Qualitative Exploration of Mental Health Challenges among HIV Positive Adolescents: A Case Study of Mansa General Hospital's Mental Annex and ART Department, Luapula Province, Zambia.

Dr. Nancy Maambo*, Musunga Nkandu

Department of Public Health, Copperbelt University, Kitwe, Zambia.

DOI: https://dx.doi.org/10.47772/IJRISS.2025.9020272

Received: 06 February 2025; Accepted: 12 February 2025; Published: 18 March 2025

ABSTRACT

Background

According to World Health Organization (WHO), an estimated 1.5 million adolescents aged 10 to 19 years were living with HIV worldwide in 2023 [109]. Among this population, the prevalence of mental health disorders is higher than in their HIV-negative peers.

Objectives

The objectives of this study were:

- To explore the mental health challenges faced by HIV positive adolescents at Mansa General Hospital, Luapula Province, Zambia.
- To assess the effects of stigma and depression on ART adherence among HIV positive adolescents at Mansa General Hospital, Luapula Province, Zambia.
- To determine the levels of social exclusion and substance abuse and their effects on ART adherence among HIV positive adolescents at Mansa General Hospital, Luapula Province, Zambia.
- To evaluate government policies on the mental health challenges among HIV positive adolescents at Mansa General Hospital, Luapula Province, Zambia.

Method

A cross sectional study employing qualitative study involving 394 HIV positive adolescents from Mansa General Hospital's Mental Annex and ART Department was employed. Purposive and convenience sampling was used, data collection was done through interview guides and focus group discussions and analysis was done using framework analysis.

Results

HIV-positive adolescents at Mansa General Hospital experienced psychological and emotional challenges such as depression, feelings of isolation and loneliness, stigma, disclosure issues and substance abuse. Stigma, depression, social exclusion and substance abuse had an effect on ART adherence. Government implemented policies like integration of mental health services into primary healthcare services, youth indabas, technical working groups and youth friendly spaces for adolescents in the province.

Conclusion

Adolescents living with HIV at Mansa General Hospital, experienced mental health challenges in form of depression, isolation, loneliness, stigma, disclosure issues and substance abuse resulting in non-adherence to ART.

Keywords: Adolescent HIV, Mental health challenges, Antiretroviral therapy adherence.

METHODOLOGY

Introduction

Adolescents living with HIV face unique mental health challenges influenced by a combination of biomedical, psychological and social factors. This age group is particularly vulnerable due to the complexities of growing up while managing a chronic illness, the stigma associated with HIV and the challenges of adhering to antiretroviral therapy. Mental health issues such as depression, anxiety and trauma are prevalent among HIV positive adolescents, yet they are often undiagnosed and untreated in many settings, including Zambia. These challenges are exacerbated by social stigma, limited access to mental health services and inadequate integration of mental health care into HIV treatment programs. Despite the growing recognition of the importance of addressing mental health in this population, research remains sparse, particularly in rural areas like Mansa District, Luapula Province, Zambia. Mansa General Hospital's Mental Annex and ART Department offer a critical vantage point for exploring these issues. This study sought to employ a cross sectional study design with qualitative research methods to explore the mental health challenges faced by HIV positive adolescents accessing care at Mansa General Hospital.

Research Design

A cross sectional study design was used to answer the research question employing qualitative research methods. This approach provided a snapshot of the adolescents' psychological and emotional experiences at a specific point in time, so as to capture the complexity of issues like depression, stigma and isolation. Qualitative methods such as in-depth interviews and focus group discussions enabled participants to express their personal experiences in detail, offering rich contextual data that uncovered the social dynamics affecting their mental health. This design was also feasible within resource-constrained settings, provided valuable insights for future interventions and avoided participant attrition, making it well-suited for sensitive topics like HIV and adolescent mental health.

Research Approach

This study adopted a qualitative research approach to explore the mental health challenges faced by HIV positive adolescents at Mansa General Hospital. The qualitative approach was suitable for understanding complex, context-specific phenomena by focusing on participants' lived experiences, perspectives and emotions. Using methods such as in-depth interviews and focus group discussions, the study sought to uncover the naunced ways in which adolescents navigated their mental health challenges. This approach prioritised rich, marrative data and thematic analysis to provide insights that informed tailored interventions for this vulnerable population.

Study Site

The study was conducted at mental annex and ART department at Mansa General Hospital of Luapula Province, Zambia. Mansa General Hospital was the largest hospital in the province, situated in the provincial capital city, Mansa District. The hospital was the largest referral hospital, receiving referral cases across all the dimensions of health from all the other districts in the province. Mansa general hospital, situated near the cathedral catholic church and the police state Luapula Police HQS, had very good staffing levels, ranging from doctors, nurses, clinical officers, laboratory staff, radiology staff, physiotherapy staff and other carders in management.

Mansa General Hospital had a centre of excellence for children and adolescents that was run by specialists in HIV/AIDS and Pediatrics. The hospital also had a mental department that offered mental health services to all age groups. Mansa General Hospital being the largest hospital receiving all the cases from other districts in the province and the services the hospital offered, made it ideal for this study.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

Study Population

Mansa General Hospital had a total population of 26, 978 adolescents aged from 10 to 19 who were HIV positive and received services there. Adolescents were primarily from Mansa District of Luapula Province and surrounding rural or peri-urban areas within Luapula province, Zambia. This population had a mix of male and female participants, potentially reflecting gender distributions in HIV prevalence among young people in this region. This population included all adolescents who were confirmed to be HIV positive and enrolled into the ART program with varying levels of adherence to treatment. Additionally, members of this population were likely from diverse socioeconomic backgrounds, with a significant proportion coming from low-income households, given the hospital's service area. Furthermore, the population included adolescents attending school, those who had dropped out of school due to health or stigma and those with disrupted schooling.

Sample Size

To establish the sample size, Yamane's formula was used.

$n = N/(1 + N (e^2))$

Where

n = required sample size

N = total population size

E = margin of error (expressed as a decimal e.g., 0.05 for 5%)

$n = 26978/(1 + 26978 (0.05^2))$

n = 394

This study used a sample size of 394 HIV positive adolescents accessing ART services at Mansa General Hospital.

Sources of Data

Data collection was done from Mansa General Hospital (MGH) ART and Mental Health Department.

Primary data source was from the HIV positive adolescents receiving ART services at Mansa General Hospital. Some participants who were not comfortable at the hospital, were followed at their homes once appointments were made a day prior to taking part in the research. Other primary sources included healthcare workers at ART department and Mental annex at the hospital, the Clinical Care Specialist (CCS) at the Provincial Health Office as well as the Provincial Adolescent Health Coordinator (PAHC).

Secondary sources of data included the ART registers at the ART clinic so as to identify the adolescents who were HIV positive and received treatment at the hospital. The OPD registers as well as the in-patient registers at mental annex were also used. These registers were from 2023 to 2024.

Sampling Technique

Purposive and convenience sampling was employed that led to the identification of the 394 HIV positive adolescents who received treatment at Mansa General Hospital ART department and mental annex. The next participant was chosen when participants refused to take part in a research so that a desired sample size was obtained.

Methods of Data Collection

Qualitative data was collected using in-depth interviews consisting of open ended questions lasting 30-40

minutes and through Focus Group Discussions. This was appropriate for allowing discussants to develop new ideas and speak freely on the topic. Interviews were carried out by trained assistants to minimize bias. To avoid missing important points and misquoting, a tape recorder was used. Information on tape recorders was transcribed promptly to avoid distortions and misplacement of ideas during analysis. Critical case purposive and convenience sampling was used to select participants so as to achieve a diverse sample in terms of social roles. 1 nurse from the mental annex and 1 HIV nurse practitioner, 2 physicians from ART department and mental annex, 2 in-charges from ART department and mental annex, 1 psychosocial counsellor from ART and policy makers- the Clinical Care Specialist (CCS) at the province and the Adolescent Health Coordinator at the province were interviewed. 8 focus group discussions were conducted at Mansa General Hospital. Gender differences were considered where females were separated from males to allow discussions to flow freely.

Data Analysis

Framework analysis was used for data analysis to analyze the qualitative data collected from in-depth interviews and focus group discussions. Framework analysis was particularly well suited for research that aimed to address specific questions, generate actionable findings and explore the perspectives of multiple stakeholders. It used themes that were identified based on the research objectives and emerging patterns in the data. Thematic analysis of data from audio recordings making reference to research objectives was done immediately after the focus group discussions thereafter, data was organized, coded and then generated into categories or themes. Transcription of data was done by getting all audio recordings to make reference to the research objectives. This approach was appropriate, analytical and explicit because it used an organized structure that enabled the analyst to check raw data.

Ethical Approval

Ethical clearance for this research was obtained from the Copperbelt University, an introduction letter from the University was given to the hospital.

RESULTS

Introduction

The results of this study highlighted the multifaceted challenges faced by HIV positive adolescents, emphasizing the significant role of stigma, depression, social exclusion and substance abuse in influencing adherence to antiretroviral therapy (ART). Through qualitative analysis, patterns emerged revealing how these factors intersect to managing their health while navigating social pressures and emotional burdens. This section presents narratives and observations derived from participants and healthcare providers, showcasing the depth of these issues and their implications for treatment adherence and overall well-being.

Findings and Analysis

Demographic Profile

Adolescents between the age of 10 to 19 (n=394) were engaged in a series of 8 focus group discussions.

Figure 1. Showing demographic information

Variable	Frequency	Percentage(%)
Male	242	61%
Female	152	39%
10-14 years	162	41%

15-19 years	232	59%
In Primary School	210	53%
In Secondary School	150	38%
In Tertiary School	4	1%
Not in School	30	8%
Stays with Both Parents	220	58%
Stays with a Single Parent	118	31%
Stays with Other Relatives	56	14%
Orphaned	190	48%
Not Orphaned	204	52%

The research involved a sample size of 394. The findings showed that majority of the HIV positive adolescents interviewed were males (61%) as compared 39% females. It was also noted that 41% of the HIV positive adolescents were aged between 15-19 while 53% were between 10-14 years. About 38% of the adolescents were in secondary school with 8% not in school. 58% lived with both parents, 31% with a single parent and 14% lived with other relatives. 48 % of the adolescents were orphaned while 52% were not orphaned.

Objective One: Mental Health Challenges Faced by HIV Positive Adolescents at Mansa General Hospital

Findings from the interviews and focus group discussions showed a number of mental health challenges faced by adolescents living with HIV at Mansa General Hospital.

Psychological and Emotional Challenges

Among the issues identified, it was noted that adolescents faced psychological and emotional challenges such as depression and feeling of isolation and loneliness.

Respondents highlighted that as a result of depression, they preferred being isolated and not associating with anyone for fear of being laughed at.

"It is true that when your family members are always talking about you, making you depressed, you end up being excluded and alone. I have no one to talk to about my condition from my family members, I have a number of questions but who will listen to me when they don't want to associate with me. I need to be isolated from everyone and I like it like this as it gives me a peace of mind". (Respondents 2, 6, 12 and 20).

"When I was growing up, I realized that I was the only one taking medicines at home. I would take them every day and I started wondering why am the only one that takes drugs. I asked my mother why my brothers and sisters were not taking medicines every day, she said she will tell me when I am old enough. She later took me to the hospital because I started asking her every day, at the hospital I was told I was HIV positive and they explained everything. My life changed from that moment, I became very sad and low. But my mother was always there for me and she really helped me throughout the whole acceptance process and out of depression". (Respondents 30, 46, and 60).

