

Adherence to IPT among HIV adolescents aged 11 to 19 years at Kisenyi health center IV, Kampala district. A cross-sectional study.

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Abstract

Background

Adherence to Isoniazid Preventive Therapy (IPT) is crucial for HIV-positive adolescents to prevent tuberculosis (TB). When forfeited, it poses severe health risks. This study thus aimed at exploring the factors influencing adherence to IPT among HIV-positive adolescents aged 11 to 19 years, focusing on socioeconomic, individual, and health facility-related factors.

Methodology

A descriptive cross-sectional study design was employed, involving 30 HIV-positive adolescents selected through simple random sampling. Data was collected using structured questionnaires translated into the local language for better comprehension. The collected data were analyzed using Microsoft Excel, and the results were presented in tables and figures.

Results

The study involved more females (20, 67%) than males (10, 33%), with the majority (70%) aged between 17 and 19 years and not living with their parents or guardians (21, 70%). Findings revealed significant socioeconomic challenges, with 56% of respondents reporting struggles to afford basic needs, which influenced adherence to IPT. Most participants (60%) found it difficult to access the health center for appointments. On individual factors, 70% of adolescents had a limited understanding of IPT benefits, while 80% expressed concern about potential side effects, negatively influencing adherence. Additionally, 70% had stigma associated with taking IPT, leading to treatment avoidance. Positively, 60% of respondents had stable housing, and 80% felt confident in managing IPT as part of their lives. Regarding health facility factors, 70% reported long wait time, while 80% noted consistent availability of IPT medication, which supported adherence.

Conclusion

Adherence to IPT among HIV-positive adolescents at Kisenyi Health Center IV is influenced by various factors such as low socio-economic status and long wait hours, which impede access to health care.

Recommendation

Implementation of targeted educational programs, enhancing access to healthcare services, training staff for supportive interactions, and developing reminder systems to help adolescents manage their medication routines.

Keywords: Adherence, IPT, Adolescents, Kisenyi Health Centre IV.

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Background of the study

Adherence to Isoniazid Preventive Therapy (IPT) refers to the consistent and correct intake of isoniazid medication to prevent

tuberculosis (TB) among individuals living with HIV (Harries et al., 2020). For HIV-positive adolescents aged 11 to 19 years,

adherence to IPT is crucial as this group is at an elevated risk of TB due to their compromised immune systems (Hlophe et al., 2023).

Adherence to IPT among HIV-positive adolescents presents significant benefits. It reduces the risk of developing TB, improves overall health outcomes, and helps prevent the progression of latent TB into active disease, which can complicate HIV management (Mwangi et al., 2019).

Globally, adherence to IPT is reported to be about 68% among HIV-positive adolescents, with higher adherence rates in high-income countries compared to low- and middle-income countries. In high-income settings, such as the United States and Europe, adherence rates are around 80% (Tayal & Kabra, 2023). However, adherence is significantly lower in low-income regions, particularly due to challenges such as stigma, lack of access to healthcare facilities, and socioeconomic factors that impede regular treatment (Harries et al., 2020).

In Africa, Adherence to IPT among HIV adolescents in Africa shows significant variability, reflecting the diverse healthcare infrastructure and socioeconomic conditions across the continent.

On average, adherence is estimated at 60%, with Southern and East African countries reporting relatively higher rates compared to Central and West Africa (Mandalakas et al., 2021). In Sub-Saharan Africa, the situation indicates that adherence to IPT among HIV adolescents stands at around 58%, with regional differences influenced by healthcare availability, stigma, and patient support systems (Villiera et al., 2022).

In East Africa: In East Africa, adherence to IPT among HIV-positive adolescents varies from 55% to 72%, with Kenya and Tanzania showing relatively better adherence rates due to concerted efforts to integrate IPT into routine HIV care (Kay et al., 2021; Gupta et al., 2023). Rwanda, in particular, has achieved notable success, with adherence rates reaching up to 75%, attributed to effective healthcare delivery models that emphasize patient education and support (Amuge et al., 2024).

In Uganda: In Uganda, adherence to IPT among HIV-positive adolescents ranges from 50% to 75%, with significant regional differences. Districts such as Wakiso and Mbarara report higher adherence rates, reaching up to 75% and 80%, respectively, due to better healthcare services and community engagement programs (Amuge et al., 2024). In contrast, adherence is as low as 50% in northern regions like Arua, where healthcare infrastructure is less developed, and there are significant barriers such as stigma and transportation challenges (Kay et al., 2020; Mandalakas et al., 2020). This study sought to explore adherence rates and the factors influencing IPT adherence among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV, Kampala District.

Methodology

Study design and rationale

The study was a descriptive cross-sectional study that involved quantitative approach. Data was collected from various respondents using questionnaires, which proved to be an effective method. Furthermore, the design enabled the collection of all the necessary data at one point in time and was completed within the limited amount of time available for the study.

Study setting and rationale

The study was conducted at Kisenyi Health Center IV, a government health facility managed by the Ministry of Health (MoH) of Uganda. Kisenyi Health Center IV is located approximately 2 kilometers west of Kampala city center. The strategic location makes it accessible for patients from various urban and peri-urban communities within the Kampala District. The facility serves as a primary healthcare facility for the surrounding neighborhoods, including Katwe, Kibuye, Nsambya, Mengo, and other parts of the central division. The facility provides a wide range of essential health services, including outpatient and inpatient care, maternal and child health services, immunization, antenatal care (ANC), and comprehensive HIV/AIDS treatment and counseling services. The health center has a bed capacity of 60, though the high demand for healthcare services often results in overcrowding, occasionally requiring patients to be accommodated in temporary arrangements. Kisenyi Health Center IV sees an average of 250 patients daily, reflecting its role as a critical healthcare provider in the community. The areas served characterize mixed occupations, with many residents engaged in informal trading, small-scale businesses, and casual labor, particularly in nearby markets and small industries. This mix of urban and peri-urban settings allows the health center to cater to diverse health needs, including those of adolescents at high risk of HIV, making it an ideal setting for this study.

