with permission from Faithful Byrne et al., 2017, p. 405

Operational Definitions of Additional Key Terms

The study variables of coaching, knowledge, attitude and practice have already been described within the operationalization of the conceptual model, and other additional terms will be explained to help the reader understand their use in this study. They will include: HIV-related depression, screening for depression, Patient Health Questionnaire-9 tool, and health workers.

HIV-related depression. These are persistent symptoms such as low mood and affect, appetite and sleep disturbances, loss of interest in activities of daily living, and poor adherence to ARVs treatment exhibited by HIV-positive clients.

Screening for depression. These are the activities undertaken by the health worker using an appropriate assessment tool to identify clients with symptoms of depression for better linkage to care or management.

Patient Health Questionnaire-9 (PHQ-9). It is a tool designed to help the health workers screen for depression in the general population or among clients with chronic illnesses, such as HIV/AIDS. It can be filled out by the client or completed by the health service provider, and it is interpreted using the score key. This is done by a trained health worker or psychiatric personnel for early identification and referral or management (Kroenke & Spitzer, 2001).

Health worker or healthcare worker. Is a person who provides care and comes in direct contact with clients seeking care as the first encounter in the health facility. They get health training at specific levels with slightly varying competencies. In an HCIV level, it may include medical doctors with bachelor degree in medicine and surgery, and mental health specialist with postsecondary education at the diploma level. Also included are paramedical health professional with postsecondary education, and nurses and midwives with diploma or certificates postsecondary education.

This chapter has introduced HIV-related depression at global, and regional levels with a focus on depression screening. Health workers' issues like knowledge, attitudes, and practices towards the use of available depression tools, and strategies that have been

tried to help address them were also introduced. Study objectives, significance, and a framework that were used to guide the study process, and how it was operationalized were described. The next chapter will explore the literature related to the effect of coaching on the health workers' knowledge, attitudes, and practices regarding the use of the PHQ-9 tool. Chapter Three will describe the research methodology guiding this study. Data collected will be presented in Chapter Four and then results will be discussed in Chapter Five.

Chapter Two: Review of Literature

This chapter will present the literature review related to the effect of clinical coaching on the health workers' knowledge, attitudes, and practices regarding identification of HIV-related depression, and the use of the PHQ-9 depression assessment tool. It will introduce the HIV-related depression literature with a focus on the epidemiology, HIV-related depression burden, factors contributing to HIV-related depression, and treatment outcomes in unrecognized depression in HIV-positive clients. It will also review the factors related to health workers' ability to identify depression, and will focus on their demographic characteristics, knowledge, attitudes, and practices. Effective depression assessment tools in practice such as PHQ-9, and its use for depression recognition in general practice, and in HIV care settings will be reviewed. Strategies to improve recognition of depression using educational interventions, and clinical coaching on the use of PHQ-9 tool will be discussed. Application of Clinical Coach Framework in guiding other relevant studies will be presented here as well.

HIV-related Depression often goes Unrecognized and Leads to Poor Outcomes

HIV/AIDS is a global concern that has affected many people, in many communities across continents. In 2021, it was estimated that 38.4 million people were living with HIV/AIDS worldwide, and 1.7 million new cases were reported in the same year (UNAIDS, 2020). In Africa, which contributes to 12% of the world population, it is estimated that, by the end of 2021, 25.6 million people (two thirds) were living with HIV, making it the continent with the highest HIV/AIDS burden (WHO, 2022).

According to a UNAIDS report in May 2020, an estimated 1.5 million people were living with HIV in Uganda by the end of 2019 (UNAIDS, 2020). Depression management has been identified as critical in achieving the 90-90-90 UNAIDS goal of eliminating HIV infection by the year 2030 through early identification using existing primary healthcare providers (Kulisewa et al., 2019). In HIV, depression presents with unsuppressed viral load, increased CD4+ counts, poor adherence, drug misuse, restlessness, and sleep or appetite changes (Bernard et al., 2020; Meng, Tang, Xiao, Välimäki, & Wang, 2021). Because in HIV care, depression has psychopathological manifestations, staff need to have a validated tool that enables them to identify depression early for immediate management (Meng et al., 2021).

Depression is referred to as a major depressive disorder in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V). It is described as a condition that manifests with persistent depressed mood, loss of interest in pleasurable activities, forgetfulness, appetite and weight changes, low level of concentration, psychomotor changes, and feeling of worthlessness, fatigue, sleep disturbances and suicidal thoughts among other depressive features that occur for at least two weeks (American Psychiatric Association, 2013). For the diagnosis to be made, at least three symptoms must have occurred for a period of at least two weeks. HIV-related depression is a global health problem that often goes unrecognized by health workers especially in Sub-Saharan Africa (Abas et al., 2014), and yet these health service providers are the immediate direct contact for the clients. In this study, HIV-related depression refers to persistent symptoms of depression such as low mood and affect, appetite and sleep

disturbances, loss of interest in activities of daily living, and poor adherence to ARVs treatment exhibited by HIV-positive clients.

In this section, relevant literature focusing on the epidemiological distribution of depression, HIV-related depression burden, and factors contributing to HIV-related depression will be reviewed. Also, HIV treatment outcomes in unrecognized depression among the HIV-positive clients will be addressed.

Epidemiological distribution of depression. The prevalence of depression has been on the rise globally. Worldwide, depression is estimated to affect about 280 million people across the world as reported in 2019, and this translates to 3.8% of the global population (Global Health Data Exchange, 2021). The incidence of depression has increased in the recent past from 1990 to 2017 at a rate of about 50% (Liu et al., 2017). This has been made worse by the presence of Covid-19, and it has recently increased by 53.2 million cases since the beginning of 2020, with major depression resulting in 49.4 million Disability-Adjusted Life Years (DALYs) in the same period (Santomauro, 2021).

By the end of the year 2020, major depressive disorder was the leading diagnosis among the common mental illnesses at a prevalence of 28%, probably due to the Covid-19 pandemic (Nochaiwong et al., 2021). However, the recent global prevalence of depression among children and adolescents during the Covid-19 pandemic also showed similar though slightly lower occurrence than in adults at 25.2% (Racine et al., 2021). In a systematic review and meta-analysis of global prevalence of depression in HIV/AIDS, showed an average of 31%, ranging from 22% in Europe to 44% in South Africa (Ayano, Demelash, Abraha, & Tsegay, 2021; Rezaei et al., 2019).

The prevalence of depression in the HIV setting is high both regionally and locally, and it is reported to be about two times higher than in the general population (Nanni, Caruso, Mitchell, Meggiolaro, & Grassi, 2015). In Iran, a hospital based study done in Mashhad found that the prevalence of depression was very high at 63.3% (Esmaeeli et al., 2014). However, another study done in Hong Kong on depression in primary care reported 10.7%, of which nearly half of clients remain undetected by primary health care workers (Chin et al., 2014).

In Sub-Saharan Africa, researchers have reported varying prevalence rates. A systematic meta-analysis of 118 studies found the burden of depression in Africa was 36.4% among the HIV positive population (Bigna et al., 2019). Another systematic review found the pooled prevalence of major depression in HIV to be low between 14-32% for those on ART, and between 9-31% for those not on treatment depending on the various assessment scales used (Bernard et al., 2017).

There is also a variation in the prevalence of depression across many countries depending on where the study was done and the study population. For example, in South Africa, the prevalence of depression was reported to be high at 46.2% (Mashaba et al., 2021) in comparison to the low incidence reported at only 11.4% (Bhana et al., 2015). In Nigeria, the prevalence of depression in one of the tertiary hospitals was found to be at 39.6% (Adeoti et al., 2018). However, in another study done in the same country found the prevalence was slightly lower among HIV-positive group at 24% (Adewole, Olagundoye, & Ajumobi, 2021).

In Ethiopia, the prevalence varies from one study to another. For example, a systematic review of the pooled incidence of depression in Ethiopia was found to be at 38.93% among HIV/AIDS clients (Weldesebet, Kebede, & Tusa, 2020). This was slightly different from what was reported by other researchers such as 41.7% (Abadiga, 2019), though this was higher than the prevalence reported in South Wollo, Ethiopia (Seid, Abdu, Mitiku, & Tamirat, 2020). In Malawi, an assessment done by the Ministry of Health among HIV positive population found the prevalence at 30% which was within the ranges with other neighboring countries (Mental Health-Malawi, 2018).

In Uganda, the prevalence of depression in HIV varies from region to region and depends on the population studied. For example, in Western Uganda, Namagga, Rukundo, Niyonzima, & Voss (2021) reported the prevalence of depression among HIV-positive clients at 27% in their study. Regarding adolescents in central Uganda, the prevalence was reported at 18.2% (Kyohangirwe, Okello, Namuli, Ndeezi, & Kinyanda, 2020). However, a study done by Kemigisha et al. (2019) noted that depressive symptoms prevalence among HIV-positive adolescents in western Uganda was high at 46% from the study undertaken.

Depression is still rampant even among the general community in Uganda. For example, Kaggwa et al. (2021), while carrying out a cross-sectional study on the prevalence of depression among the rural women involved in a monetary savings group in Uganda, found it to be high at 65.4%. This was much higher in all regions. The persistently high occurrence of depression has led Uganda to join the rest of the world in

an attempt to integrate depression management in HIV care using the available health workers (Ministry of Health Uganda, 2016; Wagner et al., 2014).

HIV-related depression burden. Depression is the most common and prevalent mental disorder in the general population and it is twice as high in HIV/AIDS clients (Bernard et al., 2017). Depression is the single largest contributor of disability globally as ranked by WHO (2015), which translates to 7.5% of all years lived with disability. In 2006, depression was projected to be among the three leading causes of mortality globally by 2030 (Mathers & Loncar, 2006). The presence of depression in HIV is associated with poor social support, HIV-related perceived stigma, and low CD4 cell count among the clients (Duko et al., 2018). It has a direct association with financial difficulties, stressful lives, loneliness, and poor adherence to treatment (Rodkjaer et al., 2010).

In HIV care, depressed clients are more likely to have increased HIV viral load and report substance abuse as compared to those who have been well managed with no episodes of depression (Schumacher et al, 2013). Depression has been noted to play a pivotal role in reducing clients' engagement with health services, contributing to their failure to return for scheduled appointments and poor adherence among clients receiving ART (Kulisewa et al., 2019).

Depression is recognized as the main contributor of suicide globally, with nearly 800,000 cases per year (WHO, 2017). For example, Kemigihsa et al. (2019) while studying depression symptoms and associated factors among HIV-positive adolescents in

Western Uganda found that, 7.7% of 336 participants thought of suicide in the past six months prior to the study.

Depressive symptoms may result in poor HIV treatment success, and it can lead to complications if left unrecognized by primary healthcare workers. Also, it can lead to transmission of the virus to others at-risk due to the high viral load (Nanni et al., 2015). In another study, depression when not screened early may impact negatively on ART adherence, disease progression, and increase in mortality level (Abas et al., 2014). According to Ickovics, Hamburger, and Moore (2001) HIV positive women who are depressed are twice as likely to die as compared to their uninfected counterparts under the care of health personnel (Chuah et al., 2017; Ickovics et al., 2001).

Factors contributing to HIV-related depression. Several factors have been considered to put an HIV-positive individual at high risk of developing depression. Some of these factors include being older than 50 years (Kaggwa et al., 2021), which could be related to their overwhelming roles in the age category. In other studies regarding factors associated with developing symptoms of depression, there is evidence that low level of education, being of female gender, stigma, low social support, poverty, and the presence of opportunistic infections or the HIV virus itself have been identified as the main risk factors (Abadiga, 2019; Bernard et al., 2017; Damtie et al., 2021). A study done in Kenya reported an increase in perceived HIV-related stigma, being separated or divorced or widowed, on second-line ART regimen, having any current chronic illness, and clinic inaccessibility were significantly associated with an increased risk for a positive depression screen (Nyongesa et al., 2019). Another study done in Uganda also reported

that travelling for long distances to seek care, low level of social support, low CD4-count, and poor health states has been noted to contribute to severe depressive symptoms among adolescents (Kemigisha et al., 2019).

Treatment outcomes in unrecognized HIV-related depression. Detection of depression among general clients has remained low by primary health care providers (Craven & Bland, 2013), with only about 0-10% reported in under developed countries (Fekadu et al., 2022). Depression is underdiagnosed among HIV/AIDS clients and has a direct association with financial difficulties, loneliness, stressful life, and poor adherence to treatment (Rodkjaer et al., 2010). Also, depression has an adverse effect on viral suppression and immunity leading to greater rates of HIV related mortality (Kulisewa et al., 2019).

In HIV care, depressed clients are more likely to have increased HIV viral loads and substance abuse reports as compared to those who have been well managed with no depressive episodes (Schumacher et al., 2013). Zuniga et al. (2016), while assessing the role of depression towards adherence to care for persons living with HIV in South Florida noted that, depressive symptoms have been associated with missed follow-up visits. HIV may diminish the physical and psychological resources of the caregivers as well, especially those living in contexts characterized by poverty and other psychosocial stressors, putting them also at greater risk for developing mental health disorders (Mohangi & Pretorius, 2017). A study done on elderly clients revealed that, a marked cognitive decline was observed as a long-term effect of depression on the individual

(Voros et al., 2020). At its worst, depression may lead to suicide, with nearly 800,000 reported cases per year (WHO, 2017).

A meta-analysis exploring the effect of depression in HIV by Gonzalez, Batchelder, Psaros, and Safren (2011), found that depression was consistently associated with non-adherence to HIV treatment, and this affected treatment outcomes. For example, Ekat et al. (2020) studied the association between depressive symptoms and adherence among adolescents living with HIV in the Democratic Republic of Congo and noted that up to 73% of non-adherent clients had depressive symptoms as compared to 33% in those reported to have good adherence in the same study.

In a cohort study of depression and all-cause mortality in HIV-infected and uninfected US veterans, So-Armah et al. (2019) found there was an association between depression with, a 24% increased mortality risk and uninfected counter parts at 4%. Mills et al. (2018) studied the cumulative burden of depression and all-cause mortality in women living with HIV and found that mortality was 2.9 deaths/100 women-years. In the same study, the authors reported that persistent depressive symptoms for each additional year would increase mortality risk by 72% (Mills et al., 2018). In another setting, Tyree et al. (2019) conducted a longitudinal study to understand the correlation of depression in HIV and suicidal ideation, they found that depression chronicity affected its remission with 38.4% of depressed clients living with HIV having suicidal ideation.

Ickovics' et al. (2001) longitudinal analysis of mortality, CD4 cell count decline, and depressive symptoms among HIV-seropositive women, found that those with chronic depressive features and a CD4 count of less than 200 cubic meters/L were 54% more

likely to die, those with intermittent depressive symptoms were at 48% risk while there was only 21% mortality associated death when the women had no depressive features. According to Abas et al. (2014), little attention is paid to depression in Sub-Saharan Africa, and when not screened early it may impact negatively ART adherence, disease progression, and increase in mortality.

HIV-related depression is a global public health problem and noted by most studies reviewed to be 2-4 times higher in the HIV population than the general population. It ranges from about 10% in some studies to over 70% in other settings with women more likely to be affected than men (Wang et al., 2018; Abrah, 2019; Ayano et al., 2021). Also, it has been reported that half of clients with depression in HIV care go undetected by primary healthcare providers. Factors such as female gender, low social support, old age, existing opportunistic infection and HIV itself have been noted as contributing factors. HIV-related depression, if not identified early, may lead to unsuppressed viral load, poor treatment adherence to ARVs, increased CD4+ counts, drug misuse, worsening of depression symptoms, and suicide.

Knowledge, Attitudes and Practice of Health Workers Affect their Ability to Recognize Depression

The knowledge, attitudes and practice of health workers directly influence their choice to use a depression screening tool, and recognize clients with symptoms of depression in HIV care settings. For health workers to use the available PHQ-9 tool, knowledge and attitude are key determinants in shaping their practice. This section will review the literature relevant to the issues such as demographic characteristics,

knowledge, attitudes, and practice on screening for HIV-related depression. Depression identification tools, and how the tools have affected the health workers ability to recognize depression will also be reviewed.

Demographic of health workers. Few studies have been done to understand the influence of demographic variables regarding knowledge, attitudes and practice of health workers. This has made it difficult to determine the associations. One study noted females to have less confidence in dealing with situations like depression identification (Aldahmashi, Almanea, Alsaad, Mohamud, & Anjum, 2019). In another systematic literature review, the attitude of blaming clients with depression for their symptoms was observed among older health workers, and those who have served for long (Rojas et al., 2018).

