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**CASE MANAGEMENT AND RESILIENCE OF ADOLESCENTS
LIVING WITH HIV IN KIBRA SUB-COUNTY, NAIROBI CITY
COUNTY, KENYA**



**CASE MANAGEMENT AND RESILIENCE OF ADOLESCENTS LIVING WITH HIV
IN KIBRA SUB-COUNTY, NAIROBI CITY COUNTY, KENYA**

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Abstract

Purpose: This study sought to examine the influence of case management on the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya. Mainly, the study aimed to assess the effect of the healthy domain, safe domain, schooled domain, and stable domain interventions on the resilience of adolescents living with HIV in Kibra Sub-County.

Methodology: The study was anchored on Resilience Theory, Empowerment Theory, and Case Management Model and adopted a cross-sectional descriptive design. The study used a sample size of 165 adolescents living with HIV aged between 10-19 years and 16 key informants. A stratified sampling technique was used to select adolescents living with HIV, while key informants were selected through a purposive sampling technique. The study used questionnaires and interview guides to collect data.

Findings: It is observed that case management interventions explained 80.0% of the resilience of adolescents living with HIV. More importantly, the study found that healthy domain, safe domain, schooled domain, and stable domain interventions had a positive and significant effect on the resilience of adolescents living with HIV in Kibra Sub-County. The case management interventions contributed significantly to the resilience of adolescents living with HIV in informal settlements. The most significant predictor of resilience was stable domain interventions, followed by schooled domain interventions, safe domain interventions, and healthy domain interventions.

Unique contribution to theory, practice and policy: The study recommends that organizations or facilities dealing with adolescents living with HIV need to strengthen health education training, viral load monitoring, assisted disclosure, and follow-ups and bolster basic counselling, enhanced adherence counseling, and life-skill training. They should also support needy adolescents with sanitary pads and school fees/levies, monitor school attendance, provide relief food support to families experiencing emergencies, and provide career guidance and business and vocational/technical training. The findings contribute significantly to project management since all development projects aim to build the resilience of beneficiaries and enable them to become self-reliant. In order to support the findings that successful case management contributes to higher resilience and improved wellbeing, the researcher invites more research to identify other variables under case management intervention.

Key Words: *Healthy Domain, Safe Domain, Schooled Domain, Stable Domain Interventions, and Resilience of Adolescents Living With HIV*

Background of the Study

Case management is a social services process that involves working with children and their caregivers to identify, plan, and carry out a series of actions to meet their healthy, safe, stable, and school needs (Coordinating Comprehensive Care for Children [4Children], 2019). Implementation of Case Management consists of seven steps which include: 1) identifying a child who is orphaned and vulnerable to HIV/AIDS; 2) enrolling or registering the child who meets pre-determined criteria into the program; 3) assessing/reassessing specific needs of the child/household; 4) developing an individual case plan based on the need; providing/referring for services based on the case plan; 6) monitoring the child/caregiver progress in meeting goals and 7) graduating a child/household which meet the case management benchmarks (Green & Ellis, 2017; 4Children, 2019). Resilience, on the other hand, refers to the ability of project beneficiaries to overcome adversity and achieve a state of self-reliance and improved wellbeing (PEPFAR, 2020). In particular, resilience among adolescents living with HIV manifests in the form of adherence to treatment, viral suppression, reduced exposure to the risk of violence or unsafe sexual behaviors, as well as school attendance and progression (Phiri et al., 2020). Lack of resilience can negatively affect the health of adolescents living with HIV and their future career plans and wellbeing. Ssewanyana et al. (2018) claim that if left to persist, a lack of resilience can expand and create a total pattern of risky behaviours on the part of adolescents, which can be expressed most visibly in the form of poor adherence to medication, risky sexual behaviours and violence, school drop-out and poor transition to adult clinics.

Studies conducted in Sub-Saharan Africa show that case management helps adolescents living

with HIV to identify and overcome health, safety, economic, and educational barriers that affect their wellbeing. Sarfo et al. (2017) aptly demonstrated that case management facilitated the provision of counseling and mental health services, which contributed to early HIV diagnosis, linkage to ART care, adherence, and viral load suppression among PLHIV in Ghana. On the other hand, Phiri et al. (2020) significantly demonstrated that case management promoted access to medical, educational, psychosocial, and economic services to vulnerable groups in Zambia. In addition, Mhongera and Lombard (2018) recognized that case management significantly contributed to the smooth transition of HIV-positive adolescents from pediatric clinics to adult care in Zimbabwe. Case management has also been used to improve the resilience of vulnerable groups in Sub-Saharan Africa. Chinyandura et al. (2022) found that case management interventions (economic, social, emotional, and physiological) improved the retention and adherence of children living with HIV in South Africa. Muchacha (2015) revealed that case management improved the resilience of PLHIV in Zimbabwe through economic, social, emotional, and physiological support, while Williams et al. (2021) found an association between case management and early HIV diagnosis, linkage to care, psychosocial support, and viral suppression in Eswatini. Further, Davis et al. (2020) found a significant link between case management. They increased HIV knowledge in Mozambique while William et al. (2021) associated case management with increased education assistance (fees, levies, educational materials) in Botswana.

In East Africa, a lack of resilience among adolescents living with HIV is most visible in diminished health outcomes. Masese et al. (2019) found that many adolescents living with HIV in Tanzania were not willing to transition to adult clinics due to unfulfilled healthy needs, which included; inadequate preparation, attachment to peer friends and staff, stigma & discrimination; financial constraints, and perceived lower quality of care in adult clinics.

Case management is one of the approaches adopted by different organizations providing care for children and families affected by HIV to address barriers that hinder them from achieving their goals. Case Management aims to help children and families achieve a state of wellbeing where they can meet their healthy, school, stable, and safety needs and become resilient enough to withstand modest shocks (PEPFAR, 2015). However, adolescents living with HIV are experiencing challenges and cannot meet their healthy, stable, safe, and school needs. Lack of resilience among HIV-positive adolescents is visible in cases of poor adherence to treatment, risky behaviours, violence, school absenteeism, discontinuation, and delayed transition to adult clinics. The above background suggests the need to examine the effect of case management on the resilience of adolescents living with HIV. Knowing and understanding the difficulties and challenges experienced will put the researcher in the best position to offer alternatives to the problem. Furthermore, in the case of adolescents living with HIV who lacks resilience, seeking

their experiences and identifying the factors that cause them to lose resilience is the first step in addressing the problem.