Study Population and Rationale

The study focused on HIV-positive adolescents aged 11 to 19 years who were receiving HIV care and treatment services at Kisenyi Health Center IV, Kampala District. These specific demographics were chosen because adolescents are at a crucial developmental stage where adherence to Isoniazid Preventive Therapy (IPT) is essential for preventing tuberculosis (TB), which poses a significant risk to individuals with compromised immune systems.

Sample Size Determination

The Burton formula (1965) was used, that is, $N = QR/O$ where;

Q: is the total number of days taken to collect data.

R: Is the maximum number of respondents to be interviewed

O: Maximum amount of time on each respondent.

Q= 6, R= 5, O = 1 hour

Page | 3 There-fore $N = (6 \times 5) / 1$

$N = 30$ respondents. A sample size of 30 respondents was used.

Sampling Procedure

A simple random sampling technique was employed to recruit participants for the study. This method included adolescents who had been receiving HIV care at the facility within the past six months and were available during the study period. Eligible participants were selected based on these criteria to ensure an equal chance of participation. The selection process involved preparing 30 pieces of paper marked "YES" and 30 pieces marked "NO," all equally folded and mixed in a box. Eligible and consenting HIV-positive adolescents were invited to draw a piece of paper from the box. Those who picked a paper marked "YES" were included in the study, while those who drew a "NO" did not participate. This approach guaranteed a transparent and unbiased selection process to ensure accurate enrollment. By using this method, the study ensured that the sample was representative of the population of HIV-positive adolescents at Kisenyi Health Center IV, thereby enhancing the validity and reliability of the research findings. The sample size of 30 was chosen to provide a manageable group for in-depth analysis while still offering meaningful insights into adherence behaviors among this demographic.

Inclusion Criteria

HIV-Positive Adolescents: Adolescents aged between 11 and 19 years who had tested positive for HIV.

Attendees of Kisenyi Health Center IV: Participants receiving care or services at Kisenyi. **Currently Receiving IPT:** Participants are currently enrolled in the IPT program as part of their HIV care regimen.

Study Variables

Dependent Variables

The dependent variable was adherence to Isoniazid Preventive Therapy (IPT) among HIV-positive adolescents aged 11 to 19 years. This variable measured the extent to which the participants consistently followed their prescribed IPT regimen, as recommended by healthcare providers.

Independent Variables

The independent variables included:

Socio-economic Factors: These covered aspects such as the adolescent's family income, parental/guardian education level, and employment status, which could influence adherence to IPT.

Individual Factors: These included the adolescents' knowledge about IPT, attitudes towards medication, self-efficacy, and any history of substance abuse.

Health Facility-Related Factors: These encompassed aspects such as the accessibility of the health center, availability of IPT medication, quality of counselling services, and the frequency of follow-up visits provided by healthcare staff.

Research Instruments

For this study, structured questionnaires were the primary data collection tool. Each questionnaire featured multiple-choice questions to capture participants' experiences accurately. This format facilitated straightforward data collection and analysis, ensuring standardized responses for consistency. The questionnaire was translated into Luganda, the local language, to enhance comprehension and engagement among participants. Thematically organized in alignment with the study objectives, the questionnaire was drawn from existing literature on factors influencing IPT adherence. Employing a structured questionnaire and standardized data collection reduced the risk of misinterpretation and allowed for efficient gathering of information from a broader participant base. The thematic structure ensured that all questions directly contributed to the research objectives, providing reliable insights into the factors influencing IPT adherence among HIV-positive adolescents at Kisenyi Health Centre IV.

Quality control

A pilot study was conducted with a small sample of HIV-positive adolescents from a different health center within Kampala District to assess the questionnaire's clarity, relevance, and cultural appropriateness. This ensured the effective capturing of the necessary data.

Data Collection Procedure

The data collection spanned three consecutive days, engaging 10 participants daily, totaling 30 participants. The researcher personally oversaw the process to maintain uniformity and ensure the reliability of the data collected. Study participants, all of whom were proficient in English, received self-administered questionnaires to complete, selecting the most fitting option for each question. Immediately after completion,

the questionnaires were reviewed for completeness. For those unable to read or write in English, oral presentation of the questions, translating them into the local language predominantly spoken in the area, and responses were marked based on the participants' answers. This method ensured that all eligible participants contributed their insights on the factors influencing IPT adherence among HIV-positive adolescents.

Data management

The filled questionnaires were collected, checked for completeness, and counted after each day of data collection to ensure that all were returned. The data was coded and kept in a safe place as a backup. A flash disk was also used to store the data.

Data Analysis and Presentation

The collected data was sorted manually and tallied, and frequency tables were developed following the numbers assigned to each questionnaire. Information was coded and entered into the Microsoft Excel program for analysis. Tables, pie charts, and graphs were generated automatically by the computer program, and the report was drafted.

Ethical Consideration

An introductory letter from the principal of the Mildmay Institute of Health Sciences introducing the researcher to the management of Kisenyi Health Center IV in Kampala District, requesting permission to conduct the study on adherence to Isoniazid Preventive Therapy (IPT) among HIV-positive adolescents. Upon receiving authorization, the chairperson of the facility research committee introduced the researcher to potential study participants. Adolescents and their guardians (where necessary) were assured of confidentiality and privacy. The research objectives were clearly communicated to all participants, and they were informed that their participation was entirely voluntary. Consent forms were provided to the adolescents and, where applicable, their guardians, emphasizing that they were free to join or withdraw from the study at any point without any negative repercussions. Once consent was secured, structured questionnaires were distributed to participants for completion. Completed questionnaires were securely collected and stored to maintain confidentiality and data integrity. The study strictly adhered to ethical guidelines to ensure the safety, dignity, and rights of all participants, particularly given the vulnerable status of the adolescent population involved.

