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Nurses' Roles in Reducing Stigma Toward People Living with HIV-AIDS Through a Culturally Grounded Karo Spiritual Intervention Model

Papel de las enfermeras en la reducción del estigma hacia las personas con VIH/SIDA mediante un modelo de intervención espiritual Karo con base cultural

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SUMMARY

Introduction: *The phenomenon of caring for patients with HIV presents a unique challenge, especially for nurses working in hospital settings. Professional support is essential in the prevention, transmission control, care, and stigma reduction for people living with HIV/AIDS (PLWHA), as this condition is often complex for others to accept. This study aims to examine the role of nurses in reducing stigma toward PLWHA through a culturally sensitive spiritual intervention model based on Karo traditions.*
Methods: *This research employed a quantitative quasi-experimental design with pretest-posttest measures in both the intervention and control groups. The sampling method was purposive sampling. Data analysis used the Wilcoxon test. Data were collected from May 17 to 22, 2025, at the Karo District General Hospital in North Sumatra, with ethical approval from the UPH Ethics Committee.*
Results: *Following implementation of the Karo culturally sensitive spiritual intervention model, significant improvements were observed in nurses' knowledge and religiosity, whereas no meaningful change was observed in their behavior. In contrast, the control group showed no significant changes across knowledge, religiosity, or behavior throughout the study period.*
Conclusion: *The educational intervention significantly improved nurses' knowledge and religiosity among those caring for PLWHA in the intervention group. However, there was no significant change in behavior. In the control group, no significant improvements were observed in knowledge, religiosity, or behavior related to stigma reduction toward individuals living with HIV.*

Keywords: *Spiritual therapies, culturally sensitive care, nurses' role, social stigma.*

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RESUMEN

Introducción: *El cuidado de pacientes con VIH representa un desafío singular, especialmente para el personal de enfermería que trabaja en entornos*

hospitalarios. El apoyo profesional es esencial para la prevención, el control de la transmisión, la atención y la reducción del estigma hacia las personas con VIH/ SIDA (PVVS), ya que esta condición suele ser difícil de aceptar para otras personas. Este estudio busca examinar el papel del personal de enfermería en la reducción del estigma hacia las PVVS mediante un modelo de intervención espiritual con sensibilidad cultural, basado en las tradiciones Karo.

Métodos: *Esta investigación empleó un método cuantitativo cuasiexperimental, con mediciones pretest y postest, tanto en el grupo de intervención como en el grupo control. El método de muestreo fue intencional. El análisis de datos empleó la prueba de Wilcoxon. La recolección de datos se programó del 17 al 22 de mayo de 2025 en el Hospital General del Distrito de Karo, en Sumatra del Norte, con la aprobación del Comité de Ética de la UPH.*

Resultados: *Tras la implementación del modelo Karo de intervención espiritual con sensibilidad cultural, se observaron mejoras significativas en los conocimientos y la religiosidad de las enfermeras, mientras que no se detectaron cambios significativos en su comportamiento. Por el contrario, el grupo control no mostró cambios significativos en los conocimientos, la religiosidad ni el comportamiento durante el período de estudio.*

Conclusión: *La intervención educativa tuvo un impacto significativo en la mejora de los conocimientos y de la religiosidad del personal de enfermería que atendía a las personas con VIH del grupo de intervención. Sin embargo, no se observó un cambio significativo en el comportamiento. En el grupo de control no se observaron mejoras significativas en los conocimientos, en la religiosidad ni en el comportamiento relacionados con la reducción del estigma hacia las personas con VIH.*

Palabras clave: *Terapias espirituales, cuidados culturalmente sensibles; el papel de las enfermeras; estigma social.*

INTRODUCTION

Human Immunodeficiency Virus (HIV) remains a critical global health challenge, weakening the immune system and potentially leading to acquired immunodeficiency syndrome (AIDS) if left untreated. In Indonesia, the HIV epidemic presents a complex picture. While the estimated number of individuals living with HIV (PLWHA) in 2020 was around 543 100, a decrease from the 2016 figures prevalence rates vary significantly across different populations. For instance, the 2018 UNAIDS / HIV & AIDS Data Hub for Asia-Pacific survey highlighted disproportionately high rates among men who have sex with men (25.8 %), people who inject drugs (28.8 %), transgender individuals (24.8 %), and female sex workers (5.3 %). The COVID-19 pandemic further exacerbated challenges for PLWHA by disrupting their access to continuous care (1).

