

Optimizing Adherence: Social Support and Inclusion in HIV Counseling for High Viral Load Patients in Abuja, Nigeria

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Background: Social support is generally defined as "the perception or experience that one is loved and cared for by others, esteemed and valued, and part of a social network of mutual assistance and obligation. This study examines the level of social support among high viral load HIV seropositive patients in EAC.

Methods: This study is a cross-sectional descriptive study that determine the level of social support among high viral load HIV seropositive patients enrolled in EAC in 063 Nigerian Airforce Hospital, Garki 1 Abuja, Nigeria. Data for this study was collected through a face-to-face interview by administering a structured questionnaire to both HIV clients enrolled in EAC and those that were not to compare the impact of social supports on ART adherence among the HIV clients.

Results: Based on this study's findings majority of respondents, 78.7%, 83.5, 74.7%, and 90.5%, disclosed their HIV status to family, were on three years on ART, and have been on EAC and have TB, respectively. However, the majority did not achieve viral load suppression. Also, almost all clients (87.2%) enrolled for EAC due to poor adherence. Based on the three-factor analysis of social support in this study, both items 3 and 10 contributed 60.6% each to the total variance of the SS. Item 2 contributed 67.2% of the total variance of esteem, and item 6 contributed 67.8% of the total self-esteem variance. The overall scale has a high correlation with the sub-scales "Esteem" and "Self-development" ($r= 0.877$ and 0.910 respectively) and a medium correlation with the sub-scale "Belonging" ($r= 0.579$). Furthermore, the overall scale for internal consistency for the three factors was 0.862 , while the sub-scale "Belonging" was 0.334 , the sub-scale "Esteem" was 0.741 , and the sub-scale "Self-development" was 0.834 . Most respondents with the highest social support were male (94.2%), likewise, those who disclosed their HIV status to their family (92.3%). The level of perceived belonging (3.80 ± 0.87), esteem (3.75 ± 0.82), and self-development (3.58 ± 0.75) of PLWHIV included in EAC was significantly lower than those who were not ($P<0.05$).

Conclusion: Efforts should be made to increase social support and ART adherence through EAC among PLWHA.

Keywords: antiretroviral therapy, viral load, social support, enhanced adherence counselling

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Introduction

Enhanced Adherence Counseling (EAC) is a structured support program that utilizes implementation tools such as a session guide, patient file, and register to engage virally unsuppressed patients in three monthly sessions.¹ EAC is done to investigate the obstacles to adherence and, in collaboration with the patients, develop strategies to overcome them with the goal of suppressing the disease.¹ Following the completion of EAC, the patient is scheduled for a follow-up viral load testing at the end of the fourth month of treatment. The viral load (described as the number of HIV RNA copies per millilitre of blood) in people living with HIV is a direct measure of viral replication.² Social support is generally defined as "the perception or experience that one is loved and cared for by others, esteemed and valued, and part of a social network of mutual assistance and obligations."³ Conceptualizations of social support have also focused on the source of support, which can vary from family, spouse, friend, coworkers, doctor, and community ties/affiliations.⁴ Higher viral loads are associated with a greater decline in CD4 cell count, which increases the likelihood of contracting an opportunistic infection.⁵ It is critical to reduce the viral load in PLHIV (People Living with HIV) to less than 1000 copies/ml of blood (referred to as "viral suppression") to reduce morbidity, death, and transmission.⁶ Antiretroviral therapy (ART) prevents HIV from replicating, transforming the disease from a fatal infection to a manageable chronic illness.⁵ Currently, the World Health Organization (WHO) recommends periodic evaluation of viral loads (at least once a year) in all PLHIV on ART and the achievement of viral load suppression in those with high plasma viral loads (>1000 copies/ml).⁵ Poor adherence to ART is the most common cause of high viral load, and WHO advises EAC to address this issue.⁷ Other typical causes of high viral load include medication resistance, malabsorption, drug-drug interactions, and drug-associated adverse effects.⁸ Resolving these causes may necessitate a change in the