Statement of the Problem

Case Management should help children and families affected by HIV to build resilience and meet their health, safety, economic, and educational needs. Although previous studies by Phiriet al. (2020) and 4Children (2019) found a significant association between case management and resilience of vulnerable groups in Zambia and Nigeria respectively, the two studies did not show how resilience is built and was not specific to adolescents living with HIV as a particular group. In Kenya, the lack of resilience among adolescents living with HIV is evidenced by the increase in new HIV infections, poor viral suppression, risky behaviours, school interruption, and mental health issues (NAS COP, 2020; KENPHIA, 2018). Failure to address the issue of resilience can lead to a surge in AIDS-related morbidity and mortality among adolescents living with HIV, preventing Kenya from achieving epidemic control in the long run. While lack of resilience has the potential to increase the number of AIDS-related morbidity and mortality among adolescents (Toska et al. 2016), little has been done in Kenya to analyze the influence of case management on the resilience of adolescents living with HIV, especially when some HIV-positive adolescents live in slums where low socioeconomic status of their families may compound the problem. In addition, some people or institutions in Kenya still have potent myths and beliefs that link HIV with promiscuity or misfortune. Such myths may result in stigma and discrimination against HIV-positive adolescents forcing some to stop taking their drugs, engage in risky behaviors and not attend school regularly (PEPFAR, 2015). The lack of resilience among adolescents living with HIV raises concerns about how case management has promoted the empowerment of HIV-positive adolescents to cope with complex challenges without compromising their wellbeing.

In studying the contribution made by case management in promoting resilience of HIV-positive adolescents, it is essential to look into the influence of case management in promoting medication adherence; continuity in care, viral suppression, prevention of violence, improved psychological wellbeing, school attendance, school progression and transition to adult care. In Kenya, the only studies by Tapera (2019) and Chi *et al.* (2019) which have attempted to examine the influence of case management on the resilience of PLHIV have not discussed how resilience is built up among HIV-infected children. This made it a matter of urgent priority to examine the contribution of case management in promoting the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya. Since Kibra Sub-County, the suggested geographical area of study, is one of the poorest informal settlements in Kenya; made it is a unique setting for this study. The study was also relevant as it attempted to identify the contribution case management has made among adolescents

living with HIV in informal settlements, challenges they face during case management, and strategies that can be put to bolster the resilience of HIV-positive adolescents. Thus this study examined the influence of case management on the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya.

Research Objectives

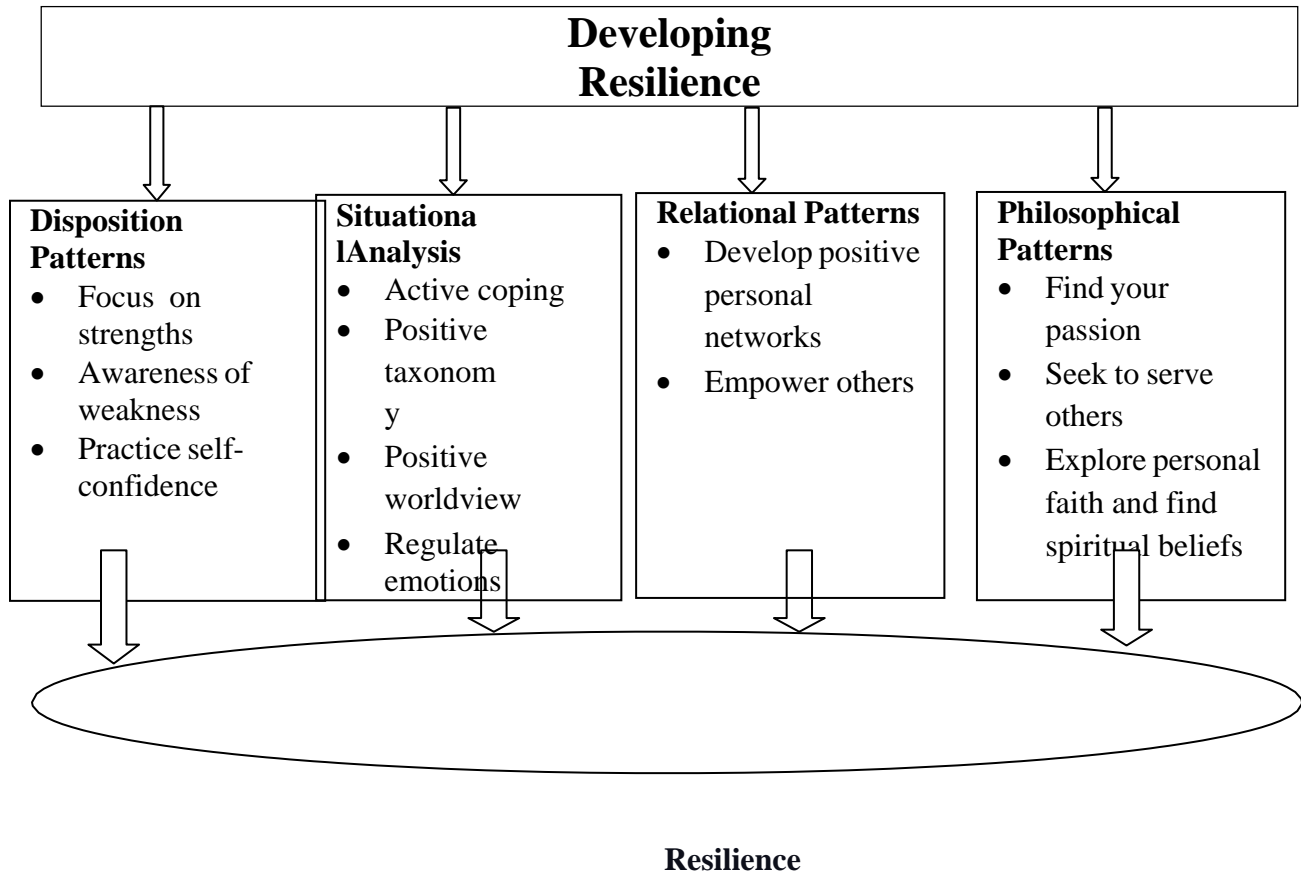
- i. To assess the effect of healthy domain interventions on the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya.
- ii. To examine the effect of safe domain interventions on the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya
- iii. To investigate the effect of schooled domain interventions on the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya
- iv. To analyze the effect of stable domain interventions on the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya

Theoretical Literature Review

Resilience Theory

This study will adopt Resilience Theory by Polk (1997). The theory posits that resilience is the ability to grow and move forward in the face of adversity. The key tenets of resilience theory are explained in four clusters: dispositional pattern, relational pattern, situational pattern and philosophical pattern.

Figure 2: Tenets of Resilience Theory



Dispositional Pattern: The dispositional pattern relates to physical and ego-related psychosocial attributes that promote resilience. These entail those aspects of an individual that promote a resilient disposition towards life stressors and can include a sense of autonomy or self-reliance, a sense of fundamental self-worth, good physical health, and good physical appearance (Polk, 1997).

Relational Pattern: The relational pattern concerns an individual's roles in society and his/her relationships with others. These roles and relationships can range from close and intimate relationships to those with the broader societal system (Polk, 1997).

Situational Pattern: The situational pattern addresses those aspects involving a linking between

an individual and a stressful situation. Situational patterns include an individual's problem-solving ability, the ability to evaluate situations and responses, and the ability to take action in response to a situation (Polk, 1997).