Beyond the immediate health implications, HIV carries a substantial social burden, primarily in the form of stigma and discrimination. This stigma profoundly impacts patients' self-esteem (2), psychological well-being (3), life satisfaction (4), and overall quality of life (5). Self-stigma is a particularly insidious form, where individuals internalize negative societal perceptions, leading them to believe that their HIV status reflects immoral behaviour. This internalization is often fuelled by a widespread lack of understanding about HIV/AIDS, which fosters fear, misinformation, and discriminatory actions. Rather than targeting PLWHA, efforts should instead focus on combating the modes of viral transmission. Illustrating the global reach of this prejudice, a 2019 UNAIDS survey across 13 countries revealed alarming statistics: in seven of these countries, 40 % of respondents would not buy vegetables from an HIV-positive vendor, and in five out of six countries, 20 % believed HIV-positive children should not attend school. Such attitudes contribute significantly to the social isolation and discrimination frequently experienced by PLWHA (1). These actions, often unconscious, have severe psychological repercussions, including stress, depression, hopelessness, and social withdrawal. Stigma, as experienced by PLWHA, encompasses demeaning sentiments, stereotypes, discriminatory actions, and the broader societal devaluation of individuals associated with the disease (6,7). It's a dynamic phenomenon, influenced by individual perspectives and societal norms. The core of this stigma lies in a lack of public knowledge about HIV/AIDS. Therefore, the focus must shift from combating PLWHA to combating viral transmission through education and awareness. People living with HIV/AIDS often grapple with low self-esteem, reduced self-efficacy, and a diminished sense of self-worth, which can hinder their ability to engage in necessary self-care and

achieve positive health outcomes. Transcultural nursing, an approach that integrates culturally and spiritually sensitive care into nursing practice, offers a promising avenue to address the diverse values, beliefs, and practices of nurses, communities, and healthcare organizations. Spiritual interventions, which draw on religious and existential beliefs, are crucial for supporting individuals' coping mechanisms during health crises and for building resilience against adversity. Evidence indicates that spiritual interventions improve quality of life among PLWHA (8). In Karo Regency, North Sumatra, the church has taken a proactive community-based approach to support PLWHA by establishing a shelter home. Pastors from the Moderamen of the Karo Batak Protestant Church (GBKP) provide spiritual support at this shelter, aiming to reduce internalized stigma. Despite these efforts, HIV cases in the region continue to rise. Previous qualitative research suggests that nurses' stigma toward PLWHA may be a contributing factor, underscoring the need for further qualitative research into nurses' experiences caring for PLWHA in hospital settings. Several factors influence the acceleration of HIV/AIDS and Programmatic Management of Sexually Transmitted Infections (PIMS) control efforts in Indonesia (7), including; the persistence of stigma and discrimination against people living with HIV within the community, which hinders healthcare workers' ability to reach PLWH and limits their access to healthcare services; limited public knowledge about HIV/AIDS and PIMS, often due to cultural taboos and reluctance to openly discuss issues related to sexuality, despite the fact that HIV/AIDS and PIMS are closely linked to sexual transmission; the need for substantial resources to implement comprehensive, high-quality, equitable, and accessible HIV/AIDS and PIMS programs across Indonesia's vast geography, which includes over 17 000 islands, many of which are difficult to reach; and the necessity for strong intersectoral commitment from both central and local governments, supported by all sectors of society, including communities, non-governmental organizations, the private sector, businesses, professionals, and academics, in the national response to HIV/AIDS and PIMS. In light of these challenges, it is essential that healthcare professionals, particularly nurses, receive specialized training to help PLWH prevent HIV transmission and to enhance the delivery of healthcare services.

