

Original Article

Association of patients' perceptions of nurses' roles and nurse-provided psychosocial support with quality of life among people living with HIV: A cross-sectional study

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Abstract

Background: Quality of life is an important outcome of long-term HIV care and is shaped by clinical, psychological, social, and health-service factors. Nurses are positioned to support people living with HIV (PLHIV) through care coordination, education, counselling, advocacy, and psychosocial support, yet evidence on these service-related factors remains limited in West Sumatra, Indonesia.

Objective: To examine the associations of patients' perceptions of nurses' roles and nurse-provided psychosocial support with quality of life among PLHIV receiving outpatient HIV care.

Methods: This single-centre analytical cross-sectional study was conducted at the Serunai Clinic, Dr. Achmad Mochtar Regional General Hospital, Bukittinggi, Indonesia, from 7 March to 7 April 2026. Total sampling included 80 PLHIV. Quality of life was measured using the Indonesian WHOQOL-HIV BREF; patients' perceptions of nurses' roles and nurse-provided psychosocial support. Associations were examined using Pearson's chi-square test and a two-predictor binary logistic model in which each nursing-related exposure was adjusted only for the other; demographic, clinical, and psychosocial confounders were not included.

Results: Among 80 participants, 42 (52.5%) rated nurses' roles as inadequate, 45 (56.3%) rated nurse-provided psychosocial support as inadequate, and 43 (53.8%) had poor quality of life. Adequate nurses' roles were associated with higher odds of good quality of life (OR=738.00; 95% CI 64.21–8482.70; $p<0.001$), as was adequate psychosocial support (OR=85.33; 95% CI 18.95–384.33; $p<0.001$). In the two-predictor logistic model, nurses' roles remained associated with quality of life (AOR=262.61; 95% CI 19.28–3577.91; $p<0.001$), and psychosocial support also remained associated (AOR=18.60; 95% CI 1.43–241.95; $p=0.026$).

Conclusion: Patients' perceptions of nurses' roles and nurse-provided psychosocial support were strongly associated with quality of life. Strengthening therapeutic communication, counselling, and person-centred biopsychosocial care is warranted, alongside larger studies that adjust for clinical and psychosocial confounders.

Background

Human immunodeficiency virus (HIV) remains a major global public-health challenge despite substantial advances in testing, antiretroviral therapy (ART), and viral suppression. The World Health Organization estimated that 41.0 million people were living with HIV at the end of 2025; approximately 1.2 million people acquired HIV and 570,000 people died from HIV-related causes during 2025 (World Health Organization, 2026). These figures underscore the continuing need to move beyond survival as the sole treatment outcome and to address long-term well-being and quality of life as integral components of HIV care.

Indonesia continues to face challenges across the HIV care continuum, including timely diagnosis, sustained access to antiretroviral therapy, treatment monitoring, and long-term retention in care. These gaps matter because treatment

continuity and viral suppression influence not only clinical outcomes but also the everyday experiences and quality of life of people living with HIV (UNAIDS, 2023).

Quality of life among PLHIV is multidimensional and encompasses physical health, psychological well-being, independence, social relationships, environmental conditions, and spirituality. Indonesian evidence indicates that quality of life is shaped not only by clinical status but also by access to care, social relationships, stigma, and broader social conditions (Fauk et al., 2023; Septanto & Purwaningsih, 2024). International studies similarly show that loneliness, limited social support, and HIV-related stigma are associated with poorer health-related quality of life and treatment engagement (Qian et al., 2023; Zhabokritsky et al., 2024). Self-stigma may also undermine ART adherence, reinforcing the

importance of respectful, non-stigmatizing care (Okafor & Bello, 2026).

Nurses can influence patients' care experiences through clinical care, education, counselling, advocacy, care coordination, and sustained psychosocial support. Recent evidence has highlighted the contribution of nurse-led care to clinical and social outcomes among PLHIV, while also showing that organizational and operational conditions can shape how HIV nursing services are delivered (Moen et al., 2023; Murudi-Manganye et al., 2023; Ngcobo et al., 2024). Nursing practice is also central to stigma reduction and psychologically safe care, particularly for populations experiencing intersecting vulnerabilities (Jaiswal & Mumba, 2022; Dada et al., 2024).

