

Transcultural Self-Efficacy among Nurses Providing HIV/AIDS Care in Public Health Centers in Cimahi, Indonesia: A Comparative Cross-Sectional Study

Wulan Novika Ambarsari^{1*}, Liwayway T. Vallesteros²

¹*Institute of Health Sciences Budi Luhur, Kota Cimahi, Jawa Barat 40532, Indonesia*

²*School of Nursing, Philippine Women's University, Manila, Malate, Manila, 1004 Metro Manila, Philippines*

**Corresponding Author's Email: wulannovika14@gmail.com*

ABSTRACT

Background: Transcultural self-efficacy is relevant to HIV/AIDS nursing because culturally sensitive issues such as stigma, disclosure, sexuality, religion, family involvement, and treatment decisions are routinely encountered in care. **Objectives:** This study assessed transcultural self-efficacy among nurses providing HIV/AIDS services in Public Health Centers (PHCs) in Cimahi, Indonesia, and compared scores across demographic and professional characteristics. **Methods:** A comparative cross-sectional design used total sampling of the full accessible population of 61 eligible nurses from 13 PHCs. The bilingual 83-item Transcultural Self-Efficacy Tool (TSET) assessed cognitive, practical, and affective domains on a 1-10 scale. Domain and overall scores were analyzed as continuous variables. Because the overall score was non-normally distributed, Mann-Whitney U and Kruskal-Wallis tests were used, with Holm adjustment across eight profile comparisons. **Results:** Mean scores were 8.21 (SD=1.95) for cognitive, 7.86 (SD=2.28) for practical, 7.66 (SD=2.28) for affective, and 7.89 (SD=2.12) overall. The overall median was 8.57 (IQR 7.21-9.51; 95% CI for the mean 7.35-8.44). Corrected item-total correlations for the 83-item scale ranged from 0.820 to 0.976, and overall Cronbach's alpha was 0.998. After Holm adjustment, differences remained significant for education (Mann-Whitney U=211.5; adjusted $p=0.0049$) and work experience ($H=14.48$; adjusted $p=0.041$), but not for workplace or other demographic characteristics. **Conclusion:** Among this local census of PHC nurses, transcultural self-efficacy was highest in the cognitive domain and lowest in the affective domain. Education and work-experience groups differed, although the work-experience pattern was non-linear. Findings should be interpreted as local, exploratory group differences rather than causal or nationally representative effects.

Keywords: HIV/AIDS Care; Indonesia; Primary Health Care; Self-Efficacy; Transcultural Nursing

INTRODUCTION

HIV/AIDS remains an important public health challenge, and sustained responses require health systems that can maintain prevention, treatment, and long-term engagement in care (Assefa & Gilks, 2020). In Cimahi City, West Java, Indonesia, HIV services are delivered through public health centers as part of the local health response (Dinas Kesehatan Kota Cimahi, 2022). Nurses in these services frequently manage conversations about stigma, disclosure, sexuality, family involvement, religious beliefs, and treatment decisions. These interactions are clinically important because HIV-related stigma among nurses and other health workers can undermine equitable and respectful care; recent Indonesian evidence continues to identify stigma as a relevant issue in HIV service settings (Wilandika *et al.*, 2025; Rahmah *et al.*, 2020). Related Indonesian literature likewise highlights stigma reduction, sexuality-related communication, and social determinants as relevant issues in HIV care (Ernawati *et al.*, 2020; Qur'aniati *et al.*, 2023).

Received: December 12, 2025 Received in revised form: August 24, 2026 Accepted: August 29, 2026

Transcultural self-efficacy refers to a nurse's perceived confidence in performing culturally appropriate assessment, communication, and care activities. The Transcultural Self-Efficacy Tool (TSET) operationalizes this construct across cognitive, practical, and affective domains (Jeffreys, 2021). In HIV/AIDS practice, the construct is relevant not because it directly measures clinical outcomes, but because culturally responsive communication is needed when patients' beliefs, family structures, stigma experiences, and treatment preferences influence disclosure, engagement, and decision-making. Indonesian evidence also links cultural competence with nursing care and therapeutic communication (Pitriani *et al.*, 2020; Rifa'i *et al.*, 2020).

Leininger's Transcultural Nursing Theory provides the nursing lens for the clinical content of culturally congruent care. It emphasizes incorporating patients' cultural values, beliefs, and lifeways into assessment and care planning rather than assuming that a single approach is appropriate for all patients (McEwen & Wills, 2022). This perspective is particularly pertinent to HIV/AIDS services, where sensitive communication must be adapted to the patient's social and cultural context. Broader transcultural nursing literature in Indonesia and other settings similarly emphasizes culturally informed assessment and care (Astuti & Alzate, 2022; Çağlar & Bilgili, 2020).

