

Nurses knowledge and attitude towards HIV/AIDS patients

Shanza Kanwal¹, Laraib Fatima², Abeera Shafique³, Mahaam Khalid⁴

^{1,2,3,4} College of Nursing Allama Iqbal Medical College Lahore Pakistan
Shahanali0175@gmail.com Corresponding author: Shanza Kanwal

Abstract

HIV (Human Immunodeficiency Virus) and AIDS (Acquired Immunodeficiency Syndrome) remain significant global health concerns, with stigma and discrimination acting as barriers to effective healthcare access. This study aimed to evaluate the knowledge and attitudes of nurses toward HIV/AIDS patients in Jinnah Hospital, Lahore (JHL). A descriptive cross-sectional design was utilized, with a sample of 120 nurses selected through non-probability sampling. A structured questionnaire assessed participants' knowledge and attitudes. Findings revealed that while 52% of nurses had satisfactory knowledge regarding HIV/AIDS transmission, 70% exhibited negative attitudes toward HIV-positive individuals. Many nurses held stigmatizing beliefs, advocating for HIV patients to remain isolated at home or in hospitals. Despite advances in treatment and education, misconceptions about transmission persisted, influencing care delivery. The study highlights the urgent need for targeted educational interventions to improve nurses' understanding and foster compassionate, non-discriminatory attitudes. The results emphasize that knowledge alone is insufficient to change attitudes; structured training programs are essential to address stigma within the healthcare sector. Hospital administrations must implement policies that ensure evidence-based nursing practices and promote empathy toward HIV/AIDS patients. Strengthening nurses' education and awareness will contribute to improved healthcare outcomes and reduced stigma for people living with HIV/AIDS.

Keywords: HIV/AIDS, nurses' knowledge, stigma, healthcare, attitudes

Abbreviations List

HIV: Human immune virus, AIDS: Acquired immune deficiency virus, AIMC: Allama Iqbal medical college, B.Sc. N: Bachelor of Science in Nursing, SPSS: Statistical package for social sciences, JHL: Jinnah Hospital Lahore. WHO: World health organization, CON: College of Nursing, APA: American Psychological Association.

Introduction

HIV (Human Immunodeficiency Virus) and AIDS (Acquired Immunodeficiency Syndrome) remain major public health concerns worldwide. HIV is a virus that attacks the body's immune system, particularly the CD4 cells (T cells), which help fight infections. If left untreated, HIV can lead to AIDS, the final stage of HIV infection, where the immune system is severely damaged, making the body vulnerable to opportunistic infections and diseases. Since the first identified cases

in the early 1980s, HIV/AIDS has claimed millions of lives, and despite medical advancements, it continues to impact healthcare systems globally. The World Health Organization (WHO) estimates that as of 2021, approximately 38 million people worldwide were living with HIV, with over 1.5 million new infections reported annually. While antiretroviral therapy (ART) has significantly improved the life expectancy and quality of life of individuals with HIV, stigma and discrimination remain significant barriers to healthcare access. Stigma in healthcare settings is particularly concerning, as it leads to delays in diagnosis, reduced adherence to treatment, and poorer health outcomes for individuals living with HIV/AIDS. One of the primary sources of stigma in healthcare is the attitude and perception of healthcare workers, including nurses. Nurses play a crucial role in the management and care of HIV/AIDS patients, as they are often the first point of contact in medical settings. Their knowledge, attitudes, and behaviors toward HIV-positive individuals directly impact the quality of care provided. If nurses lack proper knowledge or hold negative attitudes toward HIV patients, it can result in discriminatory practices, inadequate care, and increased psychological distress for patients. Previous research has highlighted the prevalence of negative attitudes among healthcare providers toward HIV/AIDS patients, often rooted in misconceptions about transmission and personal biases. Some healthcare workers fear contracting the virus through casual contact, while others hold moral judgments against individuals with HIV/AIDS, particularly those infected through drug use or unprotected sexual activity. Such attitudes contribute to the marginalization of people living with HIV/AIDS and create barriers to effective healthcare. This study aims to evaluate the knowledge and attitudes of nurses toward HIV/AIDS patients in Jinnah Hospital, Lahore (JHL). The specific objectives include:

- **Assessing Nurses' Knowledge:** Understanding the extent of nurses' knowledge about HIV/AIDS, including transmission routes, prevention methods, and treatment options.
- **Evaluating Nurses' Attitudes:** Investigating whether nurses hold positive, neutral, or negative attitudes toward HIV-positive individuals.
- **Identifying Gaps in Training:** Examining whether knowledge gaps or misconceptions contribute to stigmatization and poor care for HIV/AIDS patients.
- **Proposing Educational Interventions:** Suggesting ways to improve nurses' knowledge and attitudes through targeted training programs and policy recommendations.

The study used a descriptive cross-sectional design to collect data from 120 nurses working at Jinnah Hospital Lahore (JHL). A self-made questionnaire was used to assess nurses' knowledge and attitudes toward HIV/AIDS patients. The study employed non-probability sampling techniques to select participants. Data analysis was conducted using SPSS software, and both descriptive and inferential statistics were used to interpret the findings.

