SCHOOL OF PUBLIC HEALTH

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ASSESSMENT OF COPING STRATEGIES AMONG ADOLESCENTS AND YOUNG ADULTS LIVING WITH HIV/AIDS AT THE FEVERS UNIT, KORLE BU TEACHING HOSPITAL

BY

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(10393404)

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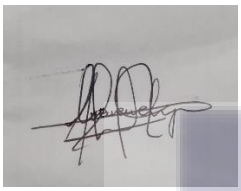
DECLARATION

I, Selom Kwame Dake, declare that except for other works which have been duly acknowledged, this work is the result of my own original research, and that as far as I am aware, this dissertation, either in whole or in part, has not been presented elsewhere for another degree.



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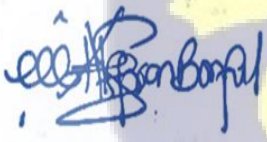

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Dr. Harriet Affran Bonful DATE

(ACADEMIC SUPERVISOR)

DEDICATION

This dissertation is dedicated to God Almighty for his provision and grace that has kept my family safe during this pandemic. Glory be to God on High! This is also dedicated to my lovely parents, siblings, and friends who have been of immense support though every step of this journey.

ACKNOWLEDGEMENT

To begin with, I would like to express my heartfelt gratitude to the Almighty God for His grace and guidance throughout the program and the successful completion of this study.

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Finally, I would also like to appreciate my family, for their endless support, prayers and encouragement throughout my program of study.

ABSTRACT

Living with HIV/AIDS has been noted to be an extremely stressful experience that has an effect on one's physical and mental health. In Sub-Saharan Africa, increasing numbers of children with perinatally acquired HIV (PAHIV) are living into adolescence due to the advent of highly active anti-retroviral therapy. Adolescents potentially have longer periods to live with this disease. Coping with the disease becomes even more important in this sub-group. The purpose of the study was to assess the coping strategies employed among adolescents living with HIV attending clinic at the Fevers Unit KBTH, and the factors that affect their choice of coping strategy. An analytic cross-sectional study was carried out on 154 young adults at the Fevers Unit, KBTH. The adolescent version of the KidCope was used to assess the choice of coping strategies. Data was analyzed using Stata v.16. Bivariate, univariate and multiple linear regression analysis was used to identify significant factors that affect choice of coping strategy at 95% CI and a p-value of 0.05. The mean age for respondents was 19.16 years(95%CI-18.72-19.58). Majority of respondents(57.1%) used predominantly positive coping strategies with cognitive restructuring(87.0%) being the most commonly used strategy. There were significant differences in coping index score among levels of education with ALHIV with tertiary education having higher coping scores. There were also significant differences observed in coping strategy index for age(0.96, p=0.046), presence of both parents as caregivers.(1.53, p=0.014) and stigma and discrimination as a stressor(1.37, p=0.008). Participants generally adopted positive coping strategies in managing the disease. Factors that affected choice of positive coping strategies included increasing age, higher levels of education and the presence of both parents as caregivers. The importance of a good social support structure and pursuing further education needs to be emphasised in counselling ALHIV as it promotes good choices of positive strategies.

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ABBREVIATIONS

AIDS-	Acquired Immune Deficiency Syndrome
ALHIV-	Adolescents Living with HIV
APA-	American Psychological Association
CSI-	Coping Strategy Index
HAART-	Highly Active Antiretroviral Therapy
HIV-	Human Immunodeficiency Virus
NLE-	Negative Life Event
PLHIV-	People Living with HIV
UNICEF-	United Nations International Children's Emergency Fund

CHAPTER ONE

1.0 INTRODUCTION

1.1- Background

The HIV/AIDS epidemic has been one of the world's most damaging health related states that has affected the global population. Worldwide, people living with HIV/AIDS (PLHIV) are estimated to be 38 million with 70% of this number in sub-Saharan Africa alone (UNAIDS, 2020). No age group has been spared and The UNICEF fact sheet on HIV in 2019 further illustrates this. It states that about 1.7 million adolescents and young adults between the ages of 10 and 24 are living with HIV worldwide, accounting for about 5% of the world's HIV population. One and a half million cases were identified in Sub-Saharan Africa with about 170,000 new cases identified in 2019(UNICEF, 2020). About 28,000 adolescents living with HIV die every year due to HIV related complications with about 90% of these in Sub Saharan Africa. In 2015, HIV-associated mortality was the 8th leading cause of adolescent death globally and the 4th leading cause in African low- and middle-income countries (UNAIDS, 2020). Due to the dynamic stage of life in which they find themselves, adolescents and young adults find it difficult to cope with the stressors of life. This is made all the more difficult when they have a chronic debilitating illness like HIV/AIDS. Due to the advent of Highly Active Antiretroviral Therapy(HAART) and its successes, these adolescents potentially have longer periods to live with the disease. Multiple stressors in relation to adherence to medication, family financial problems, disease related events and disclosure have been identified in managing HIV/AIDS according to the REACH study (Murphy et al, 2000).

Recent studies suggest that the potential of a stressor to cause mental health issues depends not only on the severity of the stress exposure but also on the resilience of the individual and the coping strategy employed.

Coping strategies as defined by the American Psychological Association refers to an action, a series of actions or a thought process used in meeting a stressful or unpleasant situation or in modifying one's reaction to such a situation. Many stressors and their associated coping strategies have been identified by mental health experts in patients in managing HIV/AIDS.(APA,2021). Examples of these coping strategies include distraction, social withdrawal, cognitive restructuring, wishful thinking, self-criticism, blaming others, problem solving, emotional regulation, seeking social support and resignation. Coping strategies can be generally be classified into positive/adaptive/engagement and negative/maladaptive/disengagement groups. Research aimed toward understanding which coping strategies are used to combat stressors associated with living with the disease has been carried out in the older subgroup. However, establishing and understanding the relationship between socio-demographic variables and the coping strategy used in the adolescent subgroup will help clinicians and other health professionals tailor interventions to manage the various stressors related to the disease thus favoring success of the entire therapeutic regimen.

1.2 -Problem statement

The use of maladaptive coping strategies has been associated with many negative outcomes in managing patients living with HIV and has contributed to increasing levels of morbidity and mortality in this population. This is a problem that affects the patient, his/her family and the nation as a whole. It has far-reaching implications for the health

of patients living with HIV and propensity for continuity of care in the adolescent subgroup in particular (Ritchwood et al, 2020).

Patients normally resort to employing negative coping strategies in managing HIV/AIDS due to many factors. These include their social and demographic factors. Lower levels of education, younger age at first diagnosis and poor socioeconomic status have all been associated with the use of poor coping strategies (Laar et al, 2014; Folayan et al, 2017). Also, when a social support structure is non-existent or non-functional a person living with HIV is more likely to resort to poor coping strategies.(Silva et al, 2018) The stressors patients face whilst managing HIV can also cause them to resort to poor coping strategies in managing the disease.

Poor coping strategies have many detrimental effects on the lives of the individual, the family structure and the community and nation as a whole. They are known to affect the mental health of ALHIV negatively and also exerts a toll on the human body. The use of denial for example delays onset of treatment and may cause progression of the disease with added complications that are difficult to manage.(Kamen et al,2011) It also affects the family as they push away their loved ones leading to rifts and strife. Poor coping strategies also lead to increased financial costs on the family as the patients do not seek medical care early causing problems to fester and worsen. The community and country are not spared as this promotes negative socioeconomic growth and increases the burden PLHIV pose on the nation's economic, health infrastructure and social resources.

Research aimed toward understanding which coping strategies are used to combat stressors associated with living with the disease has been carried out in the older subgroup. However, establishing and understanding the relationship between socio-demographic variables and the coping strategy used in the adolescent subgroup will

help clinicians and other health professionals tailor interventions to manage the various stressors related to the disease thus favoring success of the entire therapeutic regimen. This would help to tackle problems earlier in the lives of these patients. It would also serve to improve the body of knowledge concerning stressors and coping strategies among adolescents and young adults living with HIV/AIDS.