Bandura's Social Cognitive Theory provides the primary explanatory framework for the study outcome because the TSET measures self-efficacy. Self-efficacy can develop through mastery experiences, observation, social persuasion, and interpretation of personal and environmental cues (Bandura, 2023). Applied to nursing practice, this framework supports examining whether education, work experience, and practice setting are associated with differences in confidence to provide transcultural care, while Leininger's theory clarifies the culturally congruent care towards which confidence is directed. Educational approaches designed to strengthen culturally competent care have also used transcultural self-efficacy as an outcome (Presley & Mokoboto-Zwane, 2023).

The literature shows that transcultural self-efficacy has been examined in different populations and settings. Somoloo (2022), for example, explored transcultural self-efficacy among student nurses in a private nursing school in South Africa, illustrating the educational literature that predates the present study. Among practicing nurses, studies in China, Korea, and Ethiopia have reported associations between transcultural self-efficacy and professional or demographic characteristics (Berhanu *et al.*, 2021; Li *et al.*, 2020). More recent evidence has expanded attention to primary and community care: a 2025 primary-care nursing study examined transcultural self-efficacy in relation to ethical knowledge, attitudes, and practice (Theodosopoulos *et al.*, 2025), while a 2026 Indonesian study of 224 community health nurses across 26 PHCs in Samarinda linked transcultural nursing competence with therapeutic communication and self-efficacy (Nopriyanto *et al.*, 2026; Ham & Tak, 2022).

These studies indicate that TSET-related concepts are not novel in themselves. The specific gap addressed here is narrower: evidence remains limited on TSET-measured transcultural self-efficacy among nurses directly engaged in HIV/AIDS services in Indonesian public primary healthcare (Nopriyanto *et al.*, 2026; Wilandika *et al.*, 2025). This context combines the communication demands of HIV care with community-based service delivery and culturally diverse patient interactions. The present study therefore contributes to setting-specific evidence rather than claiming novelty for transcultural self-efficacy as a construct. Based on Social Cognitive Theory and prior practicing-nurse studies, three a priori hypotheses guided the comparative analyses: (H1) bachelor-educated nurses would report higher overall TSET scores than Diploma III nurses; (H2) overall TSET scores would differ across work-experience groups because opportunities for mastery experience may vary; and (H3) overall TSET scores would differ across PHCs because practice environments may provide different learning and support opportunities. Comparisons by age, gender, marital status, religion, and ethnicity were treated as exploratory rather than theory-driven primary hypotheses. Work experience and public-health nursing competency have likewise been examined as relevant professional-context factors (Maskor *et al.*, 2021; Suprpto *et al.*, 2024).

Accordingly, this study aimed to describe cognitive, practical, affective, and overall transcultural self-

efficacy among nurses involved in HIV/AIDS care in Cimahi and compare overall TSET scores across demographic, professional, and workplace characteristics. The intended inference is restricted to the accessible population of nurses from the 13 participating PHCs.

METHODOLOGY

Study Design

This study used a comparative cross-sectional quantitative design. All variables were measured at one point, without intervention or assignment of exposure, making the design appropriate for describing TSET scores and comparing naturally occurring groups (Polit & Beck, 2022). Cognitive, practical, and affective domains were defined according to the TSET framework (Jeffreys, 2021).

Setting

The study was conducted in 13 Public Health Centers (PHCs) in Cimahi, West Java, Indonesia. These centers provide community-based preventive and clinical services and participate in local HIV/AIDS service delivery. The PHCs constituted the study sites; however, the study did not collect site-level measures such as HIV caseload, staffing, frequency of transcultural training, or supervision intensity. Consequently, workplace comparisons were treated as contextual and exploratory (Dinas Kesehatan Kota Cimahi, 2022).

Population and Sampling

The accessible population comprised all 61 nurses identified by the 13 participating PHCs as being directly involved in HIV/AIDS services during the study period. Eligibility required current involvement in HIV/AIDS services at a participating PHC and willingness to provide informed consent. Each PHC identified eligible nurses from its own HIV/AIDS service personnel, and all 61 eligible nurses were invited to participate. Because the study used a census/total-sampling approach to the finite accessible population, no sample-size calculation was used to select a subsample. This complete participation does not imply adequate power for sparse subgroup comparisons, and the sample should not be interpreted as representative of Indonesian PHC nurses nationally. The local ethics approval covered the broader parent protocol involving nurses and cadres; the present manuscript reports the nursing component. Operational permission was also obtained from the Cimahi City Health Office and the directors of the 13 participating PHCs. Participants were informed about the study purpose, voluntary participation, confidentiality, and their right to withdraw without employment consequences. Identifying information was removed from the analytic dataset, and study data were stored in password-protected systems.

Instrument

Data were collected using a bilingual Bahasa Indonesia-English version of the Transcultural Self-Efficacy Tool (TSET), developed by Jeffreys. Each item displayed Bahasa Indonesia together with its English equivalent and used response anchors from 1 (not confident) to 10 (totally confident). The 83 items comprised 25 cognitive items, 28 practical interviewing items, and 30 affective items (Jeffreys, 2021). The study records available for this revision confirm use of the bilingual questionnaire but do not document a separate formal forward-translation, back-translation, expert review, or cross-cultural adaptation protocol. Accordingly, the bilingual version is described as the questionnaire used in this study and is not presented as a formally validated Indonesian-language adaptation.