Knowledge about HIV/AIDS:

- 52% of nurses had **satisfactory knowledge** regarding HIV transmission.
- 93% of nurses knew that **HIV can be transmitted from mother to baby** during childbirth.
- 91.7% understood that **using condoms reduces the risk of HIV transmission**.
- 55% were aware that **antiviral drugs could help manage HIV/AIDS**.
- 65% knew that **HIV cannot be transmitted through coughing or sneezing**, but 35% still held this misconception.

Attitudes Toward HIV/AIDS Patients:

- 70% of nurses held **negative attitudes** toward HIV/AIDS patients.
- 40% believed that **HIV/AIDS patients should stay at home or in the hospital permanently.**
- 32% felt that they had the **right to refuse care for HIV/AIDS patients.**
- 28% worried that **caring for HIV/AIDS patients could negatively impact their relationships.**
- Only 35% expressed a **positive attitude toward treating HIV/AIDS patients with dignity.**

The findings highlight a clear disconnect between knowledge and attitudes. While many nurses had accurate information about HIV transmission and prevention, negative attitudes persisted, reinforcing stigma and discrimination in healthcare settings. The study reveals a **significant gap between knowledge and attitudes** among nurses. While more than half of the nurses had **adequate knowledge of HIV transmission**, a majority still exhibited **negative attitudes** toward HIV/AIDS patients. This indicates that **knowledge alone is not enough to change attitudes**, emphasizing the need for **behavioural training** and **sensitivity workshops** to address stigma. The study underscores the impact of **stigma and discrimination in healthcare settings**, which can lead to **suboptimal treatment, patient isolation, and increased mortality rates**. Patients who fear discrimination may **avoid seeking medical care**, leading to late diagnosis and an **increased risk of HIV transmission** within the community. By highlighting these issues, the study reinforces the need for a **stigma-free healthcare environment** to improve **health outcomes for HIV-positive individuals**. The findings provide **valuable data for hospital administrators, policymakers, and public health officials** to design interventions aimed at **reducing stigma in healthcare settings**. Recommendations include:

- **Mandatory HIV/AIDS Sensitization Programs:** Hospitals should implement regular **training sessions** for nurses and healthcare workers on **HIV transmission, treatment, and ethical considerations.**
- **Counselling Services for Healthcare Workers:** Psychological counselling should be provided to nurses to help them **address fears, biases, and personal attitudes** toward HIV/AIDS patients.
- **Enforcing Anti-Discrimination Policies:** Healthcare institutions should adopt **strict policies against discrimination** toward HIV/AIDS patients, ensuring **equal treatment and care standards.**
- **Integrating HIV Education into Nursing Curriculums:** Nursing schools should incorporate **comprehensive education on HIV/AIDS** to ensure that future nurses enter the workforce **fully prepared to provide compassionate and informed care.**

Most studies on **nurses' attitudes toward HIV/AIDS** have been conducted in **Western countries**. This study provides **valuable insights from a developing country (Pakistan)**, where **cultural, religious, and societal norms** play a role in shaping healthcare attitudes. The findings can be used as a **reference point for further research in other developing nations** facing similar challenges. Nurses are at the **frontline of patient care**, and their **attitudes directly affect patient outcomes**. This study emphasizes the **critical role of nurses in reducing stigma** and improving healthcare delivery. By **identifying gaps in knowledge and attitude**, the research highlights the **need for better training and support** for nurses to ensure **high-quality, non-discriminatory care for HIV/AIDS patients**. This study provides a comprehensive evaluation of **nurses' knowledge and**

attitudes toward HIV/AIDS patients at Jinnah Hospital Lahore. While a majority of nurses had **satisfactory knowledge** about HIV transmission, a **significant proportion still exhibited negative attitudes**, highlighting the **prevalence of stigma in healthcare settings**. The study reinforces the **need for educational interventions, policy changes, and behavioural training** to ensure **better care for HIV/AIDS patients**. By addressing the **knowledge-attitude gap**, implementing **anti-stigma policies**, and enhancing **nursing education**, healthcare institutions can create a **more inclusive and supportive environment** for individuals living with HIV/AIDS. This research serves as a **valuable resource for healthcare professionals, policymakers, and educators** striving to eliminate **HIV/AIDS-related stigma and discrimination in medical settings**.

Literature Review

HIV/AIDS has been a significant global health concern for decades, affecting millions of individuals worldwide. Despite medical advancements and increased awareness, stigma and discrimination remain prevalent, particularly within healthcare settings. Nurses play a crucial role in providing care to HIV/AIDS patients, yet numerous studies highlight persistent gaps in knowledge and negative attitudes toward these individuals. This literature review explores previous research on nurses' knowledge and attitudes toward HIV/AIDS patients, the role of stigma in healthcare, the influence of misconceptions about HIV transmission, ethical considerations, and strategies to improve healthcare workers' understanding and attitudes. Furthermore, the literature gap section identifies key areas that require further research to enhance HIV/AIDS care and reduce stigma.