1.3 Conceptual framework

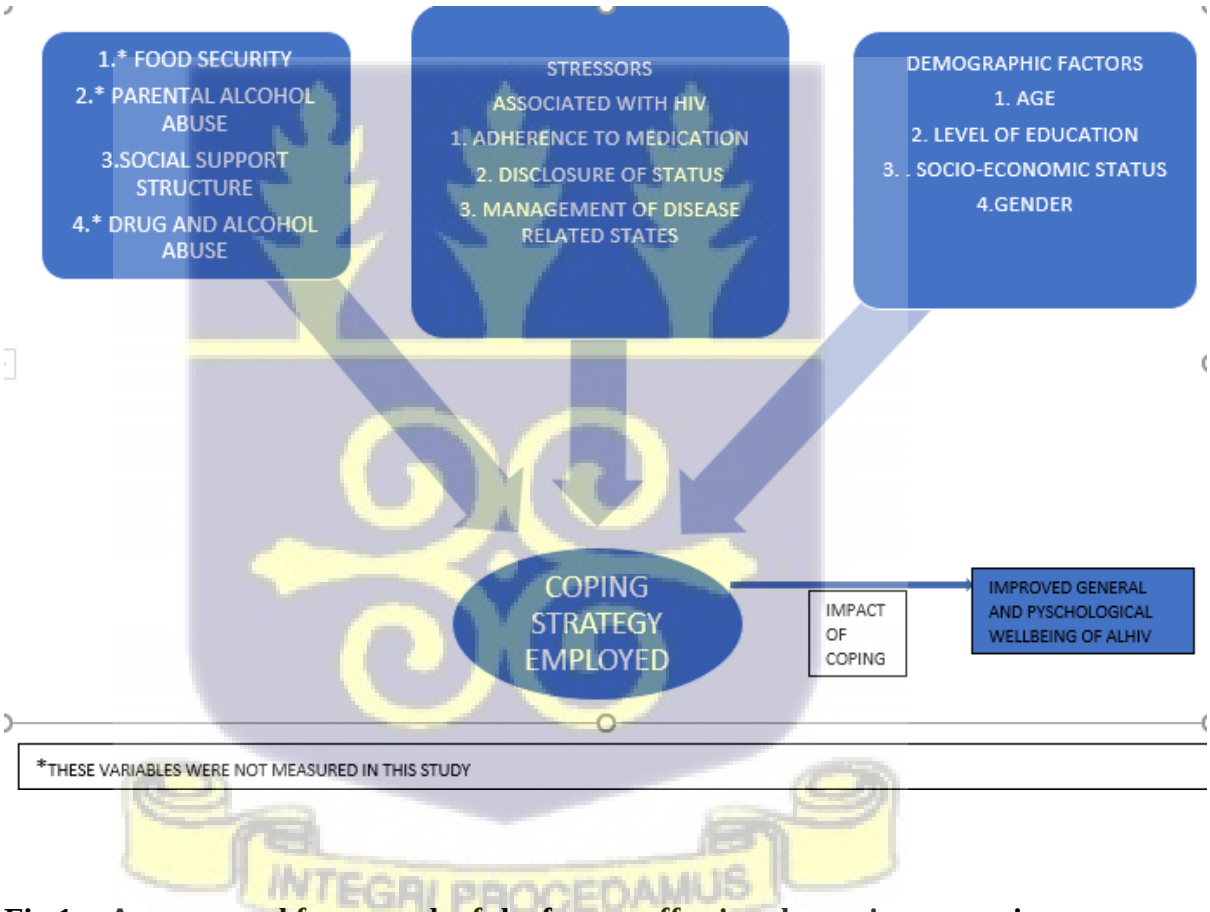

Fig 1. A conceptual framework of the factors affecting the coping strategies employed by ALHIV

NARRATION

Fig 1 shows that the coping strategies employed by adolescents living with HIV are largely affected by three main factors; stressors, social factors and the demographic factors.

The stressors include challenges associated with adherence to medication such as having to take drugs regularly and visit the hospital often and the side effects that they encounter. It also includes the difficulties in disclosure of status to their family friends and loved ones and managing the stigma and discrimination that they face. It also involves physical challenges that come with management of the disease such as opportunistic infections and complications of managing HIV.

Demographic factors include the age of the adolescent as younger adolescents have been studied to employ maladaptive/avoidance coping strategies as opposed to their older counterparts, gender, level of education and socio-economic status.

The social factors include the social support structure largely made up of the family and close friends of the individual, the use of alcohol and drugs by the individual and the availability of constant food supply and poverty in the home of the adolescent living with HIV/AIDS.

1.4 Research Questions

- What stressors do adolescents living with HIV experience? -
- What coping strategies do youth living with HIV employ when they are managing stressors?
- What are the demographic and social factors that affect coping strategies used by ALHIV?

1.5 General objective

The main objective of this research is to determine the coping strategies among adolescents living with HIV at a HIV clinic in Korle Bu Teaching Hospital, Accra-Ghana.

1.6- Specific objectives

1) To assess the stressors that ALHIV face in living with the disease.
2) To determine the coping strategies among adolescents living with HIV.
3) To assess the proportion of adolescents who adopt positive coping strategies to manage stressors associated with HIV.
4) To assess the demographic factors that affect coping strategies used by ALHIV.
5) To assess the social factors that affect coping strategies used by ALHIV

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Definition

Coping strategies as defined by the American Psychological Association refers to an action, a series of actions or a thought process used in meeting a stressful or unpleasant situation or in modifying one's reaction to such a situation (APA, 2018).

2.2 Classification

The human race is known to adopt various strategies to cope with the varying stressors of life they face. However, it must be noted that just as the body's inappropriate immune response to a particular stimulus can lead to undesirable effects like anaphylactic shock and granulomatous diseases, maladaptive coping strategies can also be equally damaging to the patient's health.

Many different coping strategies have been identified in managing various stressful situations. This can be subdivided into adaptive/positive/engagement/active coping strategies and maladaptive/negative/disengagement/passive coping strategies. The positive coping strategies seek to approach the problem with focus on one's action in actively managing the stressful situation presented. The use of positive coping strategies helps to deal with negative emotions and foster resilience, a mental state that helps to overcome challenges (Wu et al, 2020). The negative/avoidant coping strategies seek to ignore or postpone dealing with the problem, an approach that manages stress less effectively. Problem solving, positive emotion regulation, cognitive restructuring and seeking social support are regarded as positive coping strategies whereas distraction, negative emotion regulation, social withdrawal, wishful thinking, self-

criticism, blaming others and resignation are regarded as negative coping strategies (Orban et al., 2010).

2.3- Theoretical Background

The transactional theory of stress and coping developed by Lazarus and Folkman in 1984 was truly groundbreaking and remains the cornerstone of psychological stress and coping research across many fields in psychology, psychiatry and academia in general. Psychological stress is defined by Lazarus and Folkman as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus and Folkman, 1984). They analyzed the paradigm as a balance between stress reactions and coping efforts. Coping in this situational approach is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." (Lazarus and Folkman, 1984). In order to evaluate which type of coping is beneficial for each patients' adjustment, it is important to note that the term 'coping' refers to all efforts to deal with a stressful encounter, independent of their effectiveness (Lazarus and Folkman, 1984). They further went on to describe two distinct arms of coping: problem based coping and emotion based coping(Lazarus and Folkman, 1984). This was later modified by Ashel and Weinberg in 1999 to consist of an approach-based coping as opposed to an avoidance based coping strategy. (Anshel, 1996; Anshel & Weinberg, 1999)

There are some schools of thought that believe that coping may be affected by the genetic makeup of individuals and this may play a more significant role in how individuals react to the challenges they face. Heritability estimates generally point to a

non-additive genetic component to different phenotypic coping types. (Dunn et al, 2015). However, there is more room for study in this area.

2.4 Coping Strategies Among Adolescents and Young Adults Living with HIV

Many studies have been conducted worldwide to investigate how adolescents and young adults living with HIV cope with the disease.

Passive emotional regulation has been reported to be one of the most used strategies among adolescents living with HIV, according to the Adolescent Impact Study (Orban et al, 2010). Other coping strategies have also been reported with varying degrees of use. In Ghana most of the studies have however focused on the adult population. HIV affected households have been known to employ largely negative coping strategies in managing challenges the disease poses (Laar et al, 2015). Breastfeeding mothers were noted to employ varying coping strategies. Some resorted to denial and resignation whilst others used positive strategies such as hope in antiretroviral therapy and prayer as a way to tackle their challenges (Acheampong, 2017).

Some positive coping strategies have been identified in adolescents living with HIV and have been useful in their management. HIV-infected adolescents from 16 locations in 13 U.S. cities were recruited into the Reaching for Excellence in Adolescent Care and Health (REACH) project. REACH is the first large-scale disease progression study of HIV positive adolescents infected through sexual behavior or injection drug use. It was noted that lower levels of stressful events were associated with lower levels of depression, and this association was moderated by satisfaction with social support and by adaptive coping strategy use (Rogers et al, 1998).

In fact, seeking social support has been identified as one of the most used adaptive coping strategies and has been used to great effect in dealing with the psychosocial

challenges living with HIV/AIDS poses. In a study conducted among HIV/AIDS adolescent in the US, Social support moderated the effect of negative life events (NLE) such as family deaths, poverty and hospitalization among others. NLEs were associated with greater depression when social support was low. However, it must be noted that the effect did not remain statistically significant when main effects of other variables were accounted for. Daily hassles, poor coping, and limited social support can adversely affect the psychological well-being of HIV-infected adolescents, particularly youth with behaviorally acquired HIV (Lewis et al., 2015). This is further supported by studies conducted in Zambia and Nigeria involving young adolescents which reported the use of social support as a major positive coping strategy employed (Folayan et al., 2017; Linyaku et al., 2017).

On the other hand, maladaptive coping strategies have been identified as key risk factors in the development of depression and negative psychosocial effects in adolescents living with HIV (Compas et al., 1993). Poor mental health has been associated with poorer clinical outcomes in patients living with HIV. Controlling for sociodemographic variables, psychosocial support, and clinical condition at enrollment, depression was associated with an increased risk of disease progression in a study conducted among HIV/AIDS patients in Tanzania who employed the use of mental disengagement, a negative coping strategy (Antelman et al., 2007).

2.5 Measuring Coping Strategies

Many studies have been geared towards understanding how patients living with HIV cope with the disease. This has led to many coping classifications being generated and several authors have resorted to different tools to assess coping strategies in PLHIV. Examples of commonly used tools include The Cope Inventory, the Brief Cope Inventory and the Adolescent version of the KidCope.

2.5.1- The Cope Inventory

The Cope Inventory was based on a behavior self-regulation model and coping model developed by Lazarus and Folkman and was adapted to assess a broad range of coping mechanisms (Lazarus and Folkman, 1984). It has 60 items with 15 subscales each with a particular focus on a strategy. Its advantages include high test-retest reliability, high values of Cronbach's alpha and significant external validity (Carver,1989).However, its lengthy nature makes it extremely tedious to use and cumbersome to obtain data. The Cope Inventory was used in the 1980-199s in Miami, USA and in Ireland to assess coping (Carver, 1989).

2.5.2- The Brief Cope Inventory.