Knowledge of healthcare workers towards depression recognition in HIV care. Knowledge plays a great role in depression recognition by the individual health worker. Knowledge provides health workers with competencies required in performing the selected task such as depression screening. A study on knowledge and attitudes of primary health care workers about depression in Nigeria found that 56.2% of health workers had good knowledge to detect depression as compared to 86.2 % who agreed to screen for depression only if their capacity was enhanced, signifying the need for capacity building (Adewuya et al., 2017). In this same study, about 67.5% of participants reported a lack of competence to diagnose depression in the primary care setting (Adewuya et al., 2017). Another pre-post intervention study done in South Africa on primary healthcare providers noted that a total of 63.04% of the participants reported

improvement in their accuracy to diagnose depression (Sibeko et al., 2018). A pre-post study done on knowledge to identify depression by health workers also revealed that knowledge increased from a baseline of 37.5% at pre-training to 92.5% at 6 months post-training (Nollet et al., 2020). Another study on knowledge showed improved scores from 45% pre-training to 90.3% post-training in a pre-posttest study done in Nigeria (Ayano et al., 2017).

Coaching has demonstrated success in improving knowledge. For example, a coaching intervention to improve knowledge and skills of health workers on newborn care in the Solomon Islands revealed an improvement in knowledge gained from 44% at baseline to 89% post-coaching (Tosif et al., 2020).

On the other hand, health workers have identified various reasons as factors for the low level of knowledge. For example, a study done in South Africa noted that limited training health workers received for community-based mental health care, and deep concerns about levels of competency needed to diagnosed depression as possible factors (Searle et al., 2019).

Limited knowledge and training by health workers on the diagnosis and managing of depression has hindered depression care among HIV clients (Chan, Pradeep, Mayer, & Kumarasamy, 2017). In another study to assess if primary care provider training in screening, assessment, and treatment of adolescent depression improved knowledge, reported that knowledge improved from a baseline of 49% before the training to 68% post-training and the confidence of primary care providers ultimately increased (Fallucco, Seago, Cuffe, Kraemer, & Wysocki, 2015).

A study to assess the knowledge of primary health care workers in Tanzania, noted that two-thirds of study participants were able to differentiate between clients with clinical depressive disorders, and those with normal sadness other than depression as a first observation in depression assessment (Mbatia, Shah, & Jenkins, 2009). Loh, Joshi, Taku, Mendelsohn, and Katz (2018) in an assessment of the knowledge and attitudes towards depression screening noted that there was good knowledge about the etiology and treatment of depression by the participants. In another study, an improvement on the knowledge has been reported in a quasi-experimental study using a brief training session in nurses and general practitioners about depression care. It increased from 29.3% to 74.8% for nurses, and from 39.7% to 78.7% for general practitioners (Mroueh et al., 2021).

Elsewhere, knowledge has been reported to be low in published studies. For example, Mulango et al. (2018) noted that knowledge among primary health providers was very low in Cameroon, and only 1.8% of study participants knew of a standard tool used in the identification and classification of depression. In another study by Kumar and Shoba (2014) assessing the knowledge of nurses regarding depression management noted that 60% of the respondents had inadequate knowledge compared to only 10% with adequate knowledge which calls for orientation of staff to improve depression care in primary health care settings.

Attitudes of healthcare workers towards depression recognition in HIV care.

Attitudes play a significant role in motivating the staff towards depression screening and needs to be further evaluated in primary healthcare workers since they are the first professionals' clients encounter. Mbatia et al. (2009) while assessing attitudes noted that

primary care workers felt it was rewarding to work with depressed clients and they felt comfortable dealing with them. However, they found it tiresome working with these clients. In the same study, the researchers noted that two-thirds of the sample believed that becoming depressed is a way that people with poor stamina deal with life's difficulties. In another study done in Riyadh among non-psychiatric physicians noted the majority of physicians had neutral to slightly positive attitudes in helping clients with depression (Aldahmashi et al., 2019).

However, a study done in Nigeria of primary health care workers revealed a high level of stigmatizing attitudes by staff towards clients was present. This was done by distancing themselves from clients with depressive features as reported by 42% of the total participants (Adewuya et al., 2017). Another study by Ola et al. (2014) noted that about 56.4% of study participants reported that there is little to be offered to depressed clients who do not respond to what the primary health care worker does, and 87.5 % believed that working with depressed clients is time consuming and tedious. This could be associated with the societal beliefs where they work.

Attitudes of primary health workers influence the outcome of depression screening. Mulango et al. (2018) in their study in Cameroon noted that, only 26.5% of primary health care workers felt comfortable screening for depression, and 74.3% reported that depression screening is time-consuming, difficult, or tedious. Kumar and Shoba (2014) while studying the attitudes of primary health care nurses reported that, there were unfavorable attitudes towards depression care by 56% of the total participants, and only 15% had good or adequate attitudes towards depression care.

In another study from India assessing the attitudes of primary care providers, reported that, people with depression are hard to talk with and are unpredictable (Loh et al., 2018). According to Rojas et al. (2018), primary physicians have been found to have a poor attitude which created stigma towards people with mental illness and denied them access to care. This was more common among older experienced physicians. Another study has also reported that non-specialist health workers such as primary care physicians, and nurses can be involved in depression interventions at lower health facilities (Wagenaar et al., 2020). A quasi-experimental study done in Armenia showed a brief training intervention improved the attitude of health workers (Mroueh et al., 2021).

A study done in India among health workers also noted 53% of study respondents felt it was difficult to work with depressed people living with HIV (Chan, Pradeep, Mayer, & Kumarasamy, 2016). A study done in South Africa noted that training improved the attitude and confidence of health workers (Sibeko et al., 2018). For example, a training intervention to improve depression care in clinical settings reported 90.74% of participants had shown favorable attitudes at the post-test evaluation (Ayano et al., 2017).

Practice of healthcare workers towards depression recognition in HIV care.

Depression prevalence among HIV is still high and early detection may help increase access to treatment and improve treatment compliance (Zimasa et al., 2020). Identifying depression symptoms by primary health care workers is one of the many tasks that are performed at first contact in the health facilities in clinical practice. Nollett et al. (2020) examined the barriers among health workers in screening for depression among low vision clients and noted that limited time constraints and low levels of confidence result

in poor screening practices for depression among this population. In another study, Mroueh et al. (2021) demonstrated that practices of health workers can improve after a brief training intervention. A study done to implement systematic screening by health workers in Denmark after introduction of a national clinical guideline has also shown promising results. Identified cases of depression increased from 61% to 88% in rural hospitals and from 20% to 89% in urban health facilities (Egholm et al., 2022). Another study on practices for depression identification noted improvement from 15.87 to 18.75% in post-test evaluation (Ayano et al., 2017).

Practices are very important components in handling clients with depressive features. A study done by Adewuya and colleagues (2017) in Nigeria to evaluate health providers' level of knowledge, experience, competence, attitude, and perceived challenges to managing depression in primary care identified challenges of heavy work schedules at 68.5%, and lack of competence at 67.5% as the major practice issues. A study done in Cameroon of general health practitioners regarding practices towards depression screening noted that only 12% of the staff were able to screen for depression and 16.4% reporting that they never screen for depression (Mulango et al., 2018). In this same study, up to 43% reported that time constraints hindered depression care in primary settings. Searle et al. (2019) studied primary health workers in China and reported that most doctors were unaware or did not even use any guidelines for the assessment of depression clients in primary care.

The above section has reviewed studies related to demographic characteristics of study participants, knowledge related to depression screening, and attitudes of health

workers in regard to depression recognition. It also presented studies on the current practices of health workers. In summary, knowledge, attitudes and practices of health workers have been shown to have a direct effect on health care improvement. Studies also reported that health workers' ability to provide effective care to depressed clients are challenged with low levels of knowledge, attitude and practice. Limited time constraints, and lack of competency or confidence is even more pronounced with long serving and older staff has been implicated. However, training interventions, including coaching, play a critical role in overcoming the barriers to provide effective service to clients with depressions in the pre-post studies reviewed.

Strategies have Improve Health Workers' Abilities to Recognize Depression

Various tools and effective implementation strategies have been used to improve depression recognition by healthcare workers. Some of the tools have been standardized for use in identifying depression in HIV-positive clients, as well as other chronic disease conditions across many care settings (Kroenke & Spitzer, 2001; Shrestha, Shrestha, Shrestha, & Kamholz, 2020). In this section, literature related to tools and strategies in depression recognition will be reviewed. Relevant literature on common depression screening tools, including the Patient Health Questionnaire-9, (PHQ-9) and its application in both general, and HIV care will be reviewed as well. Strategies to improve the utilization of the PHQ-9 tool like the use of short trainings and clinical coaching interventions will be described here as well.

Available standardized depression screening tools. Several depression case identification tools have been identified for use in both clinical care practice, and research

settings for diagnosing clinical depression in specific populations and for those with chronic conditions including HIV-related illness. Among the several screening tools for depression that have been adopted in practice are Edinburgh Postnatal Depression Scale (targeting women who are pregnant or 6-8 weeks postpartum), Geriatric Depression Scale (targeting elderly clients of 65 years or more), and Hospital Anxiety and Depression Scales (targeting the general adult population) (Meader et al., 2011). Center for Epidemiologic Studies Depression (CES-D) scale is a 20-item self-rating scale that assesses symptoms experienced by the participant during the past week and has been found to be effective in identifying depression in clients with HIV (Radloff, 1997). Beck Depression Inventory has 21-self report measures for depression and is specific to different limited populations.

Some of the clinicians and researchers use a variety of tools to detect depression including the Zung Self Rating Depression Scale, the Hamilton Depression Rating Scale, the Geriatric Depression Scale (Shrestha et al., 2020), and Geriatric Depression scale (GDS-15 and GDS-30), General Health Questionnaire (GHQ-12 and GHQ-28), Montgomery–Asberg Depression Rating Scale (MADRS), and Hamilton Depression Rating Scale (HDRS). Another tool that support diagnosis of depression clinically is Useful Depression Outcome Scale. It employ two questions for depression screening (Meader et al., 2011); and Beck Depression Inventory comprising of 21-item (Namagga et al., 2021). Lastly, the PHQ-9 is a tool that has been used to screen, diagnose and monitor the severity of depression (Kronke et al., 2001). It can be administered by the health worker and interpreted for the appropriate action or the client answers the

questions and the health worker interprets the results by comparing it with the scoring guide.

Some of these tools have been validated for use in Africa and Ugandan settings as well. For example, a translated version of Luganda PHQ-9 was used by Nakku et al. (2019). The use of the PHQ-9 compared to other specific depression tools has shown the strong validity to recognize depression even in other population categories like perinatal, or chronic conditions (Wang, Kroenke, Stump, & Monahan, 2021). When selecting a tool, the following are important considerations: length of the tool, time required to administer it, the accuracy of the tool, simplicity of the tool, detection of the key symptoms of depression according to DSM-5, and recommendation for its' use by WHO and/or a national health system. These stipulations are met by only the PHQ-9 tool. The PHQ-9 not only helps to screen or diagnose depression, but also monitors the level of severity and the client's response to interventions.

Application of the PHQ-9 assessment tool in general health care.

Mental health screening among HIV clients should be routinely done to identify depression and stress that could reduce the adherence to HIV care (Rodkjaer et al., 2010). The Patient Health Questionnaire-9, (PHQ-9) is a tool developed by Kroenke and Spitzer (2001) to screen for and classify the severity of depression and to monitor the progress of depression in a patient under treatment. The PHQ-9 was originally extracted from the DSM-IV manual (American Psychiatric Association, 2013), as a summary of depression symptoms to enable any health worker to identify, diagnose, classify the severity and

monitor the complications or treatment outcomes in a clinical setting (Korenke et al., 2001).

The PHQ-9 has been recommended as a screening tool for depression in the general population. It was adopted and is being used in Korea (Shin, Ko, An, Yoon, & Han, 2020), and has been validated to be used in other countries such as Argentina (Urtasun et al., 2019), and Iran in clients with multiple sclerosis (Patrick & Connick, 2018). The primary health care setting is the ideal place for depression screening (Indu et al., 2018). Screening for depression usually starts at the first health service care provider contact with the patient, mostly by non-psychiatric personnel. This may be the ideal setting for identifying those with depressive features (Park & Zarate, 2019).

The PHQ-9 is a tool that may be administered at every patient visit both to screen for depression and to quantitatively monitor those already on follow-up care for depression (Zimmerman, 2019). Because of its good psychometric properties, the PHQ-9 is used to screen for depression in many chronic conditions like infertility in Iran (Maroufizadeh et al., 2019). So-Armah et al. (2019) have also used PHQ-9 to assess for depression in the US among non-HIV positive veterans with promising results. Some African countries are selectively using it for specific chronic illnesses. For example, in Malawi it has been used to screen for depression among type-2 diabetes mellitus clients (Udedi, Muula, Stewart, & Pence, 2019). Kemp et al. (2020) has used the PHQ-9 to screen for depression among clients with chronic illnesses in KwaZulu-Natal in South Africa.

Masaba et al. (2021) demonstrated the use of PHQ-9 to screen for clients with chronic conditions such as HIV/AIDS in a health facility in South Africa and found it to be cost effective. The use of this tool has enabled identification of up to 46.2% of depressive cases in their study. The PHQ-9 was used in Kenya to screen for depression among postpartum women using the Kiswahili translated version (Velloza et al., 2020). The validated PHQ-9 has been used in other settings like in screening for depression among children with childhood-onset systemic lupus erythematosus (c-SLE), (Mulvihill et al., 2021).

This tool has also been used to screen for depression among elderly clients with chronic physical illnesses (Park et al., 2017), clients with diabetes, hypertension, or hyperlipidemia (Jensen, Dumas, & Edlund, 2016). In another study, the PHQ-9 has been used to investigate depression among clients with chronic rare diseases like neoplasm, yersiniosis, and Marfan syndrome among others (Uhlenbusch et al., 2019). Santos et al. (2017) has used the PHQ-9 to assess depression in a community of who live in Pelotas, Brazil and reported good psychometric properties in recognizing depression among adolescent adults and the elderly.

The PHQ-9 tool has demonstrated a high level of accuracy at 88.2% and has good validity and reliability in identifying depression as noted by Indu et al. (2018). The same study also recommended that the PHQ-9 may be used by health workers to screen diverse populations including women whose depression remain unidentified. Nakku et al. (2016) examined the validity and diagnostic accuracy of the Luganda translated version of the

PHQ-9 in detecting major depression in rural Uganda and found the specificity of this tool at a 95% confidence level.

The PHQ-9 has been used in several parts of Uganda to screen for depression in various studies. For example, Kagwa et al. (2021) used it to screen for depression among women involved in the money saving groups in rural Uganda. Nakku et al. (2019) also applied the translated Luganda version while studying the prevalence of depression among women in the village saving groups. Screening using this tool may begin by asking the first two questions in the PHQ-9 where a positive answer to either will compel the screener to complete the tool. It can target the general adult and adolescent population of 12 years and above.

Application of the PHQ-9 in HIV care settings. The PHQ-9 has been used to identify depression in HIV care settings due to its ability to discriminate between the depressed and the non-depressed clients. Damtie et al. (2021) successfully used the PHQ-9 tool in a cross-sectional study to screen for depression among HIV positive clients in Dissie in North Ethiopia. In another study, the PHQ-9 assessment tool was used by Stockton et al. (2020) while integrating depression screening into HIV care settings in Malawi. A study done in HIV care setting in Tanzania to screen for depression using the three tools of PHQ-2, PHQ-9 and WHO-5 revealed that PHQ-9 has performed very well in depression recognition compared to the other two (Nolan et al., 2018).

Depression screening to identify those at risk has been very low in Uganda (Kigozi, Ssebunnya, Kizza, Cooper, & Ndyabangi, 2010), specifically in HIV care settings where failure to diagnose may interfere with treatment outcomes (Schumacher et

al., 2013). This situation is worsened due to the absence of validated screening tools that can provide cost-effective ways of recognizing depression early (Bhana, Rathod, Selohilwe, Kathree, & Petersen, 2015).

In Uganda, there is an ongoing attempt to integrate depression screening in HIV programs using an approach called “HIV plus depression (HIV+D)” strategy (Ssebunnya et al., 2021). The Patient Health Questionnaire-9 has been identified as an effective tool for screening depression in many settings, including HIV care settings. The PHQ-9 tool can be given at the triage point for clients within their first three months in HIV care and then six monthly thereafter for those already in chronic care to avoid screeners fatigue (Edwards et al., 2014).