Nurses' Knowledge and Awareness of HIV/AIDS

Several studies have assessed the knowledge levels of nurses regarding HIV/AIDS, focusing on transmission, prevention, and treatment. Knowledge is a critical factor influencing the quality of care provided to HIV-positive individuals. Research indicates that while many nurses possess basic knowledge about HIV transmission, misconceptions persist, particularly regarding casual contact and non-bloodborne transmission. A study by Royce and Birge (2009) found that while many nurses correctly identified major transmission routes, a significant portion still believed that HIV could be contracted through casual physical contact such as hugging, sharing food, or using public restrooms. Similarly, Farotimi et al. (2015) observed that poor knowledge of HIV/AIDS among nurses was a predictor of stigmatization and reluctance to provide care. In another study, Martin and Bedimo (2000) assessed attitudes among nurses and physicians, finding that those with higher levels of HIV/AIDS knowledge exhibited more compassionate and professional behaviours when treating HIV-positive patients. Conversely, nurses with limited knowledge were more likely to exhibit fear-based avoidance behaviours. Nakhae (2002) further reinforced these findings by demonstrating a positive correlation between knowledge and attitude, showing that nurses with better education on HIV/AIDS were less likely to discriminate against HIV-positive patients. These studies highlight the importance of comprehensive HIV/AIDS education programs for nurses to dispel myths and reduce stigma in healthcare settings. While knowledge plays a crucial role in shaping nurses' behaviours, research suggests that information alone is insufficient to alter attitudes. Several studies indicate that even among nurses with adequate knowledge, negative attitudes and stigma persist due to personal biases, cultural beliefs, and fear of infection. This suggests that educational interventions must go beyond theoretical knowledge and incorporate behavioural change strategies to be effective.

Negative Attitudes Among Nurses Toward HIV/AIDS Patients

Despite significant advancements in HIV treatment and prevention, stigma remains deeply ingrained in healthcare settings. Numerous international studies have reported that nurses often exhibit negative attitudes toward HIV/AIDS patients, impacting the quality of care provided. Research conducted by Metz and Malan (1988) in South Africa found that negative attitudes among nurses were driven by ignorance, fear, and moral judgments about HIV/AIDS patients, particularly those who acquired the virus through drug use or sexual activity. Reisman (1996) also suggested that negative attitudes among nurses lead to fear, denial, and avoidance, ultimately resulting in substandard care for HIV-positive individuals. In a study by Pulerwitz et al. (2015), researchers found that stigma among healthcare providers contributed to delays in HIV testing, reluctance to provide treatment, and breaches of patient confidentiality. Healthcare workers who held discriminatory attitudes were more likely to engage in practices that discouraged patients from seeking medical care, further exacerbating the spread of HIV. Goldberg and Tarcher (2003) reported that some nurses refused to touch or sit next to HIV-positive colleagues and patients, reflecting deep-seated stigma and misinformation about HIV transmission. Similarly, Flaskerud, Lewis, and Shin (2013) found that a continuing education conference significantly improved nurses' knowledge and attitudes toward HIV/AIDS. However, the effect diminished over time, indicating the need for sustained and repeated training programs. These studies demonstrate that while education can reduce misinformation, deeply rooted stigma requires targeted interventions that focus on attitude change and behavioural training. The persistence of negative attitudes despite increased awareness underscores the complexity of HIV-related stigma in healthcare and the need for multi-faceted approaches to address the issue.

Fear of HIV Transmission Among Healthcare Workers

One of the primary reasons for stigma among healthcare providers is the fear of contracting HIV. Despite well-documented evidence on HIV transmission and the effectiveness of universal precautions, fear remains a significant barrier to compassionate care. Research shows that many nurses overestimate their risk of infection, leading to avoidance behaviours and substandard care for HIV-positive patients. Blumenfield, Smith, and Milazzo (2017) conducted a study among ICU nurses and found that 68% expressed greater fear of caring for HIV/AIDS patients compared to those with hepatitis despite similar occupational risks. This fear was largely attributed to misconceptions about transmission through non-bloodborne routes. Oyeyemi (2006) noted that some nurses refused to work with HIV-positive patients due to concerns about accidental needle pricks, despite clear guidelines on post-exposure prophylaxis (PEP) and infection control measures. Similarly, Van Servellen, Lewis, and Leake (2009) surveyed 3,000 nurses. He found that 25% believed they were at high or moderate risk of contracting HIV at work, despite adherence to universal precautions significantly reducing occupational transmission risk. These findings suggest that addressing fear-based stigma requires not only education on HIV transmission but also confidence-building measures such as training in infection control protocols, exposure management, and real-life case studies demonstrating the low occupational risk of HIV.

Ethical and Professional Responsibilities of Nurses

Nurses have a professional and ethical obligation to provide care without discrimination. The World Health Organization (WHO, 2018) emphasizes that all healthcare workers must offer equitable treatment to HIV-positive patients. However, research suggests that ethical guidelines are often overlooked due to personal biases and stigma. A report by UNAIDS (2008) revealed that HIV/AIDS patients frequently experience discrimination in hospitals, including refusal of

treatment, lack of confidentiality, and denial of medication. Sharman (2009) highlighted violations of patient dignity and privacy in healthcare settings, further alienating HIV-positive individuals from seeking care. These studies indicate that while ethical guidelines exist, their enforcement remains a challenge. Addressing discrimination in healthcare settings requires stricter policies, institutional accountability, and training programs that reinforce the ethical responsibilities of nurses.