Results

Socio-demographic characteristics

Table 1: Socio-demographic Characteristics of respondents

(n=30)			
Characteristics	Attributes	Frequency	Percentage
Age of Respondents.	11-13 years	4	13%
	14-16 years	5	17%
	17-19 years	21	70%
	TOTAL	30	100%
Gender	Male	10	33%
	Female	20	67%
	TOTAL	30	100%
Education level of Respondents	Primary	7	23%
	Secondary	3	10%
	Not in school	20	67%
	TOTAL	30	100%
Reveals whether the respondent currently lived with their parents or	Yes	9	30%

guardians	No	21	70%
	TOTAL	30	100%

Source: Primary data (2024)

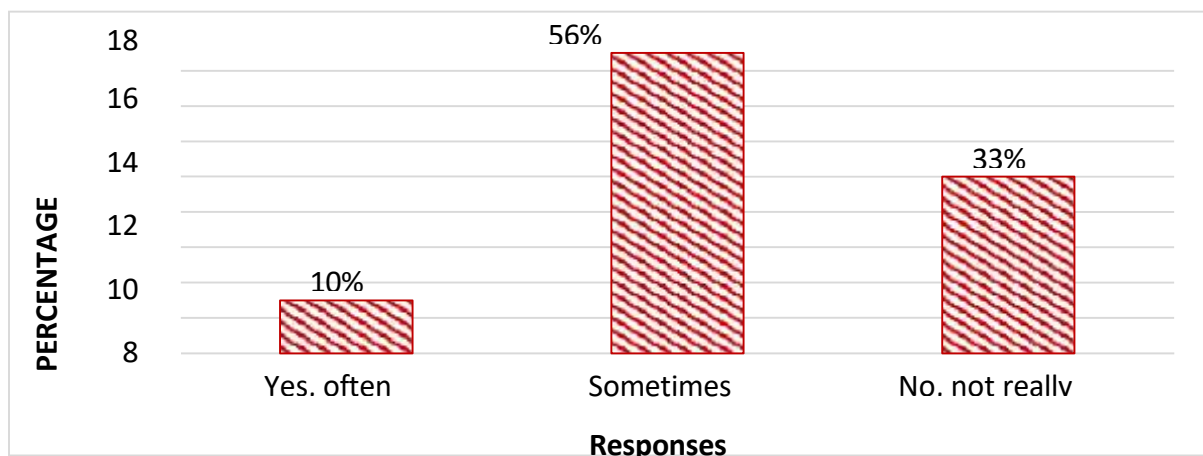
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Table 1 shows that the majority of respondents, 21 (70%), were aged between 17-19 years, while the smallest group, 4 (13%), were aged 11-13 years. Additionally, most respondents, 20 (67%), were female, whereas the least number of respondents, 10 (33%), were male. Regarding education level, the largest group, 20 (67%), was not in school, while the smallest group, 3 (10%), had attained

secondary education. The majority of respondents, 21 (70%), did not live with their parents or guardians, while the minority, 9 (30%), did.

Socioeconomic factors affecting adherence to IPT among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV

Figure 1: Illustrates whether the respondent's family struggled to afford basic needs like food, housing, and transport, (n = 30)



Source: Primary data (2024)

Figure 1 shows that vast of the respondents 17 (56%) sometimes struggled to afford basic needs like food, housing, and transport whereas the pocket sized of the respondents 3

(10%) often struggled to afford basic needs like food, housing, and transport

Table 2: Demonstrates some of the socio-economic factors and IPT adherence, n= 30.

Source: Primary data (2024)

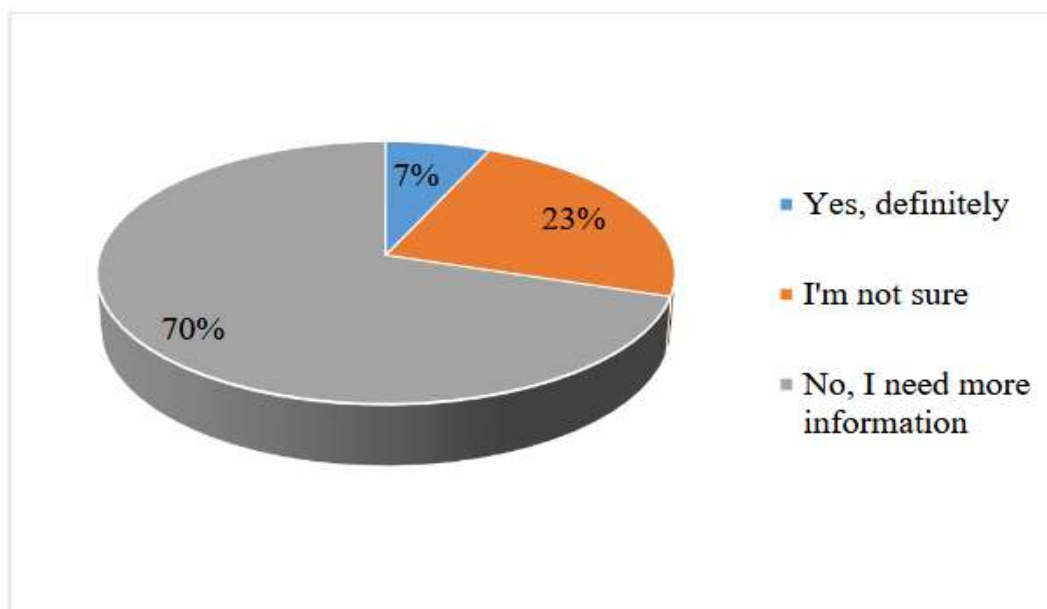
Characteristics	Attributes	Frequency	Percentage
Demonstrates whether it was difficult for the respondent get to the health center for your IPT appointments	Yes, very	18	60%
	A little	2	7%
	Not at all	10	33%

	TOTAL	30	100%
Demonstrates whether the respondent had a stable place to live	Yes, always	18	60%
	Sometimes	3	10%
	No, we move often	9	30%
	TOTAL	30	100%
Demonstrates whether the respondent had ever missed meals or went hungry	Yes, often	6	20%
	Sometimes	22	73%
	No, never	2	7%
	TOTAL	30	100%

Table 2 indicates that the majority of respondents, 18 (60%), found it very difficult to get to the health center for their IPT appointments, while the smallest group, 2 (7%), reported it was only a little difficult. Most respondents, 18 (60%), had a stable place to live, whereas the minority, 3 (10%), only

sometimes had a stable place. Regarding missed meals or hunger, the largest proportion, 22 (73%), experienced this sometimes, while the least number of respondents, 2 (7%), reported never going hungry

Figure 2: Shows whether the respondents felt like they had enough information about IPT and why it is important, n = 30.