This study proposes implementing a culturally sensitive Karo-based spiritual intervention for nurses, enabling them to understand and apply the SABETH method, which is designed to help prevent HIV transmission and reduce the stigma experienced by PLWH. Recent studies underscore the pivotal role of nurses in mitigating HIV-related stigma through targeted education and training. For instance, a quasi-experimental study by Purnama et al. (9) demonstrated that blended learning interventions effectively reduced HIV-related stigma and discrimination among nurses in Indonesia. Similarly, a study by Dewi et al. (10) in Bandung, Indonesia, revealed that nurses' stigmatizing attitudes adversely affected the quality of care provided to HIV/AIDS patients, emphasizing the necessity for stigma-reduction programs in nursing education. Moreover, Langi et al. (11) in rural Indonesia highlighted that healthcare workers, including nurses, exhibited significant stigma and discrimination towards people living with HIV, underscoring the need for comprehensive training to address these issues. These findings collectively suggest that integrating stigma-reduction strategies into nursing education and practice is essential for enhancing the quality of care and support for individuals affected by HIV. Previous research on culturally based nursing intervention models has been implemented among people living with HIV using the SABETH Spiritual Intervention Model (Health Care). In a specific academic context, SABETH is an acronym for a Karo culture-sensitive spiritual intervention model designed to help people living with HIV/AIDS (PLWHA) manage the psychosocial challenges and stigma associated with their diagnosis (12). However, the implementation of this model through a culturally sensitive Karo approach has not yet been applied to nurses. Therefore, the researcher extended this study to include the first and second phases in 2023, focusing on nurses providing care for PLWH.

The Karo spiritual intervention model, developed as a culturally sensitive approach to care, comprises a module, a guidebook, a workbook, an evaluation instrument, and an implementation manual. This model is grounded in Leininger's Culture Care and Caring Theory,

in conjunction with established nursing care principles for individuals living with HIV. Given this foundation, the study aims to examine the role of nurses in addressing and reducing stigma toward people living with HIV/AIDS (PLWHA) through the implementation of a spiritually based intervention rooted in Karo cultural traditions.

METHODS

This study employed a quantitative approach in the first phase, using a quasi-experimental design. Specifically, it adopted a pretest-posttest design with both a control and an intervention group, in which the intervention was administered only to the intervention group and compared with the control group. The research aimed to assess the effectiveness of a culturally sensitive Karo spiritual intervention on nurses' knowledge and attitudes towards PLWHA. The study population consisted of nurses working in Karo Regency. The sample comprised 40 nurses (20 in the control group and 20 in the intervention group) employed at hospitals that provide care for PLWHA in Karo Regency. According to current methodological literature, a sample size of at least 20 participants per group is generally acceptable for detecting medium effect sizes (Cohen's $d \approx 0.5$) with 80 % power ($1-\beta = 0.80$) and a significance level of $\alpha = 0.05$ in two-group comparisons (13). Given these considerations and the limited population of nurses providing care for PLWHA in Karo Regency, a total sample of 40 nurses (20 per group) is deemed sufficient. This size balances methodological rigor with feasibility, allowing for the detection of meaningful differences while maintaining ecological validity in a real-world clinical setting. Participants were selected based on the following inclusion criteria: nurses actively providing care to PLWHA in hospital settings, aged 21-55 years, of productive age, able to communicate effectively, and proficient in Indonesian and/or the Karo language. Nurses unwilling to care for PLWHA were excluded.