Depression is very common in a primary setting among HIV clients and yet it is under-detected. Therefore, targeted screening using a standardized tool may help to identify depression early (Hirschtritt & Kroenke, 2017). The PHQ-9 tool may be used to measure depression levels among HIV-positive individuals (Crane et al., 2010).

According to the Uganda Ministry of Health, depression is the major mental disorder among non-communicable diseases and in HIV/AIDS, and screening should be done with the PHQ-9 tool by staff that has been trained to use the tool (Ministry of Health, 2016).

When studying the prevalence of depression in a population-based survey in rural Uganda, one research group used the PHQ-9 to study the prevalence and impact of depression (Ssebunnya et al., 2019).

Educational strategies to improve depression recognition. Many strategies have been tried to engage practicing health workers to learn and update their knowledge,

practices and attitudes within the clinical environment. This includes attempts such as formal short training sessions which have been one of the traditional ways for building the capacity of health workers (Page, Pool, Crick, & Leahy, 2020). Use of adult mental health practice support program to address comfort and skills levels in depression care by physicians. This was implemented in British Columbia to help promote mental health and depression management in general care using PHQ-9 tool (Lauria-Horner et al., 2018). Formal teaching using a checklist in the clinical environment has been reported to help improve knowledge and skills development in Sudan (Bingawi & Alghamdi, 2020).

Other strategies that have been adopted are peer learning where two or more people at the same level support each other to improve their knowledge and skills (Williamson et al., 2020). Standard education training for in-service of clinical staff has also been used to improve the knowledge of health workers (Kallio, Voutilainen, Viinamäki, & Kangasniemi, 2020). Hill, Woodward and Arthur (2020) noted that collaborative learning supports the ability of health workers and trainees to improve their knowledge, attitudes and practices regarding health service provision. Peer coaching using a case scenario approach has been noted to support learning of undergraduate students and enable them master critical thinking skills (Williamson et al., 2020; Himes & Ravert, 2012).

Clinical guidelines were used in another study to train the health workers at clinical sites as part of integrating mental health into primary health care settings, however, its success depended on supportive supervision (Wakida et al., 2019). In Armenia, a brief training intervention to improve knowledge, attitudes and practices of

nurses' and general practitioners' depression care resulted in using face-to-face training interactions the overall, mean scores increasing from 29.3% to 74.8% for the nurses, with the general practitioners' scores improving from 39.7% to 78.7% (Mroueh et al., 2021).

Clinical coaching on the use of the PHQ-9 tool. The availability of standardized screening tools and routine assessments for depression is the first stage of depression care in primary settings. A study done on primary health workers from Kenya demonstrated the impact of training and the availability of screening tools purposely designed for use for depression in the primary care setting. This may increase primary health workers' comfort level in providing such care (Alexander, Arnkoff, Glass & Kaburu, 2013). Depression screening coupled with routine mental health information in the HIV/AIDS care population is vital in achieving mental health integration in this population category (Passchier et al., 2018).

Coaching has emerged as an effective way to engage the staff and improve individual or organization capacity to provide safe and efficient clinical care in order to promote professional development (Narayanasamy & Penney, 2014). Coaching is defined as a performance driven relationship between the coach and the learner with agreed, specific, measurable goals (Natasha, 2021). Many forms of coaching strategies have been put in place to guide teaching in clinical areas for both clients and health practitioners, including health trainees. This includes strategies such as collaborative coaching on practice, and peer support (Underwood et al., 2019; Williamson et al., 2020). Another strategy is peer-coaching which involves interactions between people at the same level of

education with varying skills, or knowledge in a non-evaluative learning environment as a way to inspire one another to learn (Schwellnus & Carnahan, 2014).

Coaching has been used for various purposes such as improved communication which is critical for screening and safety of clients (Kleiner et al., 2014); promoting an increased confidence level for staff to engage in safe patient care (Jones, 2015), and performance improvement (Natasha, 2021). It is also noted that coaching has been used an innovative strategy in nursing education to support faculty to improve their psychomotor skills competencies (Kelton, 2014; Sezer & Sahin, 2021). According to Faithfull-Byrne et al. (2017), clinical coaching has been suggested as the current innovative way of supporting nurses and midwives and may be applicable in helping health workers learn in clinical settings with the help of clinical assessment tools. The clinical coaching strategy not only promotes improved care, but also enhanced reasoning skills through utilizing synthesis and analysis questioning by the coach (Jessee & Tanner, 2016).

In Uganda, I have observed that most health facilities do not have a protocol to screen for mental health problems among clients with chronic diseases like HIV/AIDS. This has been made worse by the absence of a standardized screening tool coupled with limited knowledge by health service providers. Nollett et al. (2020) while assessing the barriers to integrating routine depression screening into community low vision rehabilitation services in primary care noted that lack of training and standardized assessment tool hindered depression identification. However, it was noted in the same study that, training increased depression identification from 37.5% to 92.5 % six months

post-training. A recent study has provided confidence in clinical coaching as an innovative way of enhancing these gaps among health care providers. Cosimi et al. (2015) integrated clinical and quality improvement coaching and found clinical coaching helps to improve knowledge and skills gaps while building capacity for systems and cultural change among the participants studied.

Research also supported that coaching of health care providers greatly improves the quality of care and health services generally (Manzi, et al., 2017), and improves the competency of an individual and ultimately the performance of the entire organization as a result of individual contributions (Utrilla, 2015). In another study, coaching has shown to improve self-confidence and reduce stress levels among an organization's staff, however, the effect may be less significant if environmental stressors are not controlled (Gyllensten & Palmer, 2005b; Jones, 2015; Rassbach et al., 2018).

When clinical coaching is effectively done, it increases learners' clinical skills, competencies and inculcates the spirit of lifelong learning. It can improve problem-solving skills as one could analyze, and reflect on the current situation in the clinical environment (Bannister, Wu, & Keegan, 2018). The coaching methodology may be done in phases or steps that begins with an engagement process between the coach and the coachee, followed by a facilitated activity and ending with an evaluation process (HEALTHQUAL, nd). Coaching has been identified to be the most cost-effective way of improving the engagement of employers with their consumers, and this can facilitate positive cultural norms (Earl, 2017).

Various tools have been in existence to help screen for depression in many client populations across the regions of the world, both in general practice and in specific healthcare settings including HIV settings. Many of the tools are long and demand deeper understanding to use them which has threatened their use by primary health workers. The PHQ-9 has been identified as a simple tool that can be completed by either the patient or the health worker, and interpreted by a trained health personal for appropriate action. Various educational strategies have been in place to address knowledge, attitudes and practice gaps. However, the Clinical Coach Framework has emerged as an effective way to support learning for health service providers at the point of care to improve practice, including depression care (Faithfull-Byrne et al., 2017). This framework may serve as a practical guide to support coaching implementation. Currently, the Clinical Coach Framework has not been implemented in Uganda as there is no data in support of it. The Clinical Coach Framework will be used to help implement the research objectives in a lower health facility setting in Northern Uganda.

Application of the Theoretical Framework

There is little literature on the use of Clinical Coach Framework to improve depression recognition in Uganda or elsewhere using the conceptual model (Faithfull-Byrne et al., 2017). A study has used the Faithfull-Byrne et al. (2017) conceptual idea to promote clinical coaching in the clinical environment while ensuring patient safety (Thompson et al., 2021). Duff, Haddad, and Gooch (2020) also used the concept of a coaching model in the clinical education experience of nurses following a post-education program. Hill, Woodward, and Arthur (2020) have also acknowledged the Clinical Coach

Framework model in their study as a recent philosophy to support collaborative clinical learning in a practice setting, and-trying to evaluate its effectiveness. To date, no study has been found to have directly applied Clinical Coach Framework in guiding clinical coaching anywhere. This study will pilot clinical coaching on the use of the PHQ-9 tool in Uganda as guided by this model, and will evaluate its applicability. Therefore, this framework may be used to provide guidance to health educators or practitioners involved in learning improvement in clinical settings.

The above chapter has presented literature reviewed, and discussed it in the context of HIV-related depression burden at local and global levels, issues related to health workers ability to recognize it, application of the PHQ-9 tool in assessing depression among chronic conditions, and reviewed the existing available options for PHQ-9 integration using a new approach of clinical coaching. Lastly, it has also described the related application of clinical coach framework. The next chapter will be describing and discussing the methodology used in guiding this study.

Chapter Three: Methodology

This chapter will present the research methodological processes for the study. It will include the study design, setting, study population, and sampling technique. It will also describe the data collection tool, data collection procedure, and data analysis. Other areas such as rights of study participants, and ethical considerations are described in this chapter as well.

Study Design

This was a quasi-experimental, pre-posttest quantitative study on one group of participants. The study design provides an opportunity to collect data from many participants within a short period, perform an intervention and then collect the second set of data to evaluate the effect of change within the same group of study participants (Polit & Beck, 2012).

Study Setting

This was a health facility-based study, and it was carried out at Atiak health center IV (HCIV) in Amuru district, Northern Uganda. This health center is the largest health facility in the district which provides both curative and promotional health activities, and it is a public health facility. Health center IV level in Uganda is mandated to handle most curative and preventive illnesses, laboratory services, and perform surgical emergencies within its catchment location with an estimated population of approximately 100,000 (Ministry of Health-Service Standards Manual, 2021). By the Ministry of Health structure, it is designed to have forty-eight staff members to run the entire facility (Health Management Information System, 2014), and clients with chronic

illnesses such as HIV/AIDS, and mental illness receive health care services from the facility within the special units. However, of the forty-eight staff in the health facility level, about forty (40) of them are involved in the provision of clinical services, and about thirty-five (35) of them can be found within a given week at the facility. The health facility has a 24-bed capacity, and it receives about 2000 patients per month as out-patients, about 200 admissions in the Inpatient Department, and on average, 32 deliveries are reported per month. It has a HIV clinic with over 700 active HIV-positive clients. These clients also seek care from other service points like the general outpatient, maternity, and inpatient wards for illnesses other than HIV itself.

Study Population

The study comprised of all the health workers including nurses, clinical officers, medical officers, and other paramedical health practitioners working in contact with HIV/AIDS clients in HCIVs in Uganda. There are limited mental health care specialists to support mental health services like depression screening in these settings, and yet the personnel at the health facility perform several tasks with many HIV-positive clients that seek care for other chronic illnesses such as depression. The accessible population in this study were drawn from a health center IV in a district of Northern Uganda that directly provides clinical care to HIV-positive clients. All the staff that provide clinical services in the selected health facility were recruited for this study as long as informed consent were given.

Sampling

Study participants need to be recruited using appropriate guiding processes. It involves selecting a portion of participants from the available number present (Polit & Beck, 2012). It includes: the use of a sample frame, sample size determination, sampling technique, inclusion and exclusion criteria. These are described below.

Sampling frame. All the staff who provide care in direct contact with HIV-positive clients in all clinical settings in the selected health facility were included. They were all within the employable age of Uganda public service, which translates to age ranges of 18-59 years. Each study participant was working in at least one of the units within the selected facility, and all were directly providing clinical care to clients by the time of the study. It took approximately six days to complete data collection during the pre-test period, coaching interventions took approximately four weeks, with a similar duration of about a week during the post-test data capture as in pre-test period.

Sample size determination. In this study, the sample size was determined using sample size estimation formula for research activities (Krejcie & Morgan, 1970). A total number of 34 study participants were drawn from a study population that were expected to be present at the study health facility within a week. All the staff in the facility who provided informed consent for the study were included.

Mathematically, it is expressed as, $s = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$, where.

X^2 - the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N- Number of accessible participants or population size

P- Population proportion (assumed to be 0.5 since it would provide the maximum sample size)

d- Degree of accuracy expressed as a proportion of 0.05

s- Required sample or participants' size

$N=35$, $P=0.5$, $d=0.05$, $X^2 = 3.841$ and $s=??$

Substituting figures in the formula:

$$s = \frac{X^2NP(1 - P)}{d^2(N - 1)} + X^2P(1 - P)$$

$s=3.841 * 35 * 0.5(1-0.5)/0.05^2 (35-1) + 3.841 * 0.5(1-0.5)$

$s=33.60875/1.04525$. Therefore, $s=32.15$ or 32 participants would be the minimum

number required for this study. However, 34 participants were successfully recruited and completed the study. This number of study participants was adequate for the quantitative data analysis for the study. No one was denied opportunity to participate as long as he or she was able to provide informed consent (Appendix E).

Sampling technique. In this technique, consecutive sampling was used. A consecutive sampling technique is defined as a sampling procedure that involves all the eligible prospective participants from the accessible population within a given time frame or sample size (Polit & Beck, 2012). It is a good sampling procedure for the study since it gives opportunity to study the members that maybe working at different shifts typical of healthcare settings in Uganda. The investigator was present at the facility every day during the entire study process from 07:00 a.m. to 06:00 p.m.

Recruitment process. Potential participants were invited into small groups of 3-5 inside the health center each day by the researcher. I would then give them a brief

introduction to myself, and the study. Those who met the criteria were given additional information concerning their consent. Each participant who volunteered for the study was given the consent form, and before signing, was provided with an opportunity to ask questions that were then addressed by the investigator. All the participants who met the requirements for the study were asked to voluntarily consent.

Inclusion criteria. All health workers who were present in the health facility (HCIV) at the time of study and who were willing to provide consent were considered and all participated.

Exclusion criteria. There was no exclusion for this study among the study participants who were approached by the researcher.

Description of the Data Collection Tool

A structured questionnaire (Appendix F) was used to gather the information from health workers in a health center IV level in a district of Northern Uganda. It was a self-designed questionnaire generated from PHQ-9 assessment tool and other literature review relevant to the study components (American Psychiatric Association, 2013; Kroenke et al., 2001; Mulango et al., 2018). The questionnaire had four sub-sections with a total of 60 questions, and these included: demographic characteristics, knowledge, attitude and practices of study participants (Appendix F).

Section A or demographic variables. This section identified the characteristics of study participants, and it included five (5) questions for each of the participant such as age, gender, profession, the highest level of qualification, and years of service. It was

then analyzed to provide the description of the participants' characteristics in the form of frequencies and percentages of subgroups in the study.

Section B or knowledge section. There were 32 questions in total for this section. This section's questions focused on the causes, symptoms, risk factors for depression, and benefits of screening for depression in HIV- positive clients. In addition, it also covered the participant's knowledge of the PHQ-9 depression tool and included their motivation to use it, when to use it, and how to interpret it. For this knowledge component, the participants were asked to respond whether a statement is true or false (Adegbiyi, Aremu, Aluko, & Adewoye, 2020). Each right answer was given 1-point and a wrong answer carried 0-points.

To get the overall score in this section, total score was added for each participant and then later divided by the total number of questions in the section (32). It was then multiplied by one hundred to convert it to percent. Overall, knowledge were categorized as very good, good or poor (Gezie et al., 2019). Very good knowledge was given a score category of 80-100% of the total score, good knowledge was categorized as 60-79 and a score of below 60% was categorized as poor knowledge in this section (Alzahrani, Alghamdi, Alghamdi, & Alotaibi, 2021; Ashebir et al., 2022; Olum, Chekwech, Wekha, Nassozi, & Bongomin, 2020). This is because a high level of quality service is expected from the health practitioners (Mashamba-Thompson, Sartorius, Stevens, & Drain, 2016).

Section C or the attitude section. This section had ten (10) questions related to use of the PHQ-9 tool, screening participants' attitudes when interacting with clients and learning information related to depression in HIV. The attitudes of participants were

described on the 4-point Likert scale as strongly disagree, disagree, agree, and strongly agree where respondents were able to check their level of either disagreement or agreement with each statement (Mulango et al., 2018). For questions or statements which are negatively formulated, the score were reversed. This was to make the research questions robust and to avoid guessing bias by the participants who may prefer to choose options of strongly agree or disagree only (Polit & Beck, 2012).

The mean for each statement on the 4-point Likert scale were calculated for all the study participants. This was interpreted depending on where the mean lies within the Likert scale, and on how strong each statement was agreed or disagreed. General score interpretation for this section was viewed as a positive attitude when it is greater than or equal (≥ 3.5 - 4), a moderately negative attitude as (≥ 3.0 - < 3.5), and a strongly negative attitude if it was below a score of 3.0 (Alzahrani et al., 2021; Goni et al., 2019).

Section D or the practices section. The practice section comprised of thirteen (13) questions, and were rated on a Likert scale based on the three items of never, occasionally, and always (Goni et al., 2019). It was scored on a scale of 0-for never, 1-for occasionally, and 2-for always for each statement or question. To understand any relationships or associations, the section questions were independently examined and then compared with the study objectives.