For each respondent, domain scores were calculated as the arithmetic mean of all items in the relevant domain, retaining the original 1-10 metric. The overall TSET score was calculated as the mean of all 83 item responses for that respondent and was then summarized across participants. Higher scores indicate greater perceived transcultural self-efficacy. No diagnostic or normative cutoffs were applied in the revised analysis.

Validity and Reliability

Psychometric analysis was repeated using the 61 complete 83-item questionnaires. Corrected item-total correlation was calculated for each item by correlating it with the total score formed from the remaining

items, thereby avoiding the inclusion of the item in its own total score. For the overall 83-item scale, corrected item-total correlations ranged from $r=0.820$ to $r=0.976$; approximate 95% confidence intervals for the lowest and highest observed correlations were 0.716-0.888 and 0.960-0.986, respectively. Cronbach's alpha was 0.996 for the cognitive domain, 0.998 for the practical domain, 0.995 for the affective domain, and 0.998 overall. These very high coefficients describe item-total association and internal consistency in this sample and should not be interpreted as a new factor-analytic or cross-cultural validation of the TSET. Their magnitude also warrants cautious interpretation because the response patterns were highly homogeneous.

Data Collection Procedure

Following local ethical approval and operational permission from the Cimahi City Health Office and the directors of the participating PHCs, eligible nurses were identified by their respective PHCs. The researchers approached all eligible nurses, explained the study objectives, voluntary participation, confidentiality protections, and the right to decline, and obtained informed consent. The bilingual questionnaire was then distributed directly, with researchers available to clarify questionnaire instructions. All 61 returned questionnaires were included in the analysis; after verification of the intended 83-item TSET structure, the retained TSET items were complete for all participants. Data were coded without participant names for analysis.

Data Analysis

Frequencies and percentages were used to summarize participant characteristics. TSET domains and the overall score were treated as continuous 1-10 variables and summarized using mean, Standard Deviation (SD), median, Interquartile Range (IQR), and 95% Confidence Interval (CI) for the mean. The unsupported labels 'fair,' 'good,' and 'very good' were removed because they are not established normative TSET classifications.

The distribution of the overall TSET score departed from normality (Shapiro-Wilk $W=0.809$, $p<0.001$). Mann-Whitney U tests were therefore used for two-group comparisons (gender and education), whereas Kruskal-Wallis tests were used for age, marital status, religion, work experience, workplace, and ethnicity. Because eight profile variables were tested against the same overall outcome, Holm's sequential adjustment was applied to the eight omnibus/two-group p -values to control family-wise errors. For the significant work experience Kruskal-Wallis test, Dunn pairwise comparisons with Holm adjustment were used to identify which groups differed. Raw p -values are reported together with adjusted p -values to make the multiplicity correction transparent. Several categories contained very few participants, including age 50-59 years ($n=2$), divorced status ($n=1$), Catholic religion ($n=2$), Buddhist religion ($n=1$), and several PHCs with $n=3-5$. Inferential results involving these sparse groups were therefore considered exploratory and potentially unstable. Statistical significance for the multiplicity-adjusted primary inference was set at adjusted $p<0.05$. Because the design was cross-sectional, statistically significant results were interpreted as group differences or associations, not causal effects.

Ethical Considerations

The study was granted ethical approval from the Health Research Ethics Committee of STIKes Budi Luhur Cimahi, Indonesia with approval number 309/D/KEPK-STIKes/X/2024 on 28th October 2024.

RESULTS

Demographic Characteristics of Nurse Participants

Table 1 presents the demographic and professional characteristics of the 61 participating nurses, who represented the full accessible population identified across the 13 PHCs. Most participants were female (75.41%), aged 30-39 years (44.26%), married (81.97%), educated at the Diploma III level (60.66%), and Sundanese (73.77%). Religion data were available for 60 nurses; one participant had a missing religion value. Several subgroup categories were small, which is relevant to the interpretation of the comparative analyses.

Table 1: Demographic and Professional Characteristics of Nurses (n=61)

Socio-demographic Characteristics	Characteristics	Frequency (n)	Percentage (%)
Gender	Male	15	24.59
	Female	46	75.41
Age	20-29 years	18	29.51
	30-39 years	27	44.26
	40-49 years	14	22.95
	50-59 years	2	3.28
Marital Status	Single	10	16.39
	Married	50	81.97
	Divorced	1	1.64
Religion	Muslim	57	93.44
	Catholic	2	3.28
	Buddhist	1	1.64
	Not reported	1	1.64
Education Level	Diploma III Nursing	37	60.66
	Bachelor of Science in Nursing	24	39.34
Work Experience	<2 years	5	8.20
	2-4 years	13	21.31
	5-9 years	20	32.79
	10-14 years	10	16.39
	>=15 years	13	21.31
Ethnicity	Sundanese	45	73.77
	Javanese	11	18.03
	Malay	2	3.28
	Other	3	4.92
Public Health Center	Cibeber PHC	3	4.92
	Cibeureum PHC	5	8.20
	Cigugur PHC	4	6.56
	Cimahi Selatan PHC	4	6.56
	Cimahi Tengah PHC	8	13.11
	Cimahi Utara PHC	5	8.20
	Cipageran PHC	4	6.56
	Citeureup PHC	3	4.92
	Leuwigajah PHC	5	8.20
	Melong Asih PHC	6	9.84
	Melong Tengah PHC	4	6.56
	Padasuka PHC	5	8.20
	Pasirkaliki PHC	5	8.20