"Being HIV positive is not easy, especially when you know you're innocent, never been careless before. One of

the things I have faced since knowing my HIV status is depression, I have really been depressed and low. I don't know what my future holds, I don't know if I will get married and be happy, why me? It's really difficulty to accept but what can I do?" (2, 6, 32, 80 and 100).

"Am not always depressed, sometimes I try to move on and forget the fact I am HIV positive. What reminds me about my status are comments I hear from people about me and it really makes me so sad. I have told myself that I need to move on and accept myself as I am". (6, 22, and 46).

"Living with HIV is not easy especially when your parents are no more, even when you have caring guardians, it's just not the same. Before my parents died, I was okay and I had accepted my status, but the moment they died, everything changed. I didn't not have anyone to confide in and this would depress me especially when taking drugs which would remind me that am HIV positive". (24, 34, 38, 42 and 62).

"I think what really causes depression is when you're reminded of your HIV status. Most times it can be during taking medicines and sometimes you can overhear people talking about it especially family members talking about you. This just breaks me and makes me so sad and all I want to do is be alone (Respondents (4).

"I know people talk about me and my HIV status behind my back, they don't understand what I am going through and I don't blame them because they were born okay so I normally avoid them completely than having to face their judgement." (Respondents 2, 16, 22, 30).

"I used to have a lot of friends at school until I decided to tell one of my friends about my HIV status, that's when I lost a number of friends. The friend I told, told other friends in my class and school and people started talking about me. Sometimes I would hear for myself what they are saying and this would make me so sad and start moving alone at school". (Respondents 4, 8, 26, 78 and 100).

Healthcare workers also highlighted depression and isolation as some of the challenges HIV positive adolescents face.

"I have noticed that when some of these adolescents come for drug pick up, they look sad and after having a one to one talk with them, you discover that they are depressed because of their status. When you interact with them further, you discover that they are isolated from their peers, they don't interact with friends and I think this worsens the whole thing." (HIV nurse practitioner).

"During adherence counselling, I have noted that some adolescents are so depressed about their HIV status. They feel like it's a death sentence, they are so sad and as a result, they are isolated from their peers." (Psychosocial counsellor).

"The adolescents who come to ART department may look happy but when you interact with them alone, away from their care givers; you will discover that they are not happy. They are low, depressed and sadly, they don't have many friends. They feel like it's a death sentence and as healthcare workers we really have a lot to do, looking at them holistically. It is sad that depression and social exclusion still exist in this age and time." (Clinician).

"I have noticed that we have adolescents that are depressed and they really need our attention as mental health affects everyone, irrespective of age, gender and race. The adolescents that I have interacted with in the mental annex, gave me a clue that our HIV positive adolescents are really facing a lot." (Mental health nurse).

"We have observed that many adolescents withdraw from others, they even avoid basic conversations. Depression makes them feel unworthy and this reinforces their isolation." (Clinician).

"The adolescent need to know that there is help out there and there are people who love and adored them. We have been collaborating very well with ART department, whenever they have a client who seems depressed, they engage us and we talk to them. Most people don't like coming to the mental annex, thinking it's for mad people, so we follow them in the ART department and talk to them." (Nurse in-charge, mental annex).

"As ART department, we have prioritized interacting with our adolescents receiving services. And during the interactions, we have noted that the status of being positive really affects the adolescents, it makes them depressed and because of this they become isolated and this is bad because we do not know what they are thinking about and as nurses, we want to see happy and healthy clients in all aspects of life." (Nurse in-charge, ART department).

"I have noticed a number of times that most of the adolescents who come for drug pickup are depressed and so closed up and mostly do not have friends. So now what we do, whenever an adolescent comes for drug pickup, whether alone or with guardians, we request to speak to them privately. And this has revealed a number of issues that are hidden within them, they are sad and depressed and they think it's the end of the world for them." (HIV nurse practitioner).

"Depression among HIV positive adolescents is very common, they feel as though it's a death sentence and I think taking medication really worsens the situation as it acts as a reminder of their condition." (Clinician).

"When we arrange support group meetings, a number of adolescents, decline to attend, citing reasons like 'I do not fit in, I am not supposed to be there,' which stems from their internal struggles with depression." (HIV nurse practitioner).

Stigma and Disclosure Issues

Stigma and disclosure issues were also highlighted by some focus group discussions as challenges faced by HIV positive adolescents. It was observed that stigma and depression was very common among them because of their HIV status.

Respondents highlighted that stigma was common even from very close family members and community members especially when the biological parents are no more.

"You know, being HV positive has taught me a lot of things especially now that both my parents are dead. I have seen some family members stigmatize me openly and others even referring to my dead parents, most times I pray I was never born. I really miss my parents as I knew they genuinely loved me." (Participants 30, 80 and 90).

"When I was younger, I used to feel bad about my status but now I have gotten used. People really talk and surprising even people who are your relatives, it's even worse when your parents are dead. But I think I have out grown it, they can talk about my status I no longer care." (Participants 12, 46, 80 and 100).

"When my parents died, I went to live with my uncle. He doesn't even let me sit at the table with the rest of the family because he says I am sick. I might infect his children. I feel like I don't belong anywhere." (Participants 12, 34, 56 and 78).

"You know when both my parents were alive, they understood me and there was no segregation. I would eat with them, freely chat with and do things with them. But after they died, no one understood me, was given my own plate of food to eat along and that was my specific plate. I couldn't change it or use another one. My cousins were told not to eat with me that I would infect them with HIV, this was very depressing, I felt stigmatized and depressed. I wished I died with my parents." (Participants 12, 26 and 40).

"The most difficult part is when neighbors are aware of your HIV status, you became the talk of the day. They will not allow you to mingle or play with them saying she will infect you as though just talking to someone can infect them. It is so sad because once people know your status, you have few friends and you can't freely walk around in the community for fear of people talking about you and not wanting to associate with you." (Participants 20, 68 and 90).

Healthcare workers also highlighted that some adolescents had disclosure issues for fear of being stigmatized.

"Some adolescents miss their appointments for drug pick up because we discovered that they have not shared

with anyone about their status for fear of been stigmatized. They fear if they tell others especially their teachers in schools they will be stigmatized as a result, they miss their appointments." (HIV nurse practitioner).

"When I interact with the adolescents when they come for clinical visits, I discovered that for a few, even their parents are not aware of their status because they are scared of what they would say. We have encouraged them to inform their parents and it's a process you know as the choice is solely theirs." (Clinician).

"My main worry has been on adolescents who are HIV positive and are at school, they need to confide at least in one of their teachers so that they can monitor their adherence to medication. But sometimes this is not the case as they feel their teachers will gossip about their status with others and the whole school will hear about it. I have encountered this before, they cannot simply disclose their status because of these fears that they have." (In-charge, ART department).

"During counselling, we encourage our clients to open up to someone they trust. It is easy for those who got the disease from their parents to open up as opposed to those who acquired it later in life. They have their own fears, they are scared of being judged and stigmatized." (Psychosocial counsellor).

"Disclosure issues are still with us even among adolescents, the ones in intimate relationships are not free to share their HIV status to their partners because they are scared of what their partners will say, maybe they will leave them and some fear of being stigmatized. We really have a lot to do as healthcare providers." (Clinician).

"Stigma is still with us and some of this is self-perceived by our adolescents as a result they are having disclosure issues, they do not trust anyone as they think people will talk ill about them as a result of their status." (Head of department, ART department).

"Stigma still exists even within our communities, sadly it's not completely gone. Once they tell someone maybe a friend whom they thought they trusted and they hear the same story all over the community, they become so depressed that this extends even to them not disclosing to their teachers at schools. This reduces the support they get from their teachers when it's time for drug picks." (HIV nurse practitioner).

"I think parents and guardians should leave the disclosure to other family members to the adolescents themselves. If they do it on their behalf, they have self-perceived stigma and this is not good for their wellbeing and this is something we normally discuss with parents and guardians." (Psychosocial counsellor).

Substance abuse

It was observed that substance abuse is one of the mental health challenges being faced by HIV positive adolescents.

"Alcohol and smoking are a kind of a way to forget about your HIV status and behave like any other normal person. I don't take those but I have seen friends doing that and when they explain why they do them, you get tempted to join them maybe so that you can be happy and forget that you're HIV positive." (Participants 2, 6, 9, 78 and 90).

"I know alcohol is bad and I have heard of its bad effects but you know what, many young ones take alcohol not only because of bad friends but because of what they are going through. Being HIV positive is not easy, especially when both parents are dead. You have no one to speak to as a result you get more depressed and you resort to taking alcohol." (Participants 12, 18, 24, 46).

"I personally do not take alcohol but I have seen young ones taking alcohol because they are depressed that they have HIV and this influence comes from their friends. That is why it is important for families to embrace people like us so that we don't start taking alcohol and smoking." (Participants 24, 26, 68, 88 and 90).

"Alcohol is not really bad, I do take alcohol and my parents are aware because everyone at home takes it.

Alcohol makes me fit in so well with my friends and I forget about my status as you know being HIV positive is itself very depressing. I think the only way it becomes bad is when it makes you not to take your medication because you're so drank." (Participants 40, 56 and 78).

"I take alcohol as a way to forget that I am HIV positive and this has perfectly worked for me. When I take alcohol, I become happy and I can freely mingle with my mates without thinking about my status and of course my parents are not aware that I take alcohol." (Participants 4, 10, 24, 28 and 32).

"When I drink, I forget about my problems and the stigma I face every day as a result of my status. It's the only time I feel normal so It's like my coping strategy and it has worked well for me." (Participants, 50, 80 and 100).

Objective Two: Effects of Stigma and Depression on ART Adherence

Participants noted that because of the stigma and depression they were experiencing from their family members and friends, some resorted to not being adherent to treatment.

"How can you freely take medicine when the people you stay with do not embrace you? It's tricky, you are so depressed and isolated as a result you end up skipping treatment especially if they will start backbiting you when they see you getting your drugs and going to take water in the kitchen. The depression is real and it leads to stopping treatment altogether." (Participant 20, 46, 56, 78 and 98).

"It is actually easy to take the drugs daily if your parents are alive because they will remind you to take it and they will encourage you. Now if both are dead and the relatives you are staying with have not fully accepted you, you fail to take the drugs freely, you start skipping some days just so they don't talk about you. And most of them do not even care to ask if you take your drugs daily, you have to remind them that my drugs are done, I need to go and collect." (Participant 6, 8, 28, 46 and 78).

"Sometimes I do not take my drugs because every time I do, it reminds me of how different I am from others and that I am HIV positive. This really depresses me and I feel so bad because it affects my mental health and my overall health." (Participant, 22, 56, 78 and 90).

"I feel my friends at school know that I am HIV positive and they talk about me and this feeling is worse when am taking my drugs, I feel as though I will give them more things to talk about so I mostly skip my drugs." (Participant 40, 46, 52, 56 and 78).

"I sometimes hear people talking about me at home, calling me names because I take medicine every day. It is exhausting and sometimes I just want to give up and live without drugs." (Participant 56, 88 and 100).

Healthcare providers also noted that there is need to educate caregivers about embracing these adolescents as most of them are depressed hence being unsuppressed virally.

"I have noticed that adolescents who still have their parents alive, experience less stigma and depression compared to those who have lost their parents. Sometimes they forget to come to the clinic when the child is due and at times these older ones come alone to the clinic. When you interact with them you discover they have not been taking their medication because they are depressed and they feel stigmatized from their families and friends. This affects their health in the long run as they are not compliant to treatment." (Clinician).