antiretroviral therapy regimen.⁸ If the viral load is high, the World Health Organization recommends performing an EAC, followed by a second/repeat viral load test after three months.² If the viral load levels remain high, it is assumed that virological treatment has failed, and the patient should be switched to a different ART regimen.² Studies have demonstrated that EAC can result in viral suppression in more than 70% of patients with high initial viral levels.^{9,10} According to the WHO guidelines, Patient whose viral load (VL) are not suppressed at re-testing after undergoing the EAC session is categorized as having "virologic failure" due to likely drug resistance and are recommended to be moved to second- or third-line therapy.¹¹ Since poor adherence is the most prevalent cause of treatment failure, the WHO recommends three to six months of enhanced adherence counseling for individuals with a high viral load count before diagnosing first-line treatment failure.¹²⁻¹⁴

Furthermore, given that HIV/AIDS is a chronic illness requiring long-term care, constant social support from family, peers, and communities, among others, is essential for maintaining adherence to ART.^{15,16} Spouse support and support groups are critical for HIV medication adherence and viral load suppression. Still, social support can fail when family members choose to stigmatize and discriminate against victims, as the stigma has been demonstrated to be a barrier to adherence to ART.¹⁷ It is believed that social support can be employed positively or adversely.¹⁸ Social support has been associated with enhanced medication adherence, quality of life, and viral load suppression in HIV-positive patients receiving ART in a variety of settings, most notably in Sub-Saharan Africa, where 90 percent of ART is prescribed.¹⁹⁻²¹ Effective social support for medication adherence could involve a variety of approaches. For example, emotional support promotes a favourable state of mind and directly increases self-efficacy to adhere.^{22,23} In 2016, the Nigerian National Guideline for HIV Prevention and Treatment suggested that all

patients starting ART have their viral load measured after six months and then annually for those who have achieved viral suppression.^{1,24} This study examines the level of social support among high viral load HIV seropositive patients in EAC.

Methodology

This study is a cross-sectional descriptive study to determine the level of social support among high viral load HIV seropositive patients enrolled in EAC in 063 Nigerian Airforce Hospital, Garki 1 Abuja, Nigeria. Data for this study was collected through a face-to-face interview by administering a structured questionnaire to both HIV clients enrolled in EAC and those that were not to compare the impact of social supports on ART adherence among the HIV clients.

Study location

The Federal Capital Territory (FCT), also known as Abuja Federal Capital Territory, was established as an administrative territory in central Nigeria in 1976. The new capital city was built and developed on the grass-covered Chukuku Hills in 1980. The area is located north of the Niger and Benue Rivers' confluence. It is bordered on the west and north-west by Niger, on the northeast by Kaduna, on the east and south by Nasarawa, and on the southwest by Kogi.²⁵ Additionally, Abuja is about 1810 feet (360 meters) above sea level and has a cooler climate and lower humidity than Lagos. The Federal Capital Territory consists of 6 different area Councils, namely: Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje and Kwali. These six councils cover a total land area of approximately 7,290 km².²⁶ According to world population review statistics, Abuja has a population of 3 464,123.²⁷ According to the United Nations, Abuja increased by 139.7% between 2000 and 2010, making it the fastest-growing city.²⁸ As of 2015, the city is growing at a rate of at least 35% annually, maintaining its status as the fastest-growing metropolis on the African continent and one of the fastest-growing cities globally.²⁹ As of

2016, Abuja's metropolitan region was predicted to have six million people, ranking it second only to Lagos as Nigeria's most populated metro area. According to the national agency for the control of AIDS (NACA), Abuja has a total HIV/AIDS prevalence rate of 1.5%.³⁰

The study population comprised HIV seropositive clients initiated on ART in 063 Nigerian Airforce Hospital, Garki 1 Abuja. Both HIV clients on EAC and those who were not were used to form the study population. Currently, there are 2,222 clients in ART in both facilities from 2019 to 2020.

Study population

The study population comprised HIV seropositive clients initiated on ART in 063 Nigerian Airforce Hospital, Garki 1 Abuja, Nigeria. Both HIV clients on EAC and those who were not, were used to form the study population.

