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Family Support, Mental Well-Being, and ART Adherence among Young Adults with HIV in Western Kenya

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ABSTRACT

Background: Young adults living with HIV face a high burden of mental health disorders that may negatively affect adherence to antiretroviral therapy (ART). Family support has been identified as a key protective factor, yet evidence among young adults in high HIV burden settings in Kenya remains limited. This study assessed the association between family support, mental well-being, and ART adherence among young adults living with HIV in Western Kenya.

Methods: A cross-sectional study was conducted among 289 young adults aged 18–30 years receiving HIV care at Chulaimbo Sub-County Hospital, Kisumu County, Kenya. Family support was measured using a family connectedness scale, while mental well-being was assessed using the PHQ-9 and GAD-7 and ART adherence using the Wilson 3-item scale and the MMAS-4. Multivariable regression models examined associations between variables.

Results: The mean age of participants was 25.2±3.8 years and 80.3% were female. Depression was reported by 17.3% of participants, anxiety by 11.8%, and comorbid depression and anxiety by 24.2%. Overall, 88.9% demonstrated good or excellent adherence. Higher family support was significantly associated with lower depression and anxiety scores ($\beta = -0.69$, 95% CI −1.12 to −0.26, p=0.002) and higher odds of optimal ART adherence (OR = 9.30, 95% CI 1.78–48.67, p=0.008).

Conclusions: Strong family support is associated with improved mental well-being and ART adherence among young adults living with HIV. Integrating family-centered and mental health interventions into HIV care programs may enhance treatment outcomes in high-burden settings.

Keywords: Family support, mental health, ART adherence, young adults, HIV, Kenya

INTRODUCTION

Young adults aged 18–30 years represent a key population in the HIV epidemic, particularly in sub-Saharan Africa where most new infections occur. Despite increased access to antiretroviral therapy (ART), this group continues to experience poorer outcomes than older adults, including lower adherence, higher loss to follow-up, and reduced viral suppression[1]. This undermines progress toward the UNAIDS 95–95–95 targets[2].

Kenya remains heavily affected by HIV, with Kisumu County reporting prevalence rates above the national average[3]. In this setting, young adults living with HIV face intersecting social and structural challenges, including stigma, economic dependence, unstable relationships, and limited psychosocial support[4,5]. These vulnerabilities contribute to a high burden of mental health conditions, particularly depression and anxiety, which are common among people living with HIV.

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Poor mental health is strongly associated with suboptimal ART adherence, treatment interruptions, and unsuppressed viral load[6]. Conditions such as depression and anxiety can impair motivation, memory, and self-efficacy, reducing the ability to maintain consistent medication use. Consequently, integrating mental health services into HIV care has become a priority in many low- and middle-income countries.

Family support is an important yet underexplored factor influencing both mental well-being and treatment adherence. Supportive family environments can enhance psychological resilience and promote adherence through emotional and practical assistance, while negative family dynamics may worsen distress and disengagement from care[7, 8]. This is particularly relevant in African contexts, where family systems play a central role in social and economic life.

However, there is limited empirical evidence on the interplay between family support, mental well-being, and ART adherence among young adults in rural and peri-urban Kenya. This study therefore examines these associations among young adults living with HIV attending Chulaimbo Sub-County Hospital in Kisumu County.

Main Objective

To assess the relationship between family supports, mental well-being and HIV management among YALHIV in -Chulaimbo sub county

Specific Objectives

1. To establish socio-demographic factors affecting family support among YALHIV in - Chulaimbo sub county.
2. To determine the association between family support and mental health in YALHIV in -Chulaimbo sub county.
3. To determine the association between family support and adherence to HIV management among YALHIV in -Chulaimbo sub county.

METHODOLOGY

Study design and setting

To address these objectives, a cross-sectional study design was used. The study was conducted at Chulaimbo Sub-County Hospital, a level four health facility located in Kisumu County, Western Kenya. The hospital provides comprehensive HIV care services, including ART initiation and follow-up, mental health screening, and youth-friendly services.

Study population and sampling

A sampling frame was developed from the clinic registers of the HIV Care Clinic, Youth-Friendly Clinic, and Prevention of Mother-to-Child Transmission (PMTCT) services at Chulaimbo Sub-County Hospital. The sampling frame included all young adults aged 18–30 years who were living with HIV, enrolled in care at the facility, and met the study's eligibility criteria.

Each eligible individual in the sampling frame was then assigned a unique identification number. These identification numbers were entered into a computer-based randomization process. Using a random number generator, the required sample size of 289 participants was selected from the full list of eligible individuals.

Selected individuals were then contacted during their routine clinic visits and invited to participate in the study. If a selected individual declined participation or did not meet inclusion criteria, including those who were critically ill or unable to provide informed consent were at the time of recruitment, another participant was randomly selected from the remaining list using the same randomization procedure to maintain randomness.