Philosophical Pattern: The philosophical pattern refers to an individual's worldview or life paradigm. It includes various beliefs that promote resilience, such as the belief that positive meaning can be found in all experiences, the belief that self-development is necessary, and the belief that life is purposeful (Polk, 1997). Polk's (1997) theory of resilience claims that the more diverse the four patterns of resilience (dispositional, relational, situational, and philosophical) are, the greater an individual's resilience. Such that the more attributes one has in each of the four patterns, and the more attributes in total across all four dimensions, the greater the diversity and the higher the likelihood that resilience will be manifested (Polk, 1997). Resilience Theory is relevant to this study because it describes the foundation of resilience in vulnerable groups. According to Theory, in order to cope with difficult circumstances, HIV- positive adolescents must strengthen their character, psychosocial well-being, interpersonal relationships, and personal/spiritual faith. Resilience Theory necessitates a focus on their strengths, confidence, positive worldview, personal networks, and discovering their passion for serving others.

Empowerment Theory

Empowerment theory originated from the American Community Psychology and was advanced by Julian Rappaport (1987). According to the Theory, an empowered community is one in which people take it upon themselves to improve the standards through participation and decision-making. Empowerment can also be divided into three inter-dependent dimensions: self-empowerment, mutual, and social. Self-empowerment comes through individual actions and psychological attributes, mutual empowerment arises from a relationship with others, and removing social, political, legal, and economic obstacles to the exercise of individual influence creates social empowerment (Olaniya & Okemakinde, 2008). Perkins *et al.* (1995) posit that empowerment at the community level considers the interconnectedness of various existing structures. Empowerment focuses on how people collaborate in solving issues ranging from health care, communal security, and access to resources - regardless of status and participatory leadership style that takes citizens' views, concerns, and contributions into the account. The Theory is an important concept in community thinking but cannot be an end in itself. Thus, empowerment is a process and means of achieving the end goals. According to Zimmerman (1990), empowerment helps individuals to gain an understanding of the opportunities around them as well as acquire skills that are necessary to address problems that impede progress. The concept of empowerment is a multifaceted construct in which different levels of empowerment are interdependent with the others. The idea of empowerment is a summation of an individual's level of personal

control, pro-activeness, and mastery of the sociopolitical environment. In an organization, the concept of empowerment may involve strategies and interventions geared toward building personnel's skills, competence, and motivation.

Empowerment is a collective effort that involves providing support and resources to people to enhance their capacity and power to make informed and independent decisions concerning economic, social, technological, legal, and environmental matters. Thus empowerment should be founded on an environment and support structures that enhance people's quality of life. The concept of empowerment may take the dimension of developing a more positive and patient sense of self or constructing better comprehension of political and social networks in an individual's environment. Further, the concept of empowerment may take the dimension of cultivating resources and strategies vital for attaining personal and group sociopolitical goals (Gerschick *et al.*, 1990). Empowerment Theory is relevant to this study because it addresses a central issue in case management- resources. Adolescents living with HIV may be less resilient if they do not have access to basic needs such as health, education, protection, and education. The Theory is also important because it addresses the issue of economic empowerment initiatives as a means of promoting resilience.

USAID Case Management Model

USAID Case Management Model is defined as a systematic process of identifying, assessing, planning, referring, and tracking referrals and monitoring the delivery of services in a timely, context-sensitive, individualized, and family-centered manner to achieve a specific goal or goals of children and families affected by HIV (4Children, 2019; PEPFAR, 2015). USAID Case Management Model is utilized by PEPFAR implementing partners to provide services to HIV-infected and affected children and their families. USAID Case Management Model aims to help children and their families to attain a state of well-being where they are able to meet their healthy, safe, schooled, and stable needs. Case management is unique in that it is client-focused and household-centered, and it seeks to capitalize on strengths and synergy to address the unique needs and goals of beneficiaries.

Step 1: Identification: It involves identifying HIV-infected and affected children and referring them for enrollment into the program. PEPFAR's programs enroll children based on the criteria to provide: 1) HIV-specific services; 2) social services; 3) key and priority population initiatives (4Children, 2019; PEPFAR, 2015).

Step 2: Enrollment: This is a process where a child who has been identified and meets the inclusion criteria is enrolled and registered into the program. Upon enrollment, the child and his or her caregiver are generally assigned a case worker by a case manager, who opens an individual case

file (4Children, 2019; PEPFAR, 2015).

Step 3: Assessment/Reassessment: Encompasses identifying a client's specific needs and resources. Assessments can explore issues related to socio-economic status, health, HIV status, nutrition, shelter, psychosocial wellbeing, education, and protection that affect the child. Re-assessment may occur due to changing circumstances within the household and at regular intervals, as determined by the given program (4Children, 2019; PEPFAR, 2015).

Step 4: Case Plan Development and Updating: This is a process of developing a written plan that details how to improve the wellbeing and safety of a child and increase the resilience of the child, caregiver, and household. The case plan should include, at a minimum: a summary and prioritization of needs, strengths, and resources; a goal or objectives that the client and case manager hope to pursue together; a series of actions to be taken to address needs (building on strengths to achieve the case management goal); the roles and responsibilities for all participants involved in implementing the case plan; a clear time frame for completing actions; and indicators for determining when actions have been completed and when the goal has been accomplished (4Children, 2019; PEPFAR, 2015).

Step 5: Service Provision or Referrals: This ensures that clients receive appropriate and timely services based on case plans. Services may be provided by the case manager or the case manager's organization or provided by another organization to which the client is referred by the case manager, such as statutory services provided by government bodies. Making referrals to other organizations can ensure that clients receive high-quality services not available within the case manager's organization but requires additional coordination and follow-up to ensure that services are received, that services are of high quality, and that services have the desired outcome (4Children, 2019; PEPFAR, 2015).

Step 6: Monitoring: This is the process of following up with the child and his/her caregiver to determine if and how the case plan is being implemented and assess the likelihood that the goal and objectives will be achieved. The frequency of monitoring may vary, depending on the level of need and the intervention(s) required. For example, children or families in crisis may require more frequent, intensive, one-on-one support. In contrast, more stable or resilient children and families can be supported to take more responsibility for their own wellbeing and be monitored by case managers less frequently or in group settings (4Children, 2019; PEPFAR, 2015).

Step 7: Case Closure: This is a process involving a final meeting with a child and his or her caregiver and a final review of the case plan and documents in the case file. This is to determine if the child and caregiver have achieved the case management goal and objectives and are ready to graduate. Graduation signifies that all recommended interventions within a case plan have been

implemented and that the household has achieved both the goals of the program and their own within the parameters of the services provided under the given program. Graduating from OVC program support does not necessarily mean that households no longer need any support-rather that they have demonstrated and sustained measurable improvements within the service domains addressed by the program (4Children, 2019; PEPFAR, 2015).