Sample size calculation

The prevalence of viral load failure at six months on ART in the north-central was 36%.³¹ The sample size was, however, calculated using the formula below;

$$n = \frac{Z^2 pq}{d^2}$$

Z = Standard normal deviate of alpha set at 1.96 corresponding to 95% confidence level.

p = the prevalence of viral load failure at 6months on ART in north central, Nigeria.

p = 0.36

d =level of precision =5% =0.05

q = 0.64

$$n = \frac{1.96^2 \times 0.36 \times 0.64}{0.05^2}; n = \frac{0.8851}{0.0025}; n = 354.04$$

Therefore, the minimum sample size is 354. This formula was used because the recent prevalence of viral load failure in north-central Nigeria is known.

Data collection method

Data was collected through a structured questionnaire. Two trained research assistants administered the structured questionnaire to HIV clients to collect socio-support data. The

research tool for this study was adapted from the questionnaire used by Cortes et al.³² on "development of the scale of perceived social support in HIV (PSS-HIV)". A pilot test was conducted using 10% (35) of the total respondents, and necessary corrections were made before administering the final version of the questionnaire. The questionnaire contains 23 items which were divided into two sections. The first section contains nine open and closed-ended questions and 14 Likert scale questions used to determine the perceived social supports for PLHIV in Abuja.

Inclusion criteria

All clients on ART, aged 10 years and above, attending the HIV/AIDS clinics of the 063 Nigerian Airforce Hospital, Garki 1 Abuja, Nigeria were included in the interviews.

Exclusion criteria

Clients below 10 years were not included in the interview. Also, clients that are very ill and patients with any mental disorder were excluded as they may be unable to withstand the interview's stress.

Data analysis

The data collected were exported into IBM-SPSS version 28.0 data analysis. Descriptive statistics were performed, presenting outcomes as frequency tables, percentages, pie, and bar charts. Pearson chi-square test was used to compare variable proportions. factor analysis and Cronbach test were performed to determine the reliability, validity, and internal consistency., setting p-values below 0.05 as significant. For the measurement scale, fourteen items were used to address the support quality. Items were scored on a Likert scale from 1-5, from "strongly disagree" to "strongly agree". For most items, 3 indicates neutral, but a "neutral" answer to items 1, 2, 3, 7, 9, 10, and 12 indicates a lack of SS (see items in Appendix 1). For instance, a "neither agree nor disagree" answer to the item "I feel emotionally sheltered by my family" is evidence of a lack of shelter expected from the family. In

these cases, a neutral answer was assigned 2 points, the same as "disagree".³³

Ethical approval

The research and ethics committee of the ministry of health Abuja approved this study. Permission was also secured from the hospitals from which the participants were recruited. There were no physical or psychological hazards.

Results

Demographic profiles of the study respondent

Table 1 shows data on various demographic characteristics of respondents. The parameters listed include gender, age category, marital status, education, occupation, and religion. Out of 348 respondents, 155 (44.5%) were males, and 193 (55.5%) were females. Similarly, 49 (14.1%) were in the age range of 10-30 years, 238 (68.4%) were in the age range of 31-50 years, and 61 (17.5%) were above 50 years of age. The marital status parameter shows that 102 (29.3%) were single, 204 (58.6%) were married, and 42 (12.0%) were divorced or widowed.

Table 1. Demographic profiles of the study participant

Parameter	Frequency	Percent
Gender		
Male	155	44.5
Female	193	55.5
Age category		
10 - 30 years	49	14.1
31 - 50 years	238	68.4
Above 50	61	17.5
Marital status		
Single	102	29.3
Married	204	58.6
Divorced/Widowed	42	12.0
Education		
No formal education	28	8.0
Primary	90	25.9
Secondary	98	28.2
Tertiary	132	37.9

Out of 348 respondents, 28 (8.0%) had no formal education, 90 (24.9%) had primary education, 98 (28.1%) had secondary education,

and 132 (31.9%) had tertiary education. Also, 152 (43.7%) were civil servants, 145 (41.7%) were traders, and 51 (14.7%) were artisans. A high proportion of the respondents were Christians, 284 (81.6%), followed by 62 (17.8%) Muslims, and 2 (0.6%) were traditional. Finally, 278 (79.9%) were currently living with family, and 70 (20.1%) were not.