The Brief Cope Inventory is a modification of the Cope Inventory. It was developed to assess coping strategies among adults living with HIV. (Rzeszutek, 2018) This was made up of a 28-item questionnaire and has 14 subscales with 2 items each. This tool however has a few drawbacks. It lacks items which specifically focus on rumination/self-criticism, one of the most strongly identified maladaptive strategies (Nolen-Hoeksema et al., 2008). This refers to responses like "what am I doing to deserve this" and "why am I going through things others do not go through". The subscales were also derived empirically and do not provide a comprehensive systemization of coping strategies. It has however been used in the French and Chilean population, among others to assess coping strategies. (Baumstarck et al, 2017; Garcia et al, 2018)

2.5.3-The Adolescent Version of the KidCope

The Adolescent Version of the KidCope was then developed. This is a modified version of the KidCope, a mental health tool used to assess how adolescents cope with stressors. It is relatively short and assesses multiple specific coping strategies. Its brevity also

makes it useful in the adolescent population due to their shorter attention span and hence was suitable for the above study. It must be noted that although it has promising values of validity and reliability, it pales slightly in this regard in comparison with the other methods due to having fewer items(15 item scale) It is noted to have a moderate (0.41) to fairly high (0.83) test-retest reliability over a short duration. It has been used in Italy and more recently in Nigeria to assess coping strategies (Spirito et al, 1988; Folayan et al, 2017). In this study the KidCope tool will be employed because of its relatively short nature due to the timeframe involved and its high values of validity and reliability.

2.6-Factors associated with coping strategies.

The factors associated with coping strategies can be broadly categorized into stressors, social and demographic factors.

2.6.1 - Stressors

Stress can be defined as the physiological or psychological response to internal or external stressors. Stress involves changes affecting nearly every system of the body, influencing how people feel and behave. Stress is known to contribute directly to psychological and physiological disorders and affects mental and physical health, reducing quality of life (APA, 2018).

Stressful situations are extremely common and are known to elicit a series of behavioral, neurochemical, and immunological changes in a person that would help an individual adapt positively. However, if those systems required for homeostasis become overly burdened, the organism may become vulnerable to pathology and disease. Several factors may dictate an individual's response to environmental stressors, including characteristics of the stressor (i.e., type of stressor and its controllability,

predictability, and chronicity); biological factors (i.e., age, gender, and genetics); and the subject's previous stressor history and early life experiences.(Anisman & Merali, 1999). Multiple studies have been conducted on the physiological and psychological responses to different types of stressful stimuli and how that might affect patients being managed for various medical conditions (Anisman & Merali, 1999).

Many situations exist in the lives of people living with chronic disease that cause them stress. Patients living with HIV are no exception. Multiple stressors have been identified in the lives of adolescents living with HIV. A qualitative study carried out among HIV adolescents at a treatment center in Kampala, Uganda identified medication difficulties, stigma, discrimination and challenges associated with disclosure as the main stressors their population faces (Mutumba et al., 2021). A similar study carried out among adolescents living with HIV in Nigeria also identified having to take drugs regularly, not adhering to medications and dealing with stigma and discrimination as major stressors that these patients face. It also went on to identify other stressors associated with handling the death of loved ones, thinking about death themselves and the prospects of not having children as other difficulties they face in managing HIV/AIDS.(Folayan et al., 2017).

These stressors may also be related to the emotions the individuals face on a daily basis in living with the disease. A study carried out in the southeastern Rwanda's southern Kayonza District among various ethnic groups showed that persistent sadness and sorrow, hopelessness and constant worry and neglect are some of the hardest emotions these adolescents deal with, in addition to the problems of poverty, poor feeding habits and hunger, dropping out of school and the challenges opportunistic infections pose to the population (Betancourt et al., 2011). This provides a different take to the challenges that cause stress in the lives of the population and serves to highlight the importance of

the role good mental health has to play in managing the adolescent who has contracted HIV/AIDS.

Generally, the stressors identified by patients living with HIV can be classified under three major headings. These include stressors due to health-related problems, stressors due to medication adherence and use and stressors due to disclosure related issues and support from loved ones.

2.7.1 Social and demographic Factors associated with coping strategies

Social, economic and demographic characteristics are known to play a role in the coping strategies employed by patients in managing HIV/AIDS. The level of poverty, abundance of assets and food security have affected how patients who live with HIV cope with the challenges they face. In a study conducted among a nationally representative sample of HIV-affected households in Ghana in 2014, it was discovered that asset poor households had a higher coping strategies index (CSI) as opposed to asset rich households (Laar et al, 2014). The CSI is a proxy measure of relative food insecurity in a household with lower scores reflecting better household food security situation. The CSI was also noted to be lower in homes affected by HIV where the level of education of the head of the household was higher and higher in homes when the head of household was a female indicating a possible gender-based association (Laar et al, 2014).

Increasing age and higher levels of education have also been associated with the use of better coping strategies has been associated with a better ability to cope with stress. Studies conducted in Uganda and Nigeria among HIV affected adolescents lay credence to this (Folayan et al, 2017; Kimera et al, 2021).

Alcohol and substance abuse also play a major role in the lives of patients living with HIV and indirectly affect how they cope with the challenges they face. Alcohol and substance abuse are known to have detrimental effects on the physical health of patients living with HIV. Patients who drank less alcohol and didn't engage in substance abuse were associated with stronger adaptive coping strategies such as coping through action and coping with religion according to the Coping with HIV AIDS study conducted in the United States (Pence et al, 2008). Maladaptive coping strategies were also associated with a greater number of adolescents who drank to the point of intoxication (Pence et al, 2008).

Also, when a social support structure is non-existent or non-functional a person living with HIV is more likely to resort to poor coping strategies (Silva et al, 2018).

CHAPTER 3

3.0-METHODS

3.1 Study design

An analytic cross sectional design was used. The study was conducted at the Korle-Bu Teaching Hospital, Fevers Unit and used a standardized questionnaire to assess the coping strategies used by adolescents and young adults living with HIV/AIDS.

3.2 Study area

The study was carried out at the adolescent HIV clinic of the Korle Bu Teaching Hospital, Accra from June to December 2021. The Korle -Bu Teaching hospital is Ghana's foremost referral facility located in the Accra Metropolis with a bed capacity currently standing at about 2000. The Fevers' unit is a medical department under the Internal Medicine Unit of the hospital. Since it was established in 2003, it has been one of the many sites that provide care for persons living with HIV in Ghana. It has a counselling unit manned by a trained clinical psychologist and community health nurses who provide free counselling and testing services for HIV.

There are four clinic days per week; Mondays, Wednesdays, Thursdays and Fridays. The adolescent and young adult clinic is scheduled for Thursdays whilst the remaining clinic days are meant for adult patients.

The adolescents and young adults' clinic attends to about 20 to 40 persons on each clinic day. About 200-250 patients are enrolled in the HIV clinic. The unit is also equipped with bed facilities that are useful when patient need to be admitted as a result of complications related to HIV infection and management.

The fevers' unit is also responsible for the care of other infectious illnesses such as tetanus, chicken pox and rabies.

3.3 Inclusion criteria

All adolescents between the ages of 10-19 who attend the HIV clinic at the Fevers Unit of the Korle Bu Teaching Hospital were eligible to be included in the study.

All participants had record of a documented HIV positive test.

3.4 Exclusion Criteria

All adolescents between the ages of 10-19 who were on admission at the Fevers Unit of the Korle Bu Teaching Hospital were excluded from the study.

All adolescents with medically diagnosed cognitive impairment were excluded from the study.

3.5 Sampling

3.5.1 Sample size calculation

The required sample size based on the available literature(Folayan et al, 2017) was obtained using the Cochrane formula as illustrated below;

$$\frac{N = Z^2 P(1-P)}{d^2}$$

where N= sample size

Z= statistic for level of confidence, P= expected prevalence

d= margin of error, Z at a 95% confidence interval = 1.96

Margin of error d= 5% (0.05)

$$\frac{N = (1.96)^2\ 0.532(1-0.532)}{} = 384$$

$(0.05)^2$

To determine the sample size for the finite population under study,

Sample size(SS) / 1+ (SS-1/Population)

= 384/1+(383/250)

=151.66 = 152 participants

3.5.2 Sampling

The sample population was made up of adolescents and young adults living with HIV between the ages of 10 and 24 who attend the clinic at Korle Bu Teaching Hospital. The sample frame contained a list of all patients to be seen on a specified clinic day. The patients who attended clinic on the respective clinic days (Thursday) were offered numbered cards based on first come basis. A systematic random sampling method was used to obtain the number of participants to be recruited on each clinic day in order to obtain the required sample size for the stipulated study time period. The number of participants recruited into the study on each of the clinic days was obtained by the sampling fraction, N/20 where N is the total number of patients present at the clinic on the clinic day. The sampling interval was then computed and used to determine the participants to be enrolled in the study. This was done until the required number of participants was obtained for the study.

3.6-Variables

3.6.1 Dependent variable

The dependent variable in the study was the coping strategy employed by adolescents living with HIV. This was measured by using the adolescent version of the KidCope. This is a mental health tool that is applied to adolescents to determine the coping

strategies employed to manage stressors they face. This has been used in assessing coping strategies employed by adolescents in managing chronic illnesses such as diabetes and depression (Spirito et al, 1998). Examples of the questions include "I blamed myself for causing the problem" and "I tried to see the good side of things."

3.6.2 Independent variable

The independent variables to be evaluated in the study include-

- Demographic variables such as age, sex, religious affiliation, level of education, and occupation
  .
- Social factors such as parental status and presence of caregivers
- Stressors such as taking drugs regularly and disclosing disease status to loved ones.