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This approach minimized selection bias and ensured that the final sample was representative of young adults living with HIV receiving care at the facility.

Data collection

Data were collected using a structured interviewer-administered questionnaire programmed in Kobo Toolbox. The questionnaire captured socio-demographic characteristics, family support, mental well-being, and ART adherence.

Measures

Family support: Family support was measured using a validated family connectedness scale assessing emotional closeness, communication, shared activities, unity, and conflict resolution. Scores were standardized on a 10-point scale, with higher scores indicating stronger perceived family support. Family support scores were categorized into low, moderate and high support based on percentiles.

Mental well-being: Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9), while anxiety was measured using the Generalized Anxiety Disorder-7 (GAD-7). Standard cut-off scores were used to classify symptom severity.

ART adherence: ART adherence was assessed using the Wilson 3-item adherence scale and the Morisky Medication Adherence Scale (MMAS-4). Two adherence measures were used to enhance validity through triangulation. Adherence was categorized as low, moderate, or high based on established scoring guidelines.

Data analysis

Data were analyzed using STRATA 15. Descriptive statistics summarized participant characteristics and outcome variables. Bivariate analyses examined associations between family support and outcomes. Multivariable linear and logistic regression models were used to assess independent associations between family support, mental health outcomes, and ART adherence while adjusting for socio-demographic covariates. Statistical significance was set at $p<0.05$. Multicollinearity was assessed using variance inflation factors. Models were adjusted for age, sex, education, and marital status.

Ethical considerations

Ethical approval was obtained from the Jaramogi Oginga Odinga Teaching and Referral Hospital Ethics Review Committee, Maseno University Graduate School, and the National Commission for Science, Technology and Innovation (NACOSTI). Written informed consent was obtained from all participants prior to enrollment.

RESULTS

Socio-demographic characteristics

A total of 289 young adults living with HIV participated in the study. The mean age was 25.2±3.8 years, and the majority were female (80.3%). Most participants resided in rural areas (79.9%), and nearly half had attained secondary education. Approximately 45% had never married, while 42% were married.

Table 1: Socio-Demographic Characteristics of Young Adolescents and Youth Living with HIV (YALHIV) in Chulaimbo Sub-County

Variable	Categories	Frequency (n)	Percentage (%)
Department	CCC	66	22.8
	PMTCT	87	30.1
	Youth friendly	136	47.1

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Gender	Male	57	19.7
	Female	232	80.3
Religion	Catholic	41	14.2
	Protestant	234	81.0
	Muslim	8	2.8
	Other	6	2.1
Marital Status	Never married	131	45.3
	Married	122	42.2
	Separated/Divorced	17	5.9
	Widowed	11	3.8
	Other	8	2.8
Residence	Urban	19	6.6
	Semi-urban	39	13.5
	Rural	231	79.9
Who do you currently live with?	Both parents	32	11.1
	Father	4	1.4
	Mother	7	2.4
	Guardian/extended family	66	22.8
	Spouse	113	39.1
	Other	67	23.2
What is your highest level of education?	Primary	105	36.33
	Secondary	139	48.1
	College	42	14.53
	University	3	1.04

Variable	Frequency (n)	Mean	Std. Dev.	Min	Max
Respondent Age	289	25.2	3.8	18	31
Household Size	289	4.5	2.1	1	10

Mental health outcomes

Overall, 17.3% of participants reported depressive symptoms alone, 11.8% reported anxiety alone, and 24.2% experienced comorbid depression and anxiety. Moderate to severe symptoms were more common among participants reporting low family support.

Table 2: Mental Health Assessment of the Study Respondents

Depression level¥ (n=289)	Frequency	Percentage
Minimal Depression	52	18.0
Mild Depression	117	40.5
Moderate Depression	76	26.3
Moderately Severe Depression	22	7.6
Severe Depression	22	7.6
General anxiety disorder level* (n=289)		
Minimal Anxiety	94	32.5
Mild Anxiety	110	38.1
Moderate Anxiety	56	19.4
Severe Anxiety	29	10.0

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Co-Morbidities* (n=289)		
No depression or anxiety	154	53.29
Depression only	50	17.3
Anxiety only	15	5.19
Both depression and anxiety	70	24.22

¥ ***Scores (PHQ-9):*** *≤ 4 "None"; 5-9 " Mild Depression"; 10–14 "Moderate Depression"; 15–20 max "Moderately Severe to Severe Depression"*

**** Scores (GAD-7)****: 0-4 "Minimal Anxiety"; 5-9 "Mild Anxiety"; 10-14 "Moderate Anxiety"; 15-max "Severe Anxiety"*

ART adherence

ART adherence was generally high. Based on the Wilson scale, 88.9% of participants demonstrated good or excellent adherence. Using the MMAS-4, 48.4% had high adherence, 41.5% moderate adherence, and 10.0% low adherence.