Domains of USAID Case Management Model

The USAID case management model describes specific services that active beneficiaries, children, and caregivers, should receive to achieve their goals. The services are categorized into four domains; healthy, safe, schooled, and stable domains:

Health Domain: Healthy domain encompasses interventions aimed at reducing the risk of HIV by ensuring that children and adolescents living with HIV (CALHIV) know their status, access treatment, adhere to treatment, and suppress the virus (4Children, 2019; PEPFAR, 2020). Under USAID case management, an adolescent is considered resilient if he/she has suppressed the virus and has demonstrated sustained good adherence to medication. HIV-positive adolescents are eligible for the following services under the healthy domain: viral load monitoring, HIV disclosure, HIV education, treatment, and direct support.

Safe Domain: Safe domain interventions aim to reduce the risk of abuse or violence by promoting the psychological wellbeing of children living with HIV (4Children, 2019; PEPFAR, 2020). Under this domain, an HIV-positive adolescent is considered resilient if he/she exhibits a healthy lifestyle free from risky behaviours such as unsafe sexual practices, drug and substance abuse, or negative peer pressure. The primary services provided to HIV-positive adolescents under the safe domain include; life-skills training, education on rights and responsibilities, and providing support towards acquiring legal documents or placement in cases of abuse.

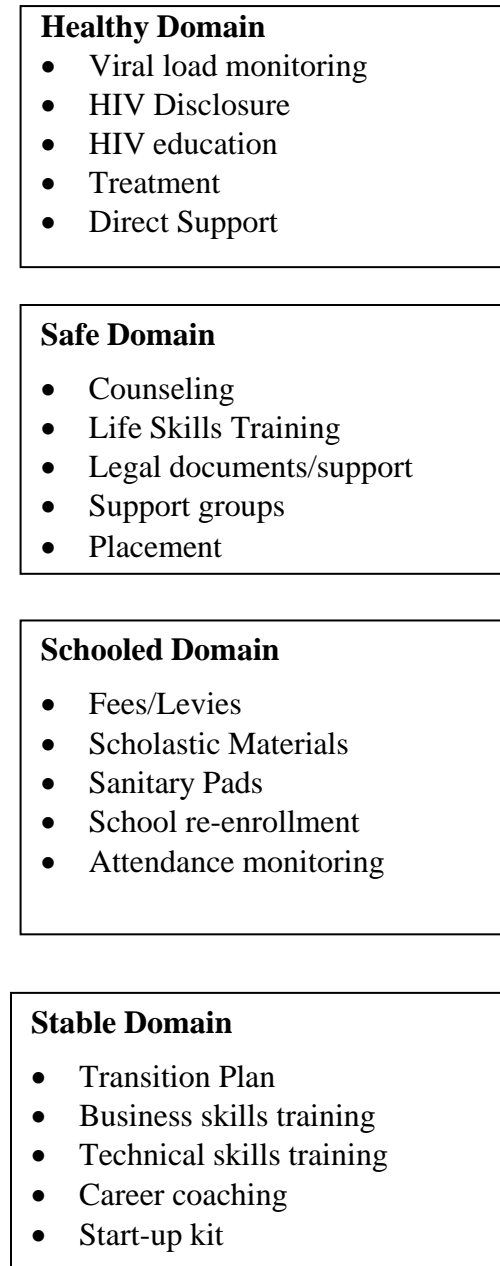
Schooled Domain: Schooled domain comprises interventions aimed at promoting school enrollment, progression, retention, and transition. It involves providing services such as sanitary pads, school fees/levies, educational materials, bursaries referrals, and monitoring school attendance (4Children, 2019; PEPFAR, 2020). An HIV-positive adolescent is considered resilient if he/she regularly attends school and progresses from one class to another.

Stable Domain: The stable domain involves interventions to promote the transition and economic sustainability of youth living with HIV. It involves providing services such as vocational training, technical skills training, career guidance and coaching, and start-up kits (4Children, 2019; PEPFAR, 2020). An HIV-positive adolescent is considered resilient if he/she smoothly transitions to adult care and attains a state of self-reliance.

Conceptual Framework

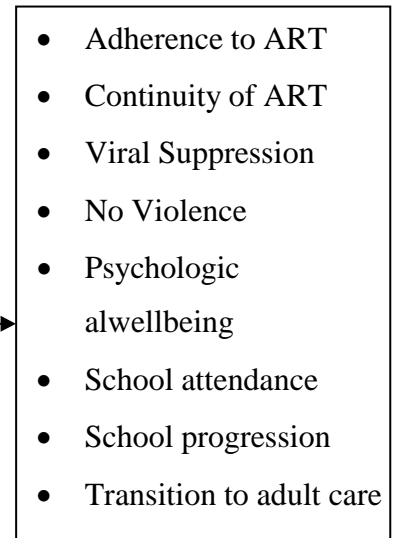
Independent Variable

Case Management

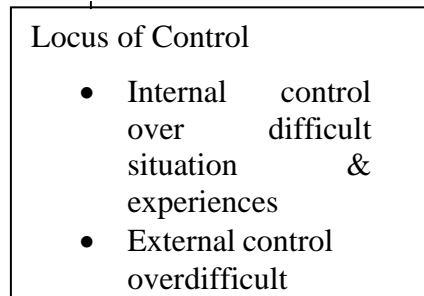


Dependent Variable

Resilience of adolescents living



Moderating



with HIV

Research Methodology

Research Design

This study adopted a cross-sectional descriptive design. This design was appropriate for this study because it takes a representative sample (cross-section) to generalize findings to a whole population (Levin, 2006). Cross-sectional descriptive design was also crucial because it can determine the prevalence of an outcome, and cross-sectional surveys can be completed relatively quickly (Omair, 2016).

Site Description, Study Population and Target population

This study was conducted in Kibra Sub-County, Nairobi City County, Kenya. The study population comprised all adolescents living with HIV in Kibra Sub-County. Data from NASCOP (2022) indicated that 4,145 children were living with HIV in the Kibra Sub-County, out of which 281 were adolescents aged between 10-19 years, forming the target population study. The study also targeted 16 key informants (case managers, case workers, counselors, and economic empowerment officers) because they were vital in the case management process.

Sample and Sampling Techniques

This study adopted Yamane's (1967) formula to calculate the sample size from a target population of 281 adolescents living with HIV in the Kibra Sub-County. Besides, purposive sampling technique was used to select 16 key informants including 5 case managers, 8 case workers, 2 counselors and 1 economic empowerment officers owing to the critical role they play in Case Management process.

Methods and Instruments of Data Collection

The study adopted quantitative and qualitative data collection methods. An interviewer administered questionnaires was used to collect quantitative data while interview guide was used to collect qualitative data.

Data Analysis Procedures

Descriptive analysis was performed using proportions, frequencies, and percentages to depict various variables. Correlation analysis was performed on categorical variables such as demographic, healthy domain, safe domain, stable domain, and school domain interventions to determine their association with the outcome measure of resilience. Where significant associations were found, multinomial logistic regression was computed to establish factors contributing to the resilience of HIV-positive adolescents, and the results were presented in tables. Qualitative data from interview schedules were analyzed using thematic analysis. This technique involved

collecting data, classifying significant issues or topics, rereading the texts and highlighting essential quotations, indicating major themes on the margins, developing a summary, and using direct quotations to present the findings.