Overall, participants' practice was graded as good if the score is greater than or equal to 1.6- 2, moderate for score of equal to or greater than one, but less than 1.6 and a score of below 1 was graded as poor practice (Goni et al., 2019). Also, the mean and frequency score of each statement against all the participants was calculated. The overall

mean was interpreted as never, occasional or always depending on where it lied within the Likert scale of 0-2.

Reliability. The reliability of the tool was done by administering it to other health workers who completed it for the consistency and accuracy of the data it collects. The questionnaire was then pre-tested on six selected health workers from a separate HCIV in another district. They evaluated the questions for clarity and understanding with the approximation of the time it takes to complete. All the six participants reported that the questions were clear and appropriate to their cultural and learning levels. Each of them took a duration of between 12-15 minutes to complete all the questions in the tool. The results were interpreted as per the questionnaires, and not how the investigator or statistician judges the situation. The inter-rater coefficient was calculated as Cronbach's alpha on each of the knowledge, attitudes and practices sections. Overall, it yielded a Cronbach's alpha level of 0.9. This was considered reliable for the questions in the tool (Polit & Beck, 2012).

Validity. The validity of the tool was done through expert reviews for the coverage of objectives and all the focused areas in the study. Four psychiatric experts were requested to review the tool for adequacy of contents and constructs, and three gave their constructive feedback and rated the questionnaires. Each of the three who responded rated it independently and all were satisfactory with suggested revision of some wordings from one of them. It was revised, recirculated and acknowledged for use by the same experts. The statistical test was performed by the statistician to evaluate the tool for content validity index calculation before the final approval by the supervisors.

Data Collection Process

The entire process of data collection and intervention took approximately four weeks. These were divided as follows: the first week was for pre-test data collection, the coaching intervention took two weeks and it occurred in the second and third weeks, and lastly, post-test data was captured during the fourth week. All the questionnaires were administered when the consenting process were complete. The investigator administered the study questionnaire forms in a quiet private convenient places within the facility for the participants to complete. This was aimed to minimize respondent bias and maintain the confidentiality of each participant. A study identity number (ID) were given to each participant, and each participant would write their personal identifier like their name together with the study ID number and place it in an envelope. The participants put the number in the envelope and sealed it by themselves, wrote their names on the outside and handed it over to the investigator for safe custody. This was generated because some of them might forget their study ID number before the second data collection. Each participant was handed back the envelope with their name on it to obtain the number used during the pre-test so that they could fill in the corresponding ID number. Later, some participants went with the envelope or destroyed it after handing over the filled posttest questionnaire to the investigator.

The post-test questionnaires were then added to the pre-test and kept confidential for the data analysis process. These were transformed into the excel data set in the coach's computer fully protected by a password where no other person can access it.

The name of the participant or health facility were not identified on the study questionnaires or research report after the data collection. The investigator kept the questionnaires in a locked cabinet inside a private room. The investigator and the statistician were the only persons who had full access to the raw data during the final data analysis. The data were entered in to the SPSS software in a secured place with good privacy and where no unauthorized person, not directly involved in the data management for this study could access them. The data forms are still being kept until the publication of the study in a recognized, peer-reviewed journal, and then they will be destroyed by the investigator.

Intervention for Clinical Coaching

This took place in two phases, and the entire process lasted for about four weeks. The group presentation started by introducing the participants to vital documents and information that they were required to be use during the clinical coaching by the investigator. Then, the clinical coaching followed when the participants were familiar with the information required in the entire process.

The coaching interventions was facilitated by the investigator, a well-trained psychiatric nurse expert with thirteen years of clinical experience in mental health & HIV care practice. In addition, have an accumulated four years of undergraduate teaching experience in mental health nursing, both in clinical and classroom settings and a final year masters of nursing students with clinical specialization in mental health.

Group presentation phase. After the pre-test assessment, the investigator introduced the study participants to the concepts of depression using a prepared document (Appendix C) and the PHQ-9 tool (Appendix D). The group presentation occurred any

time between 8:00 a.m.-6:00 p.m. as agreed by the facility staff. During this stage, the participants were invited in a group of 10-15 participants for the presentation session within the facility and four groups attended. This took an average of one hour as indicated in the lesson plan (Appendix G) to orient them to the materials (Appendix C) that they used during the coaching sessions. A demonstration on the use of the PHQ-9 with selected case scenarios (Appendix H) was presented. Some participants were asked to voluntarily perform a return demonstration and feedback were given by the coach and other participants in the session. Role play on how to begin the screening process was performed to complement the session (Oermann & Gaberson, 2017). Upon completion of this stage, each participant generated their individual learning goals, shared them with the investigator (coach), and then each went to their various units to implement them the following day (Appendix B).

Clinical coaching phase. This phase took about four weeks and was designed to ensure the coach interacts with all the participants, and to avoid compromising service delivery at the facility. Clinical coaching happened at the health care delivery points such as examination rooms, wards or specific places where the staff provide the services. During this phase, the coach would be available to the participants and would check each unit for any inquiry by the participants on a daily basis or the participant could invite the coach when the situation is occurring. The coach would ask the individual participant or a small group of 3-4 participants on how they were progressing, gave encouraging words and provided technical support to those who were in need. Where a participant would need to learn specific skills, the coach would demonstrate it and asked the same

participant to do a return demonstration and feedback were later shared in a reflective manner to build confidence in the other participants. There were ongoing learning goals set for each participant during the period. At each unit visit, the coach would ask constructive questions, give feedback or demonstrate specific skills that the participants found challenging. The interventions occurred over four weeks where everyone was given approximately 5 hours of coaching divided between at least 5 different sessions or interactions (Solms et al., 2020), and not more than 1 hour per day to ensure adequate staffing for the facilities' workload schedule. Meeting with the participants by coach occurred between 8:00 a.m. to 6:00 p.m. depending on what the specific unit or individual would find favorable.

Data Management and Analysis

The analysis was done in SPSS version 22, and STATA 17.0. Before entry into the data set, questionnaires were checked for completeness and two participants were dropped for missing posttest data. It was then entered into an Excel codebook, double-checked for any missing data or double entries, and then errors identified were corrected. Categorical variables of study participants were summarized in tabular format as frequencies and percentages for demographics, knowledge, attitudes, and practices of health workers. The detailed statistical analysis was performed to understand the participants' distribution on the mentioned sections. Continuous/numerical variables were summarized using mean and Standard deviation (SD) for those that were assumed to be normally distributed.

For objective 1 the effect was Knowledge of health workers on the use of the PHQ-9 tool in assessment of depression. This was measured as a summative score arising from the 32 questions in the section for which a correct response was weighted “1” and a wrong answer was weighted “0” so that the highest score represented high knowledge and the low score represented less knowledge. In this section, the knowledge score was categorized against the pre-set levels of very good ($\geq 80\%$), good (60-79%) or poor ($< 60\%$). The normality of the difference between the knowledge scores after and before the intervention was assessed using the overall mean and percentages of the participants and the normal distribution was assumed for this data. The total scores of mean knowledge before and after the intervention were compared using the paired t-test and significance test for association in the observed change. Each statement was also independently analyzed against the overall participants to understand their performance before and after the intervention.

For objective 2, the effect was Attitude of health workers towards the use of the PHQ-9 tool in assessment of depression. This was measured using a set of ten 4-level Likert item questions with each level weighted with a score in ascending order from 1 to 4 depending on how the statement was formulated. The attitude score was obtained by summing the weights where the highest score represented the best attitude while the lowest score represented the worst attitude. The attitude was categorized on a pre-set levels as positive attitude (≥ 3.5 - 4), moderately negative (≥ 3.0 - < 3.5) and negative attitude (< 3.0). The normality of the difference between the attitude scores after and before the intervention was assessed using the mean and standard deviation. The normal

distribution was assumed for this data. The total scores before and after the intervention were compared using the paired t-test and a P-value of <0.05 assigned for level of significance. Each statement was also analyzed against the study participants before and after to understand how each performed.

For objective 3, it was the effect on Practice of using the PHQ-9 tool in assessment of depression. This was measured with a set of 13 questions using the Likert scale of never-0, occasional-1 and always-2. The practice was categorized on a pre-set levels as being good ($\geq 1.6 - 2$), fair ($\geq 1 - < 1.6$) or poor ($0 - < 1$), and compared for identified change after the intervention from the baseline assessment. Each statement was also analyzed separately to understand the respond from the overall study participants before and after the intervention. The proportions of having an optimal good practice before and after the clinical coaching intervention were compared using the exact McNemer Chi square test to answer my prediction in this study on change observed in this practice section. This allowed for identification of the change after the intervention within the same study participants. A p-value of less than 0.05 was used to determine the significance of the clinical coaching intervention.

Ethical Approval and Rights of Subjects

For any research to be undertaken, it should demonstrate fairness to the beneficiary through an oversight function of approved committee. This involve issues surrounding the study participants in form of the individual rights, fairness and justice in the all aspects of the research process. It was reviewed by the research and ethics committee on benefits of the study, and risks associated with the study.

Research and Ethics Committee. Approved permission was obtained from Uganda Christian University (UCU) Research and Ethics Committee (REC) after the proposal has been approved by the researcher's supervisors (Appendix I) with a clearance number: UCUREC-2022-437. After the University approval, a written permission letter by the researcher to seek for clearance from the district and health facility authorities was obtained. The researcher first met with the District Health Officer (DHO), presented the study ideas, and then handed the approval letter from UCU to him, and asked for a final permission from his office (Appendix J). Then I met the in-charge of the health facility and presented both the UCU approval and District permission letters. All the prospective study participants were given opportunity to understand the study, and those who were willing to participate voluntarily provided their informed consent before study proceedings.

Benefits to the study participants. This study is expected to improve on the knowledge, attitudes, and current practices regarding the identification of clients with symptoms of depression. The staff may build their confidence level in handling similar conditions within the district of study. Health workers participating in this study may have their knowledge and attitudes enhanced to embrace and provide current practices based on well-researched information.

Risks to the Study Participants

This study portrayed no any risk to any participant during the process. No psychological distress or physical discomfort emerged throughout the entire process. Except that there was a yellow fever campaign that set-in as a national emergency

activity involving all health workers in the district of study and other parts of the country that interfered with the research study. The investigator and participants agreed and we had to suspend our activities for a week to allow ample time for the participants to balance their schedule during the clinical intervention. There was a pre-brief provided to the participants about the research process to allay their anxiety of psychological distress by the investigator. Copies of the PHQ-9 tool were given to all participants on day one of coaching so that they can familiarize themselves with it, hence reducing potential psychological distress.

The researcher presented himself as a student, with no direct link to any participant. I would ask them if they were comfortable filling the tool while I waited a few meters away and I would collect their responses at once so that I could not tell who has filled in what. This process was understood by each participant in the study. The investigator would allow small groups of participants to practice and reflect on what they have learned during the coaching session. While under the support of the investigator, I was able to observe participants for any challenge in asking specific questions to their clients and discuss it for the once I noticed. I would assure the participants that I had no connection to their appointing authority, or to leaders in positions of authority in either the health facility or the district to promote comfort of relating with me.

Conflict of Interest with Study Participants

There was no conflict of interest between the investigator and study participants since this study could not influence the participants' appointments or promotions in any way. There was also no penalty given to the study participants who recorded low scores in any of the three areas of knowledge, attitudes and practices since the assessment was

focusing on the overall performance. The investigator reassured them right at the start of the study process that there was no any penalty, no influence of their current position or benefits, and no personal interest by the researcher. While this was a research project, it's focused was for educational purposes, though could result in service improvement.

The researcher was not seeking for employment, and did not have any authoritative role in the district of study. No financial or any form of support was solicited from anyone or offered by anyone to facilitate this study. The supervisors will read the final report, accept it and acknowledge any conflict of interest if any before submission. This is a single individual study, so, the study measured only the objectives that was accepted by the supervisors.

This chapter has highlighted the study design, setting, sampling criteria, including eligibility criteria, and the data management process. It also described the participants' safety, benefits of the study to them, their privacy, and ethical considerations regarding the handling of the participants and data security. Chapter Four will present the results that were gathered after the conduct of this study. The findings from this study and recommendations will be discussed in Chapter Five.

Chapter Four: Results

In this chapter, the data results from the study specific objectives are displayed. It will include the socio-demographic characteristics of the participants, and the three specific study objectives. The first was to identify the effect of clinical coaching on the knowledge of health workers regarding the use of the PHQ-9 assessment tool. The second was to determine the effect of clinical coaching on the attitudes of health workers regarding the use of the PHQ-9 assessment tool. Lastly, the third one was to describe the effect of clinical coaching on the practice of health workers regarding the use of the PHQ-9 assessment tool at a HCIV in a district of Northern Uganda.

Socio-Demographic Characteristics of the Participants

This section presents findings regarding age, gender, professional cadre, years of experience, and the highest level of education attained by each participant. The proportion were summarized in a table and under each category was expressed as frequency and then the percentage of the total sampled participants.

Table 1:*Demographic Distribution of Study Participants (N=34)*

Category	Frequency (F)	Percentage (%)
Age (years)		
20-29	03	08.8
30-39	19	55.9
40-49	07	20.6
50-59	05	14.7
Gender		
Male	18	52.9
Female	16	47.1
Years of practice (years)		
<5	06	17.6
6 - 10	08	23.5
11- 15	11	32.4
16 or more	09	26.5
Professional cadre		
Medical Doctor	02	05.9
Nurse/Midwife	14	41.1
Allied Health	16	47.1
Mental Health	02	05.9
Level of Education		
Masters	01	02.9
Degree	08	23.5
Diploma	16	47.1
Certificate	09	26.5

In Table 1, the participants were displayed according to categories. The age of study participants ranged from 20 years and above to about 59 years with the majority lying within the age bracket of 30-39 (55.9%) years. This represents the employable age group for Uganda public service as it is recommended to be between 18-59 years, and they are capable of applying the PHQ-9 tool in practice. In regards to gender, there were more males than females with males slightly higher at 52.9% in the study. The gender distribution demonstrates that the coaching intervention was fairly distributed across the

gender as both are expected to implement the tool. Practitioners' level of education ranged from certificate to masters, with diploma holders (47.1%) as the highest percentage while only 1(2.9%) had a master's qualification. The majority of health workers were attached to lower health facilities in Uganda and were primarily certificate and diploma holders with very few employable at bachelors level. Staff with these educational qualifications have the ability to demonstrate the competency level of learning and use the PHQ-9 tool for depression screening. Medical doctors and mental health personnel in this category were few at 5.9% each. This illustrates that depression cases may be missed since these are professional trained with the ability to diagnose the depression, and justifies why the other health categories were coached in this study. Nurses or midwives (41.1%) and allied health professionals (47.1%) were nearly equal in number. It was important to have these two carders as the majority so that, they were taught how to use the tool since they comprise the majority of healthcare team and are also capable of applying the tool.

The Effect of Clinical Coaching Intervention on Knowledge of Health Workers on the Use of the PHQ-9 Depression Tool.

This was measured as a summative score arising from the 32 questions in the knowledge section for which a correct response was weighted "1" and a wrong answer was weighted "0" so that the highest score represented high knowledge and the low score represented less knowledge. The normality of the difference between the knowledge scores after and before the intervention was assessed and the normal distribution was assumed for this data. Table 2 presents the overall knowledge performance before and after the intervention against the pre-set levels of very good ($\geq 80\%$), good (60-79%) or

poor (<60%). Very good knowledge demonstrates a high competency level of the understanding of concepts in using the PHQ-9 assessment tool. Moderate knowledge indicate some understanding of concepts, and the poor knowledge indicates more need to improve in order to be able use the tool well in identifying depression.

Table 2:

Comparison of proportion of health workers' knowledge on performance against the pre-set levels of Very good, good or Poor (N=34)

Knowledge levels	Pre-Test		Posttest	
	F	%	F	%
Very good (80%)	07	20.6%	30	88.2%
Good (60-79%)	21	61.8%	04	11.8%
Poor (60%)	06	17.6%	00	00.0%

Table 2 shows that following the coaching intervention, the percentage of participants who were very good at using the PHQ-9 questionnaire to screen for depression went from a baseline of 7 (20.6%) to 30 (88.2%). Though just 11.8% were reported after the intervention, good knowledge also increased as the majority moved to very good knowledge. The findings showed that health workers' knowledge significantly increases when they receive coaching. The number of research participants with poor knowledge fell to zero as many shown significant progress, with all 17.6% of those seen with poor knowledge prior to intervention achieving the higher level of very good or good knowledge following the intervention. This suggests that clinical coaching interventions enhance healthcare workers' acquisition of knowledge.