Transcultural Self-Efficacy Scores

Cognitive Domain

As shown in Table 2, the cognitive domain had the highest domain mean ($M=8.21$, $SD=1.95$), with a median of 8.92 (IQR 7.82-9.56) and a 95% CI for the mean of 7.71-8.71. Among the selected indicators reported in Table 2, mean scores ranged from 7.92 for sexuality to 8.39 for hygiene.

Table 2: Cognitive Subscale - Selected Indicator Scores

Indicators	Mean (1-10)	SD
Informed Consent	8.38	1.96
Illness Prevention	8.36	1.99
Health Maintenance	8.36	1.94
Diet and Nutrition	8.38	1.92
Hygiene	8.39	2.03
Dying and Death	7.93	2.12
Grieving and Loss	7.97	2.18
Sexuality	7.92	2.11
Domain Mean	8.21	1.95

Practical Domain

Table 3 shows a practical-domain mean of 7.86 (SD=2.28), a median of 8.71 (IQR 7.11-9.54), and a 95% CI for the mean of 7.28-8.45. Among the selected practical indicators, English comprehension had the lowest mean (M=7.08, SD=2.74), while gender role had the highest selected mean (M=8.00, SD=2.33).

Table 3: Practical Subscale - Selected Indicator Scores

Indicators	Mean (1-10)	SD
English Comprehension	7.08	2.74
Religious Background	7.95	2.29
Technological Views	7.84	2.27
Financial Concerns	7.89	2.24
Gender Role	8.00	2.33
Family Role During Illness	8.07	2.26
Aging	7.85	2.36
Domain Mean	7.86	2.28

Affective Domain

As presented in Table 4, the affective domain had the lowest of the three domain means (M=7.66, SD=2.28), with a median of 8.17 (IQR 7.07-9.42) and a 95% CI for the mean of 7.08-8.24. Among the selected indicators, responding to treatment refusal based on beliefs had a mean of 7.49 (SD=2.41), while understanding roles had a mean of 7.85 (SD=2.41).

Table 4: Affective Subscale - Selected Indicator Scores

Indicators	Mean (1-10)	SD
Cultural Heritage & Beliefs	7.51	2.37
Roles	7.85	2.41
Values	7.80	2.41
Socioeconomic Factors	7.80	2.38
Professional Caring	7.79	2.40
Client Refusal of Treatment	7.49	2.41
Culture-Specific Nursing	7.52	2.43
Domain Mean	7.66	2.28

Overall Transcultural Self-Efficacy

Table 5 summarizes the three TSET domains and the overall score. The overall TSET mean was 7.89 (SD=2.12), calculated as the mean of all 83 items for each respondent before summarizing across the sample. The overall median was 8.57 (IQR 7.21-9.51), and the 95% CI for the mean was 7.35-8.44. The domain pattern was cognitive (M=8.21), practical (M=7.86), and affective (M=7.66).

Table 5: Summary of TSET Domain and Overall Scores

Domain	Mean (SD)	Median	IQR (Q1-Q3)	95% CI for mean
Cognitive	8.21 (1.95)	8.92	7.82-9.56	7.71-8.71
Practical	7.86 (2.28)	8.71	7.11-9.54	7.28-8.45
Affective	7.66 (2.28)	8.17	7.07-9.42	7.08-8.24
Overall TSET	7.89 (2.12)	8.57	7.21-9.51	7.35-8.44

Differences in Overall TSET Scores by Participant Characteristics

Comparative Analyses

Table 6 presents raw and Holm-adjusted results for the eight profile comparisons. Gender was not

associated with a statistically significant difference in overall TSET score (Mann-Whitney $U=247.0$, raw $p=0.102$, Holm-adjusted $p=0.512$). Education differed significantly: bachelor-educated nurses had a higher mean rank (40.69) than Diploma III nurses (24.72), with $U=211.5$, raw $p=0.0006$, and Holm-adjusted $p=0.0049$.

Education, Work Experience, and Workplace

Work experience also remained significant after family-wise adjustment (Kruskal-Wallis $H=14.48$, raw $p=0.0059$, Holm-adjusted $p=0.041$). Mean ranks were 46.60 for <2 years, 38.85 for 2-4 years, 27.18 for 5-9 years, 16.45 for 10-14 years, and 34.23 for ≥ 15 years, demonstrating a non-linear pattern. Dunn-Holm post-hoc comparisons showed significant differences for <2 versus 10-14 years (adjusted $p=0.019$) and 2-4 versus 10-14 years (adjusted $p=0.024$); all other pairs were non-significant after adjustment.