Respondents' HIV disclosure, ART and viral load status

Table 2 shows the respondent's HIV disclosure, ART and viral load status. A high proportion of participants have disclosed their HIV status to their family (78.7%). Among the participants, 83.5% have been on ART for over three years. Additionally, 58.9% did not experience unsuppressed viral load, 74.7% have not been on EAC, and 90.5% have no history of tuberculosis.

Table 2. Respondents' HIV disclosure, ART and viral load status

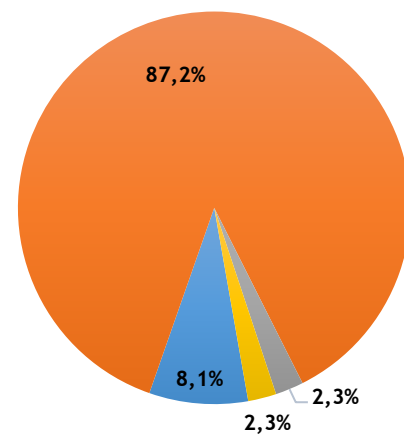
Parameter	Frequency	Percent
Occupation		
Civil servant	152	43.7
Trader	145	41.7
Artisan	51	14.7
Religion		
Christianity	284	81.6
Islam	62	17.8
Traditional	2	0.6
Currently living with family		
Yes	278	79.9
No	70	20.1

Reason for inclusion in EAS

As shown in Figure 1, most clients (87.2%) were enrolled in EAC due to poor adherence to ART, 81. % lacked adequate knowledge of ART, while 2.3% were enrolled due to side effects and stress.

Factor analysis to determine the reliability of social support variables

In the SS-PLWHIV, three factors were identified (Belonging, Esteem, and Self-development). A principal axis factoring was conducted, setting the Kaiser criterion (Eigenvalue as 1) to determine the number of relevant factors. All the items in the three



■ No adequate knowledge of ART ■ Poor adherence ■ Side effects ■ Stress

factors yielded loadings higher than 0.4. The contribution of each factor is shown in Table **Figure 1. Reasons for inclusion in EAC**

3. Both items 3 and 10 contributed 60.6% each to the total variance of the SS. Item 2 contributed 67.2% of the total variance of esteem, and item 6 contributed 67.8% of the total self-esteem variance. No item eliminations are based on these criteria. The component values closer to one show the high reliability of the items for measuring SS-PLWHIV.

Table 3. Factor analysis pattern matrix for PLWHIV

Factor	Item	Components	% Contribution
Belonging			
	10	0.778	60.6%
	3	0.778	60.6%
Esteem			
	2	0.820	67.2%
	9	0.749	56.1%
	7	0.737	54.3%
	1	0.706	49.8%
Self-development			
	6	0.823	67.8%
	8	0.814	66.3%
	12	0.728	53.0%
	11	0.698	48.8%
	5	0.692	47.8%

Internal consistency of the SS-PLWHIV variables

Table 4 shows the internal consistency of SS for PLWHIV as measured by Cronbach's alpha.

The overall scale has an alpha of 0.862, the sub-scale "Belonging" has an alpha of 0.334, the sub-scale "Esteem" has an alpha of 0.741, and the sub-scale "Self-development" has an alpha of 0.834. These values indicate that the overall scale has good internal consistency and the sub-scale "Self-development" has excellent internal consistency. However, the sub-scale "Belonging" has a low internal consistency.