Table 3.1: Details of variables and Sources of data

Type of variable	Variable	Operational definition	Scale of measurement	Source of data
Dependent	Coping strategy employed	Series of actions or a thought process used in meeting a stressful or unpleasant situation	Binary	Questionnaire
Independent variable	Age	Completed age of participant in years	Categorical	Questionnaire
	Sex	Sex of participant	Binary (Nominal)	Questionnaire

	Religious affiliation	Religious group of participants	Nominal	Questionnaire
	Occupation		Nominal	Questionnaire
	Presence of Caregivers	Who acts as caregiver for respondent	Nominal	Questionnaire
	Parental Status	Presence of single/both parents alive	Nominal	Questionnaire
	Educational level	Highest level of education attained by participant	Ordinal	Questionnaire
Independent Variable	Stressors	Event, experience, or environmental stimulus that causes stress in an individual	Binary	Questionnaire
	Stressors	Having to visit the hospital regularly	Binary(Yes, No)	Questionnaire

	Stressors	Having to take drugs regularly	Binary(Yes No)	Questionnaire
	Stressors	Body looks different from others	Binary(Yes No)	Questionnaire
	Stressors	Dealing with stigma and discrimination	Binary(Yes No)	Questionnaire
	Stressors	Telling my friends and family about my illness	Binary(Yes No)	Questionnaire
	Stressors	Thinking about death	Binary(Yes No)	Questionnaire
	Stressors	I don't have any friends	Binary(Yes No)	Questionnaire
	Stressors	Having arguments with my friends and family often	Binary(Yes No)	Questionnaire

	Stressors	Falling sick regularly	Binary(Yes No)	Questionnaire
	Stressors	People saying things about me that I don't like	Binary(Yes No)	Questionnaire

3.7- DATA COLLECTION AND TOOLS

A standardized questionnaire (Appendix III) was used to obtain information on adolescents and young adults living with HIV. Each participant was interviewed by the principal investigator with the assistance of two field workers with a study-specific designed standardized questionnaire. Questions were designed to collect information on the participants' sociodemographic characteristics, stressors and the coping strategies they employed. The data collection period was between July and December. This was done during the early hours of the morning usually at about 7 to 9am, as the clinic started quite early in the day. Prior to the administration of the questionnaire, consent (participants above 18 years) and assent (participants below 18 years) were sought from the study participants (Appendix I and II). The questionnaire was filled and submitted to the field workers or the principal investigator. The clinical details were then filled in by the fieldworkers and the principal investigator using the patient's folders. It normally took about 20 minutes to fill and was conducted whilst they waited in the queue to see the doctor attending to the patients. Questions were arranged in 3 major sections. Section A collected information on the sociodemographic characteristics of the study population. This included age, sex, level of education,

occupation and religious affiliation. Section B collected information on common stressors that they face. Section C adopted the adolescent version of the KidCope, a mental health tool used to assess coping strategies to stressors. Youth were asked to indicate how often a particular coping strategy was used. Sample items include: "I tried to fix the problem by thinking of answers" (problem-solving) and "I just tried to forget it" (distraction). Frequency was assessed by asking youth whether they made use of each strategy (Yes or No)

3.8 Data Management and Analysis

Data was entered into Microsoft excel 2016. Data was then cleaned by eliminating blank cells, duplicates and encountered errors. Data was then coded and later exported to STATA version 16 for analysis. The participant information was protected in a folder with a secure password. Descriptive statistics were used to present the data pertaining to the demographic, social variables and the various stressors of the study participants using tables and figures. The coping strategies were assessed using 15 different questions, a correct response was assigned a score of 1 and a wrong response was assigned a score of 0. The total scores obtained by each study participant were categorized into inadequate/negative coping strategy use(1-6) and adequate/positive coping strategy use (7-11).(Spirito et al, 1998). This was used to compute the coping index score for each respondent. Chi Square test of independence was used to determine the association between the independent variables and the coping strategies identified. The Fischer's exact test was used where variables had less than five observations. A linear regression model was used to estimate the strength of association between the independent variables(social factors, demographic factors and stressors) and the coping strategies. Only variables that were significant at p=0.1 or less were used to run the

adjusted model. The level of significance was set at a p value of 0.05 with a 95% confidence interval.

3.9 Quality control

3.9.1 Training of field workers and research assistants

The field workers received training before the field work. Field workers consisted of two medical doctors and a registered nurse at the Fevers' unit. These persons were taken through a two-day intensive training by the principal investigator. The training included sessions on how to obtain consent and how to manage the information obtained. The research assistants were fluent in English Twi and Ga. The work of the research assistants was supervised daily by the principal investigator, who observed the interviews and assessed completeness of the data obtained with the questionnaire. The questionnaires were assessed by the field investigators before data entry. For any error identified attempts were made to obtain the correct data by re-interviewing the patient if necessary through calls or in-person if the patient was available.

3.10 ETHICAL CONSIDERATION

This research proposal was submitted to the Ethical and Protocol Review Committee, Korle Bu Teaching Hospital and approved prior to the study (**KBTH-IRB/000100/2021**) The participation of patients in this project work was adapted to the understanding of the study and subsequent signature of the Informed Consent Form (ICF) and the Assent Form. (for participants below 18 years) The field workers directly observed the patient read the consent form and ensured that they clearly understood its contents, allowed them to ask any questions and addressed all their concerns to the best of his/her abilities. Study participants were informed that participating in the study is absolutely voluntary and that they had the right to withdraw from the study without it affecting the healthcare they were receiving. They were given enough time to ask

questions and also contact the principal investigator for further clarification and communication over the course of the study period. Questionnaires were secured in a locked cabinet. All data was then secured in a secure folder on a password protected computer.

CHAPTER FOUR

4.0-RESULTS

4.1-Socio-demographic characteristics of Adolescents Living With HIV, Fevers Unit KBTH.

The demographic characteristics for the study participants are illustrated in Table 4.1. The mean age for respondents was 19.16 years(95%CI-18.72-19.58). The gender distribution was fairly equal among study participants with 51.9% being male. A majority of the study participants were students accounting for about two thirds of the study population. Although a significant proportion of the study participants had both parents alive(61.1%), the caregivers for most of the study participants was just a single parent.(43.8%).

Table 4.1- Socio-demographic characteristics of ALHIV at the Fevers Unit KBTH(N=154)

	N	%
Sex		
Male	80	51.9
Female	74	48.1
Religion		
Christian	133	86.3
Muslim	21	13.6
Other	0	0
Educational level		
Primary	30	19.4
Secondary	97	62.9
Tertiary	23	14.9
Vocational/Technical	4	2.8
Occupation		
Student	101	69.5
Formally employed	25	16.2
Informally employed	8	5.2
Unemployed	14	9.1
Caregiver		
Single Parent	67	43.8
Both Parents	53	34.6
Other	33	21.6
Parental Status		
Both Parents Alive	99	61.1
One Parent Alive	54	36.3

No parents Alive	2	2.6
Total	154	100.0

4.2- Stressors Adolescents living with HIV face whilst living with the disease

A majority of the study participants admitted to dealing with stigma and discrimination (81.8%), taking drugs regularly(78.6%) and having to visit the hospital regularly(73.4%) as significant stressors in their lives. Table 4.2 summarizes these stressors.

Table 4.2- Stressors of Adolescents Living with HIV at the Fevers Unit KBTH

Stressors	N	%
Having to take drugs regularly		
Yes	121	78.6
No	33	21.4
Body looks different from others		
Yes	95	61.7
No	59	38.3
Dealing with stigma and discrimination		
Yes	126	81.8
No	28	18.2
Thinking about death		
Yes	43	27.9
No	111	72.1
Having to visit the hospital regularly		
Yes	113	73.4
No	41	26.6
Telling my friends and family about my illness		
Yes	95	61.7
No	59	38.3
I don't have any friends		
Yes	48	31.2
No	106	68.8
People saying things about me that I don't like		
Yes	63	40.9
No	91	59.1
Having arguments with my friends and family often		
Yes	55	35.8
No	99	64.2
Falling sick regularly		
Yes	102	66.2
No	52	33.8

4.3.1-Coping Strategies Used by ALHIV at the Fevers Unit, KBTH

Cognitive restructuring(87%) and problem solving(77.3%) were the most employed coping strategies. A summary of the coping strategies used is illustrated below.

Table 4.3- Coping Strategies Among ALHIV in the Fevers Unit, KBTH

Questions	Frequency	Percentage
I tried to fix the problem by thinking of answers to it		
Yes	119	77.3
No	35	22.7
I blamed myself for the situation		
Yes	55	35.7
No	99	64.3
I usually blame someone else for causing the problem		
Yes	50	32.5
No	104	67.5
I tried to focus on the good side of the issue		
Yes	135	87.0
No	19	13.0
I just kept to myself.		
Yes	75	48.7
No	79	51.3
I just wished the problem never happened		
Yes	128	83.1
No	26	16.9
I didn't do anything because the problem couldn't be fixed		
Yes	85	55.3
No	69	44.7
I tried to fix the issue by doing something/talking to someone	110	71.4
Yes	44	28.6
No		
I watched TV or played a game to try and forget the problem	126	80.5
Yes	28	19.5
No		
I tried to calm myself down.		
Yes	124	80.4
No	30	19.6
I tried to feel better by spending time with family and friends		
Yes	108	70.1
No	46	29.9