In this study, patients' perceptions of nurses' roles and nurse-provided psychosocial support were treated as related but distinct service constructs. Perceived nurses' roles represent a broad appraisal of clinical care, education, counselling, advocacy, collaboration, and care coordination, whereas psychosocial support captures the relational and supportive functions through which nurses provide emotional, informational, appraisal, and social support. The constructs may overlap in practice, but neither was assumed to mediate or hierarchically contain the other. Examining them simultaneously therefore helps determine whether each is associated with quality of life after accounting for the other within the limits of a cross-sectional design.

The Serunai Clinic at Dr. Achmad Mochtar Regional General Hospital in Bukittinggi provides ongoing HIV services in West Sumatra. Clinic records documented 3,842 visits in 2022, 3,927 in 2023, and 3,585 in 2024, indicating sustained demand for longitudinal care. Previous studies have established the importance of nurse-led care and psychosocial support for PLHIV, but evidence remains limited on whether patients' perceptions of these two related service factors are independently associated with quality of life when examined together, particularly in West Sumatra. Accordingly, this study examined the associations of patients' perceptions of nurses' roles and nurse-provided psychosocial support with quality of life among PLHIV receiving care at the Serunai Clinic.

Methods

Study Design and Setting

This study used an analytical observational cross-sectional design. Data were collected at the

Serunai Clinic, Dr. Achmad Mochtar Regional General Hospital, Bukittinggi, West Sumatra, Indonesia, from 7 March to 7 April 2026. The manuscript was prepared in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement (von Elm et al., 2007).

Participants and sampling

The defined source population comprised 80 unique patients with HIV who received care at the Serunai Clinic during the study period. Total sampling was used, and all 80 patients represented in the retained dataset were included in the analysis. Separate recruitment-flow counts for patients assessed, approached, missed, declining participation, or excluded were not retained; therefore, participation beyond the documented analytic cohort cannot be reconstructed. Because the study used a census of the defined clinic population, no separate inferential sample-size calculation was performed. Nevertheless, the modest sample and sparse outcome distributions limited the precision and stability of logistic-regression estimates.

Inclusion criteria were: (1) receiving HIV care at the Serunai Clinic, (2) aged 17 years or older, (3) willing to participate and provide informed consent, and (4) able to read and write Indonesian sufficiently to complete the questionnaire. The documented exclusion criterion was referral out of the Serunai Clinic during the study period. Acute illness, cognitive impairment, severe psychological distress, and communication barriers were not recorded as separate eligibility variables in the study dataset; this limitation is acknowledged below.

Variables and measurement

Quality of life was measured using the 31-item Indonesian version of the WHOQOL-HIV BREF, which assesses six domains: physical health, psychological health, level of independence, social relationships, environment, and spirituality/religion/personal beliefs. The Indonesian version has demonstrated validity and reliability in PLHIV (Muhammad et al., 2017). In the prespecified study analysis, an overall summary score was operationally categorized as good when the participant achieved at least 60% of the maximum possible score and poor when the score was below 60%. This threshold was an

analytical definition used in this study rather than a diagnostic cutoff established by the WHOQOL-HIV BREF.

Patients' perceptions of nurses' roles were measured using a 16-item questionnaire adapted from a local nursing instrument used by the study team. The items assessed care provision, education, counselling, advocacy, collaboration, and related nursing functions. Nurse-provided psychosocial support was measured using a 15-item adapted questionnaire covering emotional, informational, appraisal, and social-companionship support. Both adapted instruments were reviewed by subject-matter experts before data collection. For the prespecified analysis, each scale was categorized as adequate/good at $\geq 60\%$ of the maximum score and inadequate/poor at $< 60\%$. Full psychometric coefficients for the adapted scales were not available in the retained analytic outputs and are therefore identified as a reporting limitation rather than estimated retrospectively.

Data collection and ethical considerations

Eligible participants received an explanation of the study and provided written informed consent before completing the questionnaires. No participant names were recorded in the research questionnaire or analytic report. Ethical approval was obtained from the relevant Health Research Ethics Committee (No. 001204/KEP.RSOMH BUKITTINGGI/2026).