Table 4. Cronbach a SS-HIV on PLWHIV

Overall	Belonging	Esteem	Self-development
0.862	0.334	0.741	0.834

Table 5 shows the inter-correlations of the SS for PLHIV sub-scales. Each sub-scale score was correlated with the other sub-scales and the overall scale. The overall scale has a high correlation with the sub-scales "Esteem" and "Self-development" ($r = 0.877$ and 0.910 respectively) and a medium correlation with the sub-scale "Belonging" ($r = 0.579$). The sub-scale "Belonging" has a medium correlation with the sub-scales "Esteem" and "Self-development" ($r = 0.449$ and 0.336 respectively) and a high correlation with the overall scale ($r = 0.579$). The sub-scale "Esteem" has a high correlation with the overall scale and the sub-scale "Self-development" ($r = 0.877$ and 0.653 respectively) and a medium correlation with the sub-scale "Belonging" ($r = 0.449$). The sub-scale "Self-development" has a high correlation with the overall scale and the sub-scale "Esteem" ($r = 0.910$ and 0.653 respectively) and a medium correlation with the sub-scale "Belonging" ($r = 0.336$).

Factors associated with social support among PLWHIV

As shown in Table 6, the overall social support among the respondents was 89.9%. Only gender was significantly associated with social support ($p = 0.018$). The level of social support was significantly higher among males (94.2%) than females. The level of social support was above

80% in all age groups and was not statistically different ($P > 0.05$). HIV clients that were not educated had the least social support (78.6%) compared to others with more than 90% levels of SS. Social support for PLWHIV was not significantly associated with marital status, occupation, and religion ($P > 0.05$).

As shown in Table 7, a higher proportion of PLWHIV living with their families had high SS (90.3%) than 88.6% of those not living with their families. However, the difference was not statistically significant ($P > 0.05$). HIV status disclosure was significantly associated with SS of PLWHIV as a higher proportion of those who disclosed (92.3%) had high SS than those who did not (81.1%), $P < 0.05$. Other factors such as length on ART, previous unsuppressed viral load, previous inclusion on EAC, and HIV-TB

Table 5. Cronbach a SS-HIV on PLWHIV

	Overall	Belonging	Esteem	Self-development
Overall	1	0.579**	0.877**	0.910**
Belonging	0.579**	1	0.449**	0.336**
Esteem	0.877**	0.449**	1	0.653**
Self-development	0.910**	0.336**	0.653**	1

**Correlation is significant at the 0.01 level (2-tailed).

coinfection were not significantly associated with SS for PLWHIV.

Table 8 shows a significant association between SS of PLWHIV and inclusion in EAC. The level of perceived belonging of PLWHIV included in EAC (3.80 ± 0.87) was significantly lower than those who were not ($P < 0.05$). Similarly, those PLWHIV included in EAC exhibited a lower level of esteem (3.75 ± 0.82) and self-development (3.58 ± 0.75) than those who were not enrolled in EAC (4.04 ± 0.755 and 4.00 ± 0.80 , respectively), $p < 0.05$.

Discussion

This study examines the level of social support among high viral load HIV seropositive patients in EAC in Abuja. This study's findings show that a significant proportion of the HIV client disclosed their HIV status to their family members, have spent three years receiving

Table 6. Demographic factors associated with SS among PLWHIV

	High SS n (%)	Poor SS n (%)	X ²	P-value
Overall	313 (89.9)	35 (10.1)	-	-
Gender				
Male	146 (94.2)	9 (5.8)	5.583	0.018*
Female	167 (86.5)	26 (13.5)		
Age category				
10-30	42 (85.7)	7 (14.3)	3.588	0.166
31 - 50	219 (92.0)	19 (8.0)		
50 & above	52 (85.2)	35 (10.1)		
Education				
No formal education	22 (78.6)	6 (21.4)	4.533	0.209
Primary	82 (91.1)	8 (8.9)		
Secondary	90 (91.8)	8 (8.2)		
Tertiary	119 (90.2)	13 (9.8)		
Marital status				
Single	94 (92.2)	8 (7.8)	4.430	0.109
Married	185 (90.7)	19 (9.3)		
Divorced/Widowed	34 (81.0)	8 (19.0)		
Occupation				
Civil servant	132 (86.8)	20 (13.2)	3.220	0.200
Trader	135 (93.1)	10 (6.9)		
Artisan	46 (90.2)	5 (9.8)		
Religion				
Christianity	258 (90.8)	26 (9.2)	1.842	0.398
Islam	53 (85.5)	9 (14.5)		
Traditional	2 (100.0)	0 (0.0)		