Individual factors affecting adherence to IPT among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV

Figure 2 reveals that enormous of the respondents 21 (70%) needed more information about IPT and why it is important whereas the diminutive of the respondents 2 (7%) felt like they had enough information about IPT and why it is important.

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Table 3: Shows some of the individual factors and IPT adherence, n = 30.

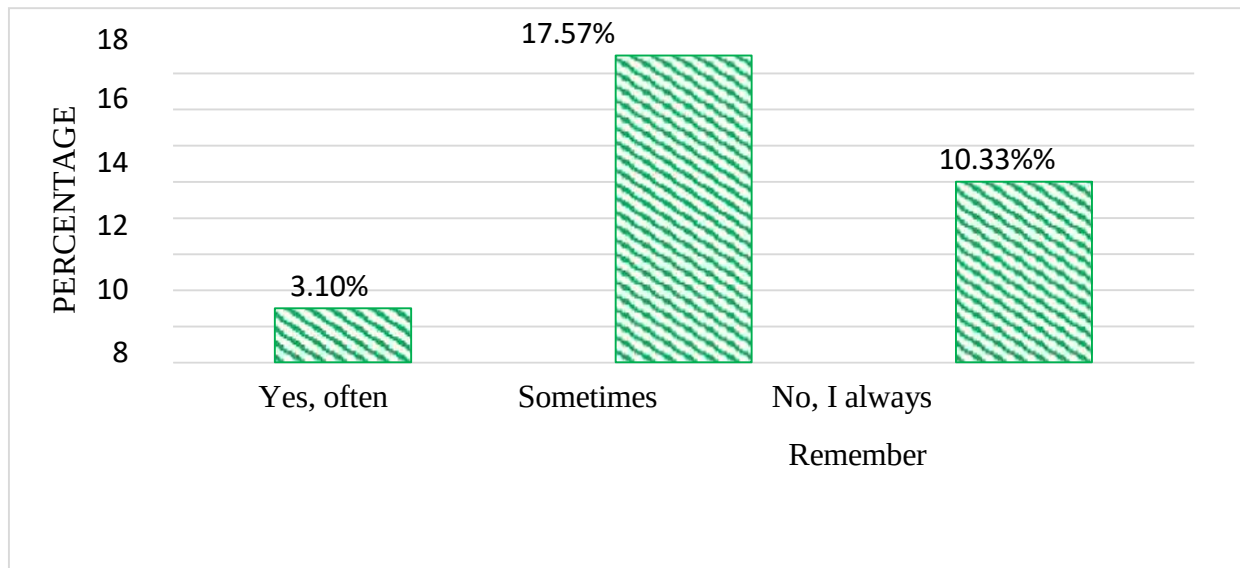
Characteristics	Attributes	Frequency	Percentage
Shows whether the respondents understood that taking IPT helped them stay healthy	Yes, completely	3	10%
	A little	21	70%
	No, not really	6	20%
	TOTAL	30	100%
Shows whether respondents were worried that other people will find out they were taking IPT	Yes, a lot	21	70%
	A little	6	20%
	No, not all	3	10%
	TOTAL	30	100%
Shows whether respondents were concerned about possible side effects from IPT	Yes	24	80%
	No	6	20%
	TOTAL	30	100%

Source: Primary data (2024)

Table 3 shows that the majority of respondents, 21 (70%), understood only a little that taking IPT helped them stay healthy, while the smallest group, 3 (10%), completely understood its benefits. Most respondents, 21 (70%), were

very worried that others would find out they were taking IPT, whereas the least number, 3 (10%), were not worried at all. Regarding concerns about potential side effects, the majority, 24 (80%), expressed worry, while a minority, 6 (20%), were not concerned.

Figure 3: Illustrates whether the respondent found it hard to remember to take their IPT medication every day, n = 30.



Source: Primary data (2024)

Figure 3 shows that the majority of respondents, 17 (57%), sometimes found it hard to remember to take their IPT medication every day, while a smaller number, 3 (10%),

often found it hard to remember to take their IPT medication every day.

Table 4: Reveals whether the respondent's child had any coexisting conditions such as nutritional deficiencies or developmental disorders, n =30.

Characteristics	Attributes	Frequency	Percentage
Reveals whether the respondents had ever had a bad experience with taking medication before	Yes	21	70%
	No	9	30%
	TOTAL	30	100%
Reveals whether the respondents felt confident that they can manage taking IPT as part of their life	Yes	19	80%
	Am not sure	6	
	No	5	
	Total	30	100%

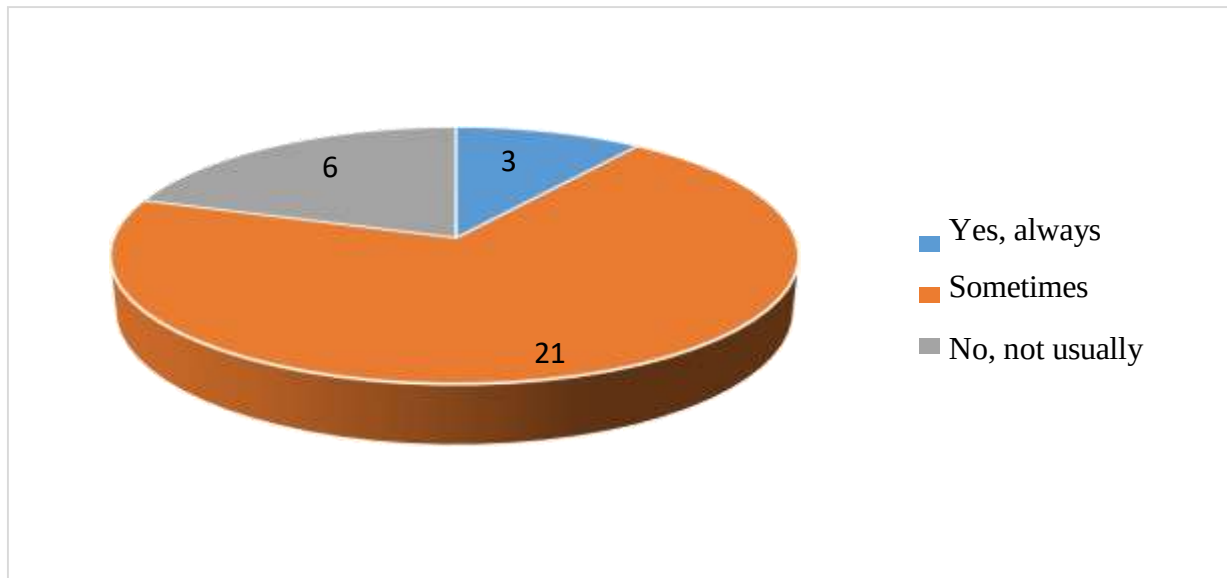
Source: Primary data (2024)

