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The Family Support and ART Adherence among PLHIV in Indonesia: A Systematic Review

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Abstract

Background: *Adherence to antiretroviral therapy (ART) is a key determinant of treatment success for people living with HIV (PLHIV) in Indonesia. Family support is thought to play a crucial role in enhancing this adherence, yet existing research findings remain inconsistent.*

Objective: *This literature review aims to synthesize recent evidence on the relationship between family support and ART adherence among PLHIV in Indonesia.*

Method: *A systematic review was conducted by searching articles in PubMed, Google Scholar, and Science Direct (publication range 2021-2025). Nine cross-sectional studies meeting the inclusion criteria were synthesized using the PRISMA method.*

Result: *Seven out of nine studies (77.8%) reported a statistically significant relationship between family support and improved ART adherence. Dimensions of emotional, instrumental, and informational support were consistently associated with positive outcomes. Inconsistencies in findings from some studies were suspected to be related to variations in measuring the "family support" construct and socio-cultural contexts.*

Implication: *The predominant evidence supports the positive role of family support in ART adherence in Indonesia. Adherence promotion programs are recommended to integrate family-involved interventions, considering multidimensional and context-specific measurement approaches.*

INTRODUCTION

Human Immunodeficiency Virus (HIV) is widely known as a virus that attacks the immune system of the affected individuals, while Acquired Immunodeficiency Syndrome (AIDS) is defined as a collection of symptoms caused by the decline of the body's immune system due to HIV infection (CDC, 2025). This virus, classified under the Retroviridae family, raises concerns due to the increase in cases worldwide, including in Indonesia (Kumala et al.,

2022). The World Health Organization (WHO) reported that approximately 40.8 million people are living with HIV, with 1.3 million new cases globally in 2024. The majority of cases occur in Africa (65%). The WHO has set a target that 95% of infected individuals should be diagnosed by 2025, with at least 95% of them receiving ARV therapy, and 95% of those receiving ARV having a controlled viral load (World Health Organization, 2025).

HIV/AIDS cases in Indonesia have been reported across all 34 provinces, highlighting the need for special attention. According to WHO data from 2019, the number of patients infected with HIV peaked in 2019 at 50,282 cases, with the highest rates in five provinces: East Java, DKI Jakarta, West Java, Central Java, and Papua. On the other hand, the highest number of AIDS cases is in Central Java, Papua, East Java, DKI Jakarta, and the Riau Islands. The latest data from early 2025 indicates that around 570 people are living with HIV/AIDS (ODHA). The biggest challenge is the "treatment gap," where only about 31% of ODHA receive management and 14% have a controlled viral load. This situation is far from the WHO target (UNAIDS, 2025).

The increase in the number of HIV/AIDS patients has become a particular concern as it can lead to a health crisis, followed by an economic and social crisis. HIV/AIDS infection as a health crisis requires responses from the community as well as treatment and care services for individuals infected with HIV (Khamid et al., 2024). Although this disease cannot be cured, people living with HIV and AIDS still require lifelong treatment with antiretroviral therapy (ART). The goal of ART for people living with HIV (PLHIV) differs from that for those with AIDS, as it aims to reduce the amount of HIV virus in the body to prevent progression to AIDS, while for AIDS patients, the goal is to prevent opportunistic infections and its various complications (Hutomo et al., 2023). Several aspects that need to be considered by PLHIV or those with AIDS are the use of ART at the correct dosage, method, and timing, as these factors significantly influence the outcomes or effectiveness of this treatment. Patients infected with HIV who take ART as directed can improve their quality of life (QoL) and have positive relationships with healthcare professionals (Padmawati et al., 2025).