Interventions to Improve Knowledge and Attitudes

Several strategies have been tested to improve nurses' knowledge and attitudes toward HIV/AIDS patients. Educational programs have been shown to be effective in increasing awareness and reducing stigma. Tavossi (2000) found that education programs significantly improved nurses' willingness to care for HIV-positive patients. Flaskerud, Lewis, and Shin (2013) demonstrated that a one-day HIV education seminar led to short-term improvements in knowledge and attitudes, although long-term effects were unclear. Pulerwitz et al. (2015) conducted a hospital-based intervention in Vietnam that reduced stigma and improved patient care through interactive workshops and personal storytelling. In addition to education, psychological support programs for nurses have been recommended to address fear and stress associated with HIV/AIDS care. Wagner et al. (2014) suggested mental health counselling for nurses as a means to reduce anxiety and promote empathy. Parker and Aggleton (2003) emphasized the importance of empathy-building exercises in nursing education to improve attitudes toward HIV/AIDS patients. Despite extensive research on nurses' knowledge and attitudes toward HIV/AIDS, several gaps remain. One of the primary gaps is the limited research conducted in developing countries, particularly in South Asia. Most studies on HIV/AIDS stigma among nurses have been conducted in Western countries, where cultural, religious, and social factors differ significantly from those in regions like Pakistan. More research is needed to understand how local cultural and religious beliefs influence nurses' attitudes and care practices in these settings. Another key gap is the disconnect between knowledge and attitudes. Many studies confirm that while nurses may have accurate information about HIV transmission, stigma and negative attitudes persist. Future research should focus on understanding why knowledge does not always translate into behaviour change and explore more effective strategies to bridge this gap. Additionally, there is a lack of longitudinal studies examining whether attitude changes from educational interventions are sustained over time. Many studies show immediate improvements after training sessions, but few assess whether these changes remain in practice months or years later. Research comparing different educational approaches, such as lecture-based training versus experiential learning or interactive workshops, is also needed to determine the most effective methods for reducing stigma. Furthermore, limited research exists on the impact of hospital policies and leadership in shaping nurses' attitudes toward HIV/AIDS patients. Institutional culture and policies play a significant role in fostering a stigma-free healthcare environment, yet this area remains underexplored. Addressing these research gaps will be crucial in developing comprehensive strategies to eliminate HIV/AIDS-related stigma in healthcare settings and improve patient outcomes.

Methodology

The methodology section outlines the research design, population, sampling techniques, data collection tools, and analytical methods used in this study. The study aimed to assess nurses' knowledge and attitudes toward HIV/AIDS patients at **Jinnah Hospital Lahore (JHL)** using a **descriptive cross-sectional study design**. The approach allowed for a **quantitative assessment**

of the current knowledge levels and attitudes of nurses, providing valuable insights into how stigma and misconceptions influence patient care.

Study Design

The research adopted a **descriptive cross-sectional study design**, a widely used methodology in healthcare studies to assess knowledge, attitudes, and behaviours at a specific point in time. Cross-sectional studies are particularly effective for identifying patterns and associations without requiring long-term follow-ups.

Mathematically, the cross-sectional study design can be represented as follows:

$$O = f(X_1, X_2, X_3, \dots, X_n) + e$$

Where:

O is the observed knowledge and attitude scores, X1, X2, and X3 represent different independent variables such as education level, experience, and prior HIV/AIDS training, and e is the error term accounting for variability not explained by the measured factors.

This study design was chosen because it allows for rapid data collection and analysis while minimizing costs and logistical challenges associated with longitudinal studies.

Study Setting

The research was conducted at **Jinnah Hospital Lahore (JHL), Pakistan**, one of the largest tertiary care hospitals in the country. JHL provides extensive healthcare services, including **HIV/AIDS treatment and counselling**. Nurses working in different departments, including **medical, surgical, intensive care, gynaecology, and emergency units**, were included in the study to ensure a diverse representation of experiences and attitudes. Figure 1 illustrates the structure of **Jinnah Hospital Lahore**, showing various departments from which the study participants were drawn.