"Stigma and depression is very real among these adolescents who are living with HIV. If care is not taken, we will have depressed adults in the future. Stigma doesn't just come from their communities but also from their homes, it's surprising that people still stigmatize HIV and its worse for the adolescents who have so many questions like why me? And this affects their adherence to treatment." (HIV Nurse Practitioner).

"We see many adolescents living with relatives who don't understand their emotional needs. If caregivers embraced them, we could reduce depression and this will subsequently improve their adherence to ART." (Clinician).

"Some caregivers still believe in outdated myths about HIV. They fear sharing meals with these adolescents and this adds to the stigma and isolation these adolescents experience.' (HIV nurse practitioner).

"We normally include parents and guardians during adherence counselling when we notice that the client has been unsuppressed because as healthcare providers we can only do much to help them out of depression but the people they stay with have much more to do as they are always found with them. These people have a lot to do in encouraging and ensuring that they take their medication as this is the only way their viral load will be suppressed." (Psychosocial Counsellor).

"Some caregivers are only focused on providing shelter and food. They forget that these adolescents need emotional support too. Without it, they will feel unloved and in turn they will stop taking their medication which will have a negative impact on their health." (In-charge, ART department).

Objective Three: Effects of Social Exclusion and Substance Abuse on ART adherence

It was observed that social exclusion and substance abuse had an effect on their adherence to ART.

Participants highlighted that substance abuse, makes one forget to take their drugs and this affects their health.

"You know if you're isolated from others especially family members, you will be influenced by friends to start abusing substances and once you start, it's difficult to remember that it's time to take your medication. By the time you realize, you would have missed taking the drugs for a week or so." (Participant 20).

"I feel so alone because no one understands what I am going through. It is hard to care about taking my drugs when no one cares about me, it's like people do not care whether I am alive or dead and sometimes I see no reason of continuing to take drugs." (Participant 10, 56 and 68).

"When people at school see me, they already start talking about my status, If I always take the drugs in front of them, they will know I am HIV positive. So, I just skip doses to avoiding the talks." (Participant 12, 24, 36, 68 and 100).

"Ever since my mother died, I do not have anyone to remind me to take my medication or check on me. Sometimes am supposed to go and collect drugs but no one reminds me so it's easy to forget collecting drugs or delaying to go and collect drugs when you're on your own." (Participant 4, 10, 20 and 26).

"When I drink alcohol, I forget about taking drugs. I only remember when it's too late and that will be the following day. I wish I could stop forgetting but it's like am so used." (Participant 12, 16 and 20).

"If I was not HIV positive, probably I would not have been taking alcohol. When I take alcohol, I normally forget taking drugs and I feel so bad the next morning. But what can I do, alcohol is now my friend and a stress reliever." (Participant 12, 24 and 25).

"Alcohol is nice taking it with friends but the problem is, it is so difficult to drink medicine in the presence of friends and besides, the alcohol itself also shadows the mind that one forgets to take the medicine." (Participant 6).

Healthcare workers also highlighted social exclusion and substance abuse as some of the challenges HIV positive adolescents face that affects their adherence to ART.

"Alcohol abuse among HIV positive adolescents make them miss their appointments for drug pick up and this definitely affects their compliance to treatment. Others who manage to come for drug pick up will not be adherent to treatment and this will be seen from their unsuppressed viral load." (HIV Nurse Practitioner).

"During adherence counselling, we have noted that alcohol abuse among our adolescents is leading to them forgetting to take their drugs because they are so intoxicated. This has a big effect on their viral load and they

are at higher risks of transmitting the virus to others." (Psychosocial counsellor).

"We have seen cases where substance abuse and exclusion lead to irregular ART intake. This eventually results in unsuppressed viral load, which compromises their overall health and wellbeing." (In-charge, ART department).

*"Substance abuse compounded with social exclusion exacerbates mental health issues like depression and anxiety. This has a severe effect on motivation to adhere to ART regimens." (*Head of department, ART).

"We have received some adolescents who have come for rehabilitation due to alcohol abuse, these adolescents have stopped school because of alcohol and when they are drank, they forget to take their drugs." (Head of department, mental annex).

"They are some adolescents who are so reserved, so quiet that it's difficult to get information from them. So we normally work closely with the mental health department and we have observed that the reason they are like that is because they are socially excluded from everyone for some time. When you interact further, you discover that they do not remember the last time they took their drugs because they fail to tell their guardians about it and this really affects their viral load." (Head of department, ART).

"I think social exclusion is something that can never be hidden if you're so attentive. It's difficult for some adolescents to accept their status, they become so closed up, been eaten up to the point that they forget to take their drugs leading to unsuppressed viral load." (HIV nurse practitioner).

"Depression caused by social exclusion often leads many adolescents to alcohol or drugs. This addiction often results in missed doses and poor health outcomes because their mental state deteriorates." (Clinician).

"Social exclusion has been one of the reasons why some adolescents are unsuppressed especially the ones in boarding schools. Their social exclusion has led them not to be free with their teachers so that they can access the ART services, they end up not taking drugs and some for the whole term and when they come for viral load check, we find them unsuppressed." (Psychosocial counsellor).

Objective Four: Government Policies on Mental Health Challenges among HIV Positive Adolescents

According to the interviews, it was noted that a number of things were put in place to address the challenges experienced by the adolescents living with HIV.

It was highlighted that mental health services have been integrated into primary healthcare services.

"We have adopted policies that are aimed at integrating mental health services into primary healthcare settings so as to improve access to care and reduce stigma. All our facilities offering HIV/AIDS services have integrated mental health services to cater for the mental health of the adolescents. We realize that our adolescents living with HIV undergo a number of mental health challenges hence the need to address these challenges as they come for drug pick-up or any other services being offered to them." (Clinical Care Specialist).

"Yes we are not only focusing on the ART package for our clients because we have seen that their mental health is very important if we are to achieve the suppression levels of 95%. We are integrating mental health services into the ART package and we have seen some positive results." (In-charge, ART department).

"I am happy to see that as a ministry and even the biggest hospital in the province is implementing integration of mental health into primary healthcare services even at ART department, this is plus as a complete package is being given to our clients." (Provincial Adolescent Health Coordinator).

It was further noted that the province also has technical working groups where adolescents are affiliated to.

"Mental health is a very critical aspect of well-being and it affects every person in one way or the other. It is very important for the ministry of Health to bring close all the HIV positive adolescents and holistically attend to their needs. As a ministry, we have adolescent technical working groups where all adolescents are affiliated. This makes it easy to have a one to one interaction with them away from the hospital setting." (Clinical Care Specialist).

"We also have adolescent technical working groups in the districts mostly supported by our partners, we invite different stakeholders including the adolescents and we discuss a number of issues including HIV and mental health. Together as a ministry, stakeholders and adolescents we come up with solutions suitable for us." (Provincial Adolescent Health Coordinator).

Additionally, youth indabas involving different stakeholders including the adolescents are held in the province every quarter.

"Luapula province holds quarterly youth indabas where stakeholders including chiefs and adolescents are invited. A number of issues are discussed and solutions made. These indabas are very important as they help adolescents bring up those issues they are experiencing and stakeholders including the local leaderships help to come up with ways to sort out these challenges." (Clinical Care Specialist).

*"As a province, we also have youth indabas for adolescents where interactions on a number of issues are possible. These indabas are held away from the clinic setup, adolescents come together in one place where they interact and learn a number of issues affecting them and how to address them". (*Provincial Adolescent Health Coordinator).

Finally, the province also implemented youth friendly spaces in most facilities across the province.

"Youth friendly spaces are available in our facilities across the province including Mansa General Hospital, we have materials that we receive from headquarters, Ministry of Health and we have distributed them across the province. These spaces are aimed at interacting with our adolescents, making them to open up on main issues affecting them including their mental health and the spaces help us come up with practical solutions that are tailored towards the needs of our adolescents in the province." (Clinical Care Specialist).

"We have a number of youth friendly spaces not only here at Mansa General Hospital, but in most of the health facilities in the province. We have adolescent clinics where we meet these adolescents living with HIV, educate them about their status, fighting stigma and other things like substance abuse. With these engagements, our adolescents are open and have accepted their status and this has contributed greatly to adherence and suppressed VL coverage." (Provincial Adolescent Health Coordinator).

"The youth friendly spaces also provide life skills training, educational workshops and creative arts that are aimed at encouraging engagement and improving the self-esteem of HIV positive adolescents. This is important for ensuring that the adolescents are engaged and kept busy especially during periods when schools close." (Clinical Care Specialist).

Conclusion

The results of this study reveal the complex interplay between social exclusion, stigma, substance abuse and mental health challenges, all of which profoundly impact ART adherence among HIV positive adolescents. Participants' narratives consistently highlighted how experiences of stigma, particularly from close family members and community, lead to feelings of isolation and depression, further exacerbating challenges to maintaining consistent ART regimens. Social exclusion often drives adolescents towards substance abuse as a coping mechanism, creating disrupted routines, impaired judgment and heightened feelings of neglect and worthlessness. Healthcare providers emphasized the critical role of caregiver support and education, noting that rejection and lack of understanding from guardians contribute significantly to adolescents' mental health struggles and treatment inconsistency. Government has also put up policies such as integration of mental health into primary healthcare, youth indabas, youth friendly corners and technical working groups. The

findings underline the urgent need for community-based interventions, peer support programs, mental health and substance abuse programs to improve ART adherence and overall well-being in this vulnerable population.

DISCUSSION

Introduction

In this discussion section, we will delve into the intricate landscape of mental health challenges that are faced by the HIV positive adolescents, as observed through the lens of Mansa General Hospital. By synthesizing the findings with existing literature, the multifaceted nature of these challenges will be illuminated as well as exploring their implications both at individual well-being and the broader healthcare strategies and propose avenues for future research and intervention.

Demographics

The sample composition revealed several significant patterns regarding the demographic and social characteristics of HIV positive adolescents.

Gender Distribution: The study had more males than female adolescents, the predominance of males (61%) compared to females (39%) in the sample suggests that male adolescents may either face higher vulnerability to HIV exposure or are more likely to seek treatment at ART department compared to females. This aligns with findings that HIV prevalence among young men increased over a 12year period, while it declined among young women [47]. Similarly, the under representation of females (27%) could be due to cultural or societal stigma as research indicates that adolescent girls in Sub-Saharan Africa face unique barriers, such as fear of discrimination and caregiver biases [89].

Age Group: The nearly even split between younger adolescents (10-14 years at 41%) and older ones (15-19 years at 53%) in the study emphasize the need for age-appropriate mental health and ART adherence strategies. Another study underscored the critical role of early HIV diagnosis and intervention, particularly for adolescents, as the disease remains a leading cause of mortality in adolescents [77]. Younger adolescents might require more family centered approaches, while older adolescents may benefit from peer-support programs and tailored education about transitioning to adult care systems.

Education Status: With 38% of participants in secondary school and 8% not in school, education emerges as a critical factor influencing the well-being of HIV positive adolescents. Those not in school may face additional risks of isolation, stigma and limited access to information on HIV management [18]. Interventions could focus on supporting school reintegration or alternative education programs for out-of-school adolescents.