Before the intervention, both groups completed a pretest questionnaire. The intervention group then received a two-day training covering HIV knowledge, spirituality, stress management, and nursing care. The training included content on HIV-related knowledge, such as modes of transmission, treatment adherence, and the psychosocial aspects of living with HIV. It also addressed spirituality, emphasizing Karo cultural values, traditional beliefs, and the role of spiritual practices in holistic care. In addition, the training covered stress management techniques, including mindfulness, relaxation strategies, and culturally appropriate coping mechanisms. Four weeks post-training, both groups completed a post-test questionnaire to measure changes, and the researcher analyzed the score differences to determine the intervention's impact.

The research instruments consisted of two main sections. The first section gathered descriptive data on respondent characteristics, such as age and gender. The second section comprised three measurement scales: the HIV Knowledge Scale (HIV-KQ-18), the Beliefs and Values Scale, and the Perceived Stigma toward People Living with HIV/AIDS (PLWHA) Scale. HIV Knowledge: Nurses' HIV knowledge was measured using the HIV Knowledge Questionnaire-18 (HIV-KQ-18) developed by Carey et al. (14), which comprises 18 items. This instrument is one of the most widely used internationally to assess knowledge of HIV/AIDS and has been translated into various languages. In the process of adaptation to Indonesian, factor analysis indicated that two principal factors were sufficient to account for the instrument's structure, consistent with the accelerated factor approach in the scree plot. Cronbach's alpha values of 0.75 and 0.71 demonstrated good internal reliability. Therefore, the Indonesian version of the HIV-KQ-18 is considered both valid and reliable for assessing HIV/AIDS knowledge in Indonesia (15). Religiosity Level was measured using the *Beliefs and Values Scale* developed by King et al. (16), which consists of 16 items. This instrument assesses the extent to which individuals engage in religious practices and the influence of religion on their daily lives. The instrument has been piloted among nurse populations in Indonesia and demonstrated good reliability, with a Cronbach's alpha value of 0.836.

Perceptions of stigma toward PLWHA in the workplace were assessed using a 10-item instrument. This instrument assesses nurses' perceptions of stigma toward PLWHA exhibited by coworkers in the workplace. A pilot study among nurses in Indonesia indicated good

internal consistency, with a Cronbach's alpha of 0.821. This study used a questionnaire to gather data on HIV knowledge, attitudes, behaviors, and perceptions regarding PLWHA in Karo Regency, North Sumatra. Data were collected simultaneously from both control and intervention groups using the same questionnaire. Baseline data were collected from nurses with prior experience caring for PLWHA. After the intervention training, post-intervention data were collected from nurses in the intervention group who routinely care for PLWHA. Data were collected in the accessible Karo region, with assistance from trained research assistants. Data were analyzed by presenting frequencies, percentages, means, and standard deviations for respondent characteristics, such as age and gender. Chi-square tests were used to examine relationships among variables such as knowledge, religiosity, and behavior. Additionally, the Wilcoxon signed-rank test was used to analyze pretest-posttest differences within groups for non-normally distributed continuous or ordinal variables, particularly to assess changes in knowledge, religiosity, and behavior before and after the intervention. All data analyses were conducted using SPSS software version 26. This study adhered to several ethical principles, including the principles of beneficence, justice, and autonomy. Ethical approval for the study was granted by the Ethics Committee of Universitas Pelita Harapan (UPH), with approval number 015/IRB-UPH/I/2025.

RESULTS

The findings of the study show the characteristics of the respondents include age, gender, and variables related to knowledge, religiosity, and nurses' behavior in reducing stigma toward people living with HIV/AIDS (PLWHA).

Table 1. Distribution of Respondents' Characteristics in the Intervention and Control Groups.