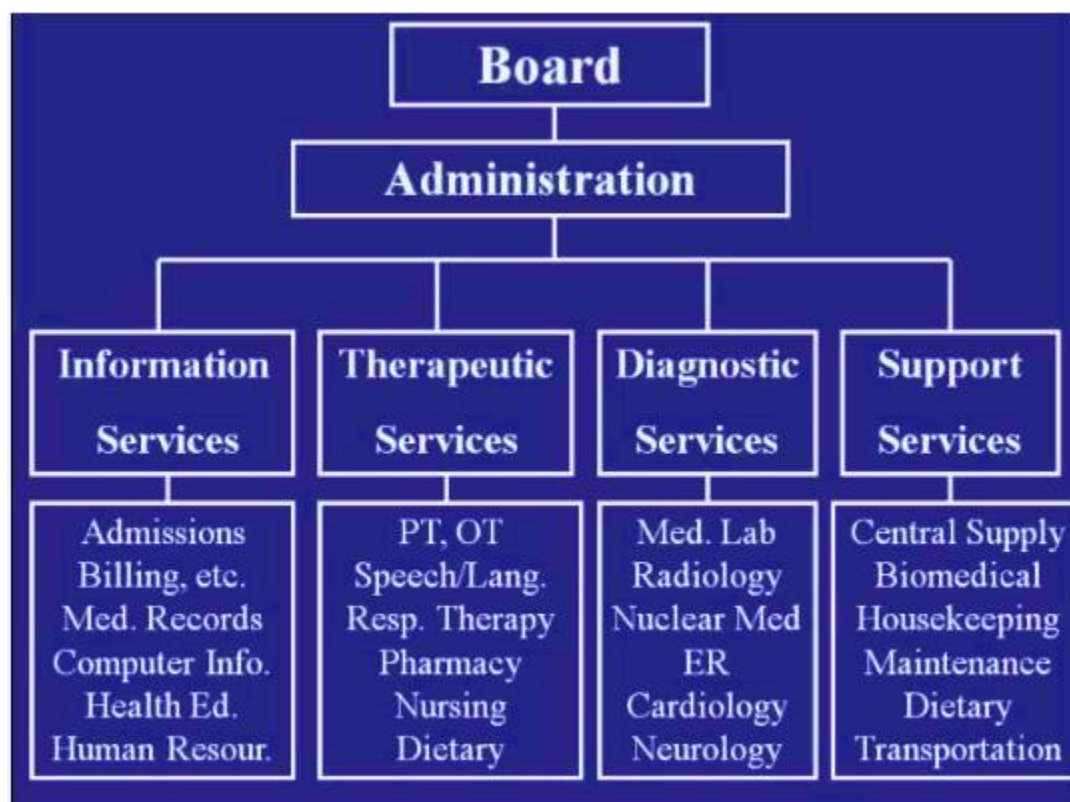


Figure 1: Organizational Structure of Jinnah Hospital Lahore

Study Population and Sampling

Population

According to **Polit & Beck (2011:749)**, a study population consists of **all individuals who meet the defined criteria** for inclusion in research. The target population for this study included **all nurses employed at Jinnah Hospital Lahore**. The accessible population consisted of **120 nurses**, selected based on **inclusion and exclusion criteria** to ensure relevance to the research objectives.

Inclusion Criteria

- Nurses currently working at JHL
- Nurses providing direct patient care
- Nurses willing to participate in the study

Exclusion Criteria

- Physicians and other healthcare staff
- Nurses working in administrative roles with no direct patient interaction
- Nurses who refused to participate

Sampling Technique

A **non-probability convenience sampling technique** was employed due to the **limited availability of nurses and time constraints**. Convenience sampling allows researchers to select participants who are **easily accessible and willing to participate**, making it a practical approach for studies conducted in hospital settings.

Mathematically, the sample size (nn) was determined using the **Lwange & Lemeshow (1991) formula**:

$$n = \frac{Z^2 P(1 - P)}{d^2}$$

Where:

Z = 1.96 (for a 95% confidence level), P = 50% (anticipated population proportion with sufficient knowledge), d = 9% (margin of error)

Substituting the values:

$$n = \frac{(1.96)^2(0.50)(1 - 0.50)}{(0.09)^2} = 120$$

Thus, a total of **120 nurses** were included in the study.

Data Collection Methods

Data was collected using a **self-administered structured questionnaire** designed to assess **nurses' knowledge and attitudes toward HIV/AIDS patients**. The questionnaire was developed after reviewing relevant literature and consulting healthcare experts to ensure validity and reliability.

Structure of the Questionnaire

1. **Demographic Information** (Age, marital status, educational qualification, years of experience)
2. **Knowledge Assessment** (10 questions assessing HIV/AIDS transmission, prevention, and treatment)
3. **Attitude Assessment** (10 questions assessing stigma, willingness to treat, and ethical considerations)

Reliability and Validity of the Data Collection Tool

Reliability

Reliability refers to the **consistency of an instrument** in measuring what it is designed to measure. To ensure reliability, the questionnaire was **pretested on a small sample (n=10)** before the actual study. **Cronbach's Alpha coefficient** was used to measure the internal consistency of the questionnaire.

The formula for **Cronbach's Alpha** (α) is:

$$\alpha = \frac{k}{k - 1} \left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right)$$

Where:

k= Number of items, σ_i = Variance of individual items, σ^2 = Total variance of the test, A Cronbach's Alpha value of **0.78** was obtained, indicating **acceptable internal consistency**.

Validity

Validity assesses whether an instrument **measures what it is intended to measure**. Content validity was ensured through **expert review**, where specialists in **public health, infectious diseases, and nursing education** evaluated the questionnaire.

Ethical Considerations

Ethical approval was obtained from the **Ethical Review Committee of the University of Health Sciences (UHS), Lahore**. Written permission was also obtained from **hospital administrators and nurses' supervisors** before conducting the study. **Informed Consent** – Nurses were provided with a detailed explanation of the study's objectives and were required to sign a consent form before participation. **Confidentiality and Anonymity** – Participants' identities were kept confidential, and responses were anonymized. **Voluntary Participation** – Nurses had the right to withdraw from the study at any time without consequences. **Non-maleficence** – The study did not involve any physical or psychological harm to participants.

Data Analysis

Data was processed and analyzed using **SPSS (Statistical Package for Social Sciences) Version 23**.

Descriptive Statistics

Frequencies, percentages, means, and standard deviations were used to describe the **demographic characteristics and knowledge levels** of participants.

Inferential Statistics

To assess relationships between variables, the following statistical tests were used:

Chi-Square Test Used to test the association between nurses' **educational background and their knowledge/attitude toward HIV/AIDS**.