Unlike other diseases, the use of ARV drugs by HIV/AIDS patients lasts a lifetime, making adherence to ARV medication essential for the drug's effectiveness in controlling viral replication, improving immunity and clinical condition, reducing the risk of ARV resistance, and preventing HIV transmission (Khamid et al., 2024). Patient compliance in taking ARV medication is defined as the behavior of patients in using the medications prescribed by healthcare providers, thus non-compliance is considered a medical error. ARV therapy consists of a combination of several drugs and will work effectively only if followed according to the doctor's instructions, such as being taken regularly twice a day in the morning and evening and at the correct dosage. Some side effects that may occur due to patient non-compliance in ARV therapy include increased resistance to ARV, risk of HIV transmission to others, risk of death for HIV patients, as well as mortality and morbidity for patients. Therefore, the success of ARV therapy relies entirely on the adherence of the people living with HIV (ODHIV) in consuming this medication (Kumala et al., 2022).

The success of ART therapy in PLHIV and PLWHA greatly depends on the patient's adherence to medication. Several factors can influence this patient compliance, such as support for treatment adherence, age, gender, education level, employment, duration of therapy, knowledge and attitudes towards therapy, and healthcare services. Support for patients adhering to medication can come from the patient's internal environment, such as family, as well as from external environments like healthcare professionals and other social support. Internal support from the patient’s family consists of several dimensions, including emotional, instrumental, informational, companionship, motivation, curiosity, and appreciation (Khamid et al., 2024). Therefore, a lack of certain factors that support patient

adherence to medication can reduce the patient's willingness to take ARV medication in appropriate doses, times, and intervals. One crucial factor in patient compliance is family support, which serves as reminders, monitors, and supervisors for the patient during ARV treatment, significantly enhancing adherence to ART among both PLHIV and PLWHA (Carsita et al., 2025).

While international systematic reviews have widely established the global benefits of social support on ART adherence (Campbell et al., 2020), a context-specific synthesis for Indonesia is highly warranted. Indonesian society is characterized by strong collectivistic family ties, yet it faces persistent cultural taboos and severe social stigma surrounding HIV, which uniquely shapes how family dynamics influence patient behavior. Furthermore, geographic disparities in access to Voluntary Counseling and Testing (VCT) clinics across the archipelago demand localized evidence to inform national healthcare strategies.

To address these gaps, this systematic review explicitly aims to synthesize recent evidence to provide a clear picture of the impact of family support on ART adherence in the PLHIV/PLWHA population in Indonesia.

METHOD

This research is a systematic review that examines family support and adherence to ARV consumption among people with HIV/AIDS in Indonesia. The article search was conducted in November 2025. The article search began by establishing the Population, Intervention, Control, and Outcome (PICO) criteria. The Population is "HIV patients," the Intervention is "family support," Control: none, and the Outcome is "medication adherence." Articles were obtained through PubMed, Google Scholar, and Science Direct with a publication range from 2021 to 2025. The keywords used in the article search through Google Scholar were "Family Role" OR "family support" AND "Medication Adherence" AND "HIV." Meanwhile, the article search through PubMed and Science Direct used the keywords ("Family Role" OR "Family Support" OR "Family Involvement") AND ("Medication Adherence" OR "Treatment Adherence" OR "Drug Adherence") AND ("HIV" OR "PLHIV") AND (Indonesia).

The searches using Google Scholar, Science Direct, and PubMed yielded 654, 15, and 1 journal articles, respectively. The inclusion criteria for this review were original articles, quantitative studies, articles in Indonesian or English, accessible full text, and articles published in the last 5 years (2020 to October 2025). The exclusion criteria for this review were grey literature, conference abstracts, letters to the editor, review articles, and articles that could not be fully accessed.

The researchers conducted screening using a PRISMA flowchart through the stages of duplicate removal, filtering based on title/abstract, and full-text eligibility assessment. The final search resulted in nine included articles (Figure 1). Data extraction was performed by two researchers (SAPA and TK) and included several variables, namely authors, year, design, sample, location, measurement tools for support & adherence, statistical analysis, and main results. The results of the data extraction for the nine articles are presented in Table 1.