The workplace comparison had a raw Kruskal-Wallis p -value of 0.026 ($H=23.21$), but it did not remain significant after Holm adjustment across the eight profile tests (adjusted $p=0.156$). Age, marital status, religion, and ethnicity were also non-significant. Accordingly, the final inferential interpretation focuses on education and work experience, while the remaining comparisons are reported descriptively and cautiously because several subgroups were very small.

Table 6: Comparative Tests for Overall TSET Score

Profile variable	Statistical test	Raw p	Holm-adjusted p	Final interpretation
Gender	Mann-Whitney $U=247.0$	0.102	0.512	Not significant
Age	Kruskal-Wallis $H=1.162$	0.762	1.000	Not significant
Marital status	Kruskal-Wallis $H=0.128$	0.938	1.000	Not significant
Religion	Kruskal-Wallis $H=0.933$	0.627	1.000	Not significant
Education level	Mann-Whitney $U=211.5$	0.0006	0.0049	Significant
Work experience	Kruskal-Wallis $H=14.478$	0.0059	0.041	Significant
Workplace	Kruskal-Wallis $H=23.206$	0.026	0.156	Not significant
Ethnicity	Kruskal-Wallis $H=0.387$	0.943	1.000	Not significant

DISCUSSION

This study found an overall TSET mean of 7.89 on the 1-10 scale, with cognitive self-efficacy highest ($M=8.21$), followed by practical ($M=7.86$) and affective ($M=7.66$). After correction for multiple comparisons, education and work experience remained associated with different overall TSET distributions, whereas workplace and the other demographic factors did not. These findings differ materially from the earlier manuscript analysis, particularly the previous characterization of the practical domain as markedly low.

Cognitive Domain

The cognitive domain was the highest-scoring domain. This pattern is broadly compatible with prior studies of practicing nurses in which knowledge and professional exposure contributed to transcultural self-efficacy, although direct comparison is limited by differences in settings and scoring approaches (Ham & Tak, 2022; Li *et al.*, 2020). The present study cannot determine whether the relatively high cognitive score reflects formal education, routine public-health practice, prior training, or other unmeasured exposures.

For HIV/AIDS care, cognitive confidence is relevant because nurses must understand how cultural beliefs and social expectations can shape communication about disclosure, stigma, sexuality, treatment choices, and family involvement. Recent Indonesian evidence showing an inverse relationship between HIV knowledge and stigmatizing attitudes among nurses underscores the importance of informed, respectful care, although HIV knowledge and TSET are distinct constructs (Wilandika *et al.*, 2025). This broader context is consistent with Indonesian literature on HIV stigma reduction and social determinants of HIV care (Ernawati *et al.*, 2020; Qur'aniati *et al.*, 2023).

Within the selected cognitive indicators, sexuality, dying and death, and grieving and loss were somewhat lower than several general health topics. These differences are descriptive and should not be overstated; item-level means do not establish a clinical competency deficit. They may nevertheless help identify topics for

discussion in continuing professional development. The lower sexuality-related indicator is also contextually consistent with qualitative evidence that Indonesian nurses can experience discomfort and limited confidence when discussing patients' sexuality concerns (Rahmah *et al.*, 2020).

Practical Domain

The re-analysis changed the interpretation of the practical domain substantially. Its mean was 7.86 rather than 5.55, so practical transcultural self-efficacy was not the weakest domain. English comprehension was the lowest of the selected practical indicators, but the study did not measure actual language use during HIV consultations or observed communication performance. Therefore, no causal explanation for this item-level pattern is warranted. English-specific preparation for Indonesian nurses has also been addressed through competency-oriented learning and assessment development (Widanta *et al.*, 2023).

Primary-care evidence supports the broader relevance of culturally responsive communication. Theodosopoulos *et al.* (2025) examined transcultural self-efficacy among primary-healthcare nurses, and Nopriyanto *et al.* (2026) reported relationships among transcultural nursing competence, therapeutic communication, and self-efficacy among community health nurses in Indonesian PHCs. These studies support attention to communication skills in community nursing, but they do not justify inferring that the Cimahi nurses had poor practical competence. Indonesian nursing studies have likewise linked cultural competence with nursing care and therapeutic communication (Pitriani *et al.*, 2020; Rifa'i *et al.*, 2020).

Training implications should therefore be targeted rather than deficit-based. A recent systematic review and meta-analysis found that cultural competence interventions can improve nurses' cultural competence outcomes, while evidence for patient-related outcomes remains more limited (Osmancevic *et al.*, 2025). In this sample, continuing education could reasonably emphasize culturally sensitive interviewing and communication without labeling the practical domain as "fair" or deficient. Related work also supports structured capacity-building and professional development in culturally competent care and community health nursing (Ernawati *et al.*, 2021; Presley & Mokoboto-Zwane, 2023).