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Where:

O = Observed frequency, E = Expected frequency

Analysis of Variance (ANOVA) – Used to compare **mean knowledge scores among nurses with different years of experience**.

$$F = \frac{\text{Between-group variance}}{\text{Within-group variance}}$$

This study employed a **descriptive cross-sectional design** to assess **nurses' knowledge and attitudes toward HIV/AIDS patients** at **Jinnah Hospital Lahore**. A **structured questionnaire** was used to collect data from **120 nurses** selected through **convenience sampling**. Statistical analyses were conducted using **SPSS 23**, with **Chi-square tests and ANOVA** used to explore associations between **education level, experience, and attitudes**. Ethical considerations were strictly followed to ensure participant confidentiality and voluntary participation. The results from this methodology will provide **valuable insights into stigma and knowledge gaps in HIV/AIDS care**, helping to design **targeted training programs** to improve **nurses' understanding and attitudes** toward HIV/AIDS patients.

Results

This section presents the findings from the research on **nurses' knowledge and attitudes towards HIV/AIDS patients** at **Jinnah Hospital Lahore (JHL)**. The data were collected from **120 nurses** using a structured questionnaire designed to assess their understanding of HIV transmission, prevention, treatment, and their attitudes toward HIV-positive individuals. The analysis was conducted using **SPSS version 23**, and descriptive and inferential statistics were employed to analyze the results. The findings are divided into two major sections: **nurses' knowledge** and **nurses' attitudes** toward HIV/AIDS patients. The demographic data of the study participants are presented in **Table 1**, which provides an overview of the characteristics of the nurses at Jinnah Hospital. The demographic characteristics include **age, marital status, education level, and years of experience**.

Table 1: Demographic Information of Nurses

Demographic Variable	Frequency (n)	Percentage (%)
Marital Status		
Married	40	33.3
Single	80	66.7
Age Group		
20–30 years	86	71.7
30–40 years	26	21.7
40–50 years	6	5.0
More than 50 years	2	1.7
Educational Level		
Post-RN	10	8.3
Nursing Degree	80	66.7
Nursing Diploma	30	25.0
Experience in the Organization		
0–5 years	88	73.3
6–10 years	20	16.7
11–15 years	8	6.7
Above 15 years	2	1.7

Table 1 clearly indicates that the majority of research participants were young nurses aged 20 to 30 years, comprising 71.7% of the sample. A majority of nurses (66.7%) had a nursing degree and

exhibited limited tenure within the business, as 73.3% had 0–5 years of experience. The data indicates a comparatively young and academically equipped nursing workforce, potentially influencing knowledge acquisition and the cultivation of professional attitudes.

Knowledge of HIV/AIDS

This part presents the nurses' knowledge of many aspects of HIV/AIDS, including its transmission, prevention, and treatment. The findings indicate that while a significant number of nurses were knowledgeable of the fundamental features of HIV/AIDS, there were deficiencies in their comprehension of specific transmission pathways and therapeutic approaches.

Table 2: Knowledge of HIV Transmission and Prevention

Statement	Yes (n)	No (n)	Percentage (%)	Yes Percentage (%)	No
HIV can be transferred through coughing and sneezing	42	78	35	65	
AIDS can be contracted through sharing cigarettes	24	94	20	78	
HIV/AIDS can be spread through an infected person's blood	114	6	95	5	
Condoms will decrease the risk of HIV transmission	110	10	91.7	8.3	
HIV/AIDS only affects intravenous drug users and prostitutes	62	58	51.7	48.3	
Antiviral drugs can protect a person from AIDS	66	54	55	45	
HIV/AIDS can be transmitted from mother to baby	112	8	93.3	6.7	
HIV/AIDS can be transmitted through infected semen	114	6	95	5	
HIV/AIDS is a punishment from God	26	92	21.7	76.7	
HIV/AIDS is caused by genetic inheritance	44	74	36.7	61.7	

The nurses demonstrated a comprehensive awareness of HIV transmission via blood, with 95% correctly recognizing it as a transmission mechanism. Likewise, 93.3% of nurses recognized that HIV may be spread from mother to infant during parturition. Despite possessing enough knowledge in several domains, 35% of nurses erroneously believed that HIV could be transferred by coughing and sneezing, while 20% felt that sharing cigarettes may facilitate transmission. The results suggest persistent beliefs about casual transmission, which may foster fear and stigma towards those living with HIV. A majority of nurses (91.7%) accurately recognized that condoms reduce the risk of HIV transmission; nevertheless, 55% expressed uncertainty over the efficacy of antiviral medications in protecting against HIV. This indicates that while nurses comprehend preventative strategies, there exist knowledge deficiencies in the management of HIV/AIDS, especially concerning antiretroviral medication (ART).

Attitudes Towards HIV/AIDS Patients

The following part evaluates nurses' perceptions of HIV-positive patients. This section uncovers a troubling level of stigma and prejudice against those living with HIV despite a generally adequate understanding of transmission.