Table 4 indicates that the majority of respondents, 21 (70%), had experienced a bad situation with taking medication before, while the minority, 9 (30%), had not. Most respondents, 19 (80%), felt confident that they could manage taking IPT as part of their life, whereas the least number, 5

(17%), did not feel confident.

Health Facility factors affecting adherence to IPT among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV

Figure 4: shows whether the respondents had to wait a long time to see someone when they go to the health center.



Source: Primary data (2024)

The majority of respondents, 21 (70%), sometimes had to wait a long time to see someone when they go to the health

center, whereas the fewest respondents, 3 (10%), always had to wait a long time to see someone when they go to the health center.

Table 5: indicates some of the health facility factors and IPT adherence, n=30.

Characteristics	Attributes	Frequency	Percentage
Indicates whether the IPT medications were always available when they went for their appointment	Yes	24	80%
	No	6	20%
	TOTAL	30	100%
Indicates whether the health workers at the clinic friendly and helpful	Yes, all of them	5	17%
	Some of them	4	13%
	No, not really	21	70%
	TOTAL	30	100%
Indicates whether the respondents got enough information and support about IPT from the health	Yes	20	67%
	No	10	33%

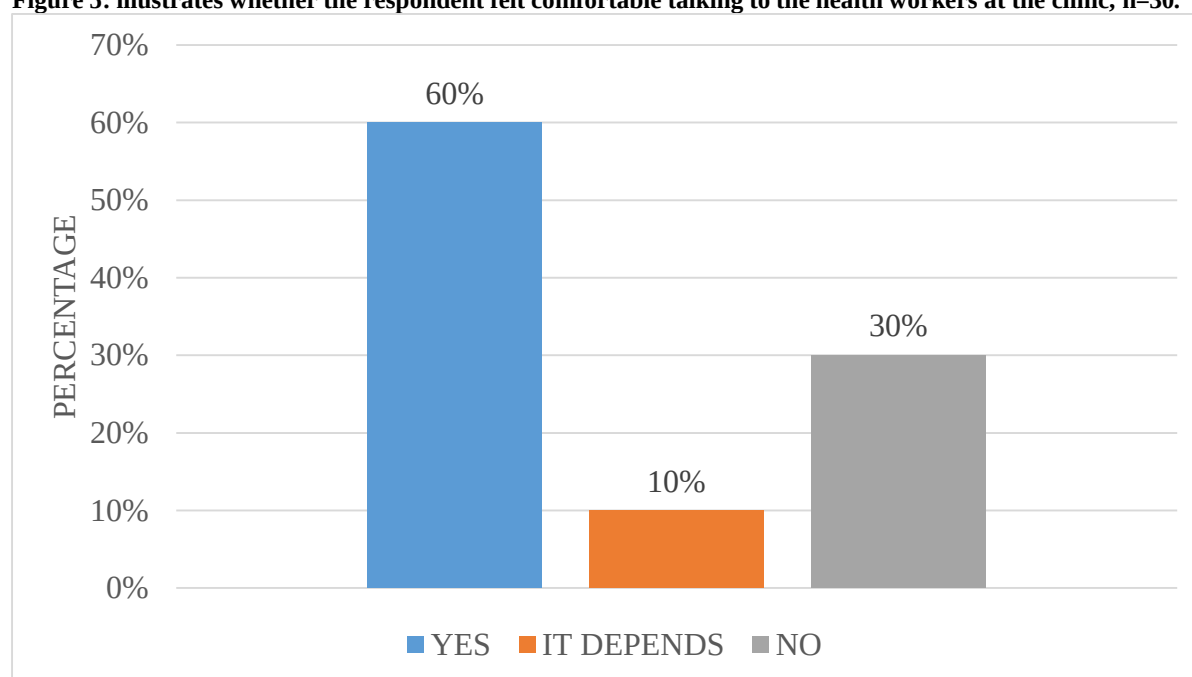


center	TOTAL	30	100%
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Table 5 reveals that the majority of respondents, 24 (80%), reported that IPT medications were always available during their appointments, while the minority, 6 (20%), stated they were not. Most respondents, 21 (70%), mentioned that health workers at the clinic were not really friendly or helpful, whereas the smallest

group, 5 (17%), indicated that all of them were. Additionally, the majority of respondents, 20 (67%), felt they received enough information and support about IPT from the health center, while a minority, 10 (33%), did not.

Figure 5: illustrates whether the respondent felt comfortable talking to the health workers at the clinic, n=30.



Source: Primary data (2024)

The majority of respondents, 18 (60%), felt comfortable talking to the health workers at the clinic while at home for them to feel comfortable talking to the health workers at the clinic. while a smaller number, 3 (10%), reported that it depended

Table 6: Shows some of the health facility factors and IPT adherence, n =30.