Respondents' Characteristics	**Intervention Group (N=20)**		**Control Group (N=20)**	
	n	**%**	**n**	**%**
Gender				
Male	2	10	3	15
Female	18	90	17	85
Total	20	100	20	100
	Mean (SD)	Median (Range min-max)	Mean (SD)	Median (Range min-max)
Age	45.55 (10.56)	46.50 (25-58)	44.25 (9.45)	44.00 (27-58)

Table 1 shows that the majority of respondents who demonstrated behavior aimed at reducing HIV-related stigma were female, with 18 respondents (90 %) in the intervention group and 17 respondents (85 %) in the control group. The average age of nurses in the intervention group was 45.55 years, whereas in the control group it was 44.25 years.

Based on Table 2, the Kolmogorov-Smirnov test of normality showed that 7 out of 12 variables had a p-value < 0.05. Because 7 of 12 variables had p-values < 0.05, the data were considered non-normally distributed. Therefore, the Wilcoxon test was used to determine whether there were differences in respondents' knowledge, religiosity, and behavior before and after the intervention aimed at reducing stigma.

Table 2. Results of the Normality Test for Knowledge, Religiosity, and Behavior Variables Before and After the Culturally-Sensitive Karo Spiritual Care Intervention

Variable	Shapiro-Wilk		
	Statistics	df	P-Value
Knowledge of the Intervention Group (Pre-test)	0.960	20	0.542
Knowledge of the Intervention Group (Post-test)	0.947	20	0.320
Knowledge of the Control Group (Pre-test)	0.831	20	0.003
Knowledge of the Control Group (Post-test)	0.913	20	0.073
Religiosity of the Intervention Group (Pre-test)	0.662	20	0.0001
Religiosity of the Intervention Group (Post-test)	0.932	20	0.166
Religiosity of the Control Group (Pre-test)	0.770	20	0.0001
Religiosity of the Control Group (Post-test)	0.939	20	0.230
Behavior of the Intervention Group (Pre-test)	0.816	20	0.001
Behavior of the Intervention Group (Post-test)	0.956	20	0.467
Behavior of the Control Group (Pre-test)	0.841	20	0.004
Behavior of the Control Group (Post-test)	0.910	20	0.063

Table 3. Distribution of Respondents Based on Knowledge, Religiosity, and Behavior in Preventing HIV

Variable	Intervention Group (n=20)				Control Group (n=20)			
	Before		After		Before		After	
	n	%	n	%	n	%	n	%
Knowledge								
Good	14	70	19	95	16	80	17	85
Poor	6	30	1	5	4	20	3	15
Total	20	100	20	100	20	100	20	100
Religiosity								
High	13	65	20	100	15	75	10	50
Low	7	35	0	0	5	25	10	50
Total	20	100	20	100	20	100	20	100
Behavior in Preventing HIV Stigma								
High	14	50	15	75	11	55	11	55
Low	6	50	5	25	9	45	9	45
Total	20	100	15	100	20	100	20	100

As shown in Table 3, before implementation of the culturally sensitive Karo spiritual intervention model, the average level of knowledge about reducing stigma was 70 %, which increased to 90 % after the intervention. In terms of religiosity, the average percentage before the intervention was 65 %, rising to 100 % after the intervention. Regarding behavior, 50 % of respondents reported taking appropriate actions to reduce HIV stigma before the intervention, which increased to 75 % afterward. In contrast, in the control group, the proportion of respondents with good knowledge increased slightly by 5 %, from 80 % to 85 %, while the percentage of high religiosity declined by 25 %, from 75 % to 50 %. Meanwhile, the proportion of respondents demonstrating high levels of behavior to prevent HIV stigma remained stagnant at 55 %.

Bivariate analysis was employed to evaluate differences in knowledge, religiosity, and behavior following the intervention. Due to non-normal data distribution (Kolmogorov-Smirnov Sig < 0.05), the Wilcoxon signed-rank test was used to compare pretest and one-month posttest results.