Risk of bias was assessed using the Joanna Briggs Institute tool. This assessment consists of eight main parameters. To facilitate quantitative synthesis, each checklist item was scored as follows: 'Yes' (+) received 1.0 point, 'Unclear' (?) received 0.5 point, and 'No' (-) received 0 points. Summed scores represented the overall methodological quality (maximum score of 8.0). Methodological risk was categorized into low risk of bias (score > 6.0), Intermediate risk (score 4.0 to 6.0), and high risk (score < 4.0).

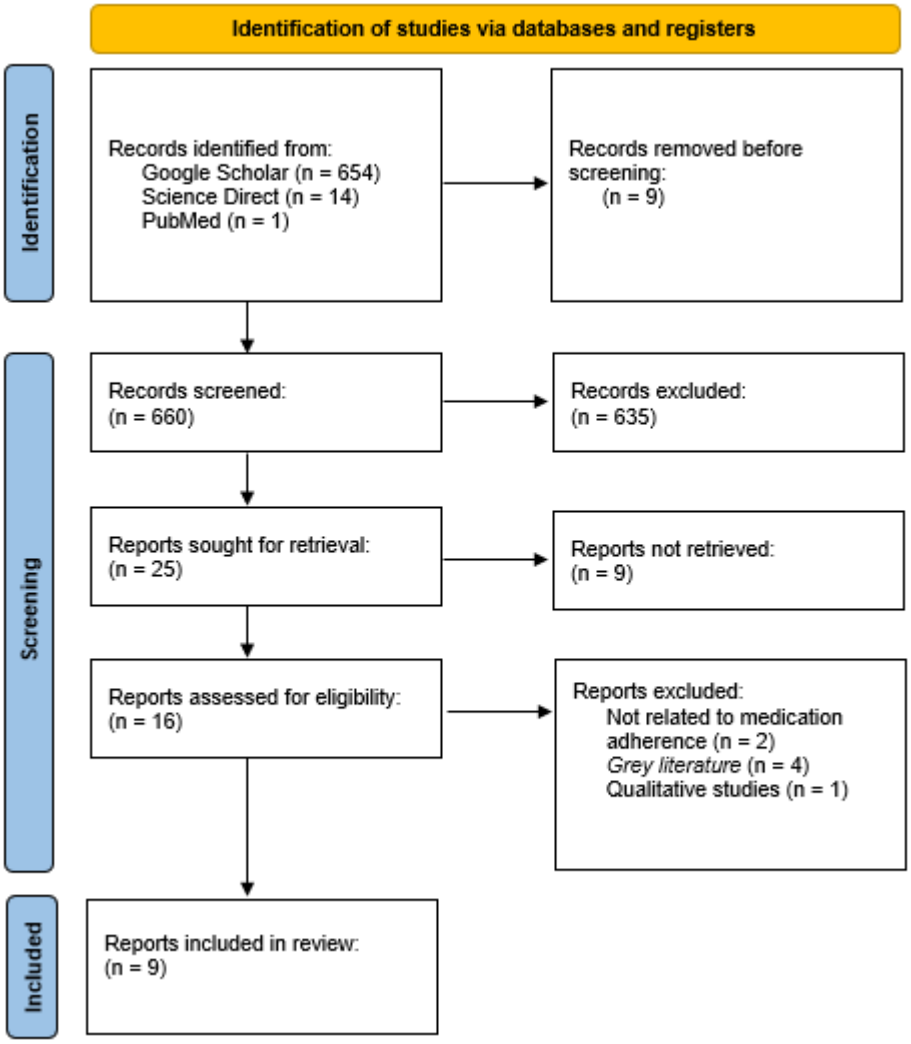

Figure 1. The PRISMA flowchart of articles screening

RESULT

From the process of identification and selection based on inclusion criteria, nine research articles met the requirements to be synthesized in this review. All nine studies had a cross-sectional design and were conducted in various regions of Indonesia, including Sumatra, Java, Papua, and Sulawesi. The sample sizes in most studies were relatively small, ranging from 30 to 190 respondents, with only two studies involving more than 100 participants. Data collection was primarily conducted using questionnaires, and the family support variable was measured across various dimensions, ranging from general support to specific aspects such as emotional, instrumental, and informational support.