Table 3 compared the difference in the knowledge mean before and after the clinical coaching intervention. The standard deviation (SD) and the significant levels are also compared against the set P- value of <0.05 for the overall participants. The general performance of participants on each question were presented (Appendix K).

Table 3:

Comparing mean of knowledge before and after the coaching intervention using a paired t-test (N=34)

	Mean (%)	SD	95% CI	t	df	P- value
Before Intervention	22.6 (70.6)	3.3	21.4, 23.8	-11	33	<0.001
After Intervention	29.0 (90.7)	2.6	28.1, 29.9			

In Table 3, there was a significant difference before ($M=70.8$, $SD=3.3$) and after ($M=90.6$, $SD=2.6$) the coaching intervention, $t(33) = -11.4$, $p = <0.001$. This result suggest that clinical coaching intervention does have an effect on the knowledge of health workers. Specifically, the result indicated that when an intervention is performed on health workers, their knowledge improves.

The knowledge score against each statement generally improved from the baseline after a coaching intervention in this section. The detailed performance score on each of the statement is displayed (Appendix K). Few variations were noted on some statements during the before and after the intervention.

Before the intervention, every research participant accurately reported that the PHQ-9 tool was authorized for use by a qualified individual. A few knowledge domains where participants had more accurate answers were HIV as a risk factor for depression

(91.2%), the advantage of recognizing depressive symptoms early for the client (97.1%), and the knowledge that failing to identify depression early can cause scheduling conflicts (97.1%), among other things. Less than 30% of participants recorded the right response in other items, though. One illustration of this was the 23.5% risk of depression associated with feminine gender. Just 26.5% of research participants properly interpreted the PHQ-9 tool's classification of a scenario in the case study.

After the intervention, participants' overall knowledge significantly increased, with some receiving perfect scores for all of the participant's responses. On certain statements, the individual participants' knowledge also increased. For instance, all study participants correctly answered eleven out of the thirty-two answers in the knowledge section about depression and PHQ-9 tool (Appendix K). Examples of these claims are that depression is more common in those who are HIV-positive and that poverty increases the risk of depression. The PHQ-9 is a tool for evaluating depression and its severity, as all participants properly indicated in their responses. It can be applied to anyone aged 12 and older, both alone and with the assistance of a skilled professional. This section showed significant progress, although 18 (52.9%) of the participants did not correctly answer the item regarding the change of ARV dosage based on the scenario score provided. Based on their observed performance, the participants' posttest evaluation showed that the coaching intervention increased their knowledge in a few targeted areas. A great improvement was noted in this section, however, 18 (52.9%) did not get the answer correct on the statement related to ARVs dose adjustment according to the scenario score given in this section. The observed performance among the participants

revealed that, coaching intervention improved knowledge in some specific areas at posttest evaluation.

The Effect of Clinical Coaching Intervention on the Attitudes of Health Workers Regarding the Use of the PHQ-9 Assessment Tool.

The attitude was described on a 4 point-Likert scale as strongly disagree, disagree, agree, and strongly agree with each weighing 1, 2, 3 and 4 respectively. In the majority of questions, 4 (strongly agree) represented the best attitude, however, some questions were worded so that 1 represented the best attitude. In the final analysis the calculations were adjusted so that 4 was coded for all the question as meaning the desired attitude, while 1 represented the undesired attitude. The mean score for each statement was calculated on an Excel sheet and later the overall mean of the 10 questions analyzed to understand the attitude before and after the coaching intervention. Each question was analyzed and the frequency and percentage of distribution displayed (Appendix L). This section was also scored as a category on the pre-set levels of positive (≥ 3.5 - 4), moderately negative (≥ 3.0 - < 3.5), and strongly negative (< 3.0) attitude (Table 4). The mean standard deviation and significant level were determined during before intervention and after a coaching intervention (Table 5).

Table 4:

Overall attitude performance against the pre-set scale of positive, moderately negative and strongly negative (N=34)

Interpretation of Attitude Scale	Pre-test		Posttest	
	Frequency	%	Frequency	%
Positive Attitude (≥ 3.5 - 4)	09	26.5	22	64.7
Moderately Negative (≥ 3.0 - <3.5)	23	67.6	11	32.4
Strongly Negative (<3.0)	02	05.9	01	02.9

Table 4, participants were compared across the pre-set levels of positive, moderately negative and strongly negative attitudes for the change in levels before and after the intervention. Generally, there was a marked improvement on the attitude levels. The majority of study participants showed a moderately negative attitude during the pre-test (67.6%) against the three pre-set scale as positive, moderately negative and strongly negative attitude. This improved further to positive attitude (64.7%) post coaching intervention. This indicates that, participants with moderately negative attitude moved upward and crossed to positive attitude level. Only 2.9% of study participants exhibited strongly negative attitude even after the clinical coaching intervention.

In Table 5, a paired t-test on the 10 statements was done after first calculating the mean of the subscale. The before and after a coaching intervention is displayed below with the overall attitude of the participants and significant level.

Table 5:***Paired t-test on Attitude against the 10 statement***

	Mean	SD	95% CI	t	df	P-value
Attitude before	3.32	0.42	3.01, 3.62	-4.78	9	0.001
Attitude after	3.58	0.31	3.35, 3.80			

As indicated in Table 5, there was a significant difference in the scores for before ($M= 3.32, SD=0.42$) and after ($M=3.58, SD=0.31$) clinical coaching intervention; $t(9) = -4.77, p = 0.001$. These results suggest that clinical coaching really does have an effect on attitude of health workers. Specifically, this result reaffirm that clinical coaching is effective in improving attitude of health workers in practice settings.

The Effect of Clinical Coaching Intervention on Practice of Health Workers

Regarding PHQ-9 Depression Assessment Tool

In this section, practices were described for each question using a three-point Likert scale of never-0, occasionally-1 and always-2 for the thirteen statements. The overall practices on the participants before and after a coaching intervention was compared using the exact McNemer test and the significance level determined. The frequency of each of the practices embedded in the thirteen statements were calculated and displayed (Table 6). Table 6 rated the practices of study participants against the pre-set leveled scale as good, moderate or poor practice. It then compared the before and after with overall P-value. The frequencies and percentages of detailed performance for each of the participant were then displayed (Appendix M).

Table 6:

Summary of the proportion of health workers on practice of the PHQ-9 assessment tool as Good, Fair or Poor (N=34)

Practice levels	Pre-Test		Posttest	
	F	%	F	%
Good ($\geq 1.6 - 2$)	02	05.9	12	35.3
Fair ($\geq 1 - < 1.6$)	17	50.0	18	52.9
Poor ($0 - < 1$)	15	44.1	04	11.8

Table 6 shows that following the coaching intervention, the percentage of participants who had good practice using the PHQ-9 questionnaire to screen for depression went from 2 (5.9%) at baseline to 12 (35.3%). Following a clinical coaching intervention, the participants' practices increased from a baseline of 11.8% to 44.1%. This suggests that following the intervention, some individuals who had poor practices were better at using fair or good practices. Clinical coaching may have an impact on practice, based on the impact shown on health workers' practices. This demonstrates that when interventions are carried out in a clinical practice setting, health workers' practices can get better.

For Table 7, the practice question levels were reduced to 2. Occasional and always were merged, and never was maintained. Additionally the first question on practice was not analyzed in the practice score because it asked whether one used or didn't use the tool. Therefore, only a set of 12 questions for which the good practice was

weighted “1” and “0” for non-practice out of 13 were used. The weights were summated to give a total score, and then dichotomized using the 75th percentile of possible scores that may arise which range from 0 to 12 (75th percentile is 9). The participants who scored 9 and above were categorized as having optimal good practice and the score less than 9 was categorized as having sub-optimal practice of using the PHQ-9 tool. The proportions of having an optimal good practice before and after the clinical coaching intervention were compared using the exact McNemer Chi square test.

Table 7:

The proportion of health workers with optimal practice on the use of the PHQ-9 assessment tool before and after the clinical coaching intervention

Category	Before intervention N=34 (%)	After Intervention N=34 (%)	P- value
Optimal Practice	20 (58.8)	29 (85.3)	0.023
Sub-optimal practice	14 (41.2)	5 (14.7)	

In Table 7, the proportion participants with optimal practice of using a PHQ-9 assessment tool to screen for depression increased from 58.8% at baseline to 85.3% after the intervention, and this change was statistically significant (P value 0.023). These results suggest that clinical coaching does have an effect on practices of health workers. Specifically, this result denotes that clinical coaching is effective in improving practices of health workers in clinical settings.

This chapter has presented the results of the 34 study participants. It described the demographic distribution and summarized it in frequencies and percentages. The three study objectives recorded a great change as a result of clinical coaching. Overall, there

was a significant improvement in health workers' knowledge, attitude, and practices regarding the use of the PHQ-9 assessment tool during the study period after the clinical coaching intervention. Chapter Five will present the discussion of the research findings, recommendations for further research, limitations and conclusion.

Chapter Five: Discussions and Recommendations

This chapter discusses the results that were obtained in the study following each of the study objective as noted here. The first was to identify the effect of clinical coaching on the knowledge of health workers regarding the use of the PHQ-9 assessment tool. The second was to determine the effect of clinical coaching on the attitudes of health workers regarding the use of the PHQ-9 assessment tool. Lastly, the third one was to describe the effect of clinical coaching on the practice of health workers regarding the use of PHQ-9 assessment tool at a HCIV in a district of Northern Uganda.

The effect of clinical coaching on the knowledge, attitude and practices were guided by Faithful-Byrne et al. (2017) Clinical Coaching Framework. This was specifically chosen as it provides for real time interventions in clinical setting as well as addressing the patients' and clinical staff care improvement needs. It then presents the limitations, conclusions and recommendations including areas of further study that could be generated from this study.

The Effect of Clinical Coaching Intervention on the Knowledge of Health Workers Regarding the use of the PHQ-9 assessment Tool

In general, clinical coaching can significantly increase a health worker's proficiency with the PHQ-9 evaluation instrument. Prior research has indicated that providing screening tools specifically intended for use in primary care settings, along with training, can enhance health workers' expertise to provide safe patient care (Alexander et al., 2013; Jones, 2015). In this study, clinical coaching improved the health workers' understanding of how to do a depression screening. This study shows that health

workers' understanding of using the PHQ-9 questionnaire changed significantly as a result of the intervention. This indicates that using clinical coaching to reinforce knowledge is a successful tactic. The participants' willingness to accept depression screening may be the reason for the remarkable improvement on knowledge towards screening. The notable shift in understanding is similar to a study conducted in the United Kingdom to detect depression in healthcare settings, which found an improvement in understanding between the pre-training baseline and the six-month post-training evaluation by healthcare professionals (Nollet et al., 2020). Additionally, as similar significant improvements have been reported in other studies as well, the knowledge gains of health workers in this study showed that the role of coaching interventions can address the immediate knowledge gap in practice settings (Ayano et al., 2017; Nollet et al., 2020).

Regarding participants' awareness of depression in HIV care, all of them were aware that depression is quite prevalent among clients living with HIV and that, following a coaching intervention, it is strongly correlated with treatment outcomes in HIV/AIDS care. According to the interpretation of these results, the coaching intervention assisted in educating the healthcare providers on how to use the PHQ-9 questionnaire, which will ultimately aid in improving the diagnosis and treatment of patients with depression in HIV care settings. The finding suggests that if medical professionals can identify depression early on with the PHQ-9 assessment and connect patients with the right care, there may be a decrease in morbidity and mortality linked to depression. These findings support the notion that depression is prevalent in patients with

long-term illnesses such as HIV/AIDS, that depression is underdiagnosed in Sub-Saharan Africa, and that depression can have detrimental effects on adherence to antiretroviral therapy (ART), the advancement of the disease, and an increase in mortality if it is not detected early (Abas et al., 2014; Bernard et al., 2017). According to the current research, health care professionals who work with people living with HIV or those who have chronic illnesses should concentrate on using the PHQ-9 tool to identify depressive symptoms that may be burdensome for specific patients.

Regarding awareness of the risk factors for experiencing depressive symptoms in HIV-positive individuals, every study participant accurately noted that poverty and gender identity had a significant correlation with depression symptoms. These results suggest that health professionals should use the PHQ-9 tool to prioritize depression screening for clients who are impoverished, with a particular emphasis on women. The present study's pattern of findings aligns with other research (Abadiga, 2019; Bernard et al., 2017; Dantie et al., 2021) which found that poverty, having a poor educational attainment, and being female were the primary risk factors for depression. The results of this study imply that healthcare professionals may require coaching on how important it is to screen for depression in both female clients and those who are receiving care at a poverty level.

The PHQ-9 tool, which is used to identify depression and its severity in people 12 years of age and older, was correctly understood by all participants. The client can self-administer the tool or a health professional can complete it. The health workers' understanding from this study could significantly enhance the PHQ-9 tool's ability to

identify depression and characterize its severity, allowing for better client treatment in HIV care settings. Prior research revealed that primary healthcare professionals have not been as successful in identifying depression, especially in low- and middle-income countries, despite recommendations to address the issue (Craven & Bland, 2013; Dadi et al., 2021). The current study's results are in line with previous research, which suggests that increasing health workers' ability to identify depression in the community through the use of a validated screening tool can be beneficial even in situations where staff members lack the necessary training (Adewuya et al., 2017; Fekadu et al., 2022; Miller et al., 2020). Additionally, the current data corroborate the notion that obtaining mental health outcomes in the HIV/AIDS care population requires routine mental health education in addition to depression screening (Passchier et al., 2018).

Some study participants did not believe that the PHQ-9 tool could be used to identify specific symptoms, even though all participants acknowledged that the tool is used to diagnose depression and its severity after the coaching intervention. According to a study conducted in South Africa, for instance, there was little training provided to healthcare providers for community-based mental health services, and there were serious reservations regarding the competency levels required to diagnose depression (Searle et al., 2019). According to earlier research, certain health professionals may not be as knowledgeable as others when it comes to identifying clients' new or chronic symptoms, which is advised for staff working in this environment (Ministry of Health Uganda, 2016). This may impede the provision of depression care by healthcare providers to HIV clients. The results of this study are in line with those of another study (Chan et al.,

2017), which found that health professionals' inadequate understanding made it difficult for them to adequately identify depressive symptoms in patients under their care.

When it came to the PHQ-9 tool's parameters, all of the participants knew when to recognize depression from the onset of symptoms. Most study participants knew that the PHQ-9 tool must be used to confirm symptoms of depression within a minimum of two weeks. The fact that the PHQ-9 assessment is a straightforward instrument and the only one that research participants had sufficient familiarity using for depression screening may help to explain the current findings. The current findings align with the research conducted by Kroenke and Spitzer (2001), which examines screening using the PHQ-9 tool. The initial two questions on the tool—persistently depressed mood and loss of interest in pleasurable activities—are asked during a two-week period to serve as a preliminary screen before moving on to complete the nine questions as the tool recommends.

Regarding the consequences of undiagnosed depression in HIV-positive patients, every participant accurately said that it can cause low CD4 counts during clinical coaching and interfere with planned visits. Furthermore, most research participants stated that it can lead to poor adherence to ARV medication and an increase in viral load. The results of this study suggest that healthcare professionals may be in favor of screening HIV-positive patients in their charge if they are aware of the consequences of depressive load following clinical coaching. The current study's findings are in line with a quasi-experimental investigation that used a quick training session to significantly increase

nurses' and general practitioners' understanding of treating depression (Mroueh et al., 2021).

The majority of study participants were able to accurately categorize the presented case scenario using the PHQ-9 questionnaire and recognized what action they can take to support the clients, indicating a considerable improvement in their understanding regarding the classification of depression. The results of this study suggest that knowledge acquisition was strengthened by case studies and the real-world use of the PHQ-9 tool for screening. In clinical settings, any health practitioner may recognize, diagnose, classify the severity, and even track the problems or treatment outcome of depression thanks to the PHQ-9 instrument, which acts as a summary of symptoms (Kroenke & Spitzer, 2001). HIV-positive people's depression levels can be assessed using the PHQ-9 instrument (Crane et al., 2010). The results of this study align with those of a prior pre-post intervention study conducted on primary healthcare practitioners in South Africa, which found that participants' accuracy in diagnosing depression improved (Sibeko et al., 2018).

The majority of research participants possessed a strong understanding of the personal categories needed to administer the PHQ-9 tool. The majority of them stated that any healthcare professional who has received PHQ-9 tool training can administer the tool. The current findings are consistent with a 2016 report from the Ministry of Health Uganda, which found that depression was the most common mental illness among non-communicable diseases among HIV/AIDS clients. The report also strongly advised staff members who have received training on the PHQ-9 tool to screen for depression.

