

Research Article

‘Staying On The Pills’: Multilevel Barriers, Facilitators, And A Provider-Integrated Strategy To Improve Art Adherence In Addis Ababa, Ethiopia A Qualitative Study.

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Abstract

Background: Antiretroviral therapy (ART) adherence is crucial for viral suppression, but evidence shows persistent challenges in Ethiopia. This study explored barriers, facilitators, and strategies for adherence from multiple stakeholders' perspectives.

Methods: A qualitative study was conducted in three public hospitals in Addis Ababa, Ethiopia. Data were collected through 44 in-depth interviews (IDIs) and 2 focus group discussions (FGDs) with people living with HIV (PLHIV), peer educators, healthcare providers, family/social supporters, and policymakers. Participants were selected using purposive and quota sampling. Audio recordings were transcribed, translated, and analyzed thematically in ATLAS.ti 8. Ethical approval was obtained from the University of South Africa (UNISA) and the Addis Ababa Regional Health Bureau (AARHB).

Results: Sociodemographic details showed diversity across sex, age, and roles (see Table 1). Three thematic domains emerged: (1) Individual-level barriers, side effects, forgetfulness, mental health, competing priorities, substance use; (2) Interpersonal and sociocultural factors, stigma, non-disclosure, family dynamics, faith-healing pressures; and (3) Health-system factors, counseling quality, provider continuity, refill logistics. Facilitators included strong patient-provider relationships, tailored counseling across cadres, supporter engagement, and reminder tools. A four-step provider-integrated strategy was synthesized: barrier screening, role-specific counseling, engagement of supporters, and low-cost reminder/follow-up mechanisms.

Conclusions: ART adherence in Ethiopia is shaped by multilevel barriers. Our proposed provider-integrated strategy is practical, low-cost, and testable in routine care.

Keywords: ART adherence; HIV/AIDS; qualitative research; Addis Ababa; stigma; health services.

BACKGROUND

Adherence to ART is essential for viral suppression and patient wellbeing. Although Ethiopia shows relatively high adherence rates in quantitative studies, underlying reasons for missed doses and disengagement remain underexplored, especially in urban public settings. Previous quantitative work from this cohort has been published separately. This study unpacks qualitative insights from PLHIV and stakeholders to propose actionable, context-sensitive strategies, bridging a critical gap in implementation research.

Studies across sub-Saharan Africa consistently cite stigma, non-disclosure, side effects, and inadequate counseling as

key adherence barriers. Our findings align with these patterns but extend knowledge by specifying **provider roles** and operationalizing them into a structured intervention strategy. Unlike prior studies that often focus on patient perspectives, ours incorporates voices of providers, supporters, and policymakers, offering a comprehensive, systems-level view. Despite major progress in HIV treatment scale-up, ART adherence remains a global challenge [1]. Suboptimal adherence undermines viral suppression, accelerates resistance, and increases morbidity and mortality [2,3]. Studies across sub-Saharan Africa report adherence rates ranging from 60–85% [4–6], often compromised by stigma [7], psychosocial stressors [8], cultural factors [9], and service

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delivery constraints [10].

Globally, WHO estimates show that more than 38 million people are living with HIV, and nearly two-thirds are in sub-Saharan Africa [11]. Ethiopia, with one of the largest ART programs in Africa, reports ART coverage exceeding 75%, yet adherence challenges remain widespread [12]. Studies in Addis Ababa and other regions of Ethiopia have identified multiple adherence barriers, including stigma, religious influences, non-disclosure, mental health issues, and weak health system support [13–17].

Interventions to improve adherence often focus on reminders, peer support, or counseling [18,19]. However, few studies triangulate perspectives from PLHIV, providers, policymakers, and family supporters in order to generate practical strategies suitable for integration into Ethiopia's public health system. Therefore, this study aimed to fill this gap by exploring multilevel barriers and facilitators to ART adherence and by proposing a structured provider-integrated adherence strategy.

METHODS

Aim, design, and setting

This qualitative inquiry was embedded in a mixed-methods doctoral project conducted in three public hospitals in Addis Ababa, selected to capture diverse urban care dynamics.

Study design

A descriptive qualitative study design was used, embedded within a mixed-methods doctoral project.

Study area

The study was conducted in three public hospitals in Addis Ababa, Ethiopia's capital city. These hospitals provide ART services to thousands of PLHIV.