Table 1. Data Extraction

Authors (year)	Title	Sample size	Location	Method	Instrument and dimensions	Statistical Analysis	Main Finding
(Hardika, 2022)	Dukungan Keluarga sebagai Stimulus Kepatuhan Minum obat ARV penderita HIV	32	Puskesmas Dempo, Palembang	Cross sectional	Questionnaire. Family support (general) — high/low category measurement	Kendall Tau Test	No significant relationship between family support dimensions and ARV adherence ($p > 0.05$)
(Fahmana et al., 2024)	Dukungan Keluarga dengan Kepatuhan Minum Obat ARV pada Pasien HIV (Human Immunodeficiency Virus) di Poli VCT RSUD Dr. R. Koesma Tuban	138	Dr. R. Koesma Tuban Regional General Hospital VCT Clinic	Cross Sectional	Questionnaire. Emotional, Instrumental, Informational Support	Spearman Rank Correlation	Strong positive correlation between family support and adherence ($r = 0.691$; $p = 0.000$).
(Kumala et al., 2022)	Family Support for HIV Patients Undergoing Antiretroviral Therapy in Subang City	40	Ceria Peer Support Group, Subang	Cross sectional	Questionnaire. Emotional, Instrumental, Informational Support	Chi Square	Significant association between family support and ARV adherence ($p = 0.001$).
(Hutomo et al., 2023)	Hubungan Family Support dengan Kepatuhan Mengonsumsi ARV pada ODHA	30	Puskesmas Malanu, Sorong	Cross sectional	Questionnaire. Emotional, Instrumental, Informational Support	Chi square	Significant relationship between family support and ARV adherence ($p = 0.000$).
(Khamid et al., 2024)	Hubungan Dukungan Keluarga dengan Kepatuhan Terapi Antiretroviral pada Orang dengan HIV	37	RSPI Prof. Dr. Sulianti Saroso Melati Clinic	Cross sectional	Secondary data and primary data (Questionnaire) Informational, Instrumental, Emotional, and Appreciation Support	Binomial Logistic Regression Test	No significant relationship between family support dimensions and ARV adherence ($p > 0.05$)
(Prasetyo, 2023)	Hubungan Dukungan Keluarga terhadap Kepatuhan Ibu Hamil dengan HIV dalam Mengkonsumsi ARV	30	Malang RSSA Obstetrics Clinic	Cross sectional	Questionnaire. Emotional & Instrumental Support. (family support for pregnant women with HIV)	Spearman Rank	Significant positive correlation ($r = 0.512$; $p = 0.004$).
(Carsita et al., 2025)	Relationship Between Family Support and Adherence to Antiretroviral Medication in Patients with HIV	190	Treatment Support Care Room (PDP) at Bhayangkara Indramayu Hospital	Cross sectional	Questionnaire. Emotional Support, Instrumental Support (reminders, monitoring), Motivation	Chi square	Significant relationship between family support and ARV adherence ($p = 0.006$).
(Setiawati et al., 2024)	Hubungan Dukungan Keluarga dengan Kepatuhan Minum Obat ARV pada Pasien HIV di Puskesmas Seputih Banyak Lampung Tengah	43	Puskesmas Seputih Banyak, Lampung Tengah	Cross sectional	Questionnaire. Family support (general): education & daily support	Spearman Rank	Moderate significant correlation ($r = 0.534$; $p = 0.001$).
(TH et al., 2021)	Hubungan Dukungan Keluarga dan Tingkat Pendidikan Pasien terhadap Kepatuhan Minum Obat Antiretroviral pasien HIV AIDS di Poli RSUD Dr. Drajat Prawiranegara Serang Banten	75	VCT and CST Clinic Teratai Regional General Hospital DR. Drajat Prawiranegara Serang Banten	Cross sectional	Questionnaire. Family support (general) — measured together with education variables	Chi square	Significant relationship between family support and ARV adherence ($p = 0.007$; OR = 4.57).