Table 4. Results of the Wilcoxon Test Analysis of Knowledge, Religiosity, and Behavior Before and After the Intervention

Variable	Intervention				Control			
	Negative Range	Positive Range	Ties	p-value	Negative Range	Positive Range	Ties	p-value
Knowledge	0	5	15	0.025	2	3	15	0.655
Religiosity	0	7	13	0.008	8	3	9	0.132
Behavior	5	6	9	0.763	8	4	8	0.248

Table 4 indicates that the educational intervention significantly improved knowledge ($p=0.025$) and religiosity ($p=0.008$) in the intervention group, as indicated by p-values < 0.05. However, no significant behavioral change was observed ($p > 0.05$). Conversely, the control group showed no significant changes in knowledge, religiosity, or behavior (all p-values > 0.05), suggesting that the intervention had no specific impact on the control group.

DISCUSSION

This study found that health education significantly improved knowledge of HIV prevention and reduced HIV/AIDS-related stigma in the intervention group. This is due to the PowerPoint-based education and the soft-copy booklet, which served as stimuli. This intervention fostered new knowledge and altered thinking patterns, which are crucial for accepting information and encouraging attitude shifts toward HIV prevention and stigma reduction. Attitude change is influenced by the message's source, content, and recipient, with the source's credibility and trustworthiness being paramount. The delivery of this educational material increased awareness of health values, encouraging individuals to reflect and modify their behaviors toward healthier lifestyles (17).

The study found that the Karo culturally sensitive spiritual intervention significantly impacted religiosity concerning HIV prevention and stigma reduction. Nurses are encouraged to strengthen their faith when caring for PLWHA, viewing them as divine creations. They should also holistically teach spirituality to PLWHA, as it can influence patient perceptions, like those with gonorrhea, about premarital sex and sexually transmitted infections (STIs) risks. Deeply rooted moral values are often connected to spiritual connectedness, which may motivate individuals to avoid behaviors considered immoral (18).

Religious patients' strong morals can reduce risky sexual behaviors because religiously devout individuals often avoid premarital sex, adhering to beliefs that sexual relations belong within marriage (19,20). Religious morals influence views on bodily sanctity and sexual behavior. High religiosity encourages self-control, deterring premarital sex and fostering healthy, moral conduct, thus preventing risky sexual behavior (21,22). Strong religiosity guides individuals toward ethical sexual conduct, reducing risky behaviors like premarital sex. It emphasizes bodily sanctity and marital sexual relationships, fostering self-restraint. The intervention group showed no significant change in behavior after one month of implementation of the culturally sensitive Karo spiritual intervention. A one-month culturally-sensitive Karo spiritual intervention didn't immediately change behavior. Unlike knowledge, attitudes, and behaviors, which require more time to shift, as they involve consistent patterns of feelings and thoughts, a process that is slower than acquiring new information (23). A prior study also found no significant difference between video and leaflet in influencing junior high school students' knowledge and attitudes (24). Behavioral change typically requires a longer process, as demonstrated in Sinulingga's study (12). Fear of rejection and disclosure causes PLWH to self-isolate, limiting their access to support and information. This leads to rising HIV cases due to a lack of knowledge and fear

of stigma. High-quality, trustworthy messages from researchers foster greater participant trust, increasing the likelihood that participants will be influenced and change their attitudes (25). Nurses and healthcare workers must maintain HIV confidentiality and avoid stigmatizing PLWH in all healthcare services, especially nursing care. Finally, regarding the implications for practice, healthcare providers should deliver culturally sensitive, credible educational interventions that incorporate spirituality and foster trust to effectively improve HIV knowledge and attitudes, while recognizing that sustained efforts are necessary to achieve lasting behavioral change.

CONCLUSION

The Karo spiritual intervention significantly improved nurses' knowledge and religiosity regarding HIV prevention and stigma reduction. Nurses who received this culturally sensitive training demonstrated better outcomes than the control group. The study recommends community-nurse collaboration to prevent HIV/AIDS and reduce stigma, with future research focusing on long-term evaluation of the intervention's impact on behavioral change and perceived stigma.

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