Source population

The source population included PLHIV on ART, peer educators, healthcare providers (doctors, nurses, pharmacists), family/social supporters, and policymakers.

Sampling and participants

Purposive and quota sampling ensured diversity by sex, age, treatment duration, and role. In total, 44 in-depth interviews (IDIs) and 2 focus group discussions (FGDs) were conducted.

Data collection and Procedures

Three FGDs and 44 IDIs were conducted with semi-structured guides covering adherence experiences, barriers, system-related issues, and suggestions. Data were collected from PLHIV, peer educators, healthcare professionals (doctors, nurses, pharmacists), family/supporters, and policymakers

through purposeful and quota sampling to ensure demographic and role variation. Semi-structured guides were used, covering ART experiences, barriers, facilitators, stigma, disclosure, and improvement strategies. Sessions were audio-recorded, transcribed verbatim, and translated into English.

Data analysis

Data were analyzed thematically in ATLAS.ti 8. Deductive codes were developed from literature, while inductive codes emerged from transcripts. Coding was cross-checked by multiple researchers to ensure rigor. Themes were refined via memoing and matrix analyses to compare across groups, with investigator triangulation enhancing credibility.

Trustworthiness

Credibility was ensured through triangulation of data sources and member checking. Dependability and confirmability were enhanced by maintaining audit trails and peer debriefing. Transferability was supported through detailed contextual descriptions.

Ethical approval

Ethical clearance was obtained from the University of South Africa (UNISA) and the Addis Ababa Regional Health Bureau (AARHB). All participants provided written informed consent. Written informed consent was secured from all participants. Transcripts were anonymized, and confidentiality was maintained throughout.

RESULTS

A total of 44 IDIs and 2 FGDs were conducted with PLHIV, providers, supporters, and policymakers.

Individual-level barriers

Participants reported medication side effects, competing responsibilities (e.g., work, childcare), forgetfulness, and mental health issues. Some mentioned substance use episodes (e.g., *khât*, alcohol) undermining adherence.

Interpersonal & sociocultural factors

Non-disclosure stemming from stigma and fear of unintended disclosure was pervasive. Faith healing pressures emerged as a unique theme in this context. Strong adherence was noted where family or social supporters were actively involved.

Health-system influences

Participants valued consistent, respectful counselling. Fragmented service delivery and poor communication eroded trust. The distinct roles of doctors, nurses, and pharmacists in supporting adherence were highlighted. Logistical facilitators included streamlined refill processes and reminder messaging.

Emergent Strategy

A four-step provider-integrated adherence model was developed, coalescing these insights into a structured approach for routine care (as described in Abstract).

Table 1. Sociodemographic characteristics of participants.

Characteristic	IDIs (n=44)	FGDs (n=2, ~12 participants)	Total (N=56)
Sex	26 Female, 18 Male	7 Female, 5 Male	33 Female, 23 Male
Age range (years)	20–55	21–49	20–55
Mean age (years)	34.7 ± 8.6	32.4 ± 7.9	33.8 ± 8.4
Marital status	19 Single, 15 Married, 6 Widowed, 4 Divorced	Mixed	-
Role	28 PLHIV, 6 Peer educators, 5 Health workers, 5 Policymakers	Mostly PLHIV	-

Table 2. Individual-level barriers to ART adherence.

Barrier	Representative Quote (summary)
Side effects of ART	"Sometimes the drugs make me dizzy, I skip doses to feel normal."
Forgetfulness	"I often forget when I travel or get busy."
Substance use	"When drinking alcohol, I forget to take pills."
Depression/mental distress	"When I feel hopeless, I don't care about pills."
Competing priorities/workload	"Work sometimes makes me miss clinic appointments."

Table 3. Interpersonal and sociocultural influences.

Theme	Effect on Adherence
HIV-related stigma	Fear of discrimination prevents open pill-taking
Non-disclosure	Patients hide medication → irregular use
Family support	Positive reinforcement → better adherence
Faith healing pressures	Some abandon ART believing prayer heals
Peer influence	Support groups improved persistence

Table 4. Health-system barriers and facilitators.