According to a previous study, HIV clients' access to depression treatment has been hampered by health professionals' inadequate understanding of the diagnosis and treatment of depression (Chan, Pradeep, Mayer, & Kumarasamy, 2017). This has been made worse by the shortage of medical professionals, such as medical officers or mental health practitioners, in rural areas who are qualified to evaluate and diagnose common mental health issues at these facilities. The study's conclusions showed that the PHQ-9 tool's smallest group of healthcare team members in the investigated health facility include medical officers and mental health professionals.

Medical professionals with a bachelor's degree in medicine and surgery as well as mental health specialists with a diploma in postsecondary education are qualified to screen for and diagnose mental health issues at the HCIV level. However, due to a lack of this skilled team, the PHQ-9 tool was developed, allowing more non-mental health professionals to take on the responsibility of detecting HIV clients who exhibit depressive symptoms in order to enhance their overall treatment. This small healthcare team of mental health professionals explains why additional healthcare professionals who are not mental health professionals were trained to cover the shortfall in human resources and try to screen for depression. The study's findings support the notion that, in a scenario with a shortage of human resources, clinical coaching might effectively bridge the knowledge gap between other practitioners in diagnosing depression. This pattern of results is in line with earlier research when participants in a pre-post study reported an improvement in their ability to diagnose depression (Sibeko et al., 2018).

The Effect of Clinical Coaching Intervention on the Attitudes of Health Workers Regarding the Use of the PHQ-9 assessment Tool

Overall, study participants' attitudes had significantly improved. Given that the majority of health professionals assessed their views as positive after the intervention, this substantial shift in attitude has demonstrated the value of clinical coaching intervention in handling depression screening using the PHQ-9 questionnaire. Prior research has confirmed that a coaching or training intervention can enhance health workers' attitudes during the post-test evaluation (Ayano et al., 2017; Mroueh et al., 2021). This could affect the results of depression screening in HIV care settings, and as a consequence a health professional might have a more upbeat attitude when working with patients who might show signs of depression. The current findings are in line with a prior study conducted by Mbatia et al. (2009) on the attitudes of primary health care providers, in which the researchers observed that certain practitioners found working with depressed patients to be fulfilling and comfortable. This could enhance the quality of care by assisting in the early detection of symptoms for appropriate care linking. Moreover, this aligns with an earlier South African study (Sibeko et al., 2018) that saw a significant increase in attitude following the implementation of mental health training for community health workers.

When given information on depression screening, study participants strongly accepted to engage in depression screening at their healthcare facility. After receiving coaching, their agreement improved even more to highly agree during the post-test evaluation. This suggests that health workers' attitudes are significantly improved by

coaching. It has been observed that obtaining mental health integration in HIV care settings requires routine mental health information in the HIV/AIDS care population as well as depression screening (Passchier et al., 2018). Previous research has demonstrated that nurses and primary care physicians, among other non-specialist healthcare professionals, can participate in depression therapies in lower health facilities (Wagenaar et al., 2020). Health professionals are motivated to provide client-centered care by their attitudes. The results of this study support that health professionals' attitudes can enhance and may support the quality of care following a coaching intervention. The study's observation of a shift in attitude is in line with a prior quasi-experimental investigation conducted in Armenia, where health professionals' attitudes on mental health care improved as a result of a training intervention (Mroueh et al., 2021).

Half of the study participants agreed or strongly agreed that having access to the PHQ-9 tool would encourage them to screen for depression before coaching intervention. Their attitudes toward using the tool improved further after receiving clinical coaching, and they strongly agreed to use the tool in their facility. The results suggest that once the tool is available in line with practice demand, staff members will be encouraged to screen the clients. The results contrasted with those of a study conducted on nurses in a general hospital, where the majority of study participants had a negative attitude toward the management of depression (Kumar & Shoba, 2014).

According to a prior study (Miller, Kintu, & Kiene, 2020), employing the depression screening tool is a useful method of detecting depression in the community, even when staff members have limited time to use it. Following a coaching intervention,

the study's participants highly agreed to advise their colleagues to screen clients for depression in HIV or any other chronic illness condition using the PHQ-9 tool. This indicates that the participants are prepared to support workforce development by motivating their peers to practice with the proper tools as a team to improve practice. Peer coaching is one strategy that has been used to support learning practitioners or trainees and enable them to master critical thinking skills in areas of knowledge, attitude, and practices, according to prior studies (Himes & Ravert, 2012; Schweltnus & Carnahan, 2014; Williamson et al., 2020). This is done in an effort to assist a colleague. However, one study suggests that the goal of coaching might be to encourage and raise staff members' confidence levels so they can provide safe patient care (Jones, 2015). The current study's findings are consistent with the notion that, when staff members assist a friend, coaching can be utilized to enhance attitude and encourage professional workforce development. The findings' pattern agrees with those of an earlier, different study (Faithful-Byrne et al., 2017). These results offer potential strategies for overcoming obstacles associated with the burden of sickness. Similar results were observed by Ayano et al. (2017) following a post-evaluation training intervention on health workers' attitudes, as positive attitudes were demonstrated in the clinical context.

In terms of attitudes toward working with depressed clients, some participants strongly disagreed or disagreed with the perception that working with this client is hard, tedious, or difficult at baseline that significantly improved to disagree post-coaching intervention. The study findings could be interpreted as meaning that, in contrast to earlier findings by James, Jenkins, Lawani, and Omoaregba (2012), where the general

practitioners expressed difficulty working with depressed patients and the participants did not view the depressed clients as difficult to work with after the coaching intervention. This suggests that, once the staff members interact with the clients, they do not view the depressed clients as difficult to work with. Even though many study participants were brave enough to use the PHQ-9 tool for the first time to evaluate the clients, it's possible that staff members were somewhat accustomed to it, which improved their capacity to engage with clients following clinical coaching. Furthermore, the current results are at odds with a study conducted in Nigeria, where medical professionals felt that treating depressed patients was time-consuming, laborious, and didn't really benefit the patients (Ola et al., 2014).

The Effect of Clinical Coaching Intervention on the Practice of Health Workers Regarding the Use of PHQ-9 assessment Tool

When it came to using the PHQ-9 depression tool, all participating health workers' practices had significantly improved overall. There was a discernible shift in the posttest assessment of practices. This study has clearly shown that, when healthcare providers are empowered, clinical coaching is a useful approach to assist in improvements in clinical care practices. On a scale of poor, fair, and good, the overall practices were assessed as poor before the intervention. Following the coaching intervention, the participants' practice improved to a reasonable degree, even though the current study was conducted in a brief amount of time, the results demonstrated a significant increase in practice; nonetheless, practice time could have produced a stronger outcome. Increased duration for practice follow-up may demonstrate a stronger shift in

the knowledge, attitudes, and practices of healthcare professionals for the identification and management of depressive symptoms, according to Phoosuwan and Lundberg (2020). The findings imply that, when used in clinical settings, a clinical coaching intervention utilizing the PHQ-9 tool can enhance practices. The findings aligned with a previous research study wherein healthcare professionals showed enhanced practice following a brief training program focused on depression treatment (Mroueh et al., 2021).

Most study participants reported that after a clinical coaching session, the proportion of clients diagnosed with depressive symptoms increased as opposed to the low level before the intervention. There was also a discernible rise in the number of health personnel interacting with HIV/AIDS patients who had symptoms resembling depression. This could mean that employees were interacting with clients at that time by using the tool. The findings suggest that early identification and assistance of depressed individuals could lead to better treatment outcomes. The current findings align with an earlier study on primary care practitioners' knowledge, attitudes, and practices regarding depression, wherein the participants reported a rise in depression cases among the clients seeking care as noted by the Nigerian general practitioners (James et al., 2012).

The majority of participants after coaching reported that they had occasionally used updated evaluation tools, indicating an improvement in their practices regarding consulting the national guidelines for the most recent information on managing depression and HIV among healthcare professionals. The findings may be explained by the fact that, within the brief study time, the clinical coaching gave the healthcare professionals the chance to accept and use new information to support their practice with

the tool, resulting in an improvement in practice. The findings mean that healthcare professionals will be able to screen the patients they are responsible for using the validated PHQ-9 instrument or the relevant guidelines, and subsequently connect them with the right care. The current findings are consistent with earlier research that used systematic screening by healthcare professionals in accordance with guidelines, and wherein the number of depression cases detected in the study hospitals rose (Ayano et al., 2017; Egholm et al., 2022).

Health professionals have not used many depression assessment tools for HIV-positive patients during the past two years; most surveyed participants said they only use the tools infrequently to identify depression in HIV treatment. This might have happened for a number of possible reasons, according to certain health workers, like not having an approved instrument in place or not using a self-reminder. These results are in line with a prior study on the screening for depression by the general practitioners in which a small percentage of staff members were able to do so and others stated they had never done so (Mulango et al., 2018).

Even with better practices, fewer than half of the health professionals said they regularly assess clients using the PHQ-9 tool to determine whether they require advanced psychiatric care following a coaching session. This study revealed that most participants hardly ever check for depression in clients with chronic illnesses or HIV-positive individuals. In my opinion, this could be because there is a lack of knowledge about the weight of depression, which, if not recognized early enough, could increase the burden on the individual bearer and increase the risk of HIV-related problems. These results are

similar to a study conducted in 2019 by Searle et al., which found that the majority of physicians either did not know about or did not apply any criteria for the assessment of depression in clients in primary care.

In the two years before to the current study, the majority of study participants stated that they had never received any training on depression or mental health. Health professionals are still required to learn outside of formal training programs from a variety of sources. According to a prior study, depression treatment has been found to be essential to reaching the UNAIDS target of 90-90-90, which calls for the early detection of HIV infection by using currently practicing primary healthcare practitioners by 2030 (Kulisewa et al., 2019). The results of the current study could be explained by the possibility that facility general care and HIV-related depression outcomes were not as carefully thought out by health leaders. The results could mean that medical professionals are less inclined to screen for depression in HIV patients, which could result in less successful therapy for the affected patients. The current findings are in line with earlier research by Mulango et al. (2018), in which almost 50% of study participants stated they had not received any recent mental health training before the study. This might have happened because a large number of participants were unaware of the tool that could be used to identify clients who were depressed, particularly in HIV care settings. The results of this study suggest that healthcare leaders must be actively involved in assisting competent staff members or their peers in the clinical settings as they adopt and scale up supportive learning strategies like clinical coaching interventions.

Following the provision of clinical coaching, the majority of study participants demonstrated an increased awareness of the prevalence of depression symptoms among clients living with HIV. This suggests that in order to identify and treat the increasing number of cases of depression, health professionals should give screening top priority. The current findings are in line with earlier research that found that depression is highly prevalent in the HIV context, both locally and regionally, and that it is roughly twice as common as it is in the general population (Bernard et al., 2017; Nanni et al., 2015). These results strongly imply that practices that use the tool to identify depression-suggestive features with coaching intervention support may enhance the abilities of caregivers. A comparable proportion of participants concentrated on utilizing the technique to gauge clients' moods with erratic symptoms following the clinical coaching. The observed modification subsequent to the clinical intervention bears resemblance to a previous investigation on structured instruction utilizing a clinical instrument that documented enhanced comprehension and proficiency among healthcare providers (Bingawi & Alghamdi, 2020).

There has been a significant improvement in the willingness of participants to regularly assess clients with low socioeconomic level using the PHQ-9 tool, particularly those who may exhibit symptoms suggestive of depression, such as speaking less or in a low tone. This suggests that staff members felt at ease using the instrument to try to address the practical issues related to depression. Conversely, half of the research participants stated that they hardly ever interacted with patients who regularly visited their medical facility and had sporadic symptoms suggestive of depression, which

significantly increased in frequency following a coaching intervention. This suggests that using the PHQ-9 tool with healthcare professionals could serve as a reminder to them to keep an eye out for clients' worsening depressive symptoms. The study's findings support the idea that coaching interventions can have an impact on health workers' practices. This outcome was in line with earlier research (Mroueh et al., 2021; Turki et al., 2020) that examined health care professionals' practices and used a brief training intervention. This was especially because medical professionals were dedicated to using the PHQ-9 instrument to identify clients in need. The display of best practices by healthcare professionals is supported by brief coaching or structured training interventions.

In general, health professionals must practice at a better level to be able to identify depression early on, which may assist in enhancing treatment compliance and expanding access to therapy (Zimasa et al., 2020). The goal of this study was to learn more about how clinical coaching affects healthcare professionals' practices. Participants in this study stated that, before the coaching intervention, they had only occasionally assessed clients for depression. Furthermore, a few participants admitted that they had never evaluated clients who could require additional psychiatric care using the PHQ-9 evaluation form. This suggests that clients would never have been screened if the tool had not been made available to healthcare practitioners. This result was in line with research conducted in China, where the majority of physicians either did not know about or did not apply any criteria or instruments for the assessment of depressed patients in primary care during the study period (Searle et al., 2019).

Though only a small percentage of study participants reported using the updated guidelines to that effect, it has been noted that the Uganda Ministry of Health treatment guidelines recommend using the PHQ-9 tool in HIV care practice to improve depression diagnosis (Ministry of Health Uganda, 2016). It has been noted that in order to meet clients' HIV healthcare needs, the current comprehensive HIV care evaluation card requires that depression status be evaluated and monitored. This has demonstrated that in order to eliminate practice gaps, healthcare practitioners must use a realistic engagement strategy, such as clinical coaching intervention. One study found that following training interventions, there was a considerable rise in the identification of depressive cases. This suggests that improvements in practice should be welcomed for positive outcomes in clinical settings (Egholm et al., 2022).

Study Limitations

It is important to consider the possible limits of the study results, even though they clearly support the clinical coaching technique in resolving knowledge, attitude, and practice gaps. An identical set of individuals took the pre- and post-tests in this study, which was conducted at a health facility. Only 34 of the 36 participants who were enrolled in the study were able to finish it. A larger sample size might yield results with a better degree of generalizability. The results should also be interpreted with some caution because the study was a quasi-experimental without randomization. A longer period of time spent using the PHQ-9 tool would have been beneficial for each health worker in the study, as they were provided with only five hours of regular practice time. The participants' hectic schedules and other ongoing government initiatives, such as the

vaccination campaign against yellow fever, interfered with the practice consistency. Notwithstanding these research limitations, it is important to remember that the purpose of this study was to assess the consequences of a clinical coaching intervention and how it affected healthcare professionals' attitudes, understanding, and use of the PHQ-9 depression test when conducting clinical depression screenings.

Conclusion

As a result of clinical coaching, health professionals' knowledge, attitudes, and practices surrounding using the PHQ-9 depression assessment tool to screen for depression have generally improved noticeably. This study represents a first step toward utilizing the PHQ-9 tool for depression screening in HIV care settings. The results add to the increasing amount of data that supports clinical coaching as a successful tactic for enhancing the quality of care provided by facility staff. This clinical coaching approach might work effectively particularly in settings or countries with minimal resources.

Study Recommendations

This study has made several recommendations for improving mental health services, particularly for depression linked to HIV. This may be relevant to the district's health leaders, medical professionals, and researchers.

District and health leaders. In addition to providing theoretical instruction that challenges staff members to demonstrate or apply the material they have learned, coaching should be considered an effective technique for addressing practice gaps in the healthcare context. Improving care may result from supporting and promoting frequent

instruction on the tool's use. The district-wide health leaders or facility in charge can stress and adopt this.

Healthcare providers. It is advised that routine HIV care should include new competencies that participants acquired in the areas of knowledge, attitude, and practice from this study to screen for depression. The Ministry of Health Uganda's PHQ-9 tool-trained personnel have recommended that regular HIV care include screening for depression symptoms (Ministry of Health Uganda, 2016). This could lead to a higher rate of depression identification and better services for both clients and service providers. To find overlooked details that could lead to a depression burden, clients with chronic diseases who may exhibit symptoms suggestive of depression should be screened using the PHQ-9 depression evaluation instrument.

Researchers. A comparable study can be conducted in the future in clinical settings with a larger sample size, as this one only attracted a small number of volunteers. Additionally, a longer intervention period that allows for sufficient practice exposure time may yield considerably better results in terms of practice modifications and attitude about the use of the PHQ-9 depression instrument. According to a prior study, this lengthier duration period is advised (Phoosuwan & Lundberg, 2020). It could be beneficial to include a qualitative study to learn more about the perspectives of healthcare professionals in order to gain a better knowledge of the problems surrounding depression screening and potential solutions for clinical coaching intervention strategies.