Table 2. Risk of Bias

Authors	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Score
Hardika 2022	Unclear	Yes	Unclear	Unclear	Yes	No	Yes	Yes	5.5
Fahmana et al 2024	Unclear	Yes	Unclear	Unclear	No	No	Yes	Yes	4.5
Kumala et al 2022	Unclear	Yes	Unclear	Unclear	No	No	Yes	Yes	4.5
Hutomo et al 2023	Unclear	Yes	Unclear	Unclear	Yes	No	Yes	Yes	5.5
Khamid et al 2024	Unclear	Yes	Unclear	Unclear	Yes	No	Yes	Yes	5.5
Prasetyo 2023	Yes	Yes	Unclear	Unclear	Yes	No	Yes	Yes	6
Carsita et al 2025	Yes	Yes	Unclear	Unclear	Yes	No	Yes	Yes	6
Setiawati et al 2024	Unclear	Yes	Unclear	Unclear	No	No	Yes	Yes	4.5
TH et al 2021	Unclear	Yes	Unclear	Unclear	Yes	No	Yes	Yes	5.5

DISCUSSION

The synthesis of evidence in this review is based on nine studies that met the eligibility criteria. Methodologically, all included studies are cross-sectional studies, which limit the interpretation of causal relationships between family support and ARV adherence. Geographically, the research locations are spread across various healthcare centers in Indonesia, reflecting a diverse context but also indicating the absence of a representative national study. The majority of the studies have relatively small samples (≤ 75 respondents), with only two studies involving samples of over 100 participants. The dominant measurement tool used is questionnaires, with variations in the operationalization of the construct "family support," both as a single variable and multidimensional. Below is a detailed data extraction from these studies (Table 1).

Of the nine studies analyzed, seven studies (77.8%) reported a statistically significant relationship between family support and ARV adherence. Meanwhile, the studies conducted by Hardika (2022) dan Khamid *et al.*, (2024) stated that there was no relationship between family support and ARV adherence among PLWHA.

The existence of a relationship between family support and ARV adherence aligns with the review by Supriyatni, *et al*. (2023) which stated that family support is one of the important factors influencing ARV adherence among PLWHA. This literature indicates that adherence and family support play a crucial role in the therapeutic process faced by PLWHA. Family support significantly affects adherence because support from family members who accept the PLWHA status can encourage treatment success (Supriyatni et al., 2023). Additionally, a randomized experimental study in Uganda also showed significant results regarding the relationship between family support and medication adherence among adolescents infected with HIV perinatally. This may occur because when adolescents understand the importance of taking medication, they become more compliant without conflict with their caregivers (Nabunya et al., 2023).

HIV patients who receive support from their families feel more cared for, leading to increased adherence to medication and a greater desire to improve their quality of life

(Setiawati et al., 2024). A preliminary study on five PLWHA with limited family support showed that patients would make greater efforts to remain adherent to ARV medication, such as setting reminders on their phones for ARV intake times (Khamid et al., 2024). In addition to family support, which can significantly impact ARV treatment for PLWHA and PLHIV, the patients' attitude towards adherence during ARV treatment is a crucial aspect that needs attention. Healthcare providers and the government are also involved in ensuring that ARV therapy remains affordable so that economic factors do not hinder patients from undergoing treatment (TH et al., 2021).