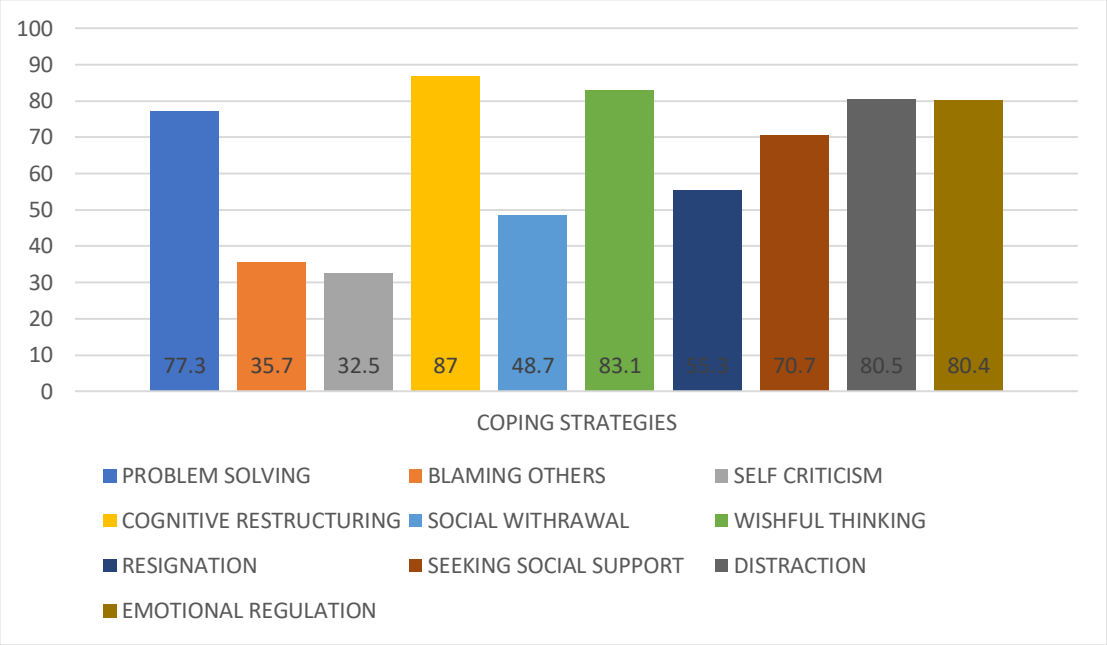

FIG 4.1-Coping Strategy Use Among Adolescents Living with HIV at the Fevers Unit, KBTH.

4.3.2- Choice of Coping Strategy Use Among ALHIV at the Fevers Unit, KBTH.

. As shown in Fig 4.1 below, a majority of the respondents employed predominantly positive coping strategies (57.1%) (95%CI-52.3%-63.4%).

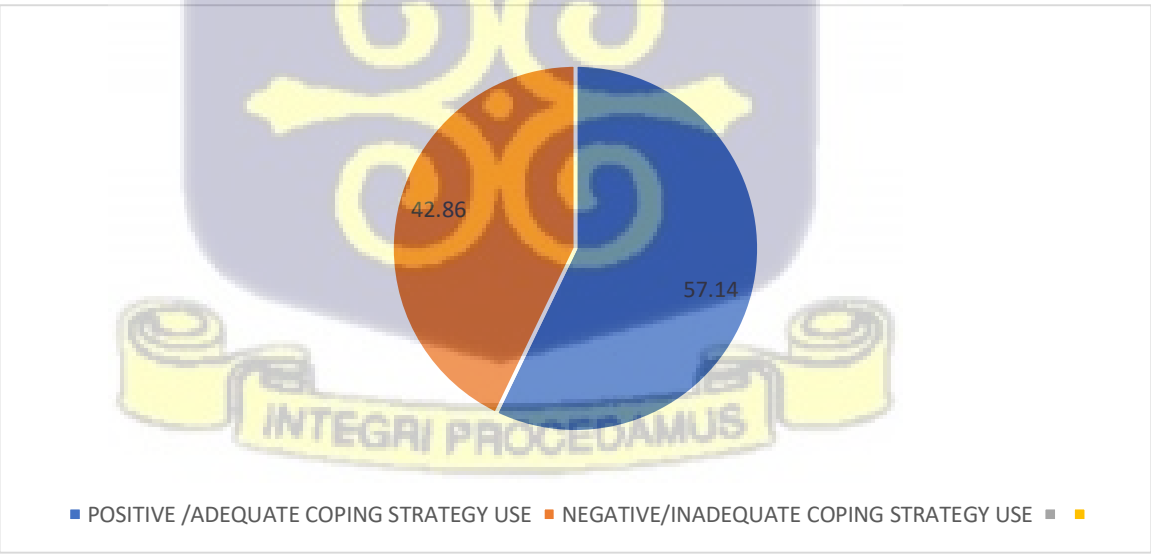

Fig 4.2-Choice of Coping Strategy Use Among ALHIV at the Fevers Unit, KBTH

4.4-Association between sociodemographic characteristics and coping strategy among ALHIV at the Fevers Unit, KBTH

A significant association was found between highest educational level(Pearson chi^2 =8.86, p=0.037) and caregiver(Pearson chi^2 =7.36, p=0.025) and coping strategy.

Table 4.4- Association between socio-demographic characteristics and coping strategy of ALHIV at the Fevers Unit KBTH.

		POSITIVE COPING STRATEGY			
CHARACTERISTIC	**TOTAL(%)**	**YES**	**NO**	**Chi^2**	**p-value**
Gender				2.96	0.085
Male	80(51.95)	51(63.75)	29(36.25)		
Female	74(48.05)	37(50.00)	37(50.00)		
Religion				0.23	0.635
Christian	133(86.36)	77(57.89)	56(42.11)		
Muslim	21(13.64)	11(52.38)	10(47.62)		
Educational level				8.86	**0.037†***
Primary	30(19.48)	19(63.33)	11(36.67)		
Secondary	97(62.99)	80(82.47)	17(17.53)		
Tertiary	23(14.94)	21(91.30)	2(9.70)		
Vocational/Technical	4(2.60)	3(75.00)	1(25.00)		
Occupation				1.41	0.704
Student	101	63(58.88)	44(41.12)		
Formally employed	25	14(56.00)	11(44.00)		
Informally employed	8	5(62.50)	3(37.50)		
Unemployed	14	6(42.86)	8(57.14)		
Parental Status				2.20	0.056*
Both Parents Alive	99(61.06)	53(53.54)	46(46.46)		
One Parent Alive	53(36.36)	33(62.96)	20(37.04)		
No Parents Alive	2(2.60)	1(50.0)	1(50.00)		
Caregiver				7.36	**0.025†**
Single Parent	67(43.80)	37(55.23)	30(44.77)		
Both Parents	53(34.60)	47(88.68)	6(11.32)		
Other	33(21.60)	14(42.42)	19(57.58)		

†- Significant values at p<0.05 *****Use of Fischer's test for variables with <5 values.

4.5-Association between stressors and coping strategy among ALHIV at the Fevers Unit, KBTH

A significant association was found between having to take drugs regularly (Pearson chi^2 =7.43 p=0.046), dealing with stigma (Pearson chi^2 =9.60, p=0.021) and falling sick regularly (Pearson chi^2 =6.17, p=0.031) and coping strategy.

Table 4.5- Association between stressors and coping strategy of ALHIV at the Fevers Unit KBTH.

CHARACTERISTICS	TOTAL(%)	POSITIVE COPING STRATEGY		Chi^2	p-value
		YES	NO		
Having to take drugs reg.				7.43	**0.046**
Yes	121	19(15.71)	102(84.29)		
No	33	11(33.33)	22(66.67)		
Body looks different				0.827	0.363
Yes	95	57(60.00)	38(40.00)		
No	59	31(52.54)	28(47.46)		
Having no friends				0.04	0.841
Yes	48	28(58.33)	20(41.67)		
No	106	60(56.60)	46(43.40)		
Dealing with stigma				9.60	**0.021**
Yes	126	17(14.29)	108(85.71)		
No	28	9(32.14)	19(67.86)		
Thinking about death				0.871	0.351
Yes	43	22(51.16)	21(48.84)		
No	111	66(59.46)	45(40.54)		
Having to visit hospital reg.				1.73	0.188
Yes	113	61(53.98)	52(46.02)		
No	41	27(57.14)	14(34.15)		
Telling friends/family about my illness				0.18	0.667
Yes	95	53(55.79)	42(44.21)		
No	59	35(59.32)	24(42.86)		
Having arguments with family/friends				0.28	0.593
Yes	55	33(60.00)	22(40.00)		
No	99	55(55.56)	44(44.44)		
Falling sick regularly				6.17	**0.031**
Yes	102	22(21.57)	80(78.43)		
No	52	21(34.62)	35(65.38)		

4.6. Univariate and Multivariate Linear Regression Analysis of the Association Between Coping Strategies and Related Factors Among ALHIV at the Fevers Unit, KBTH.

Table 4.6 and 4.7 summarizes the univariate and multivariate linear regression analysis of the association between coping strategy, stressors and sociodemographic factors. Significant differences in coping strategy index scores were observed across levels of education(p=0.029), age(p=0.046) and the presence of both parents as caregivers(p=0.014). Dealing with stigma and discrimination was also associated with a significant reduction in the coping strategy index(p=0.008).