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Appendix A: Permission to Use Clinical Coach Framework

Anthony Welch

Mon, 17 Oct, 01:19 (1
day ago)

to cheryle.moss@monash.edu, wendy.cross@monash.edu, Moira, Jenny.jaspers@health.qld.gov.au, Michelle.Elks@health.qld.gov.au, Keppel.Schafer@health.qld.gov.au, lorraine.thompson2@health.qld.gov.au, annette.fairfull-byrne@health.qld.gov.au, me

Good morning Tonny. As a member of the team, I am happy to support you in the use of the Coaching Framework for your thesis. All the best.

Tony

Adjunct Associate Professor Anthony Welch (PhD, M.Ed, B.Ed, B.N, Grad Dip (Counselling), Dip Appld Sc (N.Ed), RN, RPN, MACMHN
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I respectfully acknowledge the Traditional owners of the land on which we work and learn, and pay respect to the first Nation Peoples and their elders, past, present and future

From: Douglas Tonny Otim <dt.otim@muni.ac.ug>

Sent: Sunday, 16 October 2022 8:33 PM

To: cheryle.moss@monash.edu <cheryle.moss@monash.edu>; wendy.cross@monash.edu <wendy.cross@monash.edu>; Moira Williamson <m.williamson@cqu.edu.au>; Anthony Welch <a.welch@cqu.edu.au>; Jenny.jaspers@health.qld.gov.au <Jenny.jaspers@health.qld.gov.au>; Michelle.Elks@health.qld.gov.au <Michelle.Elks@health.qld.gov.au>; Keppel.Schafer@health.qld.gov.au <Keppel.Schafer@health.qld.gov.au>; lorraine.thompson2@health.qld.gov.au <lorraine.thompson2@health.qld.gov.au>; annette.fairfull-byrne@health.qld.gov.au <annette.fairfull-byrne@health.qld.gov.au>

Subject: Request to Use Idea of Clinical Coaching Framework

Hello, Team! I hope this email finds you well! I am Douglas Tonny Otim, a Master of Nursing student at Uganda Christian University, Uganda.

...

[Message clipped] [View entire message](#)



Reply Reply to all Forward

Appendix B: Clinical Coaching Script

Investigator & participant interaction area	Constructive questions or statements to engage participants
Initial Goal setting	<p>What are you working on today? What do you want me to pay special attention to when I attend to you?</p> <p>What is the goal you would like to accomplish? What else?</p> <p>How is it meaningful to you?</p> <p>What does success look and feel like for you? How will you know you succeeded?</p>
Reflection	<p>How did you think that encounter went? What did you do well? What do you wish you could have done differently?</p> <p>What else have you tried that has worked? Describe a time that you have been successful in a similar circumstance. How can you build off that?</p> <p>What ideas do you have that would lead to positive breakthroughs? What else?</p> <p>What other lessons learned should be considered?</p> <p>What barriers stand in your way in performing this?</p> <p>In addition to your own strengths, what additional resources or skills do you need? How can you get these resources or skills needed to achieve the goal?</p>

Ongoing goal-setting	<p>What new or continuing goals will you be working towards? How can I help support you in attaining these goals?</p> <p>What is the timeline for reaching your goal?</p> <p>What first steps will you take? What can you do today?</p> <p>What was most helpful to you? What did we not cover enough of?</p> <p>When can we meet again to discuss progress?</p>
----------------------	--

Coaching scrip adapted from: Rassbach et al. 2018 pg. 3

Appendix C: Overview Presentation Document

What is HIV-related depression? It's a condition presenting with symptoms of persistent low or depressed mood, loss of interest in pleasurable activities, appetite changes, weight changes, sleep changes related to HIV infection

What is depression?

Is a mental disorder with the disturbances of mood and affect including psychomotor alterations as outlined in the PHQ-9 tool.

Why is it important for a health worker to know about HIV-related depression?

You are in a better position to identify it early

To ensure no HIV-care interruptions

Promote good quality of client's life

Reduce burden on health workers when the client keeps visiting the facility for unresolved symptoms expressed in physical forms Client builds trust in health workers

What causes depression in HIV-positive client?

Overwhelming burden of viral infection

Social roles. For example, ladies with many responsibilities

Extreme age

What is the benefit of learning about HIV-related depression?

Increase in your competency & comfort levels to help clients with depression

Improve on the care you provide daily in this facility

Practice & professional development. I.e. you grow as a person, and or a group

What is PHQ-9 tool?

The PHQ-9 tool is a tool developed by Pfizer in late 1990s by Kroenke to screen, diagnosed, grade the severity, and monitor depression treatment. It has 9 questions that allows a staff or a patient to check the responses within a period of two weeks (check the tool)

Who should be screened with this tool?

HIV-positive clients and any other client seeking care for chronic conditions such as diabetes, sickle cell, and hypertension among others.

When will you use PHQ-9 tool in HIV care?

Newly diagnosed HIV client, unsuppressed clients on ART, any present comorbidity, inconsistencies in follow-up appointments, and changes in behaviors

Practical session

I will need a volunteer that will be pre-briefed on the expected responses to take the role of a patient as I demonstrate to the team on assessment using the PHQ-9 tool. Some reflective feedback before another volunteer performs the return demonstration.

Debrief session with focus on the emotions, feelings, beliefs, communication skills, and knowledge of the participants

How do we interpret the PHQ-9 tool?

Check the scores, some participants read it one at a time to the group

What do you think prevents us from screening depression (barriers)? Participants should list them before comments by the coach.

How should we overcome the barriers? Participants should list them before the coach gives comments

How can we access the information and how do we evaluate them to make us provide effective care using the tool?

Using Google search, MoH and WHO websites

What resources can we use to help overcome this issue?

Smart phones to search for information

Radio broadcast, newspaper reading, articles or journals from MoH, WHO, lecture notes from previous classes, short training workshops, etc

Appendix D: PHQ-9 Tool

Patient Health Questionnaire (PHQ-9)

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite —being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself	0	1	2	3

add columns + +

TOTAL:

10. If you checked off <i>any</i> problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	Not difficult at all	<input type="text"/>
	Somewhat difficult	<input type="text"/>
	Very difficult	<input type="text"/>
	Extremely difficult	<input type="text"/>

Patient health questionnaire (PHQ-9).

For initial diagnosis:

1. Patient completes PHQ-9 Quick Depression Assessment.
2. If there are at least 4 ✓ S in the shaded section (including Questions #1 and #2), consider a depressive disorder. Add score to determine severity.

Consider Major Depressive Disorder

- if there are at least 5 ✓ S in the shaded section (one of which corresponds to Question #1 or #2)

Consider Other Depressive Disorder

- if there are 2-4 ✓ S in the shaded section (one of which corresponds to Question #1 or #2)

Note: Since the questionnaire relies on patient self-report, all responses should be verified by the clinician, and a definitive diagnosis is made on clinical grounds taking into account how well the patient understood the questionnaire, as well as other relevant information from the patient. Diagnoses of Major Depressive Disorder or Other Depressive Disorder also require impairment of social, occupational, or other important areas of functioning (Question #10) and ruling out normal bereavement, a history of a Manic Episode (Bipolar Disorder), and a physical disorder, medication, or other drug as the biological cause of the depressive symptoms.

To monitor severity over time for newly diagnosed patients or patients in current treatment for depression:

1. Patients may complete questionnaires at baseline and at regular intervals (eg, every 2 weeks) at home and bring them in at their next appointment for scoring or they may complete the questionnaire during each scheduled appointment.
2. Add up ✓ S by column. For every ✓: Several days = 1 More than half the days = 2 Nearly every day = 3
3. Add together column scores to get a TOTAL score.
4. Refer to the accompanying **PHQ-9 Scoring Box** to interpret the TOTAL score.
5. Results may be included in patient files to assist you in setting up a treatment goal, determining degree of response, as well as guiding treatment intervention.

Scoring: add up all checked boxes on PHQ-9

For every ✓ Not at all = 0; Several days = 1;

More than half the days = 2; Nearly every day = 3

Interpretation of Total Score

Total Score	Depression Severity
1-4	Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

Appendix E: Consent Form

Study title: The effect of clinical coaching on health workers' knowledge, attitudes and practice towards the use of Patient Health Questionnaire-9 (PHQ-9) assessment tool in depression recognition among HIV-positive clients.

Principle Investigator: Douglas Tonny Otim, is a Master of Nursing student at Uganda Christian University (UCU), Mukono. For any question or concerns related to this study, please contact the investigator on email: Otim996@gmail.com phone: 0782974765 or Professor Karen Drake, the University research supervisor on email: drakar@bethel.edu or WhatsApp +17632425695

Purpose of the study: This study aims to evaluate the effect of clinical coaching on knowledge, attitudes and practices regarding the use of the PHQ-9 assessment tool in recognizing depression among HIV- positive clients. You have been chosen because you provide care services to HIV-positive clients in this health facility.

Procedure for the study: You will be asked to complete the same questionnaire twice. After filling it the first time, we shall have an initial training about the study and what you would need to do for the entire study. You will then have one week to interact with the investigator in order to set your own goals and obtain support from the investigator. When you have engaged a minimum of five hours using the tools practically to interact with clients with support from the investigator, you will be asked to complete the form a second time.

Benefits of the study: Participating in this study will provide the knowledge to use the PHQ-9 tool, and give you coaching on its use in order to gain confidence and ability to

screen for depression. Clients may also benefit when their symptoms are identified early and addressed, helping them comply with treatment and enjoy an improved quality of life. There is no financial reward for participating in this study, however you will be provided with a book and pen during the session.

Study risk: This study portrays no risk to you or any of your love ones

Privacy & confidentiality: All the information you share will be kept confidential and be protected

Study approval: This was approved by UCU Research and Ethics Committee, ID number: UCUREC-2022-437

Statement of a participant: I know that my participation in this study is entirely voluntary, and I may withdraw from the study at any time I wish with no penalty.

I understand that all study data will be kept confidential. However, this information may be used in journal publications or conference presentations.

The study has been explained to me. I have read and understood this consent form, all of my questions have been answered, and I agree to participate.

Signature of Participant

Date

Signature of the Investigator

Date

Appendix F: Research Questionnaires

The effect of clinical coaching on Knowledge, Attitude and Practices of health workers regarding the use of the Patient Health Questionnaire nine (PHQ-9) depression tool. The PHQ-9 is a tool developed to assess patients for symptoms of depression.

Section A: Demographic data. Instructions: Circle the correct option or fill in the information that best describes you.

1. Current age? _____
2. Gender?
 - a) Male
 - b) Female
3. Years of practice/experience? _____
4. Your cadre? a) Nurse/Midwife. b) Allied health practitioner. c) Medical doctor. d) Mental health specialist
5. Highest level of educational qualification?
 - a) Certificate. b) Diploma. c) Degree. d) Masters

Section B: Knowledge of depression. Instructions: For this section, indicate either **True** or **False** by putting a tick [✓] in the respective column.

S/N		False	True
	The following best describes depression:		
K1	Depression is more common among HIV positive clients than in the general population		
K2	Depression is rarely a disabling disease.		
K3	Depression has a strong association with treatment outcomes in HIV/AIDS care.		
	The following are risk factors for developing depression in HIV positive clients:		
K4	Having HIV is a risk factor for depression		
K5	Poverty due to high personal life issues		
K6	Being female gender		
K7	Highly active antiretroviral drugs		
	Regarding the PHQ-9 depression assessment tool:		
K8	The PHQ-9 is a tool for screening depression and its severity		
K9	The PHQ-9 is a tool for identifying specific symptoms not responding to treatment		
K10	It is a tool that is used for assessing depression only in an HIV setting		
K11	It can only be used on individuals 18 years and above.		
K12	It can be used on individuals 12 years and above		
K13	It can be used to measure all forms of depression treatment response.		
K14	It can be self-administered by the client or completed by a health worker as client gives their responses		
	Regarding parameters of the PHQ-9 tool		

S/N		False	True
K15	It can assess depression in the last 1 month only		
K16	Any positive answer in the first 2 questions prompt the completion of the entire tool.		
	When depressive symptoms are identified earlier, what would be the benefits to the client?		
K17	The client is supported to deal with their symptoms, hence there are good treatment outcomes.		
K18	The client may have poor adherence to HIV treatment because they are afraid of known depressive symptoms.		
	If depressive features are unrecognized in an HIV-positive client, what could this lead to?		
K19	There may be interruptions in scheduled visits		
K20	This may result in high viral load detection		
K21	The client can have high clusters of differentiation 4 (CD4) results		
K22	Depression symptoms can lead to disease progression and a high level of mortality.		
	The PHQ-9 tool was approved to be administered by which category of persons?		
K23	By the clients who can read and understand		
K24	Psychiatric personnel only		
K25	Any trained health worker		
	How would you classify depression according to PHQ-9 tool?		
K26	Minor and major		
K27	Minimal, mild, moderate, moderately severe, and severe		
K28	Minimal, mild, moderately mild, moderate, and severe		
	What will you do if your patient has a depression score of 17 points according to PHQ-9?		
K29	Tell the patient that this is self-limiting		
K30	Refer immediately to a mental health practitioner		
K31	Revise his/her ARV dose and adjust accordingly		
K32	Consult with the witchdoctor since it is a curse or misfortune		

Section C: Attitudes of health workers towards depression screening using the PHQ-9 tool. Instructions: For this section, indicate a tick [✓] in the respective column that best describe you on how you disagree or agree with each statement in response to your attitudes

S/N	Statement	Strongly disagree	Disagree	Agree	Strongly agree
A1	I want to participate in depression screening using the PHQ-9 tool in my health facility				
A2	I have a believe that access to the PHQ-9 tool at the facility will encourage me to actively evaluate my clients for depression.				
A3	I would recommend my colleagues to use the PHQ-9 tool to screen clients for depression in HIV or any other chronic disease condition				
A4	If you encountered a patient with symptoms of depression, will you refer them for further psychiatric evaluation?				
A5	If you are provided with information about the PHQ-9, are you willing to use it to screen the HIV-positive clients in your facility?				
A6	Is it important to provide sufficient information about the use of the PHQ-9 in screening HIV-positive clients?				
A7	Do you believe that PHQ-9 is a potentially valuable tool for use with HIV-positive clients?				
A8	I find working with depressed clients is heavy going, tedious, or difficult				
A9	Depression is best managed by traditional healers.				
A10	The clinical coach's enthusiasm towards PHQ-9 provides my motivation for using the tool				

Section D: Practices towards the use of the PHQ-9 in depression screening.

Instruction: For questions 48-60 put a tick (✓) on the appropriate response that best describes your practices against each statement

S/N	Statement	Never	Occasionally	Always
P1	Have you ever encountered an HIV/AIDS client with features suggestive of depression?			
P2	Do you check the national guidelines to find the current update on HIV management, specifically the depression part?			
P3	Have you used any depression assessment tool in the last two years for HIV-positive clients?			
P4	Do you evaluate clients using PHQ-9 to know if they need advanced psychiatric care?			
P5	Do you refer clients identified with symptoms of depression in your facility to a mental health provider?			
P6	Are depression symptoms common among HIV-positive clients?			
P7	Have you ever received training on depression or mental health in the last 2 years?			
P8	How often do you check Uganda Ministry of Health or WHO websites for current guidelines?			
P9	How often do you assess for depression among HIV-positive or chronic care clients?			
P10	Do you inquire about a client's mood when there is inconsistencies in their follow-up in HIV care?			
P11	Do you check for socio-economic status of your clients who appear to speak less in a low tone while seeking care from you?			
P12	How often do you interact with clients who frequent your health facility with random symptoms?			