Table 3: Nurses' Attitudes Toward HIV/AIDS Patients

Statement	Strongly Disagree (n)	Disagree (n)	Neutral (n)	Agree (n)	Strongly Agree (n)	Total (%)
I feel I have the right to refuse to care for an individual with AIDS	24	40	20	32	4	100%
People with HIV/AIDS should stay at home or hospital	4	22	40	36	18	100%
I am willing to do volunteer work with HIV/AIDS patients	6	18	42	40	14	100%
If I care for an individual with HIV/AIDS, I should receive additional pay	14	50	30	16	10	100%
People with HIV/AIDS should be kept out of school	16	50	28	22	4	100%
Caring for any patient who is dying is uncomfortable for me	20	42	18	28	12	100%
Caring for an individual with HIV/AIDS could affect my relationships with others	18	22	32	34	14	100%
Patients with HIV/AIDS should be treated with the same respect as any other patient	4	28	14	48	26	100%
People with HIV/AIDS tend to be violent	6	32	54	20	8	100%
It is important to work with patients of HIV/AIDS in the same caring manner as any other patient	8	32	24	42	14	100%

66.7% of nurses indicated neutrality or agreement about the refusal of care for an HIV-positive patient. This indicates a hesitation or ethical unease with the provision of care to those with HIV. Forty-five percent of nurses said that patients with HIV/AIDS should remain at home or in a hospital setting. This signifies a substantial degree of stigma and social isolation aimed at HIV-positive persons, aligning with the observations of Burns et al. (2005), who noted that healthcare professionals often possess stigmatizing ideas toward HIV patients. 43.3% of nurses said that they would need more pay for providing care to HIV-positive persons, highlighting the perceived pain and added strain linked to treating such patients. This outcome underscores the economic dimension of care and the possible obstacles to delivering fair care. Notably, 76% of nurses agreed that HIV-positive patients need to get the same respect as all other patients. However, there remained.

Discussion

This research aimed to evaluate the knowledge and attitudes of nurses at Jinnah Hospital Lahore (JHL) on HIV/AIDS patients. The attitudes of healthcare workers, especially nurses, are generally acknowledged to impact the quality of care for HIV-positive persons greatly. Notwithstanding advancements in the treatment and management of HIV/AIDS, stigma and misunderstandings persist within healthcare institutions. This research sought to investigate the correlation between nurses' understanding of HIV/AIDS and their attitudes towards HIV-positive patients, emphasizing the identification of obstacles to effective treatment, enhancement of patient outcomes, and reduction of HIV/AIDS-related prejudice. This study's findings underscore the persistent obstacles healthcare systems have in administering HIV/AIDS care, especially with stigma, knowledge deficiencies, and adverse attitudes. These results enhance the existing research on HIV/AIDS care, especially in underdeveloped countries where cultural, societal, and religious variables may profoundly affect perceptions of HIV-positive patients. This research revealed that while most nurses had an adequate understanding of HIV transmission, prevention, and treatment, considerable gaps remained. Approximately 52% of nurses exhibited adequate knowledge of HIV/AIDS, yet 35% of respondents had misunderstandings about HIV transmission. For example, 35% of nurses thought that HIV might be transferred by coughing and sneezing, a concept that has been extensively refuted in scientific literature. This conclusion aligns with the research of Royce and Birge (2009), who emphasized that healthcare workers often possess misunderstandings about HIV transmission despite their official education. Misconceptions about the transmission of HIV not only sustain stigma but also affect healthcare practitioners' readiness to treat HIV-positive individuals. The study's conclusion that 93% of nurses accurately recognized the potential for HIV transfer from mother to infant during delivery is promising, suggesting that nurses had a fundamental comprehension of vertical transmission. Nonetheless, the very low proportion of nurses (55%) who acknowledged the function of antiviral drugs in HIV management indicates a substantial deficiency in understanding treatment alternatives. This aligns with the findings of Lohrmann et al. (2000), who noted that healthcare professionals, while possessing broad information on HIV transmission, frequently exhibit a poor comprehension of the therapies accessible to HIV-positive patients. The deficiency of treatment expertise may result in inadequate care and decision-making, especially in the management of complex HIV cases necessitating antiretroviral medication (ART). The study's results highlight the need for focused educational programs to address these knowledge deficiencies, especially regarding transmission processes and treatment alternatives. Consistent training programs, current recommendations, and practical workshops might assist nurses in remaining educated about advancing treatment regimens and preventative tactics. The second significant result of this research was the enduring unfavourable attitudes of nurses towards HIV/AIDS patients despite their adequate understanding of the illness. About 70% of the participants had unfavourable opinions of persons with HIV. Numerous nurses concurred that HIV-positive people ought to be confined to their homes or hospitals, reflecting a significant degree of stigmatization. Nurses exhibited reluctance to accord HIV/AIDS patients the same respect as other patients, with 40% agreeing that HIV-positive individuals should get differential treatment. This corresponds with the results of Burns et al. (2005), who emphasized that despite enhanced HIV awareness, attitudes toward HIV-positive persons still exhibit unfavourable bias, especially among healthcare professionals. Notably, while most nurses exhibited informed reactions about HIV transmission, their adverse views remained entrenched in fear, moral judgment, and cultural prejudices. Metz & Malan (1988) discovered that healthcare professionals in South Africa had comparable anxieties and attitudes, often resulting in hesitance to interact with HIV/AIDS patients. The disparity between knowledge and attitudes highlights a