Characteristics	Attributes	Frequency	Percentage
Shows whether the health center had special services just for adolescents	Yes	6	20%
	I don't know	20	67%
	No	4	13%
	TOTAL	30	100%
Shows whether it was easy to get an appointment at the health center when	Yes	22	73%
	No	8	27%



you need one	TOTAL	30	100%
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Source: Primary data (2024)

Table 6 shows that the majority of respondents, 20 (67%), did not know whether the health center had special services just for adolescents, while the minority, 4 (13%), stated that such services did not exist. Most respondents, 22 (73%), reported that it was easy to get an appointment at the health center when needed, whereas a smaller proportion, 8 (27%), indicated it was not easy.

Discussion

Socio-demographic characteristics

Most respondents (70%) were aged between 17-19 years. This is a positive factor because older adolescents may have more understanding and maturity to manage their treatment independently compared to younger groups. The variation might stem from increased exposure to health education, better comprehension of treatment importance, and more established routines that support adherence.

Most respondents (70%) did not live with their parents or guardians. This is a significant negative factor because the absence of parental or guardian support can negatively affect adherence to IPT. Adolescents living without direct supervision may lack reminders, motivation, or the structured environment needed to stay consistent with their treatment. The variation could be due to family socioeconomic challenges, separation, or the need for adolescents to live independently due to social circumstances.

Socioeconomic factors affecting adherence to IPT among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV

Most respondents (56%) reported that they sometimes struggled to afford basic needs like food, housing, and transport. This is a negative factor because financial instability can hinder adherence to IPT, as adolescents might prioritize essential needs over medical appointments or treatments. The variation might be due to limited household income, unemployment of parents or guardians, or socioeconomic disparities in their communities. This finding aligns with (Ssendikwanawa et al., 2023), who reported that financial challenges were a

significant barrier to adherence among adolescents at Gombe Hospital, Uganda, highlighting the need for economic support systems.

Most respondents (60%) found it very difficult to get to the health center for their IPT appointments. This is a significant negative factor because difficulty accessing healthcare facilities can lead to missed appointments, disrupted treatment plans, and ultimately reduced adherence to IPT. The variation might result from factors such as distance from the facility, lack of affordable transportation options, or physical barriers like poor road infrastructure. The finding is consistent with Grace (2019), who reported that adolescents in remote areas were 55% less likely to complete IPT due to limited access to health centers, highlighting the importance of mobile health services to improve accessibility.

Most respondents (60%) reported having a stable place to live. This is a positive factor, as having stable housing can support consistent adherence to IPT by providing a secure environment conducive to following treatment plans. The stability might be attributed to support systems such as family assistance, housing programs, or community resources that help maintain a secure living situation. This finding contrasts with Kay et al. (2020), who found that adolescents experiencing housing instability had a 38% lower adherence rate due to disrupted treatment schedules.

The majority (73%) of respondents reported sometimes experiencing missed meals or hunger. This is a significant negative factor, as food insecurity can lead to poor health outcomes and hinder adherence to treatment regimens, with adolescents potentially struggling to manage both their nutritional needs and medication requirements. This variation could be due to economic challenges, large household sizes with limited resources, or insufficient social support programs. This reflects findings by Villiera et al. (2022) in Malawi, where 53% of participants with inconsistent food access were less likely to adhere to IPT.

Most respondents (70%) indicated they needed more information about IPT and its importance. This is a negative factor because inadequate knowledge can result in misconceptions, a lack of motivation, and low adherence to IPT. The variation might stem from limited

educational outreach, inadequate communication from healthcare providers, or poor access to reliable information in their environment. This finding is consistent with Ouma (2023) in Kisumu County, Kenya, where 69% of adolescents from households with limited education had reduced awareness of IPT's importance, affecting adherence.

Individual factors affecting adherence to IPT among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV.

Most respondents (70%) only understood a little about how taking IPT helps them stay healthy. This is a negative factor because limited understanding can result in lower adherence, as adolescents may not see the importance of staying consistent with their treatment. The variation might stem from insufficient educational support from healthcare providers, poor communication, or a lack of targeted awareness programs that convey the benefits of IPT. This finding aligns with (Ngugi et al., 2020) in a study in Nairobi, Kenya, where 62% of adolescents did not fully understand the benefits of completing the IPT regimen, affecting adherence.

Most respondents (70%) were very worried about others finding out that they were taking IPT. This is a significant negative factor because fear of stigma can lead to secrecy, avoidance of treatment, or reluctance to adhere to medication schedules. The variation could be due to prevailing societal stigma surrounding HIV, lack of privacy in medication administration, or limited peer and community support. This is consistent with Amuge et al. (2024) in Kampala, Uganda, where 59% of adolescents cited fear of stigma as a significant barrier to IPT adherence, stemming from concerns about being identified as HIV-positive.

The majority (80%) expressed worry about potential side effects. This is a negative factor, as concerns about side effects can discourage adolescents from taking IPT consistently or lead to skipped doses. The variation may be attributed to previous negative experiences with medication, limited counseling on managing side effects, or inadequate information provided by healthcare professionals on the safety and management of IPT. This finding is similar to (Sm, 2019) in Harar, Eastern Ethiopia, where 48% of participants reported side effect concerns contributing to non-adherence.

Most respondents (57%) sometimes found it hard to remember to take their IPT medication daily. This is a negative factor because inconsistent medication adherence can compromise the effectiveness of IPT,

putting adolescents at greater health risk. The variation may be related to factors such as busy school or home routines, lack of reminder systems, or low motivation and support for maintaining a daily regimen. This reflects Masiye's (2022) research in Nairobi, Kenya, where 41% of adolescents missed IPT doses due to forgetfulness and poor self-management skills.

Most respondents (70%) had experienced a bad situation with taking medication before. This is a negative factor because prior negative experiences can influence current adherence behaviors, leading to fear or avoidance of treatment. The variation could stem from past side effects, unpleasant experiences related to healthcare visits, or a lack of trust in medical interventions due to past issues. This finding is mirrored in Villiera et al.'s (2022) study in Lilongwe, Malawi, where 52% of adolescents reported previous negative experiences with ART side effects, which discouraged IPT adherence due to fears of similar adverse reactions.