Living Arrangements: The fact that 58% of adolescents live with both parents underscores the potential for family-centered approaches in supporting ART adherence and mental health. Studies in Dodoma, City, Tanzania highlighted that children raised by single parents may experience issues such as abuse, poor academic performance, involvement in negative peer groups, moral decay, loneliness, sadness and a lack of confidence and self-reliance [54].

Orphan hood: The nearly even split between orphaned (48%) and non-orphaned (52%) adolescents reflects the profound social impact of HIV, as being orphaned significantly influences mental health, stability and access to care. A study in Sub-Saharan African reviewed the psychological effects of orphan hood, particularly the emotional distress and stigmatization orphans often experience [48]. Orphans may require additional psychosocial support, as they are more likely to experience feelings of neglect, grief or stigma.

Objective 1: What are the Mental Health Challenges Faced by HIV Positive Adolescents

A number of mental health challenges were highlighted from the interviews and focus group discussions. These included psychological and emotional challenges like depression and social exclusion, stigma and fear of disclosure and substance abuse.

Psychological and Emotional Challenges

Depression

HIV positive adolescents often face significant psychological challenges, with depression being one of the most prevalent. It was noted from the participants that HIV positive adolescents were depressed as a result of their HIV status. Depression among HIV positive adolescents stemmed from a number of factors such as the loss of parents, the HIV positive status itself, reactions from friends and families and the segregation that came with people knowing their HIV status. This was similar with a study conducted in Sub-Saharan Africa that found that 32% of HIV positive adolescents reported symptoms of major depressive disorder, highlighting the urgent need for mental health interventions in this population [32]. HIV positive adolescents struggled with identity formation, emotional regulation and social relationships which further complicated their mental health. These feelings made them to avoid school and social gatherings and to be isolated even from their loved ones. Studies indicate that HIV positive youths are at a higher risk of depression compared to their HIV negative peers due to the chronic nature of the illness, the stigma associated with it and the life-long need for antiretroviral therapy (ART) [76]. HIV adolescents are disproportionately affected by depression compared to their HIV negative peers. Their experience of traumatic events such as parental loss exacerbated the depression they experienced. This made a number of adolescents to shun school and community activities and this further worsened their mental health. Emotional distress ranging from fear of rejection, self-blame and guilt, internalized stigma contributed greatly to the development of depressive symptoms, including persistent sadness or hopelessness, loss of interest in activities, and isolation. These worries create a persistent state of emotional distress that heightens the risk of depression [52]. The adolescents in the study revealed that they had worries as a result of their HIV positive status, some expressed worries of being laughed at, worries of not ever having a partner or family and all these made them to be isolated away from even their loved ones. Adolescents often grapple with the emotional burden of their diagnosis, which may be compounded by concerns about their future, such as the ability to achieve educational or career goals and build relationships [18]. Adolescents often express feelings of sadness, hopelessness and worthlessness, which can impair their ability to focus in school or maintain relationships. ART itself can contribute to depressive symptoms, as adolescents feel overwhelmed by the lifelong commitment to medication, side effects and the reminder of their condition every time their take their pills.

Depression among HIV positive adolescents is often underdiagnosed and untreated due to limited mental health resources in low-resource settings like Mansa. This lack of intervention can have cascading effects, including poor school performance, strained family relationships and increased vulnerability to risky behaviors [32]. Addressing this challenge requires integrating mental health services into routine HIV care, ensuring that symptoms of depression are identified early and managed appropriately. Access to mental health professionals within the ART department is crucial as this will enable the adolescents to receive holistic health care that addresses both their physical and mental health needs. Screening for depression and other mental health issues regularly are crucial where tailored interventions that cater to the unique needs of HIV positive adolescents are provided. Engagement of family members and the community in supporting HIV adolescents can help reduce the depression experienced by many HIV positive adolescents. The family members and communities are the closest the adolescents have and they have a daily interaction, hence their support is key in reducing depression among HIV positive adolescents and enhancing their mental wellbeing. Evidence from similar interventions such as Cognitive Behavioral Therapy (CBT), can significantly reduce depressive symptoms and improve overall quality of life for HIV positive youths [10].

Feelings of Isolation and Loneliness

Feelings of isolation and loneliness are another significant psychological challenge among HIV positive adolescents. It was noted from the study that HIV positive adolescents are usually isolated from friends and feel so alone. This feeling was as a result of perceived rejection because of one's status, experienced bullying from friends and families and fear of being laughed at. Adolescents who had lost parents reported loneliness and isolation as some experienced the stigma from family members, being isolated when it came to using utensils and being labelled as infectious. The stigma and fear of rejection associated with HIV can lead to social withdrawal, causing adolescents to feel disconnected from their peers. Similar findings were highlighted

that many adolescents choose to avoid social interactions to protect themselves from discrimination, which exacerbates their sense of loneliness [10]. This sense of isolation can exacerbate feelings of loneliness, shame and guilt, making it challenging for adolescents to form and maintain meaningful relationships. As a result, they may feel like they are navigating their HIV diagnosis alone, without a support system to turn to, further increasing their vulnerability to depression, anxiety and other mental health concerns. Isolation can be compounded by the loss of parental or familial support, as some adolescents have lost parents to HIV/AIDS or are in the care of guardians who may lack emotional or material resources to support them adequately. These feelings often stem from societal stigma, peer rejection and fear of disclosure that surrounds their diagnosis. The weight of keeping their status a secret can be crushing, causing them to withdraw from social interactions and relationships, fearing that others will reject or ostracize them if they discover their HIV status. This self-imposed isolation can lead to feelings of intense loneliness, disconnection and despair, as they struggle to cope with the emotional burden of their diagnosis without support or understanding from others.

A sense of disconnection is a pervasive experience among HIV positive adolescents, who often feel detached from their peers, family and community. This disconnection can stem from the stigma and shame associated with HIV, leading adolescents to feel they don't belong to or are no longer a part of their social circle. As a result, they may withdraw from social interactions, stop participating in activities they once enjoyed and struggle to form and maintain meaningful relationships. This sense of disconnection can be deeply distressing, especially during adolescence, a developmental stage when peer relationships and social belonging are critical. The sense of disconnection can also be intensified by the fear of disclosure, as adolescents may feel like they are living a "double life" – hiding their HIV status from others while struggling to cope with the emotional and psychological implications of their diagnosis [32]. This sense of disconnection can lead to feelings of isolation, loneliness and despair, making it challenging for adolescents to access the support and care they need to manage their HIV diagnosis and achieve optimal health outcomes.

Adolescents also reported having stopped school because of fear of being laughed at and being labelled. They reported experiencing exclusion or bully in schools or community settings when their HIV status becomes known. This is significant risk for HIV positive adolescents, who may face unique challenges that make it difficult to continue their education. The stigma and shame associated with HIV can lead to social isolation, bullying and teasing causing adolescents to feel uncomfortable or unwelcome in the school environment [21,68,97]. Isolation creates a vicious cycle in which loneliness leads to emotional distress, which in turn deepens the sense of otherness if caregivers treat them differently out of overprotection or lack of understanding of their emotional needs. The emotional and psychological burden of living with HIV can make it hard to concentrate and keep up with school work, leading to poor academic performance and eventual dropout. Without access to education, HIV positive adolescents may miss on opportunities and personal growth, exacerbating the already significant challenges they face.

Effective interventions are crucial to support HIV positive adolescents and mitigate the negative impacts of HIV on their mental health, education and overall well-being. Interventions such as counseling, peer support groups and mental health services can help adolescents cope with the emotional and psychological burden of living with HIV [96]. Educational support programs, including tutoring and academic mentoring, can also help adolescents stay in school and achieve their academic goals. Additionally, interventions that address stigma and discrimination, such as awareness-raising campaigns and community based initiatives can help create a more supportive and inclusive environment for HIV positive adolescents. Research highlights the importance of peer-led support groups which can help create a safe and understanding environment for HIV positive adolescents to share their experiences, combat feelings of loneliness and build a sense of community [10]. The interventions that promote inclusive education and community acceptance can play a crucial role in reducing isolation and its associated emotional burdens.

Stigma and Disclosure issues

Stigma is one of the pervasive challenges faced by HIV positive adolescents, significantly impacting their mental health and social integration. From the adolescents engaged in this study, it was found that they mostly faced stigma from their peers and even family members as well as negative self-perception due to their HIV status. The fear of being stigmatized, rejected or discriminated against led to feelings if shame, guilt and

anxiety, causing them to hide their HIV status from others. This secrecy can be overwhelming, leading to social isolation and emotional distress. Moreover, the burden of keeping their HIV status a secret can also lead to difficulties in forming and maintain relationships, as adolescents may struggle to disclose their status to romantic partners, friends or family members. These findings were similar with a study that found that HIV positive adolescents experienced stigma from peers, families and communities [68]. Stigma from peers, families and communities can have a profound impact on the lives of HIV positive adolescents. Peers may reject or ostracize them, fearing that they will contract the virus through casual contact. Families may also struggle to accept their child's HIV status, leading to feelings of shame, guilt and blame. In some cases, families may even reject or abandon their HIV positive child, leaving them feeling isolated and alone. Community stigma can also be a significant challenge, with HIV positive adolescents facing discrimination and prejudice in their daily lives. Stigma among HIV positive adolescents manifest in various form and stems from various angles including self-perception of their HIV status [96].

The effects of stigma from peers, families and communities can be devastating for HIV positive adolescents. It can lead to social isolation, emotional distress and mental health problems such as depression and anxiety. Stigma can also make it difficult for adolescents to access healthcare services, disclose their HIV status and adhere to treatment. Furthermore, stigma can perpetuate harmful stereotypes and myths about HIV, making it harder to prevent new infections and promote understanding and acceptance. Stigma manifests in various forms, including being ostracized in schools, labeled as "contagious," or excluded from school activities [18]. The manifestations of stigma against HIV positive adolescents are far-reaching and multifaceted. Socially, they may experience social isolation, rejection or exclusion from social events, gatherings or activities and may be subjected to stigmatizing language, discrimination or bully. Emotionally and psychologically, they may struggle with feelings of shame, guilt, anxiety, fear, depression and low self-esteem. Behaviorally, they may engage in non-disclosure risk-taking behaviors, poor adherence to treatment regimens or avoidance behaviors. Structurally, they may face lack of access to healthcare, discriminatory policies, inadequate support services and socioeconomic disparities, which can exacerbate stigma and marginalization. These manifestations of stigma can have devastating consequences on the lives of HIV positive adolescents, affecting their mental and physical health, education and overall well-being. Such experiences can lead to low-esteem, feelings of worthlessness and social withdrawal. Internalized stigma can also hinder their ability to accept their diagnosis, further complicating their coping mechanisms and adherence to ART [21]. The intersection of stigma with cultural norms often amplifies its impact in low-resource settings.

The fear of disclosure is closely linked to stigma and presents a significant challenge for HIV positive adolescents. The decision to disclose one's status can be a difficult and complex one, particularly for adolescents. Fear of rejection, stigma or discrimination can lead to non-disclosure, which can have negative consequences on mental and physical health [97]. A study noted that many are reluctant to disclose their HIV status to peers, romantic partners or even close family members due to fear of rejection, judgement or betrayal of confidentiality [32]. Non-disclosure also affects adolescents' ability to access social and emotional support. For instance, in a school setting, non-disclosure may prevent teachers or counselors from providing tailored support [97]. Furthermore, in romantic relationships, the fear of rejection or accusations of dishonesty can lead to relationship instability or avoidance of intimacy altogether [52]. This can contribute to feelings of loneliness and complicate mental health outcomes. However, disclosure must be done in a safe and supportive environment with access to counseling and guidance to help adolescents navigate the potential consequences of disclosure. Interventions for fear of disclosure among HIV positive adolescents focus on creating a supportive and non-judgmental environment where they feel comfortable sharing their HIV status. This can be achieved through counselling and therapy sessions, where adolescents can discuss their fears and concerns with a trained healthcare provider. Peer support groups, where adolescents can connect with others who share similar experiences, can also provide a safe space for disclosure. Additionally, educational programs and workshops can help adolescents develop disclosure skills and strategies, while also promoting awareness and understanding about HIV among their peers and family members.