Table 4.6.- Unadjusted Linear regression of the association between Coping Strategies (Composite Scores) and characteristics of ALHIV at the Fevers Unit KBTH

		95% CI		P-value
	Coefficient	Lower	Upper	
Age (years)	0.72	0.02	1.23	0.074
Gender				0.072
Male	Ref			
Female	-0.48	-1.11	1.20	
Religion				0.839
Christian	Ref			
Muslim	0.24	-1.12	6.49	
Educational level				**0.036†**
Primary	Ref			
Secondary	1.02	0.18	1.98	
Tertiary	1.22	0.23	2.29	
Vocational/Technical	0.63	-0.05	1.32	
Occupation				0.458
Student	Ref			
Formally employed	-0.75	-2.34	1.23	
Informally employed	0.38	-1.48	3.54	
Unemployed	-0.58	-4.15	5.76	
Parental Status				0.067
Both Parents Alive	Ref			
One Parent Alive	-0.42	-0.81	1.24	
No Parents Alive	-2.16	-3.54	3.86	
Caregiver				**0.021†**
Single Parent	Ref			

Both Parents	0.52	0.04	1.38	
Other	-0.59	-1.72	-0.95	
Having to take drugs regularly				0.089
No	Ref			
Yes	-0.53	-0.71	0.79	
Body looks different from others				0.682
No	Ref			
Yes	0.13	-0.51	0.84	
Dealing with stigma and discrimination				**0.011**†
No	Ref			
Yes	-1.23	-1.86	0.27	
Thinking about death				0.535
No	Ref			
Yes	-0.22	-0.94	0.49	
Having to visit hospital regularly				0.273
No	Ref			
Yes	-0.39	-1.09	0.31	
Telling friends and family about my illness				0.886
No	Ref			
Yes	0.04	-0.60	0.69	
Not having any friends				0.648
No	Ref			
Yes	0.17	-0.55	0.87	
Having arguments with family often				0.708
No	Ref			
Yes	0.12	-0.52	0.77	
Falling sick regularly				0.097
No	Ref			
Yes	-0.63	-0.96	0.47	
People saying things about that I don't like				0.235
No	Ref			
Yes	0.32	0.01	2.32	

† Statistically significant

Table 4.7. Adjusted linear regression of the association between Coping Strategies (Composite Scores) and characteristics of ALHIV at the Fevers Unit KBTH

		95% CI		P-value
	Coefficient	Lower	Upper	
Age (years)	0.96	0.51	1.76	**0.046**†
Educational level				**0.029**†
Primary	Ref			
Secondary	1.35	0.77	1.95	
Tertiary	1.15	0.53	2.45	

Vocational/Technical	0.32	0.67	1.26	
Parental Status				**0.045†**
Both Parents Alive	Ref			
One Parent Alive	-0.92	-1.43	-0.19	
No Parents Alive	-2.89	-3.28	-1.24	
Caregiver				**0.014†**
Single Parent	Ref			
Both Parents	1.53	0.36	1.97	
Other	0.26	-0.85	0.55	
Having to take drugs regularly				0.062
No	Ref			
Yes	-0.42	-0.61	0.23	
Dealing with stigma and discrimination				**0.008†**
No	Ref			
Yes	-1.37	-1.74	0.22	
Falling sick regularly				0.062
No	Ref			
Yes	-0.23	-0.48	0.19	

† Statistically significant. Only variables significant at p=0.1 were used to run the adjusted model.

CHAPTER FIVE

5.0-DISCUSSION

The main objective of the study was to assess the coping strategies among adolescents living with HIV at the adolescent HIV clinic of the Fevers Unit, KBTH. A review of the literature in this area of study yielded very little data in this particular age cohort. This study could be one of the first to measure coping strategies among this under researched group in the country. Previous studies in Ghana on coping strategies among HIV affected individuals have focused largely on the adult population, breastfeeding mothers and HIV affected households in general. However, the adolescent population is equally as important as they have much longer periods to live with and cope with the stressors HIV presents.

5.1-COPING STRATEGIES

Cognitive restructuring was the most commonly used coping strategy with about 87% of respondents employing it to cope with living with the disease. This is comparable with a study conducted by Folayan et al which identified cognitive restructuring as the most common coping mechanism used to manage stressors associated with the disease (Folayan et al, 2017).

Emotional regulation was the least used coping strategy among the respondents (28.6%). This is in stark contrast to studies conducted in the USA which reported emotional regulation as the most frequently used coping mechanism. (Orban et al, 2010). These differences may be due to a number of factors, chief among which may be due to the differences in approach to mental health in low and middle-income countries as opposed to high income countries. (Nakimuli-Mpungu et al, 2021)

Generally a majority of respondents(57.1%) used positive coping strategies in managing the challenges they encounter whilst living with HIV. This is in keeping with many other studies conducted in USA, Nigeria and Tanzania and serves to highlight the effort that has been made in raising the awareness of the importance of mental health in dealing with living with chronic diseases(Folayan et al, 2017; Linyaku et al, 2017; Orban et al, 2010).

Of all the maladaptive strategies employed, wishful thinking recorded the highest frequency with about 83.1% of respondents using this. This is comparable with studies in India which identified blaming others and wishful thinking as common tools used by patients living with HIV in managing the disease (Dhanalakshmi et al, 2013).Negative coping strategies have been associated with poor mental health and adverse clinical outcomes in adolescents living with HIV. It is therefore imperative that the use of positive coping strategies be encouraged as this greatly helps to reduce the morbidity and moratality associated with living with HIV(Antelman et al, 2007; Lewis et al, 2015).

5.2 Stressors

A majority of the study participants admitted to dealing with stigma and discrimination (81.8%), taking drugs regularly(78.6%) and having to visit the hospital regularly(73.4%) as significant stressors in their lives. This is comparable to studies in Uganda which also identified dealing with stigma as the most common stressor adolescents living with HIV face (Mutumba et al, 2021). Education about HIV and the importance of treating those affected has been on the rise in recent times. These efforts however need to be intensified as it was significantly associated with a decline in coping strategy index(p=0.008) in this study. .Disclosure(61.7%), adherence to

medication(78.6%) and stressors associated with the management of disease related states such as falling sick often(66.2%) and visiting the hospital regularly(73.4%) were also identified. This is in keeping with existing literature which identified these factors as stressors in the lives of ALHIV.

5.3Factors Associated with Coping Strategies.

5.3.1Demographic Characteristics of ALHIV

Age was found to be a significant predictor of coping strategy index as the coping index scores were seen to increase by 0.96 per increase in year among respondents. Increasing age has been associated with a better ability to cope with stress as illustrated in a study among HIV affected adolescents in Nigeria by Folayan et al(Folayan et al, 2017). Anecdotal reviews have generally shown that with age comes a sense of maturity and wisdom on a backbone of lived experiences. This may account for the improvement in the ability to cope with the disease. The coping strategy index increased by 1.15 comparing adolescents living with HIV who were tertiary education with adolescents living with HIV who had primary education). This is comparable to studies conducted among adolescents and even older individuals living with HIV as advancement in levels of education has generally led to better coping strategies, better clinical outcomes and better quality of life(Folayan et al, 2017; Laar et al, 2014; Kimera et al, 2021).

5.3.2 Social Support

The study also illustrated the role social support plays in how adolescents cope with the stressors HIV places on them. The coping strategy index declined by 2.89 comparing adolescents living with HIV who were orphans as compared with adolescents living with HIV who had both parents alive(p=0.045). Adolescents who had both parents alive

employed more positive coping strategies as compared with adolescents who had lost both their parents. This was comparable with studies conducted among HIV adolescents in Brazil, which highlighted the importance of parental presence and social support in coping positively with the disease(Silva et al, 2018).

More important of note is the impact of the presence of both parents as caregivers. This led to a 1.53 increase in coping strategy index as compared to a single parent as caregiver(p=0.014). This is comparable to studies among HIV affected families in China that highlighted the benefits of both parents being present as caregivers in managing the difficulties HIV AIDS poses(Ji et al, 2007). Improved ability to cope has been shown to lead to improvement in mental health and the ability to deal with the stress living with HIV poses. Social support is an important modulator in this. Daily hassles, poor coping and limited social support can adversely affect the psychological well-being of HIV affected adolescents(Lewis et al, 2015). Studies among HIV affected adolescents in Zambia and Nigeria help to buttress this important point (Folayan et al; Linyaku et al, 2017).

5.4-STUDY IMPLICATIONS

This study is key in managing adolescents living with HIV as it provides insight into how they manage the various stressful situations they face whilst living with the disease. The factors that affect the coping strategy they employ need to be modulated in order to improve their mental health and general wellbeing. The Ghana Aids Commission together with the Ministry of Health need to target these areas in order to be able to affect how these adolescents manage their lives. Patients also need to be mindful of the role that mental health plays in managing the challenges living with HIV poses. This will, in the long run help to manage this pandemic as this age cohort grows

to become mentally healthy individuals capable of managing the disease and its attendant problems. Researchers especially in the field of HIV also need to widen their scope to include adolescents in order to ultimately improve their outcomes.

5.5 STUDY LIMITATIONS

The study was conducted in one hospital and may not necessarily reflect the experiences of other adolescents and young adults living with HIV in the country. It may be difficult therefore to generalize the results to the rest of the population. The study is a cross sectional study and therefore difficult to assess the time factor in terms of whether poor coping strategies existed before changes in some of the independent variables occurred e.g.-level of education. The study is therefore somewhat limited by its design. Responses to how patient's choice of coping were also largely based on recall and thus may be subject to recall bias.

CHAPTER 6- CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

This study was conducted to assess the coping strategies used by adolescents and young adults living with HIV in managing stressors associated with the disease. It also sought to analyze the various factors that affect the choice of adaptive, positive and beneficial strategies in coping with the disease.

Overall, the study generally shows that a majority of respondents employ positive coping strategies in managing stressors associated with living with HIV, the most commonly used being cognitive restructuring. Very few of the respondents employed the use of self criticism and blaming others, coping tools that are associated with increasing morbidity in patients living with HIV. Demographic factors significantly associated with a higher coping index score include increasing age, and attaining a higher level of education. Stigma and discrimination significantly reduced the coping strategy index. The presence of a social support structure significantly predicted choosing more beneficial coping strategies as it led to a higher coping strategy index. The presence of both parents alive was associated with higher coping index scores. This was made more apparent when both parents were active as caregivers in the lives of young adults living with HIV.