*Significant at p<0.05

Table 7. HIV disclosure, ART and viral load status associated with SS among PLWHIV

	High SS n (%)	Poor SS n (%)	X ²	P-value
Living with family				
Yes	251 (90.3)	27 (9.7)	0.182	0.670
No	62 (88.6)	8 (11.4)		
HIV status disclosure				
Yes	253 (92.3)	21 (7.7)	8.159	0.004*
No	60 (81.1)	14 (18.9)		
Length of ART				
1 year	21 (91.3)	2 (8.7)	2.359	0.307
2 years	34 (97.1)	1 (2.9)		
3 years	258 (89.0)	32 (11.0)		
Ever experienced an unsuppressed viral load				
Yes	124 (86.7)	19 (13.3)	2.798	0.094
No	189 (92.2)	16 (7.8)		
Ever been placed on EAC				
Yes	75 (85.2)	13 (14.8)	2.895	0.089
No	238 (91.5)	22 (8.5)		
Have TB with HIV				
Yes	29 (87.9)	4 (12.1)	0.172	0.679
No	284 (90.2)	31 (9.8)		

Table 8. T-test showing the association of SS of PLWHIV with EAC enrolment

Social support factors	Ever been enrolled in EAC (N±SD)		T-test	P-value
	Yes n = 88	No n = 260		
Belonging	3.80 ± 0.87	4.04 ± 0.755	2.524	0.012*
Esteem	3.75 ± 0.82	4.00 ± 0.80	2.133	0.020*
Self-development	3.58 ± 0.75	3.80 ± 0.75	2.387	0.018*
Overall SS	3.67 ± 0.64	3.89 ± 0.65	2.764	0.006*

*Significant at $p < 0.05$

ART, have previously been placed on EAC, and have tuberculosis. The possible reason for this could be that disclosing one's HIV status to family members can have several benefits. It can help the individual form a support system, reduce feelings of isolation and stigma, and improve overall mental and emotional well-being.³⁴ Disclosure within a family environment is important to facilitate communication about HIV between family members.³⁵ Additionally, if the individual requires assistance with managing their condition, being open about their status can lead to better cooperation and understanding from their loved ones.

Also, a lengthy stay on ART can positively impact individuals living with HIV. One of the most significant benefits is that ART can help suppress the virus and prevent disease progression. This can improve the immune system and reduce the risk of HIV-related illnesses and complications, improving overall health.³⁶ Another important impact is that a lengthy stay on ART can also prevent virus transmission to others. However, despite all this, most of the HIV clients in this study did not experience viral load suppression. This could be due to poor ART adherence. Poor adherence to antiretrovirals therapy increases plasma viral load, which has been proven to be a significant risk factor for the formation of drug-resistant HIV strains, increasing the infectivity rate.^{37,38} The findings of this study were consistent with a study by Anne et al.³⁹ Therefore, it is recommended that HIV patients adhere to ART as prescribed by a healthcare provider. Also, there is need for HIV patient to regularly attend follow-up appointments with a healthcare provider to monitor viral load and assess

the effectiveness of ART. Avoid missing doses of ART or interrupting treatment, as this can lead to the development of drug resistance and a higher viral load.