Substance Abuse

Substance abuse is a significant concern among HIV positive adolescents, as it exacerbates mental health challenges and negatively impacts adherence to ART. It was noted that adolescents living with HIV may turn

to substances as a coping mechanism to manage the emotional burden about their diagnosis, stigma and feelings of isolation. Substance abuse is a significant concern among HIV positive adolescents, who may turn to drugs or alcohol as a coping mechanism for the emotional and psychological challenges associated with their diagnosis. A similar study found that substance abuse was one of the coping mechanisms among HIV positive adolescents [96]. The consequences of substance abuse among HIV positive adolescents can be severe and long-lasting. Substance abuse can lead to increased risk-taking behaviors, such as unprotected sex and sharing needles, which can further transmit the virus. Additionally, substance abuse can interfere with ART adherence, leading to poor viral suppression and increased risk of HIV-related complications. Studies show that substance use, including alcohol and drugs is linked to risky behaviors, increased HIV transmission rates and poor treatment outcomes [106]. This behavior not only undermines their physical health but also heightens the risk of mental health disorders such as depression and anxiety. Furthermore, substance abuse can exacerbate mental health problems, such as depression and anxiety, which are already prevalent among HIV positive adolescents.

There is a need for integrated intervention programs that address both substance abuse and mental health challenges in HIV care settings. Interventions to address substance abuse among HIV positive adolescents are multifaceted and can occur at individual, group and family/community levels. Individual level interventions include counseling and therapy, motivational interviewing and cognitive behavioral therapy to help adolescents address substance abuse and related mental health issues. Efforts to mitigate substance abuse among HIV positive adolescents must include preventive education, counseling and community-based support systems [106]. Programs should aim to reduce stigma to foster supportive environments and provide coping strategies that discourage substance use. Group level interventions comprise peer support groups, substance abuse support groups and life skills training to teach adolescents coping, problem-solving and decision-making skills. Additionally, family therapy and community-based programs can provide comprehensive support, while collaboration with healthcare providers ensures coordinated care and support, ultimately helping HIV positive adolescents overcome substance abuse and achieve optimal health outcomes. Comprehensive care models incorporating substance abuse treatment and mental health support alongside ART services have shown promise in improving outcomes for this vulnerable population [90].

Objective 2: Effects of Stigma and Depression on ART Adherence

Mental health challenges are prevalent among HIV positive adolescents, with stigma and depression significantly impacting their adherence to antiretroviral therapy (ART). It was noted from the study that HIV positive adolescents experienced stigma from their homes, school and peers within their communities. This was more significant among adolescents whose parents have died. Stigma and depression can significantly impact adherence to ART among HIV positive adolescents. Stigma can lead to fear of disclosure, social isolation, internalized shame and avoidance behaviors, making it difficult for adolescents to access and adhere to ART. These findings were similar with a study in Zomba District, Malawi where it was noted that HIV related stigma and discrimination was experienced at various levels including families, communities and school environments [33]. Stigma is a significant barrier to ART among HIV positive adolescents. The fear of being judged, rejected or discriminated against can lead to feelings of shame, guilt and anxiety, causing adolescents to hide their HIV status and avoid seeking medical care. As a result, they may miss appointments, forget to take their medication or stop taking it altogether, compromising their ART adherence and putting their health at risk. Moreover, stigma can also lead to social isolation, making it difficult for adolescents to access support and resources that can help them adhere to treatment. This was similar to the findings in a study in Tanzania where it was found that HIV positive adolescents experienced stigma which was manifested in separation of eating utensils, being told that they will not live long and being questioned each time they were taking the drugs [68]. The effects of stigma on ART adherence can be far reaching and devastating. Poor adherence can lead to reduced viral suppression, increased risk of transmission and decreased quality of life. Furthermore, stigma can also perpetuate negative attitudes and behaviors towards HIV positive individuals, creating a cycle of fear, shame and silence.

Depression is a significant mental health issue that can have profound impact on ART adherence among HIV positive adolescents. Depression can manifest as lack of motivation and difficulty concentrating, making it harder for adolescents to adhere to their treatment regimens. When adolescents experience depression, they

may feel overwhelmed, hopeless and disconnected from others, making it difficult to maintain a regular treatment regimen. A study found that there is a strong correlation between depression and adherence to ART among HIV positive individuals, including adolescents [17]. Depression impairs cognitive function, including memory and concentration, making it harder to remember to take medication or attend medical appointments. Furthermore, depression can lead to social withdrawal, reducing access to support and resources that can help adolescents adhere to treatment. Another study found that HIV positive adolescents who experienced higher levels of stigma were more likely to have suboptimal ART adherence [70]. This underscores the detrimental impact of stigma on treatment outcomes and the urgent need for interventions that address both mental health and adherence barriers. The effects of depression on ART adherence can be severe, leading to reduced viral suppression, increased risk of transmission and decreased quality of life. When adolescents are depressed, they may be less likely to take their medication as prescribed, which can result in the development of drug-resistant HIV strains and reduced treatment options. Moreover, depression can also exacerbate the physical symptoms of HIV such as fatigue, pain and sleep disturbances, further compromising ART adherence.

To combat these challenges, holistic approaches that integrate mental health support with HIV care are essential. Healthcare providers must integrate mental health services into HIV care, providing adolescents with access to depression screening, diagnosis and treatment. This can include counselling services, peer support groups and interventions that are aimed at reducing stigma in healthcare settings and communities. Integrating care models that combine HIV treatment with mental health services have shown promising results in addressing the dual burden of physical and psychological health needs [23]. By providing mental health support within HIV care settings, adolescents can access counselling, therapy and peer support to address stigma-related stressors and depressive symptoms. Similarly, healthcare providers can also promote ART adherence by providing education and support, addressing concerns and fears and monitoring adherence regularly. Furthermore, interventions targeting stigma at individual, community and institutional levels can help create more supportive environments and promote acceptance of those living with HIV/AIDS. Education and awareness campaigns, coupled with advocacy efforts, are essential for challenging negative attitudes and fostering empathy and understanding. Peer groups offer a valuable resource for HIV positive adolescents, providing a sense of belonging and solidarity with others who share similar experiences. A study revealed that through peer interactions, adolescents can find encouragement, practical advice and emotional support, which can improve mental well-being [69]. Peer groups have a profound impact on the lives of HIV positive adolescents. Positive peer influences can provide emotional support, encouragement and motivation, helping adolescents to stay on track with their treatment regimens. Peer groups can also offer a sense of belonging and connection thereby reducing feelings of isolation and stigma. By fostering a sense of community and support, peer groups can play a critical role in promoting ART adherence and improving the overall health and well-being of HIV positive adolescents. Cognitive-behavioral therapy support groups and family counselling can help adolescents develop coping strategies, improve self-esteem and enhance resilience in the face of stigma and other stressors. By addressing the psychological and social factors that influence ART adherence, healthcare providers can better support the mental health and well-being of HIV positive adolescents.

Objective 3: Levels of Social Exclusion and Substance Abuse and its Effect on ART Adherence

Findings from the study also showed levels of social exclusion and substance abuse among HIV positive adolescents and this had an effect on the adherence of ART. This was mostly attributed to not having someone to comfort them especially when both parents were deceased. Social exclusion can occur at multiple levels, including individual, family, community and societal levels and can have profound impact on ART adherence among HIV positive adolescents. Social exclusion significantly undermines ART adherence among HIV positive adolescents [96]. At individual level, social exclusion can manifest as internalized stigma, shame and self-blame, leading to feelings of isolation and disconnection from others. This can result in poor ART adherence, as adolescents may feel unworthy of care or may struggle to prioritize their health. These feelings may contribute to non-adherence to ART regimens as individuals may perceive their treatment as a reminder of their marginalized status. Adolescents who face exclusion often avoid disclosing their HIV status or seeking healthcare services due to fear of judgment and ridicule [87]. At the family level, social exclusion can occur when family members reject or ostracize the adolescent due to their HIV status, leading to a lack of emotional support and practical care. At community and societal level, social exclusion can manifest as discriminatory laws and policies and social norms that marginalize and stigmatize people living with HIV. This can result in

limited access to healthcare services, education and employment opportunities, making it even more challenging for HIV positive adolescents to adhere to ART. Furthermore, social exclusion can also perpetuate poverty, hunger and homelessness, which can further compromise ART adherence. Stigma also reduces their confidence to adhere to ART regimens in public or discuss treatment challenges with caregivers or healthcare providers. Studies have shown that a lack of social support exacerbates mental health issues, such as depression and anxiety, which are strongly linked to non-adherence [18] Furthermore, adolescents excluded from educational systems or peer networks miss opportunities for HIV education, peer encouragement and structured routines, all which are vital for consistent ART adherence.

The effects of social exclusion extend beyond individual behavior to community-level barriers. For instance, healthcare systems may unconsciously perpetuate exclusion through inadequate adolescent-focused services, long waiting times and insensitive staff attitudes. Adolescents who feel excluded by health systems are more likely to skip clinic visit or conceal ART use. This reduces the likelihood of viral suppression and increases the risk of treatment failure [88]. Addressing social exclusion requires community-driven strategies, including stigma reduction campaigns and youth-friendly healthcare services that prioritize inclusion and empowerment. Such interventions can foster environments that encourage adherence and improve the mental and physical well-being of HIV positive adolescents.

Substance abuse poses a critical threat to ART adherence among adolescents living with HIV. Substance use can impair judgement and decision making thereby leading to inconsistent medication adherence and poor health outcomes [7]. Substance abuse can impair cognitive function, including memory and concentration, making it difficult for adolescents to remember to take their medication or attend medical appointments. Additionally, substance abuse can lead to risky behaviors, such as sharing needles or engaging in unprotected sex, which can increase the risk of HIV transmission and compromise ART effectiveness. Furthermore, substance abuse can also lead to social and economic instability, making it challenging for adolescents to access and maintain ART. The effects of substance abuse on ART can be so severe and long-lasting. Poor ART adherence due to substance abuse can lead to reduced viral suppression, increased risk of drug resistance and decreased treatment options. Moreover, substance abuse can also exacerbate the physical and mental health consequences of HIV, including increased risk of opportunistic infections, mental health disorders and mortality. The relationship between substance abuse and social exclusion is synergistic, creating a compounded effect on ART adherence. Adolescents who abuse substances often experience heightened stigma and marginalization, isolating them from healthcare and community resources. The cycle of substance abuse, and social exclusion creates a significant barrier to achieving viral suppression, worsening health outcomes.

These findings highlight the need for comprehensive interventions that address both the mental health and social determinants of health among HIV positive adolescents to improve treatment outcomes. Integrated interventions such as combining ART adherence counselling with substance abuse treatment, are essential to breaking this cycle [96]. Additionally, providing adolescents with access to peer support mitigate the dual impacts of exclusion and substance abuse [88]. This requires a comprehensive and multifaceted approach that involves governments, communities, families and individuals.