RECOMMENDATIONS

The recommendations, based on the results of the study are as follows.

- It is imperative that adolescents and young adults living with HIV be taught how to use positive adaptive coping strategies to manage the challenges that they face on a daily basis. This can be facilitated with the help of a clinical

psychologist with a background in child/adolescent psychology who is affiliated solely to the adolescent wing of each ART clinic. This would help them learn to maneuver their way through life using healthy coping mechanisms to improve their quality of life.

- Adolescents living with HIV must be encouraged by their parents and their counsellors at the clinics to attend classes to the highest level possible despite the debilitating setbacks they may face in their battling journey against the disease. This would improve their ability to cope with the disease
- The presence of an effective social support structure is necessary to improve the young adult's ability to cope with the disease. Family members and parents must be educated by doctors and HIV awareness ambassadors on the importance of their presence as caregivers in the life of these young ones. Counselling them is almost as important as counselling for the young ones. They must be included in each step of the development of the adolescent.

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APPENDICES

APPENDIX 1- PARTICIPANTS INFORMED CONSENT

Introduction and Purpose: My name is SELOM KWAME DAKE, a post-graduate student from the school of Public Health, University of Ghana. I am carrying out a study in this department to find out the coping strategies used by adolescents living with HIV at the Fevers' unit, Korle-Bu teaching hospital and I would be very glad if you could participate in it.

Requirement: Your participation would involve a 30-minute interview with you to answer some questions about yourself and the stressors and coping strategies that you employ.

Benefits: You may not have any immediate or direct benefits from my interview but your responses would be helpful in recommendations to appropriate authorities to help with information regarding coping strategies and stressor management among adolescents living with HIV.

Risks: The only inconvenience, if any that you would face by accepting to take part in this study perhaps is your time.

Voluntary withdrawal: If you indeed decide to take part, you are allowed to withdraw whenever you wish to, and are also allowed to skip answering any of the questions that you are not very comfortable with.

Confidentiality: The information you would provide is going to be treated with strict confidentiality. Apart from my research team and members of the Ethics Committee of this hospital, no body shall have access to the information since it shall be under lock and key. We also assure you that your name shall not appear or be mentioned in any report that will come out from this study.

Ethical approval: As part of our duty to conform to standard practice and to ensure your safety, ethical approval has been sought from the Institutional Review Board of Korle-Bu Teaching Hospital (KBTH-IRB) in order to carry out this study.

Before taking Consent

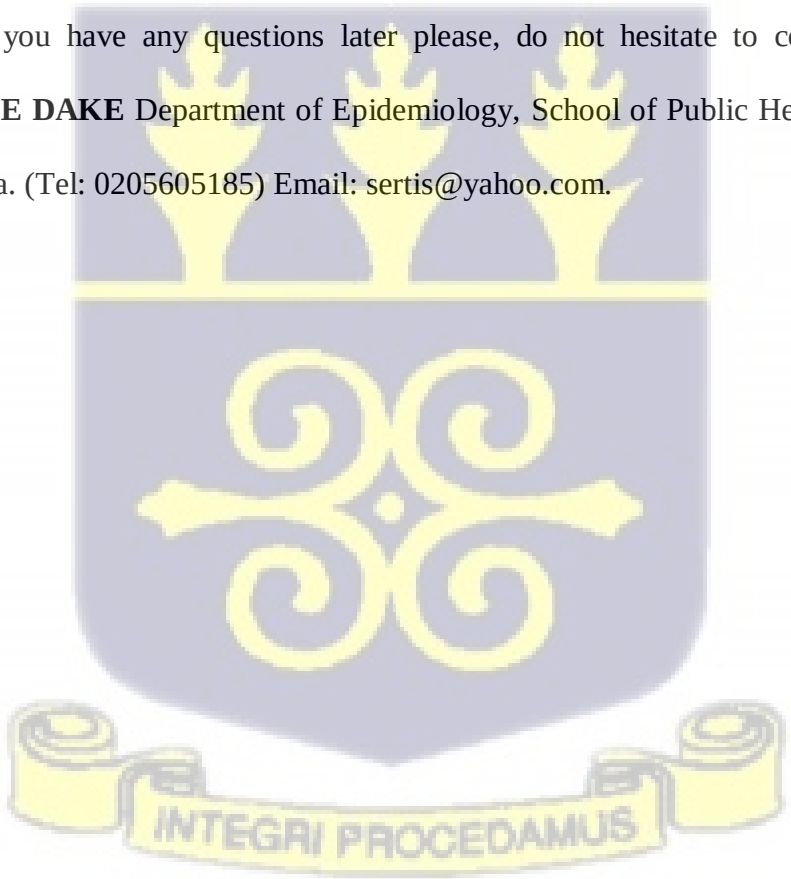
Do you have any questions you wish to ask about the study? Yes |____| No |____|

If yes, please, indicate the questions below)

…….

……

In case you have any questions later please, do not hesitate to contact **SELOM KWAME DAKE** Department of Epidemiology, School of Public Health, University of Ghana. (Tel: 0205605185) Email: sertis@yahoo.com.



PARTICIPANT'S CONSENT

I have read, or I have let somebody read or translated all the necessary information that I need to know concerning this study and have fully understood it. I have decided on my own accord without any coercion to allow my ward to take part in this study. However, by deciding to participate in this study, I am not waiving any of my personal rights by signing or thumb printing this consent form.

Signature: OR

..... L/R Thumb Print……..

Interviewers Statement

I, the undersigned, have explained this consent to the **participant** in English language/Ga/Twi, and that she/he understands the purpose of the study, procedures to be followed, as well as the risks and benefits of the study.

The participant has fully agreed to participate in the study.

Signature of Interviewer……....

Date……

Address……

APPENDIX 2- ADOLESCENT ASSENT FORM

ADOLESCENT ASSENT FORM

Introduction

My name is Selom Kwame Dake and I am from the Department of Epidemiology at the University of Ghana School of Public Health. I am conducting a research study entitled **Assessment of Coping Strategies among Adolescents Living with HIV at the Fevers Unit, Korle Bu Teaching Hospital.** I am asking you to take part in this research study because I am trying to learn more about how adolescents deal with the challenges associated with living with HIV. This will take about 10-15 minutes of your time.

General Information

If you agree to be in this study, you will be asked to answer a few questions on a written questionnaire about yourself, some of the things that cause you stress and some of the things you do to deal with the stressful situations you face.

Benefits

Your participation in this study will help us to understand more about the challenges you face whilst living with HIV and how best to deal with these challenges.

Possible Risks and Discomforts

The only discomforts you will face is the use of 10-15 minutes of your time.

Voluntary Participation and Right to Leave the Research

You can stop participating at any time if you feel uncomfortable. No one will be angry with you if you do not want to participate.

Confidentiality

Your information will be kept confidential. No one will be able to know how you responded to the questions and your information will be anonymous.

Contacts for Additional Information

You may ask me any questions about this study. You can call me at any time 0205605185 or talk to me the next time you see me.

Please talk about this study with your parents before you decide whether or not to participate. I will also ask permission from your parents before you are enrolled into the study. Even if your parents say "yes" you can still decide not to participate. 36

VOLUNTARY AGREEMENT

By making a mark or thumb printing below, it means that you understand and know the issues concerning this research study. If you do not want to participate in this study, please do not sign this assent form. You and your parents will be given a copy of this form after you have signed it.

This assent form which describes the benefits, risks and procedures for the research titled **Assessment of Coping Strategies among Adolescents Living with HIV/AIDS at the Fevers Unit, Korle Bu Teaching Hospital** has been read and or explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate.

Child's Name:…… Researcher's Name:……

Child's Mark/Thumbprint…… Researcher's Signature:……

Date: ……

Date:……

APPENDIX III- QUESTIONNAIRE

APPENDIX 1-QUESTIONNAIRE

QUESTIONNAIRE

Clinic Visit ☐☐/☐☐/☐☐☐☐

Interviewer: _____

Time Interview Started ☐☐ ☐☐

Introduction

My name is Selom Kwame Dake, a student from the School of Public Health, University of Ghana. We are looking at understanding how adolescents cope with the struggles that come with living with HIV/AIDS. We will ask you a few questions. We assure you that any information collected will be kept confidential. General findings will be made available to relevant authorities for the purpose of making important decisions and conclusions. The interview will last about 15 minutes.

SECTION A – DEMOGRAPHIC CHARACTERISTICS

(FW instruction: Circle the relevant option and write in the box on the right)

Q1. STUDY ID NUMBER: ☐☐☐		
Q2. **Sex:** Male (1) Female (2)	☐	
Q3. **Age (completed years): [**_____]		

Q4. **Religion** Christian (1) Muslim (2) African Traditional Religion (3) Other (specify) _____ (8)		
Q5A. Parental status Mother Alive Yes(1) No(2) Father Alive Yes(1) No(2) Q5B Caregiver Mother (1) Father (2) Both Parents (3) Other(Please specify		
Q6 highest level of education attained None (1) Primary (2) Secondary (3) Vocational/Technical (4) Tertiary (5)		
Q7. Occupation Student (1) Formally employed (2) Informally employed (3)		

Unemployed	(4)		

SECTION B – STRESSORS

I would like to ask you some few questions on the situations that cause you stress whilst living with the disease.