This finding is consistent with House's Social Support Theory and the Health Belief Model. According to House's Social Support Theory, support is categorized into informational, evaluative, instrumental, and emotional support. This support can influence patients' perceptions, which in turn can change their health behaviors, such as adherence to medication (Ali, Sanaji, & Andjarwati, 2025; Leow &Leow, 2022)

Meanwhile, the research by CB and Sianturi (2020) shows that there is no significant relationship between family support and the adherence of PLWHA to taking ARV medication. In this context, although PLWHA receive less family support, the friendliness of service personnel can make PLWHA feel accepted (CB & Sianturi, 2020). A supportive attitude from healthcare workers, along with empathy and good interpersonal communication skills, can increase self-efficacy and adherence among PLWHA to take ART (Makin et al., 2025).

There is variation in the approach to measuring family support, ranging from general measurements to those based on specific dimensions. Three studies (Hardika, 2022; Setiawati et al., 2024; TH et al., 2021) measured family support as a single or general construct, with comprehensive questions about the family's role without distinguishing its dimensions. Two studies (Setiawati et al., 2024; TH et al., 2021) found a positive and significant relationship with ARV adherence. One study (Hardika, 2022) did not find a significant relationship. This inconsistency suggests that general measurement of family support may not be sensitive enough to capture the specific mechanisms by which families influence patient behavior. Variation in questionnaire items across studies can lead to different constructs, making direct comparison difficult.

Most studies operationalize family support into more specific dimensions, such as emotional, instrumental, informational support, and appreciation/motivation. Five studies (Carsita et al., 2025; Fahmana et al., 2024; Hutomo et al., 2023; Kumala et al., 2022; Prasetyo, 2023) consistently report a strong or moderate positive and significant relationship between family support and ARV adherence. The study by Khamid *et al.*, (2024) is an important exception. Although it measures support multidimensionally (emotional, instrumental, informational, appreciation), their logistic regression analysis did not find a significant relationship between overall family support and adherence. Differences in findings among studies are not only due to the presence or absence of a relationship but also due to differences in measurement tools and the operationalization of the "family support" variable. Studies that use more specific and comprehensive measurement tools tend to find significant relationships.

Based on methodological quality, all studies extracted in this research used cross-sectional methods, thus able to describe the prevalence of the relationship between family support and ARV adherence among PLWHA. However, this type of study is vulnerable to temporal bias, response bias, and selection bias. Since data collection is conducted only once, research subjects may not represent the population. The results obtained cannot be generalized. Longitudinal research is needed to assess causal effects and the sustainability of family support interventions.

The results of this research can be applied in the response to HIV and AIDS in health policy. Inadequate government support and a lack of specific program direction remain challenges in policy implementation. Steps that can be intensified to support adherence to ARV treatment among PLWHA include conducting prevention education against discrimination of PLWHA, disseminating information about health services and Voluntary Counseling and Testing (VCT) services, and providing ARV information for PLWHA and individuals at risk of infection (Wahyuningsih et al., 2017).

For interventions, HIV patient accompaniment programs should train families to provide specific and diverse support, not just moral support. This support should also be extended to friends or peers as well as healthcare workers to provide the social support needed by PLWHA and to support the success of therapy (Atmajaya & Kurniawan, 2023). Research shows that family support and adherence to ARV consumption are related to the quality of life of PLWHA (Padmawati et al., 2025).

For future research, it is highly recommended to use standard and multidimensional family support measurement tools, such as the adaptation of the Family Support Scale or the Multidimensional Scale of Perceived Social Support (MSPSS), so that research results can be compared and synthesized more effectively (Kogar & Kogar, 2024). Additionally, the analysis should explore the influence of each dimension of support separately to identify the most effective forms of support.

CONCLUSION

Based on the synthesis of evidence, the majority of the evidence (8 out of 10) from studies in Indonesia concludes that there is strong evidence that family support is associated with increased adherence to ART among people living with HIV/AIDS, although some studies show different results. This inconsistency is suspected to be due to differences in the measurement of constructs and sociocultural contexts. Therefore, ARV adherence promotion programs are recommended to integrate interventions that involve families like Implement 'Family-Centered Counseling Protocols' at VCT Clinics and Formulate Stigma-Reduction Family Programs, while also strengthening support from healthcare providers.

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