Objective 4: Government Policies on Mental Health Challenges

Adolescents living with HIV face unique mental health challenges due to the complex interplay of medical, psychological and social factors. The study highlighted that government has come up with youth friendly spaces where adolescents meet and discuss freely about the challenges they face and integrated mental health services into primary healthcare services. Integrating mental healthcare into primary healthcare is a crucial step in addressing the mental health needs of HIV positive adolescents. This approach involves providing mental health services within primary care settings, making it easier for adolescents to access the care they need. By integrating mental healthcare into primary healthcare, healthcare providers can identify and address mental health issues early on, reducing the risk of complications and improving treatment outcomes. This approach can also help to reduce stigma and promote a more holistic approach to healthcare, recognizing the interconnectedness of physical and mental health. These findings were also echoed in a study where it was stated that the integration of mental health services into primary care has been shown to improve access to care and reduce the treatment gaps for individuals with mental health conditions [85]. Effective integration of

mental healthcare into primary healthcare requires a multidisciplinary approach, involving healthcare providers, mental health professionals and community workers. This approach enables healthcare providers to offer a range of services including mental health screening, counselling and therapy as well as referrals to specialist services when needed. By providing mental health services within primary care settings, healthcare providers can improve health outcomes, enhance quality of life and promote better ART adherence among HIV positive adolescents. This integrated approach also helps to address the social determinants of health, such as poverty, education and social support, which are critical to achieving optimal health outcomes. Moreover, integrating mental health services into primary care can help reduce stigma associated with seeking mental health treatment, as it normalizes the provision of mental healthcare within the routine medical settings [99].

Technical working groups and youth indabas are crucial platforms for addressing the unique needs of HIV positive adolescents, fostering participation in healthcare policy design and improving psychosocial outcomes as highlighted in the study. Technical working groups bring together stakeholders, including healthcare providers, policymakers, community leaders and adolescents living with HIV, to develop and implement tailored interventions. These groups are essential for integrating adolescents; voices into decision-making, ensuring policies reflect their lived experiences and priorities [88]. Technical working groups play a critical role in promoting ART adherence and improving health outcomes among HIV positive adolescents. These technical working groups promote ownership and trust, which are critical for improving adherence to antiretroviral therapy and overall engagement in care. The groups can also facilitate the dissemination of best practices, promote inter-facility collaboration and support the development of policies and guidelines that promote adolescent-friendly HIV services. Through their work, these groups can help ensure that HIV positive adolescents receive high quality, comprehensive care that addresses their unique needs and promotes optimal health outcomes.

It was also established that government has come up with policies like youth indabas in the province. Youth indabas, traditional gatherings rooted in African cultural practices, provide safe and inclusive spaces for dialogue and peer support. Youth indabas offer unique opportunity for young people to engage in open and honest discussions about their experiences, challenges and concerns. These gatherings are typically facilitated by trained peer educators or community leaders who create a supportive and non-judgmental environment that encourages active participation and sharing. By providing a platform for young people to express themselves and connect with their peers, youth indabas help to build trust, foster empathy and promote a sense of community and belonging. Indabas offer an opportunity for adolescents to share experiences, discuss challenges and learn coping mechanisms in a non-judgmental setting [106]. Furthermore, these gatherings also strengthen community support systems by reducing stigma and encouraging collective responsibility for adolescent health [18]. Through storytelling, education and advocacy, indabas empower HIV positive adolescents to take an active role in their care while fostering resilience and social connectedness. Youth indabas can also play a critical role in promoting HIV prevention, treatment and care among young people. These initiatives highlight the importance of culturally relevant and participatory approaches in enhancing the quality of life for HIV positive adolescents. They can provide a safe space for young people to discuss their concerns and fears about HIV, ask questions and access accurate information and resources. By addressing the social and emotional aspects of HIV, youth indabas can help to reduce stigma, promote healthy behaviors and support adherence to ART among HIV positive adolescents.

It was further observed that government has introduced youth friendly spaces for adolescents in all health facilities across the province. Youth friendly spaces are designed areas where young people can access health services, information and support in a welcoming and non-judgmental environment. These spaces are critical in providing adolescents with access to comprehensive health services, including HIV testing, treatment and care. These spaces are designed to be safe, confidential and accessible, with staff trained to provide youth friendly services. By providing a comfortable and non-intimidating environment, youth friendly spaces can help reduce barriers to healthcare access, increase health seeking behavior and improve health outcomes among young people. Youth friendly spaces also work as preventive strategies against mental health challenges. These spaces are designed to be accessible, inclusive and tailored to the unique needs of adolescents, providing integrated health services that prioritize mental health alongside HIV care. These spaces are designed to be inclusive and non-judgmental, which can help reduce stigma surrounding mental health and

encourage young people to seek help when needed. Youth friendly spaces can also serve as a hub for various activities and services that promote the overall well-being of adolescents. These may include counselling, peer support groups, education and recreational activities. Similarly, youth friendly spaces promote a safe and non-judgmental environment where adolescents can receive counselling, peer support and psychosocial interventions without fear of stigma or discrimination [106]. By providing a range of services and activities, youth friendly spaces can help people develop life skills, build confidence and make informed decisions about their health and well-being. This is especially important for HIV positive adolescents, who often face compounded challenges such as stigma, social exclusion and mental health disorders like depression and anxiety. A study highlighted that access to youth friendly services reduces stigma-related stress and encourages help-seeking behaviors among adolescents [18]. This holistic approach can help address the complex needs of adolescents and promote their overall health, happiness and success.

Preventive approaches to mental health, such as community based support services, are essential in promoting the mental well-bring of HIV positive adolescents. Community based support services provide a critical safety net for HIV positive adolescents, offering a range of preventive and supportive interventions that promote mental health and well-being. A study argued that preventive approaches to mental health such as community based support services, early intervention programs particularly youth friendly spaces, have been shown to be cost effective and beneficial in reducing the burden of mental illness [64]. These services may include peer support groups, counselling, mentorship programs and family therapy. By providing a supportive and non-judgmental environment, community based services can help adolescents develop coping strategies, manage stress and anxiety and build resilience. Community based support services can also play a vital role in preventing mental health problems among HIV positive adolescents. For example, these services about mental health, reduce stigma and discrimination and promote healthy behaviors and lifestyles. Additionally, community based services can facilitate linkages to healthcare and social services, ensuring that adolescents receive comprehensive care and support. By investing in initiatives that promote mental resilience and address social determinants of mental health, governments can create supportive environments that foster mental well-being.

CONCLUSION

The discussion highlighted the multifaceted challenges faced by HIV positive adolescents, including stigma, social exclusion, depression and substance abuse, which significantly impact ART adherence. Stigma from family, peers and the community exacerbates isolation and emotional distress, while substance abuse emerges as a coping mechanism that disrupts treatment routines. These findings underscore the necessity of addressing mental health issues, fostering supportive environments and implementing targeted interventions such as caregiver education and youth-friendly policies to promote ART adherence and improve the overall well-being of this vulnerable population. Addressing the mental health needs of HIV positive adolescents requires a comprehensive and multifaceted approach that integrates mental health services into primary care, provides community-based support services, promotes youth friendly spaces and services, addresses social determinants of health, reduces stigma and discrimination and fosters positive relationships and social connections. By prioritizing the mental health and well-being of HIV positive adolescents, we can improve ART adherence and health outcomes, enhance quality of life, support resilience and coping skills and foster a positive and supportive community environment, ultimately requiring a collaborative effort from healthcare providers, communities, families and individuals.

SUMMARY

The discussion qualitatively explored the mental health challenges faced by HIV positive adolescents at Mansa General ART department and Mental Annex in Luapula Province, Zambia, while assessing the effects of stigma and depression on ART adherence among HIV positive adolescents, determining levels of social exclusion and substance abuse and its effect on ART adherence and government policies on mental health challenges among HIV positive adolescents. Through a qualitative approach, several key findings emerged.

Firstly, the findings from this study highlighted the multifaceted mental health challenges faced by HIV positive adolescents, including psychological and emotional struggles such as depression, loneliness and

feelings of isolation. The adolescents living with HIV also faced stigma and disclosure issues and some resorted to substance abuse as a coping mechanism of the depression they were experiencing as a result of their HIV positive status. Stigma, both internalized and externalized, further exacerbated these challenges, affecting their emotional well-being and willingness to disclose their HIV status. These findings underscore the need for targeted interventions that address not only the psychological impact of living with HIV but also the societal attitudes and misconceptions that perpetuate stigma. Providing comprehensive mental health support, fostering inclusive social environments and enhancing access to counselling services are essential steps towards improving the overall well-being of these adolescents.

Secondly, the study reviewed that stigma and depression had an effect on adherence to ART. Stigma and depression are critical factors that negatively affected adherence to ART among HIV positive adolescents. Adolescents facing stigma often avoided seeking care and missed taking their medication due to fear of being laughed at and pointed at as a sick person. This lack of adherence to ART affected their viral load, making them unsuppressed and at higher risk of transmitting the virus to others.

Thirdly, the study also showed that social exclusion and substance abuse was high among HIV positive adolescents and this affected their adherence to ART. Social exclusion was as a result of peers laughing at them once they discover their HIV status and this led to taking alcohol as a coping mechanism to the stress they were experiencing. This made them forget to take their medication thereby affecting their health.

Lastly, the study showed that government has come up with policies that address mental health challenges being experienced by HIV positive adolescents. It was noted that integration of mental health into primary healthcare is one of the interventions that government has included in the healthcare package. This package is holistic and is being implemented at every entry point in primary healthcare. Secondly, government has technical working groups and indabas that involve all the stakeholders including the HIV positive adolescents that look at various issues and come up with their own interventions. Thirdly, they have youth friendly spaces that bring adolescents together, were they share their experiences without fear of discrimination or stigma. It was noted that spaces also offer life changing skills as well as provide a holistic package that addresses the mental health of these adolescents.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to all individuals and institutions that contributed to this study on qualitative exploration of mental health challenges faced by HIV positive adolescents at Mansa General Hospital.

First and foremost, their deepest appreciation goes to the adolescents who participated in this study. Their willingness to share their experiences and perspectives have been invaluable in shedding light on the mental health challenges being faced.

They are also grateful to the healthcare providers and staff at Mansa General Hospital for their support in facilitating this research. Their dedication to adolescent health and well-being is truly commendable.

Special thanks to mentors, colleagues and academic supervisors for their guidance, constructive feedback and encouragement throughout this study. Their insights have been instrumental in shaping the research process.

Lastly, they acknowledge their families and friends for their unwavering support and encouragement, which have been a source of strength throughout this journey.