Results

Response Rate

The study's main objective was to examine the relationship between case management and resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya. The researcher administered 165 questionnaires to adolescents living with HIV in Kibra Sub-County, all filled out and returned. Besides, the researcher managed to reach 16 key informants for interviews. This translates to 100.0% response rate. The excellent response rate was attributed to respondents' cooperation, research assistants' use, and close follow-up.

Descriptive Analysis of Variables

Healthy Domain Interventions

The study assessed the healthy domain interventions provided to adolescents living with HIV in Kibra Sub-County. The healthy domains were studied to determine how they influenced the resilience of adolescents living with HIV. The respondents were asked to rate their agreement or otherwise on statements relating to healthy domain interventions. Their responses were measured on a five-point Likert Scale where 1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, and 5=Strongly Agree. The results are shown in Table 1.

Table 1: Healthy Domain Interventions

Sl. No	Items	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Mean	Std. Deviation
1	My viral load is monitored twice a year	0(0.0%)	22(13.3%)	12 (7.3%)	43(26.1%)	88(53.3%)	4.19	1.053
2	Case workers visit our home at least once in month to check on my progress	3(1.8%)	5(3.0%)	8(4.8%)	106(64.2%)	43(26.1%)	4.1	0.767
3	My parent/guardian was assisted on how to disclose to me my HIV status	2(1.2%)	2(1.2%)	19(11.5%)	84(50.9%)	58(35.2%)	4.18	0.773
4	My nutritional status is always monitored at community and facility level	0(0.0%)	1(0.6%)	10(6.1%)	126(76.4%)	28(17.0%)	4.1	0.497
5	I have been trained on HIV education and prevention	1(0.6%)	0(0.0%)	0(0.0%)	50(30.3%)	114(69.1%)	4.67	0.543
6	I am helped to access treatment whenever I fall sick	0(0.0%)	1(0.6%)	5(3.0%)	109(66.1%)	50(30.3%)	4.26	0.54
7	Always facilitated with transport for treatment in another facility	3(1.8%)	37(22.4%)	20(12.1%)	78(47.3%)	27(16.4%)	3.54	1.068

Results in Table 1 show that majority of the respondents agreed that they had benefitted from HIV education and prevention training, as indicated by a mean of 4.67 and a standard deviation of 0.543. In addition, the respondents agreed that they were helped to access treatment whenever they fell sick (mean=4.26, standard deviation=0.540), that their viral load was monitored twice a year (mean=4.19, standard deviation=1.053), that their parents were assisted in disclosing HIV status to them (mean=4.18, standard deviation=0.773) and that caseworkers visited their homes at least

once in a month to monitor medication adherence and assess their needs (mean=4.10, standard deviation= 7.67). In addition, the respondents agreed that their nutritional status was constantly monitored at the community and facility level (mean=4.10, standard deviation=4.97). However, the respondents held a neutral opinion on whether they were facilitated with transport whenever referred for treatment in another facility (mean=3.54, standard deviation=1.068). Data collected through interviews with key informants revealed that healthy domain interventions significantly promoted the resilience of adolescents living with HIV. One of the participants said;

“Case management has really helped many children especially those who have poor adherence. The case workers conduct home visits regularly to check whether the children are adhering well to their medication.... case workers do pill counts to monitor adherence of children and adolescents living with HIV...” Participant KI 10 (Personal Communication, 17th June, 2022). Another participant added, *“OVC interventions such as escort to clinic, transport when referred to clinic and disclosure helps adolescents living with HIV to regain their health....index line testing services helps to identify adolescents who have not been living.”* Participant KI 03 (Personal Communication, 11th June, 2022). Another participant supported, *“Case management has helped adolescents to adhere to their medication and suppress the virus....if an adolescent has high viral load, case workers does a case plan and works with case managers and other program staff to help the child to suppress his/her virus...nowadays adolescents rarely miss their clinic appointment due to regular follow-up and monitoring”* Participant KI 15 (Personal Communication, 23th June, 2022).

Safe Domain Interventions

The respondents were asked to rate the safe domain interventions provided to adolescents living with HIV in Kibra Sub-County. The safe domains interventions were studied to determine how they influenced the resilience of adolescents living with HIV. Their level of agreement or otherwise on statements relating to safe domain interventions was measured on a five-point Likert Scale where 1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, and 5=Strongly Agree, and the results are shown in Table 2.

Table2: Safe Domain Interventions

SI No.	Items	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Mean	Std. Deviation
1	I have benefitted from basic counseling more than once	0(0.0%)	1(0.6%)	1(0.6%)	56(33.9%)	107(64.8%)	4.63	0.532
2	Adolescents who do not adhere to their medication receive Enhanced Adherence Counseling (EAC)	0(0.0%)	0(0.0%)	19(11.5%)	73(44.2%)	73(44.2%)	4.33	0.673
3	I regularly participate in life skill trainings organized by the program	0(0.0%)	15(9.1%)	8(4.8%)	107(64.8%)	35(21.2%)	3.98	0.792
4	My parents were helped to get me legal documents such as birth certificate, NHIF, ID	33(20.0%)	11(6.7%)	51(30.9%)	46(27.9%)	24(14.5%)	3.1	1.314
5	I am a member of a youth support group	5(3.0%)	93(56.4%)	7(4.2%)	46(27.9%)	14(8.5%)	2.82	1.131
6	Homeless, neglected or abused adolescents are rescued to children homes	53(32.1%)	96(58.2%)	10(6.1%)	5(3.0%)	1(0.6%)	1.82	0.726

Results in Table 2 show that majority of the respondents agreed that they had benefitted from essential counseling intervention, as indicated by a mean of 4.63 and standard deviation of 0.532. The respondents also agreed that adolescents with poor medication adherence received enhanced

adherence counseling (mean=4.33, standard deviation=0.673) and that adolescents regularly participated in life-skill training organized by the program (mean=3.98, standard deviation, 0.792). In addition, the respondents held a neutral when asked whether they were members of a youth support group (mean=2.82, standard deviation=1.314). However, the respondents disagreed that homeless, neglected, or abused adolescents were rescued to children's homes (mean=1.82, standard deviation=0.726). Data collected through interviews revealed that safe domain interventions played an essential role in reducing the vulnerability of adolescents living with HIV. One of the participants indicated, *“Adolescents attend trainings organized by the program such as life-skills.....these trainings help adolescents and children living with HIV to understand their rights.....Some programs take their beneficiaries out for recreation or mentorship and this has helped those children who are facing problems of self-stigma...”* Participant KI 01 (Personal Communication, 11th June, 2022).