Most respondents (80%) felt confident that they could manage taking IPT as part of their lives. This is a positive factor because confidence in one's ability to manage treatment is linked to better adherence, as it suggests that adolescents are more likely to integrate IPT into their daily routine. This variation might be due to effective counseling, strong support systems from family or peers, or a positive experience with previous treatment adherence. This contrasts with Amuge et al. (2024) in Kampala, Uganda, where 47% of adolescents reported low self-motivation and confidence, leading to reduced adherence.

Health Facility factors affecting adherence to IPT among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV

Most respondents (70%) sometimes had to wait a long time to see someone at the health center. This is a negative factor because long wait times can discourage adolescents from attending appointments or maintaining adherence to IPT, especially if they have school or other commitments. The variation might stem from limited staffing, high patient loads, or inadequate scheduling systems that result in overcrowded facilities. This finding aligns with Selehelo's (2018) study in Mafikeng, South Africa, where 65% of adolescents reported that long waiting times affected their adherence to IPT, suggesting the need to improve service efficiency.

Most respondents (80%) reported that IPT medications were always available during their appointments. This is

a positive factor because consistent availability of medications supports adherence, as it prevents interruptions in treatment. The variation may be due to effective supply chain management, adequate funding, or prioritization of medication stocks in health facilities. This finding contrasts with Masiye's (2022) study in Nairobi, Kenya, where 59% of participants faced inconsistent medication availability that negatively affected adherence.

Most respondents (70%) mentioned that health workers were not really friendly or helpful. This is a significant negative factor because unfriendly or unhelpful interactions can create a barrier to seeking support and maintaining adherence to IPT. The variation might be due to high workloads, inadequate training in patient interaction, or low staff morale. This finding reflects the results of Bwakura-Dangarembizi (2020) in Harare, Zimbabwe, where 54% of adolescents reported discouragement from adhering to IPT due to negative attitudes from healthcare workers.

Most respondents (67%) felt they received enough information and support about IPT from the health center. This is a positive factor because adequate information and support can boost adherence by increasing patients' understanding of the importance of IPT and how to effectively manage it. The variation could be due to the presence of educational programs, comprehensive counseling sessions, or proactive health communication strategies. This contrasts with (Wambiya et al., 2018) in Nairobi, Kenya, where a lack of regular health education talks about IPT led to limited awareness among adolescents.

Most respondents (73%) reported that it was easy to get an appointment at the health center when needed. This is a positive factor because easy access to appointments ensures timely consultations and follow-ups, promoting adherence to treatment. The variation might result from efficient appointment scheduling, sufficient staffing, or dedicated adolescent-friendly services that facilitate accessibility. This finding contrasts with Müller and Velez Lapão's (2022) systematic review, where 57% of adolescents across various settings reported limited adolescent-friendly services that discouraged follow-up visits.

Conclusion

This study investigated factors affecting adherence to IPT among HIV-positive adolescents aged 11 to 19 years at Kisenyi Health Center IV. The findings highlight a complex interaction of supportive and limiting factors

influencing treatment adherence. Socioeconomic challenges were evident, with most respondents struggling to afford basic needs and finding it difficult to access the health center. These factors negatively affected adherence due to the prioritization of essential needs and logistical barriers. However, stable housing emerged as a positive influence that facilitated consistent adherence. Individual factors revealed that limited understanding of IPT benefits, stigma, fear of side effects, and past negative experiences were significant barriers. These factors, coupled with difficulties in remembering to take medication, emphasized the need for targeted education, structured support, and reminder systems. Notably, confidence in managing IPT was a positive aspect, linked to better adherence, suggesting that supportive counseling and peer encouragement could be beneficial. Health facility factors also played a crucial role. While the availability of IPT medications and ease of appointments positively influenced adherence, long wait times and unfriendly health worker interactions were significant deterrents. Addressing these issues by improving staff training, optimizing scheduling systems, and fostering patient-friendly environments could enhance treatment adherence. In conclusion, promoting better adherence to IPT requires a holistic approach that addresses socioeconomic limitations, individual challenges, and health facility shortcomings. Strengthening educational initiatives, ensuring consistent support, and enhancing healthcare service delivery could collectively improve treatment adherence and health outcomes for HIV-positive adolescents at Kisenyi Health Center IV.

Recommendation

Recommendations for Health Facilities and the Ministry of Health (MOH)

Enhance Education and Counseling: Implement targeted education programs to improve understanding of IPT benefits and manage fears around side effects. Provide structured counseling sessions to build confidence and address stigma associated with IPT.

Improve Accessibility and Support Systems: Develop outreach initiatives to help adolescents facing economic and transport barriers. This could include subsidized transport or mobile health services to facilitate access.

Optimize Health Service Delivery: Train health workers to improve patient interaction and foster a supportive environment. Reduce waiting times by optimizing scheduling and staffing to make health centers more welcoming and efficient.



Implement Reminder and Support Tools: Introduce reminder systems such as SMS alerts or adherence apps to help adolescents remember to take their medication consistently.

Enhance Peer and Community Support: Create peer support groups and involve community programs to provide emotional backing and share best practices for managing IPT adherence.

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List of abbreviations

ART - Antiretroviral Therapy

HIV - Human Immunodeficiency Virus

IPT - Isoniazid Preventive Therapy

MoH - Ministry of Health

PLHIV - People Living with HIV

TB - Tuberculosis

UGX - Ugandan Shillings

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Conflict of interest

The author declares no conflict of interest.

Author contributions

LN- Study developer, Data collector, and analyzer

BB- Supervised the Study

Data availability

Data is available upon request.

Informed consent

There was full disclosure; full comprehension, and respondents voluntarily consented to participate in the study.