Based on the result of this study, a significant proportion of the participants (87.2%) were enrolled in EAC due to their poor adherence to ART. This was supported by a study carried out by Diress et al.⁴⁰ Poor adherence to antiretroviral therapy is the most common cause of high viral load, and the WHO advises EAC to address this issue.⁷ Based on several literature findings, the possible cause of poor adherence to ART among HIV patients could be due to some socio-economic variables such as unemployment, poverty, food insecurity and transport costs.^{41,42} Also, adherence to ART is negatively impacted by a number of social factors, including but not limited to stigma and prejudice, disclosure, and a lack of social support.^{21,43} It is believed that a lack of human resources in developing countries like Nigeran causes congestion and long waiting periods in ART centres, which discourages many people who use ART from receiving treatment.⁴⁴ Poor healthcare provider practices, including inadequate counselling sessions, abuse of patient confidentiality, lack of adherence follow-ups and drug stock-outs, have been demonstrated as major health systems barriers to adherence.^{45,46} Another well-known reason for poor adherence is the complicated nature of ART regimens with their heavy dosage of tablets and tight dietary and hydration requirements. It is widely known that patient-related issues such as forgetfulness, side effects, feeling better, distrust, and misunderstandings surrounding ARV therapy prohibit many patients from following

treatment. This is especially true for those patients who have HIV.⁴⁷⁻⁴⁹

Furthermore, based on the findings of this study, the contributing factor analysis to determine the reliability of social support among PLWHA were belonging, esteem, and self-development. The findings show that participants who perceived that they could freely express their opinion to their partner or group of friends and those who stated that if something is for their own good, their family will support them in items 3 and 10, respectively, contributed 60.6% to the social support belonging factor. Self-belonging, or a person's sense of self-worth and acceptance, can influence the level of social support they receive as someone living with HIV. If a person has a strong sense of self-belonging, they may be more likely to reach out for support and be more open about their HIV status, potentially leading to stronger relationships and a greater support network. On the other hand, if a person lacks self-belonging, they may face stigma and discrimination, causing them to isolate themselves and potentially receive less social support.

Also, the findings of this study showed that participants who perceived that they could count on their closest friends or partner when they needed to be listened to in item 2 contributed 67.2% of the total variance for esteem. Self-esteem can affect social support for people living with HIV by influencing their ability to reach out for help and engage with support networks. High self-esteem may lead to greater confidence in seeking out and accepting support, while low self-esteem may cause feelings of shame or stigma, making it harder to reach out. The quality of support received can also impact self-esteem, with positive experiences leading to increased self-worth and negative experiences potentially decreasing self-esteem.

Additionally, the findings of this study show that participants who think that their friends gave them the possibilities for growth in item 6 contributed 67.8% of the total self-development variance. Self-development can

influence social support for people living with HIV by affecting one's ability to cope with the condition's physical, emotional, and social impacts. Self-development can lead to increased resilience, better communication skills, and a positive outlook, all of which can facilitate the formation and maintenance of supportive relationships. On the other hand, a lack of self-development can lead to negative coping mechanisms, poor communication, and decreased ability to form meaningful connections, all of which can undermine the potential for social support. Overall, self-development plays a crucial role in enhancing the quality and availability of social support for individuals living with HIV.

The study findings show that the overall internal consistency of social support for PLWHA was 0.862. "Self-development had the highest internal consistency while the sub-scale "Belonging" had a low internal consistency. The findings show that the overall scale and sub-scale had good internal consistency. Self-development, which happens to have the highest internal consistency for social support in this study, could influence the internal consistency of social support for PLWHA by building their confidence and self-esteem, improving their communication skills, expanding their social network of support, increasing resilience, and enhance an individual's ability to manage their HIV status.

Additionally, this study findings showed that all three factors sub-scale were positively correlated. Those that have high sense of belonging also have high esteem and self-development. Overall, social support enhances sense of belonging, self-esteem and self-development of the patients in this study. This is an important finding, as these factors can play a crucial role in a client's overall well-being and ability to adhere to their treatment plan which could help suppress their viral load.