Factor	Barrier / Facilitator
Counseling quality	Inconsistent between providers (barrier)
Continuity of providers	Trust improved with same provider (facilitator)
Drug refill logistics	Long waiting times, rigid schedules (barrier)
Reminder tools	SMS/phone calls helped (facilitator)
Provider-patient relationship	Strong bond motivated adherence (facilitator)

Figure 1. Provider-integrated four-step adherence strategy.



DISCUSSION

Key findings and comparison

Our study affirms persistent multilevel barriers to ART adherence found across similar settings, especially stigma, side effects, logistical challenges, and provider, patient relationships. What sets our work apart is the granularity of provider roles and the translation into an actionable strategy with distinct workforce contributions, a novel contribution to HIV implementation literature in LMICs.

Practical implications

Implementing the four-step model can strengthen adherence through feasible, low-cost enhancements in existing care structures. For instance, incorporating brief barrier screening and leveraging pharmacists for reminder tools requires minimal resources but may yield significant adherence gains.

Strengths and limitations

Strengths include multi-stakeholder triangulation, rigorous coding, and methodological transparency. Limitations include the urban, hospital-based sample which may not reflect rural or

community-based dynamics, and reliance on self-reported data. This study identified multilevel barriers to ART adherence in Ethiopia. Individual-level barriers such as side effects, substance use, and forgetfulness echo findings from Kenya [20], Uganda [21], and Nigeria [22]. Stigma and disclosure challenges remain central obstacles, consistent with studies from South Africa [23], Tanzania [24], and Asia [25]. The role of religious and faith-healing pressures, while documented in Uganda [26] and Nigeria [27], appeared particularly strong in the Ethiopian context.

Health system-related issues such as counseling quality and refill logistics also parallel evidence from Malawi [28] and Zambia [29]. However, our study highlights the added importance of provider continuity and trust, which supports findings from a Tanzanian trial [30]. The four-step provider-integrated strategy we propose combines screening, role-specific counseling, supporter engagement, and reminder systems. Such integration aligns with WHO recommendations [31] and implementation studies in Uganda [32] and Mozambique [33].

Overall, these findings underscore the need for multi-pronged, contextually grounded strategies to sustain adherence, moving beyond individual reminders toward system-wide provider-supported models.

CONCLUSION

ART adherence in Ethiopia is shaped by multilevel barriers including individual, sociocultural, and system-level challenges. Our proposed provider-integrated strategy offers a practical and testable approach for strengthening adherence within routine ART services.

Declarations

Ethics approval and consent to participate: Approved by UNISA and AARHB.

Availability of data and materials: Available on request.

Competing interests: None declared.

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REFERENCES

1. Wondie H, Fentahun N, Limaye RJ, Kote M, Girma E. Barriers and facilitators of ART adherence in Hawassat town, Southern Ethiopia: a grounded theory approach. *Ethiop J Health Dev.* 2016;30(2):66–77. African Journals Online
2. Balcha TT, Jeppsson A, Bekele A. Barriers to antiretroviral treatment in Ethiopia: a qualitative study. *J Assoc Nurses AIDS Care.* 2011;22(2):167–75. SAGE Journals
3. Bezabhe WM, Chalmers L, Bereznicki L, Peterson G, Bimirew M, Kassie D. Barriers and facilitators of ART adherence and retention in Amhara region, Ethiopia: a qualitative study. *PLoS One.* 2014;9(5):e97353. PubMed
4. Tolossa T, Wakuma B, Mulisa D, et al. ART adherence among PLHIV in Western Ethiopia. *HIV/AIDS Res Palliat Care.* 2021;13:1149–58. Dove Medical Press
5. Sanjobo N, Frich JC, Fretheim A. Barriers and facilitators to ART adherence in Zambia: a qualitative study. *SAHARA J.* 2008;5(3):136–43. PMC
6. Ncama BP, McInerney PA, Bhengu BR, et al. Social support and medication adherence in HIV in KwaZulu-Natal, South Africa. *Int J Nurs Stud.* 2008;45(12):1757–63. PMC
7. Whetten K, Shirey K, Pence BW, et al. Trauma and depression predict incomplete ART adherence in a low-income country. *PLoS One.* 2013;8(1):e54702. PMC
8. Adewuya AO, Afolabi MO, Ola BA, et al. Psychological distress and ART adherence in Nigeria. *Psychosomatics.* 2010;51(1):68–73. PMC
9. Okoror TA, Falade CO, Olorunlana A, et al. Cultural context of HIV stigma and ART adherence in Nigeria. *AIDS Patient Care STDS.* 2013;27(1):55–64. PMC
10. Musumari PM, Feldman MD, Techasrivichien T, et al. Determinants of ART adherence in DRC. *AIDS Care.* 2013;25(10):1271–7. PubMed
11. Mitiku H, Abdosh T, Teklemariam Z. Factors affecting ART adherence in Harari region, Ethiopia. *Hindawi;* 2013. SAGE Journals
12. Biadgilign S, Deribew A, Amberbir A, Deribe K. ART adherence among paediatric patients in Ethiopia. *SAHARA J.* 2009;6(4):148–54. SAGE Journals
13. Negash T, Ehlers V. Personal factors influencing ART adherence in Addis Ababa. *J Assoc Nurses AIDS Care.* 2013;24(6):530–8. SAGE Journals
14. Amberbir A, Woldemichael K, Getachew S, Girma B, Deribe K. Predictors of ART adherence in Southwest Ethiopia. *BMC Public Health.* 2008;8:265. SAGE Journals
15. Hiwot F, Jugal et al. Reasons for non-adherence: forgetting, traveling, busyness – Hiwot Fana & Jugal hospitals. *J Hum HIV VR.* 2010. PubMed