Author biography

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References

1. Amuge, P. M., Ndekezi, D., Mugerwa, M., Bbuye, D., Rutebarika, D. A., Kizza, L., Namugwanya, C., Baita, A., Elyanu, P. J., Ntege, P. N., Kiragga, D., Birungi, C., Kekitiinwa, A. R., Kiragga, A., Sekadde, M. P., Salazar-Austin, N., Mandalakas, A. M., & Musoke, P. (2024). Correction: Facilitators and barriers to initiating and completing tuberculosis preventive treatment among children and adolescents living with HIV in Uganda: a qualitative study of adolescents, caretakers and health workers. *AIDS Research and Therapy*, 21(1), 61. <https://doi.org/10.1186/s12981-024-00651-2>
2. Gupta, A. J., Turimumahoro, P., Ochom, E., Ggita, J. M., Babirye, D., Ayakaka, I., Mark, D., Okello, D. A., Cattamanchi, A., Dowdy, D. W., Haberer, J. E., Armstrong-Hough, M., Katamba, A., & Davis, J. L. (2023). mHealth to improve implementation of TB contact investigation: A case study from Uganda. *Implementation*

- Science Communications, 4(1), 71. <https://doi.org/10.1186/s43058-023-00448-w>
3. Harries, A. D., Kumar, A. M. V., Satyanarayana, S., Thekkur, P., Lin, Y., Dlodlo, R. A., Khogali, M., & Zachariah, R. (2020). The Growing Importance of Tuberculosis Preventive Therapy and How Research and Innovation Can Enhance Its Implementation on the Ground. *Tropical Medicine and Infectious Disease*, 5(2), 61. <https://doi.org/10.3390/tropicalmed5020061>
4. Hlophe, L. D., Tamuzi, J. L., Shumba, C. S., & Nyasulu, P. S. (2023). Barriers and facilitators to anti-retroviral therapy adherence among adolescents aged 10 to 19 years living with HIV in sub-Saharan Africa: A mixed-methods systematic review and meta-analysis. *PLOS ONE*, 18(5), e0276411. <https://doi.org/10.1371/journal.pone.0276411>
5. Kay, A. W., González Fernández, L., Takwoingi, Y., Eisenhut, M., Detjen, A. K., Steingart, K. R., & Mandalakas, A. M. (2020). Xpert MTB/RIF and Xpert MTB/RIF Ultra assays for active tuberculosis and rifampicin resistance in children. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD013359.pub2>
6. Mandalakas, A. M., Hesselning, A. C., Kay, A., Du Preez, K., Martinez, L., Ronge, L., DiNardo, A., Lange, C., & Kirchner, H. L. (2021). Tuberculosis prevention in children: A prospective community-based study in South Africa. *European Respiratory Journal*, 57(4), 2003028. <https://doi.org/10.1183/13993003.03028-2020>
7. Mandalakas, A. M., Kay, A. W., Bacha, J. M., Devezin, T., Golin, R., Simon, K. R., Dhillon, D., Dlamini, S., DiNardo, A., Matshaba, M., Sanders, J., Thahane, L., Amuge, P. M., Ahmed, S., Sekadde, M. P., Fida, N. G., Lukhele, B., Chidah, N., Damba, D., ... Schutze, G. E. (2020). Tuberculosis among Children and Adolescents at HIV Treatment Centers in Sub-Saharan Africa. *Emerging Infectious Diseases*, 26(12). <https://doi.org/10.3201/eid2612.202245>
8. Mwangi, P., Wamalwa, D., Marangu, D., Obimbo, E., & Ng'ang'a, M. (2019). Implementation of Isoniazid Preventive Therapy Among HIV-Infected Children at Health Facilities in Nairobi County, Kenya: A Cross-Sectional Study. *East African Health Research Journal*, Vol 3(No 2), 141–150. <https://doi.org/10.24248/eahrj.v3i2.611>
9. Müller, P., & Velez Lapão, L. (2022). Mixed methods systematic review and metasummary a. about barriers and facilitators for the implementation of cotrimoxazole and isoniazid—Preventive therapies for people living with HIV. *PLoS One*, 17(3), e0251612.
10. Ngugi, S. K., Muiruri, P., Odero, T., & Gachuno, O. (2020). Factors affecting uptake and completion of isoniazid preventive therapy among HIV-infected children at a national referral hospital, Kenya: A mixed quantitative and qualitative study. *BMC Infectious Diseases*, 20(1), 294. <https://doi.org/10.1186/s12879-020-05011-9>
11. Selehelu, K. (n.d.). *Experiences of people living with HIV with respect to Isoniazid Preventive Therapy provision in Mafikeng PHC facilities*.
12. Sm, A. (2019). *Initiation appropriateness, adverse drug reaction and adherence of isoniazid prophylaxis therapy among people living with human immune virus in Eastern Ethiopia: A cross-sectional study*. 2(1).
13. Ssendikwanawa, E., Juniour Nsubuga, E., Lee, S., Frances Zalwango, J., Joan Bayowa, R., Judith Ssemasaazi, A., Ronald Muganga, K., Adolphus, C., Akunzirwe, R., Nante Wangi, R., Ronald Kasoma, M., Kalyango, J. N., Karamagi, C., & Sekaggya-Wiltshire, C. (2023). Factors associated with isoniazid preventive treatment interruption and completion among PLHIV in Gombe Hospital, Uganda, 2017–2019. *Journal of Clinical Tuberculosis and Other Mycobacterial Diseases*, 31, 100349. <https://doi.org/10.1016/j.jctube.2023.100349>
14. Villiera, J. B., Katsabola, H., Bvumbwe, M., Mhango, J., Khosa, J., Silverstein, A., & Nyondo-Mipando, A. L. (2022). Factors associated with antiretroviral therapy adherence among adolescents living with HIV in the era of isoniazid preventive therapy as part of HIV care. *PLoS Global Public Health*, 2(6), e0000418. <https://doi.org/10.1371/journal.pgph.0000418>
15. Wambiya, E. O. A., Atela, M., Eboreime, E., & Ibisomi, L. (2018). Factors affecting the acceptability of isoniazid preventive therapy among healthcare providers in selected HIV clinics in Nairobi County, Kenya: A qualitative study. *BMJ Open*, 8(12), e024286. <https://doi.org/10.1136/bmjopen-2018-024286>
16. Wong, J.S. and Burton, T.A. (1965) Some Properties of Solution of . Monatshefte für Mathematik, 69, 364–674.



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