Affective Domain

The affective domain had the lowest mean of the three domains ($M=7.66$), although the absolute difference from the practical domain was small. The selected item concerning treatment refusal based on beliefs was among the lower affective means. This topic is relevant to HIV/AIDS nursing because respecting patient beliefs while maintaining informed, non-stigmatizing communication can be challenging (Rahmah *et al.*, 2020; Wilandika *et al.*, 2025).

Leininger's perspective emphasizes culturally congruent responses to patients' values and lifeways, while Bandura's framework highlights confidence in performing these interactions (Bandura, 2023; McEwen & Wills, 2022). The present data measure perceived confidence, not observed ethical behavior, empathy, stigma, or patient-centered outcomes; these distinctions should be maintained when interpreting the affective score. Transcultural nursing literature similarly emphasizes the importance of culturally informed assessment of values, beliefs, and social context (Astuti & Alzate, 2022; Çağlar & Bilgili, 2020).

Differences Based on Demographic and Professional Characteristics

After Holm adjustment across eight profile comparisons, only education and work experience remained statistically significant. This multiplicity correction materially changes the interpretation of the earlier analysis, in which workplace was treated as significant on the basis of its unadjusted p -value.

Education Level

Bachelor-educated nurses had a higher mean rank than Diploma III nurses, and the difference remained significant after Holm adjustment (adjusted $p=0.0049$). This finding is consistent with the study's first hypothesis and with literature indicating that professional preparation can be associated with transcultural

self-efficacy (Berhanu *et al.*, 2021; Li *et al.*, 2020). Because education was not assigned and potential confounders were not modeled, the result should be described as an association rather than evidence that degree level caused higher self-efficacy.

Work Experience

Work experience differed across groups, but the pattern was clearly non-linear. Nurses with <2 years and 2-4 years of experience had higher mean ranks than the 10-14-year group in the adjusted pairwise comparisons, whereas several other pairs were not different. This finding supports heterogeneity across experience groups but not a dose-response relationship in which self-efficacy rises steadily with years of service. Unmeasured differences in recent training, role assignment, case exposure, or cohort characteristics may have contributed, but the present study cannot test those explanations. Evidence from nursing competency research also suggests that work experience may relate to professional competency, although the relationship can be modest and context-dependent (Maskor *et al.*, 2021).

Workplace Setting

The PHC comparison was significant only before multiplicity correction (raw $p=0.026$; Holm-adjusted $p=0.156$). It should therefore not be presented as evidence of a workplace effect. Interpretation is further limited because PHC subgroup sizes ranged from 3 to 8 nurses and the study did not measure site-level characteristics such as staffing, HIV caseload, supervision, or training exposure. Future multicenter work should measure these organizational factors directly rather than using PHC identity as an unexplained proxy.

Implications for Practice

Within the limits of a small local census, the findings support focused professional development rather than a broad claim of deficient transcultural competence. Potential priorities are

- Reinforce culturally sensitive HIV communication on disclosure, stigma, sexuality, treatment refusal, and family involvement.
- Use case discussion, simulation, and reflective learning to strengthen confidence in complex transcultural encounters.
- Tailor continuing education to educational background and identified learning needs rather than assuming that years of experience alone predict competence.
- Evaluate training with both self-efficacy measures and observed communication or patient-related outcomes.
- Collect PHC-level data on training, supervision, staffing, and HIV caseload before drawing organizational comparisons.

Non-significant Demographic Findings

Age, gender, marital status, religion, ethnicity, and workplace were not significant after the planned multiplicity adjustment. These findings should not be interpreted as evidence that personal or cultural characteristics are irrelevant. The sample was highly homogeneous, and several comparison cells contained only one to three participants, making estimates unstable and reducing the ability to detect meaningful differences. Religion was also missing for one participant.

Limitations

This study has several important limitations. First, the sample was a census of only 61 nurses from 13 PHCs in one Indonesian city; it represents the accessible local population rather than Indonesian PHC nurses generally. Second, several subgroups were extremely small, making rank-based comparisons unstable despite use of nonparametric tests. Third, the TSET was self-reported, and one respondent used the same score across all 83 items while 26 of 61 respondents used no more than two distinct response values; this response homogeneity may contribute to the unusually high corrected item-total correlations and Cronbach's

alpha. Fourth, the study records available for revision did not document a formal forward/back-translation and cross-cultural adaptation protocol for the bilingual questionnaire, limiting conclusions about the linguistic equivalence of the Bahasa Indonesia wording. Fifth, the study did not collect observed clinical behavior, patient outcomes, HIV caseload, site-level training, staffing, or supervision measures. Finally, the cross-sectional design precludes causal inference. Holm adjustment reduced the risk of false-positive findings across the eight profile comparisons, but it does not overcome the limited precision of the small subgroups.

Future Scope

Future research should include larger multicenter PHC samples, document formal cross-cultural adaptation of the TSET where required, and combine self-efficacy scores with observed communication, qualitative perspectives, and patient-centered outcomes. Longitudinal or intervention studies could assess whether structured transcultural communication training changes both perceived self-efficacy and clinical practice. Organizational variables such as HIV caseload, staffing, supervision, and access to continuing education should be measured explicitly.