Potential sources of bias

All principal variables were self-reported by the same participants at one time point, creating potential common-method, perception, recall, and social-desirability biases. Reverse causality is also plausible: participants with better quality of life may have evaluated nursing care more positively. The single-centre clinic sample and incomplete recruitment-flow detail may introduce selection bias and limit external validity. Dichotomization may have caused information loss and misclassification near the study-specific threshold. Residual confounding is likely because the available model did not include ART adherence, CD4 count, viral load, mental health, stigma, family support, or socioeconomic status. Finally, sparse cells and probable quasi-separation

may have inflated conventional logistic-regression estimates.

Statistical analysis

Categorical variables were summarized using frequencies and percentages. Associations between each independent variable and the binary quality-of-life outcome were examined using Pearson's chi-square test; expected cell counts were ≥ 5 in both reported 2×2 analyses. Variables meeting the prespecified bivariable screening criterion of $p < 0.25$ were entered into a binary logistic model containing patients' perceptions of nurses' roles and nurse-provided psychosocial support. Regression results are reported as coefficients (B), standard errors (SEs), Wald statistics, mutually adjusted odds ratios [Exp(B)], 95% CIs, and p-values, with statistical significance set at $p < 0.05$. Participant-level information required to verify missing-data patterns, multicollinearity, goodness-of-fit, calibration, influential observations, and separation diagnostics was not retained in the available analytic outputs. Accordingly, the model is interpreted as an exploratory two-predictor association analysis; it does not provide comprehensive confounder adjustment or causal estimates.

Results

The analytic sample comprised 80 participants. Forty-four participants (55.0%) were younger than 40 years and 36 (45.0%) were aged 40 years or older. Most participants were men (72.5%) and married (67.5%); half had completed senior high school (50.0%). The most frequently reported occupation was trading (38.8%). Forty percent had lived with HIV for more than five years, and 83.8% had no documented comorbidity in the study characteristics table (Table 1). The age cutoff was used only as a descriptive grouping in the source dataset and should not be interpreted as a clinical threshold.

Forty-two participants (52.5%) rated nurses' roles as inadequate, 45 (56.3%) rated nurse-provided psychosocial support as inadequate, and 43 (53.8%) were categorized as having poor quality of life (Table 2).

Table 1. Characteristics of Respondents

Characteristic	n	%
Age, years		
<40	44	55.0
≥40	36	45.0
Sex		
Male	58	72.5
Female	22	27.5
Marital status		
Never married	17	21.3
Married	54	67.5
Widowed/divorced	9	11.3
Education		
No formal schooling	1	1.3
Primary school	6	7.5
Junior high school	21	26.3
Senior high school	40	50.0
Higher education	12	15.0
Occupation		
Farmer	3	3.8
Self-employed	25	31.3
Trader	31	38.8
Civil servant/military/police	1	1.3
Other	20	25.0
Duration living with HIV		
1–2 years	19	23.8
3–4 years	29	36.3
>5 years	32	40.0
Documented comorbidity		
None	67	83.8
Pulmonary tuberculosis	10	12.5
Diabetes mellitus	3	3.8

Table 2. Distribution of nurses' roles, nurse-provided psychosocial support, and quality of life (n=80)

Variable and category	n	%
Nurses' roles: adequate	38	47.5
Nurses' roles: inadequate	42	52.5
Psychosocial support: adequate	35	43.7
Psychosocial support: inadequate	45	56.3
Quality of life: good	37	46.3
Quality of life: poor	43	53.8

Among participants who rated nurses' roles as adequate, 36 of 38 (94.7%) had good quality of life, compared with 1 of 42 (2.4%) among those who rated nurses' roles as inadequate. The association was statistically significant (Pearson $\chi^2(1)=68.45$, $p<0.001$), with an OR of 738.00 (95% CI 64.21–

8482.70) for good quality of life among participants reporting adequate versus inadequate nurses' roles (Table 3). Although all expected cell counts were ≥ 5 , the extremely wide CI indicates low precision and warrants cautious interpretation.