Another participant stated, *“Case workers and program staff provide basic counseling when they do home visits...this helps caregivers and children to address their problems....case workers regularly gives information to caregivers to process legal documents of their children and sometimes the program facilitates caregivers and children to process documents like ID card or NHIF..”* Participant KI 09 (Personal Communication, 16th June, 2022). Another participant commented, *“Counselling adolescents who have high viral loads helps a lot.....some children do not adhere well to their medication due to stigma and negative peer pressure..so counseling enables them to understand the importance of taking their drugs every day.”* Participant KI 15 (Personal Communication, 23th June, 2022). Another participant said, *“Continuous counseling is important because it helps children living HIV to avoid bad company, to concentrate in school and adhere to their treatment.....”* Participant KI 07 (Personal Communication, 13th June, 2022).

Schooled Domain Interventions

The study examined the major schooled domain interventions provided to adolescents living with HIV in Kibra Sub-County. The importance of studying the schooled domain interventions was to ascertain healthy how they influenced the resilience of adolescents living with HIV. The responses were measured on a five-point Likert Scale where 1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, and 5=Strongly Agree, and the results are shown in Table 3.

Table 3: Schooled Domain Interventions

SI No.	Items	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Mean	Std. Deviation
1	Adolescents receive fees/levies depending on their need	8(4.8%)	11(6.7%)	17(10.3%)	96(58.2%)	33(20.0%)	3.82	0.989
2	Adolescents receive scholastic materials such as pens, textbooks, depending on their need	8(4.8%)	61(37.0%)	43(26.1%)	34(20.6%)	19(11.5%)	2.97	1.112
3	Girls aged 9-19 years are supported with sanitary pads	0(0.0%)	11(6.7%)	10(6.1%)	101(61.2%)	43(26.1%)	4.07	0.766
4	Adolescents who drop-out of schools are assisted to go back to school	5(3.0%)	41(24.8%)	20(12.1%)	70(42.4%)	29(17.6%)	3.47	1.134
5	Case workers monitor school attendance of adolescents through home visits and school visits	8(4.8%)	12(7.3%)	27(16.4%)	92(55.8%)	26(15.8%)	3.7	0.983

According to the results in Table 3, the majority of the respondents agreed that girls aged 9-19 years were supported with sanitary pads, as indicated by a mean of 4.07 and standard deviation of 0.766. Further, the respondents agreed that adolescents received fees/levies depending on their needs (mean=3.82, standard deviation=0.989) and that caseworkers monitored school attendance of adolescents through home visits and school visits (mean=3.70, standard deviation=0.983). However, the respondents were undecided about whether adolescents received educational materials such as pens, and textbooks, depending on their needs (mean=2.97, standard deviation=1.112). Findings from interviews with key informants revealed that schooled domain interventions were vital in promoting school enrollment, attendance, progression, and performance of adolescents in school. One of the participants said, “*Children living with HIV receive school fees and prevent them from being sent home because of lack of school fees.....also girls are*

provided with sanitary pads....”Participant KI 10 (Personal Communication, 16th June, 2022).Another participant added, *“Actually many adolescents have been supported with fees...the program case workers conducts regular assessment and case plans for children who have school fee needs...the case managers, then processes the fees or uniforms...this has enabled adolescents to attend school...”*Participant KI 02 (Personal Communication, 11th June, 2022).Another participant indicated, *“Case workers usually monitors school attendance of children living with HIV during home visits... if a child is not attending school, case workers report to the case managers and they work together in planning how to support the child to go back to school....”*Participant KI 08 (Personal Communication, 14th June, 2022).Another respondent stated *“Youth who have finished school are trained on skills or career guidance....some are supported to enroll for technical and vocational training.....there are beneficiaries who have their own businesses or have gotten jobs courtesy of the support they received from this program...”* Participant KI 03 (Personal Communication, 11th June, 2022).

Stable Domain Interventions

The respondents were asked to rate the stable domain interventions provided to adolescents living with HIV in Kibra Sub-County. The stable domain interventions were studied to determine how they influenced the resilience of adolescents living with HIV. The responses were measured on a five-point Likert Scale where 1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, and 5=Strongly Agree, and the results are shown in Table 4.

Table 4: Stable Domain Interventions

SI No.	Items	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Mean	Std. Deviation
1	Adolescents are prepared on transition to adult care as early as 10 years	2(1.2%)	65(39.4%)	37(22.4%)	38(23.0%)	23(13.9%)	3.09	1.109
2	Adolescents aged above 17 years and out of school receive training in areas of career guidance and business	5(3.0%)	9(5.5%)	42(25.5%)	88(53.3%)	21(12.7%)	3.67	0.878
3	Adolescents are supported to access vocational/technical training	4(2.4%)	10(6.1%)	35(21.2%)	91(55.2%)	25(15.2%)	3.75	0.874
4	Adolescents who are willing to start business are assisted with start-up kits or microcredit services	5(3.0%)	33(20.0%)	45(27.3%)	74(44.8%)	8(4.8%)	3.28	0.942
5	Food support to needy families help adolescents not to go hungry, not to miss taking drugs and prevent malnutrition	3(1.8%)	12(7.3%)	8(4.8%)	41(24.8%)	101(61.2%)	4.36	0.994

Results shown in Table 4 reveal that most respondents agreed that food support helped adolescents not to go hungry, not to miss taking drugs, and prevented malnutrition, as indicated by a mean of

4.36 and standard deviation of 0.994. The study also revealed that adolescents above 17 years and out of school received training in career guidance and business (mean=3.67, standard deviation=0.878) and that adolescents were supported to access vocational/technical training (mean=3.75, standard deviation=0.874). However, the respondents were undecided whether adolescents willing to start a business were assisted with start-up kits or microcredit services (mean=3.28, standard deviation=0.942) and whether adolescents were prepared for the transition to adult care as early as ten years. Data collected from key informants through interviews revealed that stable domain interventions significantly reduced the social and economic vulnerability of adolescents living with HIV. The participants argued that regular food support, microcredit support, skills training, and transition planning promoted the resilience of adolescents. One of the participants said, *“Food support and other relief services have enabled families to recover from emergencies.....in Kibra issues such as fires or floods displace families...but through OVC programming, affected families receive relief support...”* Participant KI 16 (Personal Communication, 23th June, 2022). Another participant said, *“Parents are supported with money to start business so that they can meet the basic needs of their families...however parents must be in a support group in order to be supported...there are businesses which succeed and this helps needy families....”* Participant KI 04 (Personal Communication, 12th June, 2022). Another participant stated, *“Cash transfer to support orphans and malnourished children is important in promoting health of these children.....needy families receive food or children are supported with fees to remain in school...”* Participant KI 09 (Personal Communication, 16th June, 2022).

Resilience

The study used a five-point Likert Scale to rate statements relating to the resilience of adolescents living with HIV in the Kibra Sub-County. The purpose of examining the resilience of adolescents living with HIV was to determine the extent of the problem under study. The scale was as follows: 1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, and 5=Strongly Agree. The results are shown in Table 5.