P13	When I see a client with random symptoms, I would assess for depression.			
-----	--	--	--	--

Appendix G: Lesson Plan for Group Learning Session

S/N	Activity details for the schedule	Duration
1	<p>Overview of depression in HIV, PHQ-9 tool presentation</p> <p>Define depression</p> <p>Identify the causes of depression in HIV specific settings</p> <p>Describe the presentations of depression in an HIV positive client</p> <p>Identify the various tools commonly used in the screening for depression in Uganda and Africa</p> <p>Demonstrate the skills of asking depression-specific questions using the PHQ-9 assessment tool.</p> <p>Demonstrate effective skills of initiating depression topic among HIV positive clients</p>	15 Mins
2	<p>Causes of depression in HIV, its presentations and roles of health workers</p> <p>Identify and explain the risk factors for developing depression in HIV-positive clients</p> <p>Describe how healthcare personnel may identify symptoms of depression</p> <p>Describe how depression may present</p>	15 Mins
3	<p>Screening tool</p> <p>Identify the various tools commonly used in the screening for depression in Uganda and Africa</p>	15 Mins

	<p>Describe a brief background of the PHQ-9 tool</p> <p>Identify and explain the 9 parameters assessed in the PHQ-9 tool</p>	
4	<p>The screening process, interpretations, and actions to be taken</p> <p>Identify the conditions for using the PHQ-9 tool</p> <p>Identify and explain the clients that are eligible for screening</p> <p>Interprets the PHQ-9 score and relate it to the care of depression clients</p> <p>Describe the steps to be taken depending on any identified PHQ-9 score</p>	15 Mins
5	<p>Screening process demonstration by participants</p> <p>Demonstrate effective communication skills in assessing for depression</p> <p>Identify personal strength and weak areas during depression screening</p> <p>Apply the principles of health assessment during history taking among HIV-positive clients</p>	15 Mins

Appendix H: Case Scenarios for Group Learning

Case scenario 1

You are reviewing a 52-year old male on ART, and has been in care for the last 5 years now in your unit. You noticed that he has missed his two (2) previous consecutive scheduled visits. Your observation reveals that he is slightly wasted, looks sad and speaks slowly. You send him for a lab workup, and the results show CD4 cell count of 200 cells/dL, and no malaria parasites in the blood slide. On further interview, he reports poor sleep and loss of appetite that has lasted for 2 months now.

Questions

What other symptoms would you assess him for?

How would you classify his depression using the PHQ-9 tool?

What are your three next steps for this client?

Case scenario 2

A 25-year old HIV-positive lady has been referred to your unit from a nearby HCIII with history of being socially withdrawn, refusal to take her ARVs and lack of interest to perform her daily household activities for 17 days now. During your health interview, you noticed that she shade tears easily when asked and said to you, “let me die because my husband infected me with the HIV virus and I am tired of living with this situation”.

Questions

What is your most likely impression?

How would you classify this condition on a PHQ-9 tool?

What are your next steps for her condition?

Appendix I: REC Approval Letter



**UGANDA CHRISTIAN
UNIVERSITY**
A Centre of Excellence in the Heart of Africa

To: Douglas Tonny Otim

28/02/2023

0782974765

Type: Initial Review

Re: UCUREC-2022-437: The effect of clinical coaching on health workers' knowledge, attitude and practice towards the use of PHQ-9 in screening for depression in HIV care., First, 2022-12-13

I am pleased to inform you that the Uganda Christian University REC, through expedited review held on 23/02/2023 approved the above referenced study.

Approval of the research is for the period of 28/02/2023 to 28/02/2024.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for review and approval prior to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC eight weeks prior to the expiration date of 28/02/2024 in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of all documents approved in this application by Uganda Christian University REC:



No.	Document Title	Language	Version Number	Version Date
1	Prior Ethical Approval	English	old	2022-12-13
2	Informed Consent forms	English	First	2022-12-13
3	Protocol	English	First	2022-12-13
4	Data collection tools	English	First	2022-12-13

Yours Sincerely



Peter Waiswa
For: Uganda Christian University REC




Appendix J: Site Permission Letter

*Permission granted,
for the attention of
DR SCENE ANGEEO*

DR SCENE ANGEEO

DR SCENE ANGEEO



UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

Permission Granted

[Signature]

DISTRICT HEALTH OFFICER
the Heart of Africa

24 APR 2023

ADLG April 2023

P. O. Box 1074. Amuru-Uganda

Department of Nursing & Midwifery

RE: REQUEST FOR PERMISSION TO COLLECT DATA AT ATIAK HCIV, AMURU DISTRICT

To Whom It May Concern

I am Douglas Tonny Otim who has been a masters' student at Uganda Christian University for the past 4 years. Covid-19 certainly delayed my completion of the program sooner. But at this point I have completed all course works, my proposal approved and I am due for data collection.

I have submitted a very important study in a much-needed area in Uganda on Mental Health.

"The effect of clinical coaching on health workers' knowledge, attitudes and practice regarding the use of the PHQ-9 assessment tool in a HIV care setting at a HCIV (Atiak HCIV) in a district of Northern Uganda". Responding to the need for healthcare professionals to more quickly recognize depression in clients who are HIV positive knowing that it will bring about better compliance to treatment and improve quality of life.

The study has been approved by the University Review Ethical Committee (REC) with ref: **UCUREC-2022-437**.

This letter is therefore to request for any support I might need to help me successfully collect my data in your health facility.

Hoping for your positive support towards this process.

Thank you

Sincerely,

[Signature]

Douglas Tonny Otim (0782974765, otim996@gmail.com)
Master of Nursing Science Candidate, Uganda Christian University

Appendix K: Performance against Each Statement

Statement	Pre-test		Posttest	
	Correct: n (%)	Wrong: n(%)	Correct: n(%)	Wrong: n (%)
The following best describes depression:				
K1-Depression is more common among HIV positive clients than in the general population	26 (76.5)	8(23.5)	34 (100)	0 (0)
K2-Depression is rarely a disabling disease.	19(55.9)	15(44.1)	26(76.5)	8 (23.5)
K3-Depression has a strong association with treatment outcomes in HIV/AIDS care.	24(70.6)	10(29.4)	34(100)	0(0)
The following are risk factors for developing depression in HIV positive clients:				
K4-Having HIV is a risk factor for depression	31(91.2)	3(8.8)	33(97.1)	1(2.9)
K5-Poverty due to high personal life issues	29(85.3)	5(14.7)	34(100)	0(0)
K6-Being female gender	8(23.5)	26(76.5)	34(100)	0(0)
K7-Highly active antiretroviral drugs	25(73.5)	9(26.5)	24(70.6)	10(29.4)
Regarding the PHQ-9 depression assessment tool:				
K8-The PHQ-9 is a tool for screening depression and its severity	30(88.2)	4(11.8)	34(100)	0(0)
K9-The PHQ-9 is a tool for identifying specific symptoms not responding to treatment	15(44.1)	19(55.9)	20(58.8)	14(41.2)
K10-It is a tool that is used for assessing depression only in an HIV setting	24(70.6)	10(29.4)	33(97.1)	1(2.9)
K11-It can only be used on individuals 18 years and above.	24(70.6)	10(29.4)	32(94.1)	1(2.9)
K12-It can be used on individuals 12 years and above	21(61.8)	13(38.2)	34(100)	0(0)
K13-It can be used to measure all forms of depression treatment response.	25(73.5)	9(26.5)	33(97.1)	1(2.9)
K14-It can be self-administered by the client or completed by a health worker as client gives their responses	29(85.3)	5(14.7)	34(100)	0(0)
Regarding parameters of the PHQ-9 tool				
	25(73.5)	9(26.5)	33(97.1)	1(2.9)

K15-It can assess depression in the last 1 month only				
K16-Any positive answer in the first 2 questions prompt the completion of the entire tool.	11(32.4)	23(67.6)	27(79.4)	7(20.6)

Statement (cont...	Correct: n (%)	Wrong: n (%)	Correct: n (%)	Wrong: n (%)
When depressive features are identified earlier, what would be the benefits to the client?				
K17-The client is supported to deal with their symptoms, hence there are good treatment outcomes.	33(97.1)	1(2.9)	34(100)	0(0)
K18-The client may have poor adherence to HIV treatment because they are afraid of known depressive symptoms.	27(79.4)	7(20.6)	32(94.1)	2(5.9)
If depressive features are unrecognized in an HIV-positive client, what could this lead to?				
K19-There may be interruptions in scheduled visits	33(97.1)	1(2.9)	32(94.1)	2(5.9)
K20-This may result in high viral load detection	33(97.1)	1(2.9)	34(100)	0(0)
K21-The client can have high clusters of differentiation 4 (CD4) results	13(38.2)	21(61.8)	24(70.6)	10(29.4)
K22-Depression symptoms can lead to disease progression and a high level of mortality.	33(97.1)	1(2.9)	34(100)	0(0)
The PHQ-9 tool was approved to be administered by which category of persons?				
K23-By the clients who can read and understand	19(55.9)	15(44.1)	31(91.2)	3(8.8)
K24-Psychiatric personnel only	32(94.1)	2(5.9)	32(94.1)	2(5.9)
K25-Any trained health worker	34(100)	0(0)	33(97.1)	1(2.9)
How would you classify depression according to PHQ-9 tool?				
K26-Minor and major	15(44.1)	19(55.9)	30(88.2)	4(11.8)
K27-Minimal, mild, moderate, moderately severe, and severe	18(52.9)	16(47.1)	32(94.1)	2(5.9)
K28-Minimal, mild, moderately mild, moderate, and severe	23(67.6)	11(32.4)	33(97.1)	1(2.9)
What will you do if your patient has a depression score of 17 points according to PHQ-9?				
K29-Tell the patient that this is self-limiting	9(26.5)	25(73.5)	30(88.2)	4(11.8)
K30-Refer immediately to a mental health practitioner	32(94.1)	2(5.9)	34(100)	0(0)

Revise his/her ARV dose and adjust accordingly	12(35.3)	22(64.7)	16(47.1)	18(52.9)
Consult with the witchdoctor since it is a curse or misfortune	33(97.1)	1(2.9)	34(100)	0(0)

Appendix L: General Performance of Attitude against each Statement

Statement	SD: n(%)	D: n(%)	A: n(%)	SA: n(%)	SD: n(%)	D: n(%)	A: n(%)	SA: n(%)
A1-I want to participate in depression screening using the PHQ-9 tool in my health facility	0(0)	0(0)	23(67.6)	11(32.4)	0(0)	0(0)	11(32.4)	23(67.6)
A2-I have a believe that access to the PHQ-9 tool at the facility will encourage me to actively evaluate my clients for depression.	0(0)	0(0)	17(50)	17(50)	0(0)	0(0)	10(29.4)	24(70.6)
A3-I would recommend my colleagues to use the PHQ-9 tool to screen clients for depression in HIV or any other chronic disease condition	0(0)	0(0)	16(47.1)	18(52.9)	0(0)	1(2.9)	6(17.6)	27(79.4)
A4-If you encountered a patient with symptoms of depression, will you refer them for further psychiatric evaluation?	0(0)	2(5.9)	21(61.8)	11(32.4)	0(0)	2(5.9)	17(50)	15(44.1)
A5-If you are provided with information about the PHQ-9, are you willing to use it to screen the HIV-positive clients in your facility?	0(0)	0(0)	20(58.8)	14(41.2)	0(0)	1(2.9)	7(20.6)	26(76.5)
A6-Is it important to provide sufficient information about the use of the PHQ-9 in screening HIV-positive clients?	0(0)	0(0)	14(41.2)	20(58.8)	0(0)	0(0)	14(41.2)	20(58.8)
A7-Do you believe that PHQ-9 is a potentially valuable tool for use with HIV-positive clients?	1(2.9)	1(2.9)	19(55.9)	13(38.2)	0(0)	0(0)	9(26.5)	25(73.5)
A8-I find working with depressed clients is heavy going, tedious, or difficult	2(5.9)	13(38.2)	12(35.3)	7(20.6)	8(23.5)	14(41.2)	9(26.5)	3(8.8)
A9-Depression is best managed by traditional healers.	31(91.2)	3(8.8)	0(0)	0(0)	32(94.1)	2(5.9)	0(0)	0(0)
A10-The clinical coach's enthusiasm towards PHQ-9 provides my motivation for using the tool	1(2.9)	2(5.9)	24(70.6)	7(20.6)	1(2.9)	1(2.9)	13(38.2)	19(55.9)

Appendix M: General Performance against each Statement on Practices

Statement	Pre-test			Posttest		
	Ne: n(%)	Occ: n(%)	Alw: n(%)	Ne:n(%)	Occ: n(%)	Alw: n(%)
P1-Have you ever encountered an HIV/AIDS client with features suggestive of depression?	4(11.8)	17(50)	13(38.2)	1(2.9)	15(44.1)	18(52.9)
P2-Do you check the national guidelines to find the current update on HIV management, specifically the depression part?	13(38.2)	18(52.9)	3(8.8)	2(5.9)	25(73.5)	7(20.6)
P3-Have you used any depression assessment tool in the last two years for HIV-positive clients?	20(58.8)	10(29.4)	4(11.8)	13(38.2)	7(20.6)	14(41.2)
P4-Do you evaluate clients using PHQ-9 to know if they need advanced psychiatric care.	22(64.7)	7(20.6)	5(14.7)	11(32.4)	8(23.5)	15(44.1)
P5-Do you refer clients identified with symptoms of depression in your facility to a mental health provider?	4(11.8)	14(41.2)	16(47.1)	2(5.9)	13(38.2)	19(55.9)
P6-Are depression symptoms common among HIV-positive clients?	0(0)	14(41.2)	20(58.8)	0(0)	6(17.6)	28(82.4)
P7-Have you ever received training on depression or mental health in the last 2 years?	30(88.2)	3(8.8)	1(2.9)	16(47.1)	12(35.3)	6(17.6)
P8-How often do you check Uganda Ministry of Health or WHO websites for current guidelines?	15(44.1)	19(55.9)	0(0)	6(17.6)	22(64.7)	6(17.6)
P9-How often do you assess for depression among HIV-positive or chronic care clients?	7(20.6)	18(52.9)	9(26.5)	2(5.9)	12(35.3)	20(58.8)
P10-Do you inquire about a client's mood when there is inconsistencies in their follow-up in HIV care?	2(5.9)	13(38.2)	19(55.9)	0(0)	6(17.6)	28(82.4)
	5(14.7)	17(50)	12(35.3)	0(0)	10(29.4)	24(70.6)

P11-Do you check for socio-economic status of your clients who appear to speak less in a low tone while seeking care from you?						
P12-How often do you interact with clients who frequent your health facility with random symptoms?	1(2.9)	17(50)	16(47.1)	0(0)	17(50)	17(50)
P13-When I see a client with random symptoms, I would assess for depression.	3(8.8)	17(50)	14(41.2)	1(2.9)	14(41.2)	19(55.9)

Appendix N: Post-Viva Dissertation Correction Compliance Report Form



UGANDA CHRISTIAN UNIVERSITY

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UGANDA CHRISTIAN UNIVERSITY
SCHOOL OF RESEARCH & POSTGRADUATE STUDIES

DISSERTATION CORRECTION COMPLIANCE REPORT BY THE CANDIDATE (POST VIVA FORM)

Date: 27 March 2024

Name of Candidate: Otim Douglas Tonny

Reg. No: RM18M11/021

Title of Dissertation: Effect of Clinical Coaching on the Health Workers' Knowledge, Attitudes, and Practice towards the Use of the Patient Health Questionnaire-9 Tool in a HIV Care at Atiak HCIV in Amuru District, Northern Uganda

SN	COMMENTS BY EXTERNAL EXAMINER	ACTION TAKEN	INDICATOR
1	Issues of abbreviations & biology of high prevalence of depression.	Addressed, except the molecular biology of depression is above the scope of the study.	Cover page
2	Problem statement (references & detail description)	Addressed, though there are detail descriptions in the background with proper citations as well.	From pg 7-8
3	Significance- focus on new knowledge	Already addressed, probably examiner individual bias	Pg 9-10
4	Justification of study	Addressed	Pg 10-11
5	Use more conceptual framework (CF)	Not added since this was a short-period specific study & no evidence that multiple CF can influence study outcome. Also conceptual framework and theoretical framework are used interchangeably to guide direction of the study where the latter is stronger in the sense. No confounding variables identified in the final report.	Pg 11-27
6	Result modifications	Addressed. Wilcoxon signed rank test is a great suggestion, however, it is applicable in multi-variant analysis to predict the correlational changes within categories that was not a focus for the study. For Practices, t-test was dropped and re-analysis done with McNemar Chi square test to compare the change in the pre-test in the group.	From pg 77-88
7	Discussions	Addressed & followed the results	From pg 89-105

SN	COMMENTS BY INTERNAL EXAMINER	ACTION TAKEN	INDICATOR
1	All comments were addressed before	All comments were addressed before submission to external examiner	Examined by external person
2			
3			
4			
5			

SN	COMMENTS BY VIVA VOCE PANNEL	ACTION TAKEN	INDICATOR
1	Mention name of research facility	Addressed	From cover page
2	Straight forward research question	Remained as guided by book (Polit & Beck, 2012). Team never provided evidence on indirect way of formulating it.	Unchanged, pg. 9
3	No reference on problem statement	Addressed	Pg. 7- 8
4	Abbreviations on the research topic	Addressed	Cover page
5	Conclusion	Already addressed in final document	Pg. 106

Otim Douglas Tonny



Sebuliba Faith Rosemary Kasumba



Candidate's Name

Signature

Supervisor's Name

Signature