Thank you all for your invaluable contributions.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

REFERENCES

1. Ayşe, M., Ebru G., & Eda, T. (2021). The effects of the parenting Mental Health Adolescents in Turkey.
2. Ambareen. K., Ambreen U., & Tanwir K. (2020). Mental Health and HIV: Perception of medical officers working in low resource setting: A Focus Group Discussion.
3. American Psychological Association (APA). (2020). Substance Use Disorders and Addictions. Retrieved from: https://www.apa.org/topics/substance-use-disorders 07/03/2024
4. Barry, C. L., Huskamp, H. A., Goldman, H. H., & AHRQ MCC research network. (2016). A political history of federal mental health and addiction insurance parity. Milbank Quarterly, 94(1), 40-76.
5. Bastawrous, A., & Armstrong, M. J. (2013). Depression, stigma and HIV in low- and high-income countries: an overview of the peer-reviewed literature.
6. Betancourt, T., Scorza, P., Kanyanganzi, F., Fawzi, M. C., Sezibera, V., Cyamatare, F., Beardslee, W., Stulac, S., Bizimana, J. I., Stevenson, A., & Kayiteshonga, Y. (2014). HIV and Child mental health: A Case-Control Study in Rwanda. Pediatrics 134 (2): e464-e472.
7. Braistein, P., Katshcke, A., Shen, C., Sang, E., Nyandiko, W., & Vreeman, R. C. (2016). Retention of HIV infected and HIV exposed children in a comprehensive HIV clinical care program in Western Kenya. Tropical Medicine & International Health, 21(8), 1012-1020.
8. Canadian Institute of Health Research (CIHR). (2020). Mental Health. Retrieved from: https://cihr-irsc.gc.ca/e/48791.html 14/05/2024.
9. Carneiro. I., & Howard. N. (2011). Introduction to Epidemiology, 2nd edition, Berkshire: McGraw-Hill Open University.
10. Casale, M., Lane, T., & Sello, L. (2019). Social support and health outcomes in HIV positive adolescents: A systematic review. AIDS Care, 31(1), 2-10.
11. Centers for Diseases Control and Prevention (CDC). (2021). HIV Basics. Retrieved from: https://www.cdc.gov/hiv/basics/index.html 07/03/2024
12. Centers for Diseases Control and Prevention (CDC). (2020). Substance Use and Mental Health. Retrieved from: https://www.cdc.gov/mentalhealth/substance_use/index.htm 07/03/2024
13. Central Statistics Office, (2020) Census Report. Lusaka: Central Statistics Office Publishers.
14. Chikezie U., & Otakpor, A. (2013. HIV/AIDS and mental health research in Sub-Saharan Africa: A systematic review. African Journal of AIDS Research, 12(2), 115-112.
15. Chitah, M. (2001). Decentralization of Health Systems in Zambia: Resource Allocation and District Performance, Boston: Harvard School of Public health.
16. Claborn, K., Meier, E., Miller, M. B., & Leffingwell, T. (2021). The relationship between substance abuse and medication adherence among people living with HIV: A meta-analysis. American Journal of Drug and Alcohol Abuse, 47(1), 57-71.
17. Clark, D. M., Canvin, L., Green, J., Layard, R., Pilling, S., & Janecka, M. (2018). Transparency about the outcomes of mental health services (IAPT approach): an analysis of public data. The Lancet, 391(10121), 679-686.
18. Cluver, L., Orkin, M., Boyes, M., Sherr, L., & Meinck, F. (2020). Pathways from parental AIDS to child psychological, educational and sexual risk: Developing an empirically-based interactive theoretical model. Social Science & Medicine, 120, 53-62.
19. Collins, P. Y., Patel, V., Joestl, S. S., March, D., Insel, T. R., Daar, A. S., & Bordin, I. A. (2011). Grand challenges in global mental health. Nature, 475(7354), 27-30.
20. Commonwealth of Australia. (2019). National Mental Health Strategy. Retrieved from: https://www.health.gov.au/resources/publications.national-mental-health-strategy. 14/05/2024.
21. Dow, D. E., Turner, E. L., Shayo, A. M., Mmbaga, B., Cunninghan, C. K., & O'Donnell, k. (2016). Evaluating mental health difficulties and associated outcomes among HIV-positive adolescents in Tanzania, AIDS Care, 28:7, 825-833, DOI: 10.1080/09540121.2016.1139043.
22. Dube, B. (2005). Neuropsychiatric manifestations of HIV infection and AIDS. J. Psychiatry Neurosci.
23. Earnshaw, V. A., Smith, L. R., Chaudoir, S. R., Amico, K. R., & Copenhaver, M. M. (2013). HIV stigma mechanisms and well-being among PLWH: A test of the HIV stigma framework. AIDS and Behavior, 17(5), 1785-1795.
24. Farmer, P. (2013). Mental Health in Zambia, Lusaka: Zed Press.

25. Frey, J. (2020). How to Conduct Interviews in person. London: Sage Publications.
26. Hollis, C., Morriss, R., Martin, J., Amani, S., Cotton, R., Denis, M., & Tinsley, S. (2019). Technological innovations in mental healthcare: harnessing the digital revolution. Bristish Jpurnal of Psychiatry, 218(5), 271-275.
27. Joint United Nations Programme on HIV/AIDS (UNAIDS). (2013). Guidance on provider-initiated HIV Testing and Counselling in Health facilities. Retrieved from: https://www.unaids.org/sites/defau;t/files/media_asset/20130522_PITCguidance_en_0.pdf
28. Institute for Health Metrics and Evaluation (IHME). (2020). Global Burden of Disease Study 2019. Retrieved from: https://www.healthdata.org/gbd 16/04/2024.
29. Kay, M., Santos, J., & Takane, M. (2011). mHealth: New horizons for health through mobile technologies.
30. Katz, I. T., Ryu, A. E., Onugbu, A. G., Psaros, C., Weiser, S. D., Bangsberg, D. R., Tsai, A. C. (2013). Impact of HIV-related stigma on treatment adherence: systematic review and meta-analysis. Journal of the International AIDS Society, 16(3Suppl 2), 18640.
31. Kieling, C., Baker-henningham, H., Belfer, M., Conti, G., Ertem, I., & Omigbodun, O. (2011). Child and adolescent mental health worldwide: evidence for action. Lancet. 378(9801): 1515-25.
32. Kimera, E., Vindevogel, S., De Maeyer, J., Reynaert, D., & Engelen, A. M. (2021). Psychological challenges among HIV positive adolescents in Sub-Saharan Africa: A systematic review. Child and Adolescent Psychiatry and Mental Health, 15(1), 1-11.
33. Kip, E. C., Udedi, M., Kulisewa, K., Go, F. V., & Gyaness, B. N. (2022). Stigma and mental health challenges among adolescents living with HIV in selected adolescent-specific antiretroviral therapy clinics in Zomba District, Malawi. BMC pediatr 22, 253. Retrieved from: https://doi.org/10.1186/s12887-022-03292-4 05/03/2024.
34. Kumar, R., Sangeetha, N., & Thomas, B. (2019). Psychological determinants of substance use among adolescents with HIV. Journal of Adolescent Health, 65(3), 367-374).
35. Lee, B., Taylor, D. C., & Kanters, S. (2018). Stigma in HIV positive women. Journal of the International AIDS Society, 21(Suppl 5), e25190.
36. Lowenthal, E. D., Bakeera-Kitaka, S., Marukutira, T., & Chapman, J. (2014). Health and psychosocial outcomes of a long term program for orphaned and vulnerable adolescents in Uganda: a cohort study. JAIDS Journal of Acquired Immune Deficiency Syndromes, 65(3), e94-e101.
37. Lungu, G., Tsarkov, A., Petlovanyi, P., & Phiri, C, (2023). Health-seeking behaviors and associated factors in individuals with substance use disorders at Chainama Hills College Hospital, Zambia. World Journal of Advanced Research and Reviews. 17(03): 480-499.
38. Lungu, M. (2015). Factors contributing to underutilization of mental health services in rural Health centers within Lusaka urban. Retrieved from: http://dspace.unza.zm/handle/123456789/3761 07/03/2024
39. Lusale, D. (2007). Why do Zambian health workers migrate abroad? The Brain Drain of Zambia health workers. Medicus. http:// 87 Medical Journal of Zambia, Volume 35 Number 3 www.medicusmundi.ch/mms/services/bulletin/ bulletin104_2007/chapter0705168999/ bulletinarticle0705162432.html
40. MacDonald, M. and Starrs, A. (2002). Adolescents living with HIV: Policy Brief. Family Care International, New York.
41. Makasa, E. (2019). Africa's medical brain drain: Why I want to stay in Africa, BMJ 2005.
42. Mellins, C.A, Malee K. M. (2013). Understanding the mental health of youth living with perinatal HIV infection: lessons learned and current challenges. J Int AIDS Soc.
43. Menon, A., Glazebrook, C., Campain, N., & Ngoma, M. (2007). Mental health and disclosure of HIV status in Zambian adolescents with HIV infection: implications for peer-support programs. J Acquired Immune Deficiency Syndromes. 46(3): p 349-354.
44. Ministry of Health (MOH). (2023). Mental health cases at Chainama hospital. Lusaka, Zambia.
45. Ministry of Health, (2022). Zambia Demographic and Health Survey, Central Statistics Office Publishers, Lusaka.
46. Munakampe, M.N. (2020). Strengthening mental health systems in Zambia. Int J Ment Health Syst 14, 28. Retrieved from: https://doi.org/10.1186/s13033-020-00360-z 07/03/2024
47. Murray, J., Chansa, C., & Lungu, L. (2019). HIV prevalence trends among young people aged 15-24

years in Zambia: A 12-year analysis BMC Infectious Diseases, 19(1), 405. Retrieved from: https://doi.org/10.1186/s12879-019-4059-3

48. Murungi, L., Owuor, J., Kiwanuka, J., & Nyongesa, M. K. (2019). Mental health status of adolescents living with HIV in Kenya: Assessing challenges in HIV care. Journal of the Association of Nurses in AIDS Care, 30(4), e100-e109.
49. Murungi, M. K., & Cummings, E. M. (2017). The effects of orphan hood on the psychological well-being of children in Sub-Saharan Africa: A Review of the Literature. African Journal of Psychiatry, 20(5), 289-297.
50. Musisi S, Kinyanda E. (2009). Emotional and behavioural disorders in HIV seropositive adolescents in urban Uganda. East Africa Medical Journal.
51. Mutumba, M., Bauremeister, J. A., Musiime, V., Byaruhanga, J., Francis, K., & Snow, R. C. (2016). Psychosocial challenges and strategies for coping with HIV among adolescents in Uganda: a qualitative study. AIDS patient care and STDs, 30(7), 345-352.
52. Mutumba, M., & Harper, G. W. (2015). Mental health and support among HIV positive adolesecnts in Sub-Saharan Africa: A review. International Journal of Child Health and Human Development, 8(1), 45-63.
53. Mwanahamuntu, M. (2019). Community Health Workers materials for prevention and control of mental health challenges**,** Lusaka: Zed Press.
54. Mwandira, S., & Ruga, R. (2020). Community perceptions of single parenting in Dodoma City, Tanzania. Rural Planning Journal, 35(1), 1-15. Retrieved from: https://www.ajol.info/index.php/rpj/article/view/288031
55. Mwape, L., Mweembe, P., & Kasonde, J. (2012). Strengthening the health system to enhance mental health in Zambia: a policy brief. International Journal of Technology assessment in healthcare. 28(3): 294-300.
56. Mwape, L., Sikwese, A., Kapungwe, A., Mwanza, J., Flisher, A., Lund, C., & Cooper, S. (2010). Integrating mental health into primary healthcare in Zambia: a care provider's perspective. Int J Ment Health Syst 4, 21. Retrieved from: https://doi.org/10.1186/1752-4458-4-21. 19/03/2024.
57. National Institute of Allergy and infectious Diseases (UIAID). (2021). HIV Transmission. Retrieved from: https://www.niaid.nih.gov/diseases-conditions/hiv-transmission.
58. National Institute on Drug Abuse (NIDA). (2021). Drugs, Brains and Behavior: The science of addiction. Retrieved from: https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-abuse-addiction 07/03/2024
59. National Institute of Mental Health (NIMH). (2020). Mental Health Information: Substance Use Disorders. Retrieved from: https://www.nih.gov/health/topics/substance-use-and-mental-health/index.shtml
60. Pao, M., Lyon, M., D'Angelo, L. J., & Schuman, W. B. (2000). Psychiatric diagnoses in adolescents seropositive for the human immunodeficiency virus. Arch Pediatric and Adolescent Med.
61. Passchier, P. V., Abas, M. A., Ebuenyi, D. I., & Pariante, M. C. (2018). Effectiveness of depression interventions for people living with HIV in Sub-Saharan Africa: A systematic review & meta-analysis of psychological & immunological outcomes. Retrieved from: https://doi.org/10.1016/j.bbi.2018.05.010.
62. Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: a global public-health challenge. The Lancet, 369(9569), 1302-1313.
63. Patel, V., Belkin, G. S., Chockalingam, A., Cooper, J., Saxena, S., & Unutzer, J. (2014). Grand challenges: integrating mental health services into priority health care platforms. PLoS Medicine, 11(5), e1001657. Retrieved from: https://doi.org/10.1371/journal.pmed.1001657 07/03/2024.
64. Patel, V., Saxena, S., Lund, C., Thornicroft, G., Baingana, F., Bolton, P., & Prince, M. (2018). The Lnacet Commission on global mental health and sustainable development. The Lancet, 392(10157), 1553-1598.
65. Patel, V., Araya, R., Chatterjee, A., Chisholm, D., Cohen, A., De Silvia, M., Hosman, C., McGuire, H., Rojas, G., & Ommeren, M. V. (2007). Treatment and prevention of mental disorders in low-income and middle-income countries. Global Mental Health. Lancet. https://doi.org/10.1016/S0140-6736(07)61240-9. 19/03/2024.
66. Patmschmidt, H., & Belfer, M. (2005). Mental health care for children and adolescents worldwide: a