LIFE EVENTS AS STRESSORS	YES (1)	NO(2)	code
Q8. Telling friends and family about my illness			**q10pfpb**
Q9. Falling sick regularly			**q11neap**
Q10. Conforming to religious beliefs			**q12cnrb**
Q11. Argument with a friend or family member			**q14affm**
Q12. Someone saying something about me that I don't like			**q15ssml**
Q13. Having to visit the hospital regularly			**q16hvhr**
Q14. Having to take drugs regularly			**q17htdr**
Q15. Dealing with stigma and discrimination			**q18dsdn**
Q16. Body looks different from others			**q19bdfm**
Q17. Thinking about death			**q21tadh**
Q18. I don't have friends			**q24dnhf**

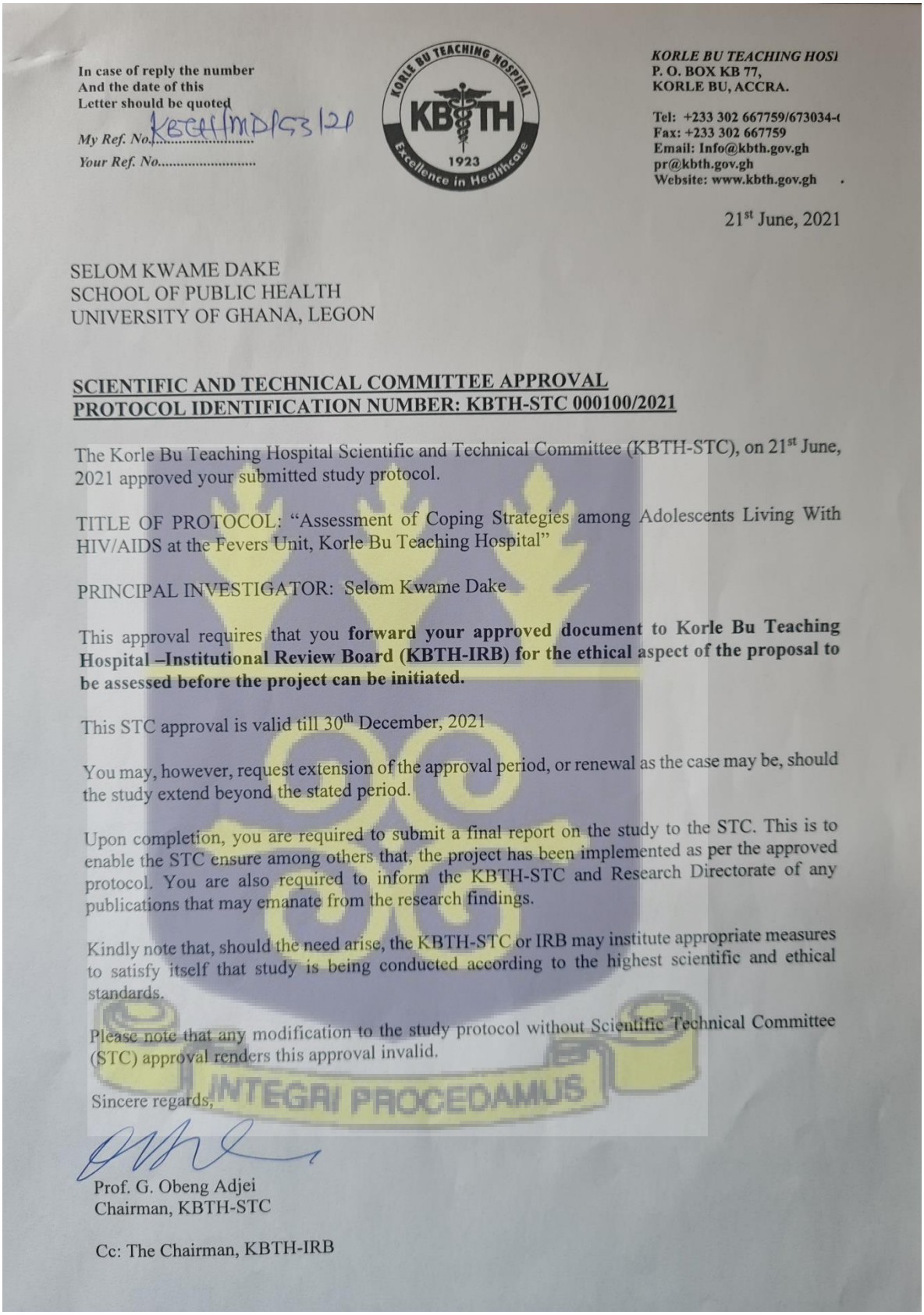
SECTION C – COPING STRATEGIES

Which coping strategies did you use to deal with the situations that stress you out?

	Did you do this?	
	Yes	No

Q19. I did something like watch TV or played a game to forget it.	□ 1	□ 0
Q20. I stayed by myself	□ 1	□ 0
Q21. I tried to see the good side of things.	□ 1	□ 0
Q22. I blamed myself for causing the problem.	□ 1	□ 0
Q23. I blamed someone else for causing the problem.	□ 1	□ 0
Q24. I tried to fix the problem by thinking of answers.	□ 1	□ 0
Q25. I tried to fix the problem by doing something or talking to someone.	□ 1	□ 0
Q26. I tried to calm myself down.	□ 1	□ 0
Q27. I wished I could make things different.	□ 1	□ 0
Q28. I tried to feel better by spending time with others like family, grownups, or friends.	□ 1	□ 0
Q29. I didn't do anything because the problem couldn't be fixed.	□ 1	□ 0

APPENDIX IV- STC APPROVAL AND ETHICAL CLEARANCE



In case of reply the number
And the date of this
Letter should be quoted

My Ref. No. KBTH/MD/S3121

Your Ref. No.....

KORLE BU TEACHING HOSPITAL
KBTH
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KORLE BU TEACHING HOSI
P. O. BOX KB 77,
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pr@kbth.gov.gh
Website: www.kbth.gov.gh

21st June, 2021

SELOM KWAME DAKE
SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF GHANA, LEGON

SCIENTIFIC AND TECHNICAL COMMITTEE APPROVAL
PROTOCOL IDENTIFICATION NUMBER: KBTH-STC 000100/2021

The Korle Bu Teaching Hospital Scientific and Technical Committee (KBTH-STC), on 21st June, 2021 approved your submitted study protocol.

TITLE OF PROTOCOL: "Assessment of Coping Strategies among Adolescents Living With HIV/AIDS at the Fevers Unit, Korle Bu Teaching Hospital"

PRINCIPAL INVESTIGATOR: Selom Kwame Dake

This approval requires that you **forward your approved document to Korle Bu Teaching Hospital –Institutional Review Board (KBTH-IRB) for the ethical aspect of the proposal to be assessed before the project can be initiated.**

This STC approval is valid till 30th December, 2021

You may, however, request extension of the approval period, or renewal as the case may be, should the study extend beyond the stated period.

Upon completion, you are required to submit a final report on the study to the STC. This is to enable the STC ensure among others that, the project has been implemented as per the approved protocol. You are also required to inform the KBTH-STC and Research Directorate of any publications that may emanate from the research findings.

Kindly note that, should the need arise, the KBTH-STC or IRB may institute appropriate measures to satisfy itself that study is being conducted according to the highest scientific and ethical standards.

Please note that any modification to the study protocol without Scientific Technical Committee (STC) approval renders this approval invalid.

Sincere regards,

Prof. G. Obeng Adjei
Chairman, KBTH-STC

Cc: The Chairman, KBTH-IRB

In case of reply the number
And the date of this
Letter should be quoted

My Ref. No. KBTH/IRB/193/21

Your Ref. No.....

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19th July, 2021

SELOM KWAME DAKE
SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF GHANA, LEGON

ASSESSMENT OF COPING STRATEGIES AMONG ADOLESCENTS LIVING WITH HIV/AIDS AT THE FEVERS UNIT, KORLE BU TEACHING HOSPITAL

KBTH-IRB /000100/2021

INVESTIGATOR: Selom Kwame Dake

The Korle Bu Teaching Hospital Institutional Review Board (KBTH IRB) reviewed and granted approval to the study entitled: "Assessment of Coping Strategies among Adolescents Living with HIV/AIDS at the Fevers Unit, Korle Bu Teaching Hospital"

Please note that the Board requires you to submit a final review report on completion of this study to the KBTH-IRB.

Kindly, note that, any modification/amendment to the approved study protocol without approval from KBTH-IRB renders this certificate invalid.

Please report all serious adverse events related to this study to KBTH-IRB within seven days verbally and fourteen days in writing.

This IRB approval is valid till 30th June, 2022. You are to submit annual report for continuing review.

Sincere regards,

DR. DANIEL ANKRAH
VICE CHAIR (KBTH-IRB)
FOR: CHAIR (KBTH-IRB

Cc: The Chief Executive Officer, KBTH
The Director of Medical Affairs, KBTH

MEDICAL DIRECTORATE
KORLE BU TEACHING HOSPITAL

16th July, 2021

THE HEAD
DEPT. OF MEDICINE
KORLE BU

LETTER OF INTRODUCTION – SELOM KWAME DAKE
"ASSESSMENT OF COPING STRATEGIES AMONG ADOLESCENTS LIVING WITH HIV/AIDS AT THE FEVERS UNIT, KORLE BU TEACHING HOSPITAL"

I have the pleasure to introduce to you the above named Investigator from School of Public Health, Legon. Selom Kwame Dake sought and has been granted approval to conduct a study entitled: "Assessment of coping strategies among adolescents living with HIV/AIDS at the Fevers Unit, Korle Bu Teaching Hospital".

He is to contact you to discuss the commencement date of the study.

Please verify his identity with a Government issued National ID card and accord him the needed assistance.

Attached is the Scientific and Technical Committee and Institutional Review Board approval, which specifies the terms.

Sincere regards,

Dr. Ali Samba
Director of Medical Affairs
For: Chief Executive

Cc: The Head
Fevers Unit, Korle Bu

INTEGRI PROCEDAMUS