Table 3: Wilson 3-Items Treatment Adherence Scoring

Wilson 3-Item Treatment Adherence Status	**Categories**	**Frequency (n)**	**Percentage (%)**
	Poor Adherence	23	8.0
	Moderate Adherence	9	3.1
	Good Adherence	104	36.0
	Excellent Adherence	153	52.9

Association between family support, mental health, and adherence

Higher family support was significantly associated with lower depression and anxiety scores (β = −0.69, 95% CI −1.12 to −0.26, p=0.002). Participants reporting moderate family support had significantly higher odds of optimal ART adherence compared with those reporting low support (OR = 9.30, 95% CI 1.78–48.67, p=0.008). Younger age and marital stability were also associated with better adherence outcomes.

Table 4: Socio-Demographic and Household Determinants of Treatment Adherence among People Living with HIV

Treatment Adherence	**Odds Ratio**	**Std. Err.**	**z**	**P>z**	**[95% Conf. Interval]**	
Family Support Levels						
Low	1	(empty)				
Moderate	9.301828	7.85414	2.64	0.008*	1.777638	48.67358
High	1	(omitted)				
Residence						
Semi-urban	1.784253	1.633814	0.63	0.527	0.2964993	10.73715
Rural	6.848759	5.498012	2.4	0.017*	1.420001	33.03202
Age	0.6825627	0.0704683	-3.7	0.000	0.5575243	0.8356439
Household Size	0.6132003	0.1038226	-2.89	0.004*	0.4400308	0.8545187
Religion	0.2599994	0.116593	-3	0.003*	0.1079601	0.6261544
Marital Status	3.434671	1.797838	2.36	0.018*	1.231215	9.581568
Living Arrangement	1.211402	0.2170535	1.07	0.284	0.8526559	1.721086

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Education Level	1.679893	0.7674177	1.14	0.256	0.6861689	4.112747
_cons	34124.94	103691.6	3.44	0.001	88.43457	1.32e+07

DISCUSSION

This study examined the association between family support and antiretroviral therapy (ART) adherence among young adults living with HIV in Western Kenya. The findings demonstrate that higher levels of perceived family support were significantly associated with better ART adherence. Young adults who reported moderate to high family support were more likely to achieve good or excellent adherence compared to those with low family support. These findings align with existing evidence showing that psychosocial support plays an important role in improving treatment adherence among people living with HIV[8]. In addition, a substantial proportion of participants experienced symptoms of depression and anxiety, with comorbid mental health conditions being particularly common. Mental health disorders among people living with HIV are widely recognized as major contributors to poor treatment outcomes, including suboptimal ART adherence[6]. Importantly, higher family support in this study was associated with lower levels of depressive and anxiety symptoms, suggesting that family support may have a protective effect on both mental health and adherence behaviors among young adults living with HIV.

The findings of this study are consistent with previous research demonstrating the positive influence of family and social support on ART adherence among people living with HIV [5, 7, 8]. Prior studies conducted in sub-Saharan Africa have shown that emotional and practical support from family members improves medication-taking behavior, clinic attendance, and viral suppression outcomes[7]. Similar associations between family support and reduced psychological distress have been reported among adolescents and young adults living with HIV, where supportive family environments have been linked to lower levels of depression and anxiety[9, 10]. However, some studies have emphasized peer or partner support over family involvement, particularly among older adults and key populations[11, 12, 13].The present study adds to the literature by highlighting the continued importance of family support during young adulthood, a transitional period often characterized by increasing independence but ongoing reliance on family systems[14].

The findings have important implications for HIV care and treatment programs targeting young adults. Integrating family-centered approaches into HIV care may enhance ART adherence and mental health outcomes among this population. Previous programmatic evidence suggests that family engagement interventions, including caregiver education and family counseling, enhance adherence and retention in care[8, 10]. HIV programs should consider routinely assessing levels of family support during clinic visits and incorporating family engagement strategies, such as caregiver education, family counseling, and disclosure support. Additionally, the high prevalence of depression and anxiety underscores the need for routine mental health screening and linkage to psychosocial services within HIV care settings. Strengthening integration and collaborations between HIV services and mental health programs may help address the interconnected challenges of psychological distress and ART non-adherence among young adults living with HIV[16, 17].

Strengths and limitations

This study used validated tools to assess mental health and ART adherence and included a relatively large sample from a high HIV burden setting. However, the cross-sectional design limits causal inference, and self-reported measures may be subject to recall and social desirability bias. Findings may not be generalizable beyond similar rural high-burden settings.

CONCLUSION

Family support is a key protective factor for mental well-being and ART adherence among young adults living with HIV. Integrating family-centered approaches and mental health services into HIV care programs may improve treatment outcomes and enhance the overall well-being of young adults in high-burden settings. HIV

programs should consider integrating family-based psychosocial interventions alongside routine mental health screening to improve adherence outcomes among young adults.

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