16. Hussen Hebo STGK, Abiso Erango M. ART adherence among adults in Arba Minch, Ethiopia. *J Adv Med Med Res*. 2019. SpringerLink
17. Assefa N. Factors influencing ART adherence in Addis Ababa health centers (Doctoral Thesis, St. Mary's University). 2019. SpringerLink
18. Negassi Demeke B, Chanie T. ART adherence among PLHIV in Dessie Referral Hospital, Ethiopia. *Int J Pharm Sci Res*. 2014;5(9):572–81. SpringerLink
19. Ejigu SH, Rike WA, Angamo MT. Adherence and associated factors at Nekemte Hospital, Ethiopia. *Gazi Med J*. 2014;20(3):199–208. SpringerLink
20. Gebreagziabher TT, Woldemariam GT. ART adherence in Eastern Tigray General Hospitals, Ethiopia. *HIV/AIDS Res Palliat Care*. 2020;12:497–505. SpringerLink
21. Hassen A, Mohammed Y. ART adherence and associated factors in Jimma zone, Southwest Ethiopia. *Int J Multicultural Multireligious Underst*. 2019;5(5):331–41. SpringerLink
22. WHO. Global HIV & AIDS statistics — 2024 fact sheet. World Health Organization. 2024.
23. UNAIDS. Global HIV & AIDS statistics — 2024. UNAIDS. 2024.
24. Hardon AP, Vernooij E, Bongololo-Mbera G, et al. Social determinants of ART adherence in southern Africa. *AIDS Care*. 2020;32(12):1517–28.
25. Ware NC, Pisarski EE, Wyatt MA, et al. Understanding disengagement from HIV care in Africa. *PLoS Med*. 2013;10(1):e1001368.
26. Eshun-Wilson I, Rohwer A, Moshabela M, et al. Being HIV positive and staying on ART in Africa: thematic synthesis. *PLoS One*. 2019;14(11):e0210408. PMC
27. Wouters E, Masquillier C, et al. Barriers to ART adherence in HIV-positive South Africans. *Glob Public Health*. 2018;13(4):463–85.
28. Kagee A, Remien RH, Berkman A, Hoffman S, Campos L. Structural barriers to ART adherence in South Africa. *AIDS*. 2011;25(4):403–8.
29. Pope C, Ziebland S, Mays N. Qualitative research in healthcare: Analysing interview data. *BMJ*. 2000;320(7227):114–6.
30. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ). *Int J Qual Health Care*. 2007;19(6):349–57.
31. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for Reporting Qualitative Research (SRQR). *Acad Med*. 2014;89(9):1245–51.
32. Green EC. Traditional healers and AIDS in Uganda. *J Altern Complement Med*. 2000;6(1):1–2. Wikipedia
33. King R, Homsy J. Involving Traditional Healers in AIDS Education and Counselling in Sub-Saharan Africa: A Review. *AIDS*. 1997;11 Suppl A:S217–25. Wikipedia