Table 3. Association between perceived nurses' roles and quality of life

Nurses' roles	Good QoL, n (%)	Poor QoL, n (%)	Total, n	χ^2 (df)	p-value	OR (95% CI)
Adequate	36 (94.7)	2 (5.3)	38	68.45 (1)	<0.001	738.00 (64.21–8482.70)
Inadequate	1 (2.4)	41 (97.6)	42			
Total	37 (46.3)	43 (53.8)	80			

For nurse-provided psychosocial support, 32 of 35 participants (91.4%) with adequate support had good quality of life, compared with 5 of 45 (11.1%) with inadequate support. The association was statistically significant (Pearson $\chi^2(1)=51.09$,

$p<0.001$), with an OR of 85.33 (95% CI 18.95–384.33) for good quality of life among those reporting adequate versus inadequate psychosocial support (Table 4). The CI remained wide, indicating limited precision.

Table 4. Association between nurse-provided psychosocial support and quality of life

Psychosocial support	Good QoL, n (%)	Poor QoL, n (%)	Total, n	χ^2 (df)	p-value	OR (95% CI)
Adequate	32 (91.4)	3 (8.6)	35	51.09 (1)	<0.001	85.33 (18.95–384.33)
Inadequate	5 (11.1)	40 (88.9)	45			
Total	37 (46.3)	43 (53.8)	80			

In the two-predictor binary logistic regression model, perceived nurses' roles remained associated with quality of life ($B=5.571$, $SE=1.333$, $Wald=17.475$, $p<0.001$), corresponding to an AOR of 262.61 (95% CI 19.28–3577.91). Nurse-provided psychosocial support also remained associated with quality of life ($B=2.923$, $SE=1.309$, $Wald=4.988$, $p=0.026$), corresponding to an AOR

of 18.60 (95% CI 1.43–241.95) (Table 5). These estimates indicate higher adjusted odds of good quality of life among participants reporting adequate care experiences; they do not represent probability ratios. The very wide CIs indicate substantial statistical uncertainty and possible model instability.

Table 5. Binary logistic regression for good quality of life

Predictor	B	SE	Wald	df	p-value	AOR (95% CI)
Adequate nurses' roles	5.571	1.333	17.475	1	<0.001	262.61 (19.28–3577.91)
Adequate psychosocial support	2.923	1.309	4.988	1	0.026	18.60 (1.43–241.95)

Discussion

This study found that more than half of participants rated nurses' roles and nurse-provided psychosocial support as inadequate, and slightly more than half were categorized as having poor quality of life. Both service-related variables were strongly associated with quality of life in bivariable analyses and remained associated in a two-predictor logistic model. However, the exceptionally large ORs and AORs were accompanied by very wide CIs. The main interpretation is therefore the direction and

statistical evidence of association, not the literal magnitude of the point estimates.

The participant profile should be interpreted as a description of people who attended this clinic during the study period rather than as evidence about HIV acquisition or transmission. Sociodemographic characteristics such as age, sex, marital status, education, and occupation may shape communication preferences, social responsibilities, access to resources, and the type of support required during long-term care, but the present study did not measure sexual behaviour or transmission pathways. Avoiding unsupported risk attributions is particularly important in HIV

research because stigmatizing interpretations can themselves undermine engagement with care (Akbar, 2024; Jaiswal & Mumba, 2022).

The strong association between patients' perceptions of nurses' roles and quality of life is consistent with the broader importance of nursing continuity, education, coordination, and person-centred support in HIV care. Moen et al. (2023) showed that nurse-led hospital-to-community care can address both clinical outcomes and health-related social needs among PLHIV. Studies of HIV nursing services in other settings also demonstrate that operational conditions, integration of services, role clarity, and organizational support influence nurses' capacity to deliver comprehensive care (Murudi-Manganye et al., 2023; Ngcobo et al., 2024; Okoroafor & Christmals, 2023). Public-health nursing is likewise central to prevention, education, linkage, and continuity across the HIV care pathway (Prasad et al., 2023).

The finding for psychosocial support is also consistent with evidence that social connection, emotional support, stigma, and loneliness influence the lived experience of HIV. Qian et al. (2023) found that loneliness mediated part of the relationship between social support and health-related quality of life among PLHIV. Zhabokritsky et al. (2024) identified social and stigma-related correlates of poorer outcomes among older adults living with HIV, while Okafor and Bello (2026) reported an association between self-stigma and ART adherence. These findings support the clinical relevance of therapeutic communication, counselling, emotional validation, and linkage to peer or community resources as components of HIV nursing practice (Amirudin et al 2026).