review. World Psychiatry.
67. Pauline, B. Kamande, E. Omuya, M. (2017), The role of a decision-support smartphone application in enhancing community health volunteers' effectiveness to improve maternal and newborn outcomes in Nairobi, Kenya: quasi-experimental research protocol. BMJ Open.
68. Ramaiya, M. K., Sullivan, K. A., Donnell, K. O., Cunningham, K. C., Shayo, M. A., Mmbaga, B., & Dow, D. E. (2016). A qualitative exploration of the mental health and psychosocial contexts of HIV-positive adolescents in Tanzania. Retrieved from: https://doi.org/10.1371/journal.pone.0165936
69. Rao, D., Elshafei, A., Nguyen, M., Hatzenbuehler, M. L., Frey, S., & Go, V. F. (2018). A systematic review of multi-level stigma interventions: state of the science and future directions. BMC medicine, 16(1), 7.
70. Rao, D., Kekwaletswe, T. C., Hosek, S., Martinez, J., & Rodriguez, F. (2012). Stigma and social barriers to medication adherence with urban youth living with HIV. AIDS care, 24(8), 953-960.
71. Reif, L. K., Bertrand, R., Benedict, C., Lamb, M. R., Rouzier, V., Verdier, R. I., & Pape, J. W. (2019). Impact of a youth friendly HIV clinic: 10 years of adolescent outcomes in Port-au-Prince, Haiti. Journal of the International AIDS Society, 22(3), e25252.
72. Saraceno, B., Ommeren, V, M., Batniji, R., Cohen, A., Gureje, O., Mahoney, J., & Underhill, C. (2007). Barriers to improvement of mental health services in low-income and middle-income countries. The Lancet, 370(9593), 1164-1174.
73. Shank, N, C. (2011). "Mental Health Challenges among HIV positive adolescents" Open Access Theses and Dissertations from the College of Education and Human Sciences. Paper 92. Retrieved from http://digitalcommons.unl.edu/cehsdiss/92
74. Shatkin, J., & Belfer, M. (2004). The global absence of child and adolescent mental health policy. Child Adolesc Ment Health. 9: 104-8.
75. Shubber, Z., Mills, E., J., Nachega, J. B., Vreeman, R., Freitas, M., Bock, P., Ford, N. (2016). Patient-reported barriers to adherence to antiretroviral therapy: a systematic review and meta-analysis. PLoS medicine, 13(11), e1002183.
76. Simbayi, L. C., Zuma, K., Zungu, N., Moyo, S., & Marinda, E. (2022). Depressive symptoms and associated factors among HIV positive adolescents in Sub-Saharan Africa. Journal of Adolescent Health, 71(3), 230-238.
77. Sinyangwe, S., Chintu, N., & Mweemba, O. (2022). Early identification and intervention strategies for adolescents living with HIV in Zambia and South Africa: Implications for cate and support. PLOS ONE. Retrieved from: https://doi.org/10.1371/journal.pone.0266573
78. Substance Abuse and Mental Health Services Administration (SAMHSA). (2021). Prevention of Substance Abuse and Mental Illness. Retrieved from: https://www.samhsa.gov/prevention 07/04/2024.
79. Taiwo, A. and Downe, A. (2013). The theory of user acceptance and use of technology (utaut): a meta-analytic review of empirical findings. Journal of Theoretical and Applied Information Technology, vol. 49. No. 1.
80. The Body. (2021). HIV Disclosure. Retrieved from: https://www.thebody.com/article/hiv-disclosure
81. The College of Family Physicians of Canada (2007). Electronic Health Records. Retrieved from http://toolkit.cfpc.ca/en/information-technology/electronic-health-record.php.
82. The Global Fund. (2017). HIV Counselling and Testing. Retrieved from: https://www.theglobalfund.org/en/faq/disease/hiv-aids/#:~:text=HIV%20counseling%20and%20testing%20services%20provide%20information%20about%20HIV%2C%20test,the%20risk%20of%20HIV%transmission
83. The institute of medicine landmark report. (2019). To err is human: Building a safer health system. Retrieved from http://www.iom.edu/~/media/Files/Report%20Files/1999/To-Err-is-Human/To%20Err%20is%20Human%201999%20%20report%20brief.pdf
84. Thornicroft, G., Deb, T., & Henderson, C. (2016). Community mental health care worldwide: current status and further developments. World Psychiatry, 15(3), 276-286.
85. Thornicroft, G., Sweeney, A., & McKeown, S. (2010). Integrating Mental Health into Primary Health Care in Zambia: A Care Provider's Perspective. BMC Health Services Research, 10, 21. Retrieved from https://doi.org/10.1186/1752-4458-10-21
86. Tyler. W., Stephanie C. G., & Corey, B. B. (2021). The effects of mobile health on emergency care in low- and middle-income countries: A systematic review and narrative synthesis. NCBI.

87. UNAIDS. (2020). UNAIDS Data 2020. Retrieved from: https://www.unaids.org/sites/default/files/media_asset/2020_aids-data-book_en.pdf 07/03/2024.
88. UNAIDS. (2021). Ending AIDS: Progress Towards the 90-90-90 Targets. Retrieved from: https://www.unaids.org/en/resources/documents/2021/20210714_2021-political-declaration-Endin-g-AIDS-progress-towards-the-909090-targets
89. UNAIDS. (2021). Global HIV & AIDS Statistics-Fact Sheet 2021. Retrieved from: https://www.unaids.org/en/resources/fact-sheet
90. UNAIDS. (2022). Addressing the double burden of mental health and substance use disorders in people living with HIV.
91. UNICEF. (2021). Mental Health and Psychosocial Support. Retrieved from: https://www.unicef.org/mental-health-and-psychosocial-support
92. UNICEF (2019). Mental health challenges among adolescents in Haiti: An assessment of system use and the impact of large-scale disruptions. International journal of medical informatics. Retrieved from www.ijmijounal.com(http://ac.els-cdn.com/S1386505612000305/1-s2.0-S1386505612000305-main.pdf).
93. UNFPA. (2012). Youth friendly health services: An agenda for change. Retrieved from: https://www.unfpa.org/sites/default/files/resources-pdf/EN-SRH%20fact%20sheet_YFHS.pdf 14/05/2024.
94. USAID, (2020). A tool for mental health Health advocates, Zed Publishers, Lusaka.
95. Volkow, N. D., Kooba, G. F., & McLellan, A. T. (2016). Neurobiologic Advances from the Brain Disease Model of Addiction. New England Journal of Medicine, 374(4), 363-371.
96. Vreeman, R. C., McCoy, B. M., & Lee, S. (2017). Mental health challenges among adolescents living with HIV. Retrieved from: **https://doi.org/10.7448/IAS.20.4.21497**
97. Woolett, N., Cluver, L., Bandeira, M., & Brahmabhatt, H. (2017). Identifying risks for mental health problems in HIV positive adolescents accessing HIV treatment in Johannesburg, Journal of Child & Adolescent Mental Health, 29:1, 11-26. DOI: 10.2989/17280583.2017.1283320
98. Williams, F (2008). Mental Health Challenges in Missouri: a systematic review. University of Missouri, Columbia, USA.
99. World Health Organization. (2018). Integrating mental health into primary care: a global perspective. Geneva: World Health Organization.
100. World Health Organization. (2014). Making health services adolescent friendly: Developing national quality standards for adolescent friendly health services. Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/112824/WHO_FWC_MCA_14.05_eng.pdf 14/05/2024.
101. World Health Organization (WHO), (2019). HIV among Adolescents: levels and trends 2000 to 2018. Geneva.
102. World Health Organization (WHO). (2019). The WHO application of ICD-10 to deaths during pregnancy, childbirth and the puerperium, IDC MM. Geneva.
103. World Health Organization (WHO). (2021). Mental health rehabilitation. Retrieved from: https://www.who.int/news-room/q-q-detal/mental-health-rehabilitation 07/03/2024.
104. World Health Organization (WHO). (2022). Mental Health Atlas 2020 country profile: Zambia. Retrieved from: https://www.who.int/publications/m/item/mental-health-atlas-zmb-2020-country-profile. 07/03/2024.
105. World Health Organization (WHO). (2017). Mental disorders affect one in four people. Retrieved from: https://www.who/int/whr/2001/media_centre/press_release/en/ 16/04/2024.
106. World Health Organization (WHO). (2020). Substance abuse and HIV among adolescents: Global and regional trends. Geneva: World Health Organization.
107. World Health Organization (WHO). (2017). Zambia Mental Health Country Profile. Retrieved from: https://www.who.int/mental_health/evidence/zambia_who_aims_report.pdf 07/03/2024.
108. World Health Organization (WHO). (2019). HIV/AIDS. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/hiv-aids. 07/03/2024.
109. World Health Organization (WHO). Global HIV-Program. Retrieved from: https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/hiv/treatment/treatment-and-care-in-children-and-adolescents

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

110. Zambia Demographic and Health Survey. (2018). Lusaka, Zambia. Retrieved from: https://dhsprogram.com 30/03/2024
111. Zambia National Public Health Institute (ZNPHI). (2021). Integrated Disease Surveillance and Response (Idsr) Week 13 (23 To 29 March 2020). Surveillance and Disease Intelligence Unit Zambia National Public Health Institute.
112. Zurovac (2012). Relationship between mental health and HIV: Results from a Survey of Patients in Four States. Working paper. Retrieved from https://mathematica-mpr.com/publications/pdfs/Health/EHR_perceptions.pdf