CONCLUSION

Transcultural self-efficacy among nurses providing HIV/AIDS services in public health centers in Cimahi varied across cognitive, practical, and affective domains, with the cognitive domain showing the strongest pattern and the affective domain the lowest. Education level and work experience were associated with differences in overall transcultural self-efficacy after adjustment for multiple comparisons, although the pattern across work-experience groups was non-linear. In contrast, workplace and the other demographic characteristics examined did not show significant differences after adjustment.

These findings provide context-specific evidence on transcultural self-efficacy among nurses involved in HIV/AIDS care within Indonesian primary healthcare settings. They highlight the importance of considering professional characteristics when examining nurses' perceived confidence in delivering culturally responsive care. However, the findings should be interpreted within the local and cross-sectional nature of the study and should not be considered evidence of causal relationships, actual clinical competence, or national patterns. Further multicenter research incorporating observed clinical practice and patient-related outcomes is needed to clarify how transcultural self-efficacy relates to culturally responsive HIV/AIDS nursing care.

CRedit Authorship Contribution Statement

W.N.A: Conceptualization, Methodology, Investigation, Data Curation, Formal Analysis, Project Administration, Visualization, Writing, Original Draft, and Writing, Review and Editing. L. T. V: Conceptualization, Methodology, Supervision, Validation, and Writing, Review and Editing. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

AI Assistance Declaration

During manuscript preparation, the authors used ChatGPT (OpenAI) to support English-language editing, organization, and grammar correction. The authors subsequently reviewed the manuscript, verified the data and references, and took full responsibility for the final content.

Conflict of Interest

The authors declare no conflict of interest related to this study.

ACKNOWLEDGEMENT

The authors are thankful to the Cimahi City Health Office, the participating Public Health Centers, and the nurse participants for their cooperation. The authors also acknowledge the academic support of the Philippine Women's University School of Nursing and the Institute of Health Sciences Budi Luhur, Indonesia.

REFERENCES

- Assefa, Y., & Gilks, C. F. (2020). Ending the epidemic of HIV/AIDS by 2030: Will there be an endgame to HIV, or an endemic HIV requiring an integrated health systems response in many countries? *International Journal of Infectious Diseases*, 100, 273–277. <https://doi.org/10.1016/j.ijid.2020.09.011>
- Astuti, R., & Alzate, A. M. T. (2022). Applications of Giger and Davidhizar's transcultural nursing theory in Indonesia. *Jurnal Kesehatan Budi Luhur: Jurnal Ilmu-Ilmu Kesehatan Masyarakat, Keperawatan, dan Kebidanan*, 15(2), 627–635. <https://doi.org/10.62817/jkbl.v15i2.149>
- Bandura, A. (2023). *Social cognitive theory: An agentic perspective on human nature* (D. Cervone, Ed.). Wiley. <https://doi.org/10.1002/9781394259069>
- Berhanu, R. D., Tesema, A. A., Deme, M. B., & Kanfe, S. G. (2021). Perceived transcultural self-efficacy and its associated factors among nurses in Ethiopia: A cross-sectional study. *PLoS ONE*, 16(7), e0254643. <https://doi.org/10.1371/journal.pone.0254643>
- Çağlar, S., & Bilgili, N. (2020). Transcultural nursing care in Turkey. *Florence Nightingale Journal of Nursing*, 28(1), 110–123. <https://doi.org/10.5152/FNJN.2020.18008>
- Dinas Kesehatan Kota Cimahi. (2022). *Profil kesehatan Kota Cimahi tahun 2022 [Cimahi City health profile 2022]*. <https://opendata.cimahikota.go.id/pencarian?organization=dkkc>
- Ernawati, E., Aminah, S., Nurhayati, N., & Fathurohman, A. (2020). Implementing of HIV/AIDS cadre partnership to reduce stigma on people living with HIV/AIDS: A case study. *Jurnal Ilmu Keperawatan Jiwa*, 3(4), 513–526. <https://doi.org/10.32584/jikj.v3i4.745>
- Ernawati, E., Nursalam, N., Devy, S. R., Soesanto, E., & Rejeki, S. (2021). Nurse support on health cadre empowerment and the influence on the ability of women's mentoring human immunodeficiency virus/acquired immune deficiency syndrome. *Open Access Macedonian Journal of Medical Sciences*, 9(G), 112–117. <https://doi.org/10.3889/oamjms.2021.6589>
- Ham, H. J., & Tak, S. H. (2022). Factors influencing transcultural self-efficacy among nurses with foreign patient care experience. *Journal of Transcultural Nursing*, 33(1), 87–95. <https://doi.org/10.1177/10436596211016514>
- Jeffreys, M. R. (2021). The Transcultural Self-Efficacy Tool (TSET), a journal article, holistic evaluation of evidence, and statistical thoughtfulness. *Journal of Transcultural Nursing*, 32(3), 198–200. <https://doi.org/10.1177/1043659621999829>
- Li, J., Wu, B., He, Z., Liu, J., Xiao, R., & Luo, Y. (2020). Investigation for the transcultural self-efficacy of nurses in Guizhou, China. *International Journal of Nursing Sciences*, 7(2), 191–197. <https://doi.org/10.1016/j.ijnss.2020.03.004>
- Maskor, N. A., Muhamad, M., Krauss, S. E., & Nik Mahmood, N. H. (2021). Relationship between personal values, work experience and nursing competencies among cancer care nurses in Malaysia. *Asian Pacific Journal of Cancer Prevention*, 22(1), 287–294. <https://doi.org/10.31557/APJCP.2021.22.1.287>
- McEwen, M., & Wills, E. M. (2022). *Theoretical basis for nursing* (6th ed.). Wolters Kluwer.
- Nopriyanto, D., Bahtiar, B., Ruminem, R., Puspasari, R., Sukmana, M., Samsugito, I., & Wati, R. (2026). The interplay of transcultural competence, therapeutic communication, and self-efficacy among community health nurses. *Contagion: Scientific Periodical Journal of Public Health and Coastal Health*, 8(2), 514–526. <https://doi.org/10.30829/contagion.v8i2.26621>
- Osmanovic, S., Steiner, L. M., Großschädl, F., Lohrmann, C., & Schoberer, D. (2025). The effectiveness of cultural competence interventions in nursing: A systematic review and meta-analysis. *International Journal of Nursing Studies*, 167, 105079. <https://doi.org/10.1016/j.ijnurstu.2025.105079>