Table 5: Resilience

SI No	Items	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Mean	Std. Deviation
1	I have never missed my clinic appointment	0(0.0%)	6(3.6%)	31(18.8%)	101(61.2%)	27(16.4%)	3.9	0.7
2	I never skip taking my drug	0(0.0%)	11(6.7%)	24(14.5%)	103(62.4%)	27(16.4%)	3.88	0.752
3	I have never defaulted my care	0(0.0%)	4(2.4%)	16(9.7%)	111(67.3%)	34(20.6%)	4.06	0.631
4	I have suppressed my virus (Undetectable viral load)	0(0.0%)	10(6.1%)	18(10.9%)	102(61.8%)	35(21.2%)	3.98	0.753
5	I know my rights, responsibilities and where to seek help in case I am abused	0(0.0%)	0(0.0%)	7(4.2%)	113(68.5%)	45(27.3%)	4.23	0.514
6	I easily manage distressing events such as stigma and discrimination	0(0.0%)	32(19.4%)	12(7.3%)	109(66.1%)	12(7.3%)	3.61	0.881
7	I'm able to learn, feel, express and manage positive and negative emotions as well	0(0.0%)	6(3.6%)	17(10.3%)	119(72.1%)	23(13.9%)	3.96	0.624

	as form and maintain good relationships with others								
8	I attend school regularly and progress from one class to another	0(0.0%)	40(24.2%)	7(4.2%)	88(53.3%)	30(18.2%)	3.65	1.04	
9	I perform well in class	0(0.0%)	6(3.6%)	43(26.1%)	78(47.3%)	38(23.0%)	3.9	0.793	
10	I don't fear transitioning to adult clinic when I turn 18 years	1(0.6%)	24(14.5%)	38(23.0%)	87(52.7%)	15(9.1%)	3.55	0.872	

Results in Table 5 indicate that most respondents agreed that they knew their rights, responsibilities and where to seek help in case of abuse, as shown by the mean of 4.23 and standard deviation of 0.514. Similarly, the respondents agreed that they had never defaulted on their care (mean=4.06, standard deviation=0.631), that they had suppressed viral load (mean=3.98, standard deviation=0.753), that they were able to learn, feel, express, and manage positive and negative emotions as well as form and maintain good relationships with others (mean=3.96, standard deviation=0.624), that they never missed their clinic appointments (mean=3.90, standard deviation=0.700) and that they were performing well in class (mean=3.90, standard deviation=0.973). However, the respondents held neutral opinions as to; whether they attended school regularly and progressed from one class to another (mean=3.65, standard deviation=1.040), whether they efficiently managed distressing events such as stigma and discrimination (mean=3.61, standard deviation=0.881) and as to whether they had no fear of transitioning to an adult clinic when they turn 18 years (mean=3.55, standard deviation=0.872).

Locus of Control

Locus of control refers to the degree to which adolescents living with HIV believe they have control over their situation, experiences, or what happens to them. The locus of control of adolescents living with HIV in Kibra Sub-County was assessed, and responses under each item of

the locus of control were measured on a Likert's Scale where: 1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree and 5=Strongly Agree. The results are shown in Table 12.

Table 6: Locus of Control

Statements	Mean	Std. Dev
a) If I get sick, it is my own behavior, which determines how soon I get well again	3.67	0.829
b) No matter what I do, if I am going to get sick, I will get sick	2.42	0.827
c) Having regular contact with my physician is the best way for me to avoid illness	3.99	0.595
d) Most things that affect my health happen to me by accident	2.98	1.096
e) Whenever I don't feel well, I should consult a medically trained professional	4.22	0.469
f) I am in control of my health	4.01	0.777
g) My family has a lot to do with my becoming sick or staying health	4.21	0.711
h) When I get sick, I am to blame	2.36	0.842
i) Luck plays a big part in determining how soon I will recover from an illness	2.65	0.999
j) Health professionals control my health	3.42	1.216
k) My good health is largely a matter of good fortune	3.85	0.921
l) The main thing, which affects my health, is what I myself do	3.82	0.773
m) If I take care of myself, I can avoid illness	4.38	0.608
n) When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me	4.24	0.606
o) No matter what I do, I am likely to get sick	2.48	0.86
p) If it's meant to be, I will stay health	3.76	0.82
q) If I take the right actions, I can stay healthy	4.39	0.538
r) Regarding my health, I can only do what my doctor tells me to do	3.83	1.102

Table 6 shows that most respondents agreed that if they took the right actions, they could stay healthy, as indicated by a mean of 4.39 and a standard deviation of 0.538. In addition, the respondents agree that if they took care of themselves, they could avoid illness (mean=4.38, standard deviation=0.608) and that whenever they recovered from an illness, it was usually because of other people (for example, doctors, nurses, family, friends) have been taking good care of them (mean=4.24, standard deviation=0.606), that whenever they did not feel well, they consult a medically trained professional (mean=4.22, standard deviation=0.469), that their family had a lot to do with them becoming sick or staying health (mean=4.21, standard deviation=0.711), that they were in control of their health (mean=4.01, standard deviation=0.777) and having regular contact with my physician was the best way to avoid illness (mean=3.99, standard deviation=0.595).

Inferential Analysis

Correlation Analysis Results

Spearman's correlation was used to determine the association between healthy domain interventions, safe domain interventions, schooled domain interventions, stable domain interventions and resilience of adolescents living with HIV. The Spearman's correlation analysis was used to determine the relationship between the variables in terms of strength and direction. The results are shown in Table 7:

Table 7: Correlation Analysis

Variables		Healthy	Safe	Schooled	Stable	Resilience
Healthy	Spearman Correlation	1	.155*	.382**	.468**	.289**
	Sig. (2-tailed)		0.047	0	0	0
Safe	Spearman Correlation		1	.428**	.294**	.322**
	Sig. (2-tailed)			0	0	0
Schooled	Spearman Correlation			1	.609**	.425**
	Sig. (2-tailed)				0	0
Stable	Spearman Correlation				1	.525**
	Sig. (2-tailed)					0
Resilience	Spearman Correlation					1
	Sig. (2-tailed)					

The results in Table 7 reveal that the stable domain had a strong positive and significant association with the resilience of adolescents living with HIV ($r = .525^{**}$, $p\text{-value} = .000$) at a 5% level of significance. This implies that an increase in stable domain interventions is significantly associated with an increase in the resilience of adolescents living with HIV. The results also indicate that schooled domain interventions had a strong positive and significant association with the resilience of adolescents living with HIV ($r = .425^{**}$, $p\text{-value} = .000$) at a 5% level of significance. This means that increase in school is significantly associated with an increase in the resilience of adolescents living with HIV. Further, the findings reveal that safe domain intervention had a strong positive and significant association with the resilience of adolescents living with HIV ($r = .322^{**}$, $p\text{-value} =$

$.000$) at a 5% level of significance. This denotes that an increase in safe domain interventions is significantly associated with an increase in the resilience of adolescents living with HIV. In addition, the results indicate that healthy domain interventions had a strong positive and significant association with adolescents living with HIV ($r = .289^{**}$, $p\text{-value} = .000$) at a 5% level of significance. This means that increase in healthy domain interventions is significantly associated with an increase in the resilience of adolescents living with HIV.