Psychosocial care must be delivered in ways that reduce stigma and respect patients' social and cultural contexts. For HIV nursing practice, the most directly relevant mechanisms include therapeutic communication, continuity of care, emotional validation, adherence support, mental-health needs, and linkage to family, peer, or community resources (Dada et al., 2024; Jaiswal & Mumba, 2022).

The adjusted association for nurses' roles was numerically larger than that for psychosocial support, but it should not be labelled a "dominant factor." The model contained only two independent variables and did not adjust for ART

adherence, CD4 count, viral load, clinical stage, opportunistic infections, stigma, depression, family support, socioeconomic status, or other plausible confounders. In addition, the very sparse distribution of good quality of life in the "inadequate nurses' roles" group (1 of 42 participants) produced a very large odds ratio and a wide CI, which is compatible with small-sample or sparse-data bias. The conceptual overlap between perceptions of nurses' roles and psychosocial support may also contribute to model instability. These issues require caution in interpreting the adjusted point estimates.

Operational workload and administrative responsibilities may plausibly affect the time nurses can devote to education and counselling, but this study did not measure workload, staffing, consultation duration, or administrative burden. Evidence from nurses providing HIV care indicates that organizational conditions and work-related stress can influence care delivery (Ngcobo et al., 2024; Pan et al., 2022). Future studies should therefore measure service-level determinants directly rather than infer them from patient ratings.

From a practice perspective, the findings support strengthening structured therapeutic communication, counselling, emotional support, education, and referral pathways for social and mental-health needs. Nurse-led and community-connected models may help extend support beyond the clinic (Moen et al., 2023), while community-system strengthening and peer/community delivery approaches may reduce barriers and stigma (Akbar, 2024; Dela Cruz et al., 2024). Such interventions should be evaluated prospectively using patient-reported outcomes, clinical indicators, and implementation measures rather than assuming that improved nursing processes will automatically cause improved quality of life (Sujianto et al 2025; Amirudin et al 2026).

Limitations

Several limitations should be considered. First, the cross-sectional design establishes association but not temporal sequence or causality. Second, all main variables were patient-reported and dichotomized using a 60% threshold, which may reduce information and may amplify contrasts between groups. Third, the sample was small and drawn from a single clinic; sparse cell

distributions generated very large ORs and AORs with wide CIs, indicating limited precision. Fourth, the regression model included only two service-related predictors and did not control for important clinical and psychosocial factors such as ART regimen and adherence, CD4 count, viral load, clinical stage, opportunistic infections, stigma, depression, family support, or socioeconomic status because these variables were not available in the study dataset. Fifth, age was retained only in the predefined <40/≥40-year categories, limiting descriptive detail. Sixth, detailed recruitment-flow subcategories and systematic documentation of acute illness, cognitive impairment, communication barriers, or severe psychological distress were not recorded separately. Finally, use of adapted nurse-role and psychosocial-support instruments would be strengthened by reporting full psychometric coefficients in future studies

Conclusion and Recommendation

Patients who perceived nurses' roles and nurse-provided psychosocial support as adequate had higher odds of good quality of life than those who perceived these aspects of care as inadequate, and both variables remained statistically associated in the two-predictor model. However, very wide confidence intervals, probable sparse-data bias, a small single-centre sample, dichotomized measures, potential reverse causality, and the absence of comprehensive confounder adjustment preclude causal interpretation and do not support describing either variable as a dominant determinant. Therapeutic communication, counselling, respectful psychosocial support, and person-centred biopsychosocial care may warrant strengthening and prospective evaluation. Confirmation requires larger multicentre longitudinal studies using validated continuous measures and adjustment for relevant clinical, mental-health, stigma, adherence, socioeconomic, and social-support factors.

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Declaration of conflict of interest

The authors declare no competing interests.

Declaration on the Use of AI

No AI tools were used in the preparation of this manuscript.

Data Availability Statement

Data sharing is not applicable to this article.

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