- Pitriani, U., Ibrahim, K., & Pebrianti, S. (2020). Cultural competency and nursing care among Sundanese nurses ethnic group in Indonesia. *Malahayati International Journal of Nursing and Health Science*, 3(2), 131–137. <https://doi.org/10.33024/minh.v3i2.3634>
- Polit, D. F., & Beck, C. T. (2022). *Essentials of nursing research: Appraising evidence for nursing practice* (10th ed.). Wolters Kluwer.
- Presley, D., & Mokoboto-Zwane, S. (2023). Empowerment of foreign nurses to develop self-efficacy in culturally competent care delivery. *The Malaysian Journal of Nursing*, 15(2), 114–124. <https://doi.org/10.31674/mjn.2023.v15i02.013>
- Qur'aniati, N., Sweet, L., De Bellis, A., & Hutton, A. (2023). Social determinants of health on human immunodeficiency virus care quality in Indonesia. *Journal of Advanced Nursing*, 79(5), 1778–1788. <https://doi.org/10.1111/jan.15422>
- Rahmah, H., Afyanti, Y., Rachmawati, I. N., Ungsianik, T., Budiati, T., & Kurniawati, W. (2020). "I do not feel confident and uncomfortable discussing patients' sexuality concerns": A thematic analysis of Indonesian nurses' experiences in discussing sexuality with patients. *Jurnal Keperawatan Indonesia*, 23(1), 23–30. <https://doi.org/10.7454/jki.v23i1.1173>
- Rifa'i, A., Afandi, A. T., & Rindiantika, E. (2020). The correlation between transcultural nursing competencies and hospital-based nursing therapeutic communication in Jember, Indonesia. In *Enhancing capacity of healthcare scholars and professionals in responding to the global health issues: The 2nd Andalas International Nursing Conference 2019 (AINiC 2019)*, 70–78. De Gruyter. <https://doi.org/10.2478/9783110680041-010>
- Somoloo, P. (2022). *Transcultural self-efficacy among student nurses at a private nursing school in Durban, KwaZulu-Natal* [Master's dissertation, Durban University of Technology]. DUT Open Scholar. <https://doi.org/10.51415/10321/4443>
- Suprpto, Kamaruddin, M. I., Herlianty, & Nurhanifah, D. (2024). Building nurse competency strategy at public health center in Indonesia: A descriptive qualitative approach. *The Malaysian Journal of Nursing*, 15(3), 62–70. <https://doi.org/10.31674/mjn.2024.v15i03.008>
- Theodosopoulos, L., Fradelos, E. C., Panagiotou, A., & Tzavella, F. (2025). Cultural competence and ethics among nurses in primary healthcare: Exploring their interrelationship and implications for care delivery. *Healthcare*, 13(17), 2117. <https://doi.org/10.3390/healthcare13172117>
- Widanta, I. M. R. J., Putra, I. M. A., Ardika, I. W. D., & Hidayanti, N. N. A. T. (2023). Developing English for nurses in Indonesia: From learning supporting tools to assessment. *Theory and Practice in Language Studies*, 13(4), 917–926. <https://doi.org/10.17507/tpls.1304.13>
- Wilandika, A., Sajodin, Rohmah, S. F., & Yusof, S. (2025). Stigma toward patients living with HIV among nurses within public hospital in Bandung, Indonesia. *Asian Nursing Research*, 19(3), 284–290. <https://doi.org/10.1016/j.anr.2025.03.007>