Multinomial Logistic Regression

This study examined the strength of the relationship between healthy domain interventions, safe domain interventions, school domain interventions, stable domain interventions, and resilience of adolescents living with HIV using multinomial logistic regression. Tables 8, 9, and 10 present the Model Fitting Information, Pseudo R-square, and Likelihood Ratio Test results, respectively.

Table 8: Model Fitting Information

Model	Model Criteria	Fitting	Likelihood Tests	Ratio	
	-2 Likelihood	Log	Chi-Square	df	Sig.
Intercept Only	794.624				
Final	533.745		260.879	68	0

Table 8 shows that model fitting information had a p-value are .000, which is less than .05. This is interpreted to mean that the model fitted the data significantly better than a model with no predictors. Thus the model was ideal for analyzing the results.

Table 9: Pseudo R-Square

Cox and Snell	0.794
Nagelkerke	0.8
McFadden	0.325

Pseudo R-Square results in Table 8 indicate that all the four independent variables jointly explained 80% ($R^2 = .800$) of the total variations in the resilience of adolescents. This result implies that healthy domain, safe domain, schooled domain, and stable domain interventions contribute significantly toward change in the resilience of adolescents living with HIV. However, further research should be carried out to identify other case management interventions that will account for the remaining 20% of resilience.

Table 10 Likelihood Ratio Tests

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Mode	Chi-Square	df	Sig.
Intercept	626.059	92.314	17	0
Healthy	576.723 _a	42.978	17	0
Safe	578.564 _a	44.819	17	0
Schooled	607.733	73.988	17	0
Stable	627.550 _a	93.805	17	0

The likelihood ratio test results in Table 10 reveals that stable domain interventions had the highest positive and significant effect on the resilience of adolescents (-2Log Likelihood = 627.550_a, p-value = .000) at a 5% significance level. This means that an increase in stable domain interventions by one unit would result in a 627.550 increase in resilience of adolescents living with HIV. This means that stable domain interventions contribute significantly to the resilience of adolescents living with HIV. Further, the findings show that schooled domain interventions had the second highest positive and significant effect on the resilience of adolescents living with HIV (-2Log Likelihood=607.733, p-value = .000). This means that an increase in school domain interventions by one unit would result to an increase in resilience of adolescents living with HIV by 607.733 units. This implies that school domain interventions contribute significantly to the resilience of adolescents. The study further revealed that safe domain interventions had the third highest positive and significant effect resilience of adolescents living with HIV (-2Log Likelihood=578.564_a, p-value = .000). This means that an increase in safe domain interventions by one unit would result in to increase in resilience of adolescents by 578.564 units. This implies that safe domain interventions contribute significantly to the resilience of adolescents. Finally, the study revealed that healthy domain interventions had a positive and significant effect resilience of adolescents living with HIV (-2Log Likelihood=576.723_a, p-value = .000). This means that an increase in healthy domain interventions by one unit would result in an increase in resilience of adolescents by 576.723 units. This implies that healthy domain interventions contribute significantly to the resilience of adolescents living with HIV in Kibra Sub-County, Nairobi, Kenya.

Conclusion

The conclusions of this study are derived from the research findings and are in line with the study objectives. Based on the findings for objective one, the study concluded that healthy domain interventions had a positive and significant effect on the resilience of adolescents living with HIV. Evidently, healthy domain interventions contribute significantly to the resilience of adolescents. Several aspects of healthy domain interventions were identified as key, that is, HIV education and prevention training, transport to the clinic when sick, viral load monitoring, assisted disclosure, and household follow-up through home visits and nutritional monitoring both at the community and facility level. According to the findings on objective two, the study concluded that safe domain interventions have a positive and significant effect on the resilience of adolescents living with HIV. Notably, safe domain interventions contribute immensely to adolescents' resilience with HIV. The study established that basic counseling, enhanced adherence counseling, and life-skill training were essential aspects that promoted the resilience of adolescents living with HIV.

Based on the results of objective three, the study concluded that schooled domain interventions had a positive and significant resilience of adolescents living with HIV. The implication is that an increase in school domain interventions would increase the resilience of adolescents living with HIV. The study established that sanitary pads, school fees/levies, and school attendance monitoring by case workers significantly promoted the resilience of adolescents living with HIV. On objective four, the study concluded that stable domain interventions had a positive and significant effect on adolescents living with HIV resilience. This means that an increase in stable domain interventions increases the resilience of adolescents living with HIV. Several stable domain aspects, including food support, career guidance, business training, and vocational/technical training, promoted the resilience of adolescents living with HIV. Lastly, the study concluded that case management had a significant effect resilience of adolescents living with HIV. Stable domain interventions were identified as the most significant predictors of resilience, followed by schooled domain interventions, safe domain interventions, and healthy domain interventions.

Recommendation

Health Domain Interventions

The study established that healthy domain interventions had a positive and significant effect on adolescents living with HIV resilience. The study recommends that healthcare facilities or organizations dealing with adolescents living with HIV shift more effort to the aspects related to healthy domain interventions. The healthcare facilities or organizations should specifically enhance health education training, viral load monitoring, assisted disclosure, household follow-up

through home visits, and nutritional monitoring both at the community and facility level. The study suggests the full involvement of parents/caregivers in the healthcare of adolescents living with HIV. More importantly, the study recommends that the Kenya Ministry of Health develop policies and regulations that promote the adoption of case management in building the resilience of adolescents living with HIV.

Safe Domain Interventions

The study established that safe domain interventions had a positive and significant effect on adolescents living with HIV resilience. The study suggests that healthcare facilities or organizations dealing with adolescents living with HIV should continuously improve aspects related to safe domain interventions. These are basic counseling, enhanced adherence counseling, and life-skill training. The counseling and training should be extended to caregivers to understand their role in supporting adolescents living with HIV. Besides, there is a need for healthcare facilities or organizations to evaluate why adolescents are not facilitated to acquire legal documents, why not all youth are in support groups, and why there are no measures to rescue homeless or abused adolescents to institutions.

Schooled Domain Interventions

The research found that school domain interventions had a positive and significant effect on adolescents living with HIV resilience. The study suggests that healthcare facilities or organizations dealing with adolescents living with HIV should put more emphasis on assessing and supporting adolescents who need sanitary pads and school fees/levies, as well as monitoring their school attendance. Schooled interventions should also empower parents/caregivers to start income-generating activities to meet their children's educational needs.

Stable Domain Interventions

The study established that stable domain interventions had a positive and significant effect on adolescents living with HIV resilience. This study recommends that healthcare facilities and organizations dealing with adolescents living with HIV strengthen aspects related to stable domain interventions with a particular focus on relief, food support for needy households, career guidance, business, and vocational/technical training. The study also recommends that implementing partners review the effectiveness of transition plans and microcredit interventions for adolescents with HIV and ensure that it meets the salient needs of adolescents.

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