This study's finding also showed that the level of social support was higher among male respondents than female respondents. Social support for PLWHIV was not significantly associated with marital status, occupation,

and religion ($P > 0.05$). The findings of this result align with the study carried out by Berhe et al.⁵⁰, Oppong et al.⁵¹, and Deichert et al.⁵². A plausible explanation may be due to less stigmatization among men than women, particularly in the family and society. Also, another reason could be that low self-esteem may have played a role in the extent to which women were able to perceive and receive support efforts from friends and families. Self-esteem has been shown to influence interpersonal relationships because individuals' feelings of self-worth have a bearing on both their beliefs and social behaviours.⁵³ This means that low self-esteem may damage interpersonal relationships because it promotes a self-protective interpersonal relationship. In other words, PLWHAs feel socially isolated and have negative perceptions of their social relationships. This process may be fueled by internalized HIV-related stigma and discrimination, among PLWHA.⁵⁴ Social support is instrumental in determining the psychological well-being of men and women living with HIV. This should be a wake-up call to critical stakeholders to enhance the uptake of EAC among HIV patients. As the counselling session will help patients build up patient self-esteem and also their perception to social support. This reflects that we should pay more attention to females living with HIV/AIDS and encourage them to participate in various forms of activities and share their inner thoughts and feelings with others. However the findings of this study result was contrary to the findings of studies by Xiao et al.⁵⁵ and Li et al.⁵⁶, who found that females received more social support than males. In their study, they believed that it could be because females are more inclined to share their unpleasant experiences with their relatives, friends or colleagues to reduce psychological pressure. Men are more likely to choose to endure setbacks or face difficulties, hoping to overcome and reduce their psychological burden through their own efforts.⁵⁶

Based on the findings of this study, living with family, HIV status disclosure, client length on ART, ever experienced unsuppressed viral

load, ever being placed on EAC, and having TB with HIV were all factors associated with social support among PLWHA. However, only HIV status disclosure was statistically associated with social support among PLWHA. This showed that the majority of participants whose HIV status were disclosed had high social support. These findings were supported by a study carried out by Cama et al.⁵⁷ A possible explanation for this could be that revealing one's HIV status may help other people to provide some emotional, informational and psychological support to HIV patients. Patient disclosure of HIV status will enable the social circle to know the problem and act as a support system to the patient, which in turn helps to improve ART adherence. HIV status disclosure, or the decision to reveal one's HIV-positive status to others, can greatly impact the level of social support a person living with HIV receives. If people are open about their status, they may receive support from loved ones, friends, and healthcare providers. However, if they fear stigma and discrimination, they may choose to keep their status private, potentially limiting their support network. Additionally, not disclosing their status may lead to isolation and decreased access to healthcare resources. Ultimately, the decision to disclose one's HIV status is a personal one and can have significant implications for a person's social support and well-being. However, these findings contrast with the outcome of studies conducted in Addis Ababa in, Ethiopia, by Dessalegn et al.⁵⁸, and Tehran University in Iran by Shushtari et al.⁵⁹ and in Southern Ethiopia by Berhe et al.⁵⁰

The result of this study shows that those with lower sense of belonging, esteem and self-development were more included in EAC. This indicate that clients included in EAC had poor SS. Also, these findings shows that those with social support are less likely to be enrolled in EAC, meaning that social support may help adherence or treatment and hence those with social support are less likely to have high viral load than those without social support.

Conclusion

Based on the finding of this study, a significant proportion of the HIV client disclosed their HIV status to their family members, have spent three years receiving ART, have previously been placed on EAC, and have tuberculosis. However, the majority did not achieve viral load suppression. This shows that their adherence level to ART is poor. Also, this study found that the majority of participants enrolled for EAC due to poor adherence. The study findings also found that all three factor analyses contributed to social support and had a good internal consistency. Social support in this study enhances sense of belonging, self-esteem and self-development of the patients. Furthermore, in this study, males received higher social support than female, likewise, those that disclosed their HIV status and those

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7. Overall, this study found that that PLWHIV without adequate social supports are more likely to experience high viral load, and hence be should be included in EAC
8. Therefore, it is recommended that efforts should be made to increase the level of social support for HIV clients, especially among females. Also, support programmes and interventions aimed at improving adherence to ART should be designed and implemented. This may include medication reminders, counselling, and peer support groups. Additionally, regular monitoring of clients' adherence to ART should be implemented to identify any issues and provide early intervention. This can help to ensure that clients remain on treatment and achieve viral load suppression.

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