significant difficulty in HIV/AIDS care: information alone cannot eradicate stigma. Although educational treatments may enhance comprehension, altering entrenched views requires multifaceted strategies that include emotional, psychological, and cultural influences. A significant determinant of adverse attitudes is the anxiety of acquiring HIV. Notwithstanding explicit directives for universal precautions and the efficacy of personal protective equipment (PPE), several nurses in this research showed significant apprehension over HIV transmission. This was particularly obvious in the result that 68% of ICU nurses expressed heightened concern about caring for HIV patients in comparison to hepatitis patients despite analogous transmission methods. This indicates a prevalent misapprehension of risk and an exaggerated fear of HIV, as shown in several research, including those by Oyeyemi (2006) and Van Servellen et al. (2009). Nurses apprehensive about getting the infection are more inclined to exhibit avoidance behaviours, thereby undermining the quality of care delivered to HIV-positive patients. This dread is often intensified by cultural misunderstandings around HIV/AIDS, especially about the stigma linked to HIV transmission via activities considered socially undesirable, such as drug use or unprotected sexual activity. In this setting, HIV-positive individuals are often seen as morally accountable for their status, which exacerbates the unfavourable perceptions shown in the research. Pulerwitz et al. (2015) discovered that the stigma associated with HIV/AIDS is profoundly linked to social and moral evaluations, complicating healthcare personnel's ability to distinguish their convictions from their professional duties. To resolve this problem, it is essential to offer psychological support programs in conjunction with knowledge-based training. Such programs would assist nurses in confronting concerns and anxieties associated with HIV/AIDS care, eventually fostering more empathic and compassionate encounters with HIV-positive patients. Furthermore, alterations in policy and institutional backing are crucial in fostering a conducive atmosphere for nurses, enabling them to surmount stigma and prejudice. The research indicates that the absence of systematic, organized training in HIV/AIDS treatment perpetuates stigma and prejudice among healthcare professionals. The results corroborate the conclusions of Flaskerud, Lewis, & Shin (2013), who said that education is inadequate without institutional policies that promote empathy, equitable treatment, and the psychological welfare of healthcare professionals. Wagner et al. (2014) observed that mental health assistance and consistent HIV/AIDS training programs are essential for diminishing the stigma healthcare professionals attach to HIV-positive patients. This research clearly demonstrates the need for ongoing professional development (CPD) in HIV/AIDS care. Structured training programs must include current knowledge of HIV treatment, mental health support, and cultural competence, ensuring that nurses are adequately prepared to provide comprehensive and empathetic care. Hospital administrations must develop policies that foster non-discriminatory practices, promote inclusive healthcare settings, and facilitate open discourse around HIV/AIDS in the workplace. Institutional leadership is crucial in influencing healthcare professionals' attitudes since supportive settings cultivate trust, empathy, and professionalism in patient care. The results of this study correspond with prior studies on the correlation between knowledge and attitudes about HIV/AIDS among healthcare professionals. Comparable research in South Africa, Nigeria, and India has shown that while healthcare professionals have sufficient information about HIV transmission and treatment, they often exhibit unfavourable attitudes towards persons living with HIV. Research conducted by Royce et al. (2009) and Reisman (1996) revealed that misunderstandings about transmission, fear of infection, and moral judgments were widespread among healthcare professionals. Moreover, a study by Pulerwitz et al. (2015) in Vietnam underscored the efficacy of intervention programs in reducing stigma while also stressing the need for enduring measures to secure sustainable improvements in attitudes. This research is distinguished by its emphasis on Pakistan, where

cultural and religious influences significantly affect healthcare personnel' perceptions of HIV-positive patients. The research underscores the need for culturally attuned treatments that include local norms, attitudes, and social constructions related to HIV/AIDS. This study examines a hospital in a poor nation, offering significant insights into the issues encountered by healthcare systems in resource-constrained environments. Mandatory and thorough HIV/AIDS training is essential for all healthcare professionals, emphasizing information, skills, and attitudes. Training programs must integrate technical expertise with emotional intelligence to cultivate empathy and mitigate anxiety. Institutions have to provide psychological counselling services to assist nurses in managing the emotional and psychological stress linked to the care of HIV/AIDS patients. This assistance needs to be offered to all healthcare professionals to mitigate burnout and compassion fatigue. Hospitals must implement explicit anti-discrimination rules to guarantee that HIV-positive patients get treatment based on medical needs rather than personal or societal prejudices. Systematic audits and institutional responsibility must implement policies. Interventions for HIV/AIDS must be customized to align with the local cultural context, ensuring that nurses comprehend how cultural beliefs and religious perspectives may influence their attitudes towards HIV-positive patients. This will enhance patient-nurse relations and diminish culturally rooted prejudice.

Conclusion

HIV/AIDS continues to be a significant public health concern worldwide, particularly in developing nations such as Pakistan. In recent decades, medical discoveries have markedly enhanced the treatment and management of HIV/AIDS, transforming it into a manageable disease rather than a terminal illness. Nonetheless, despite these achievements, stigma and prejudice continue to be pervasive challenges, especially in hospital environments. Healthcare professionals, particularly nurses, are essential in the care and treatment of HIV/AIDS patients, rendering their knowledge, attitudes, and actions toward these persons critical to patient outcomes. This research aimed to assess the knowledge and attitudes of nurses at Jinnah Hospital Lahore (JHL) about HIV/AIDS patients and to investigate the correlation between these elements. The research used a descriptive cross-sectional methodology to collect data from 120 nurses at JHL, using a standardized questionnaire to evaluate their knowledge of HIV/AIDS transmission, prevention, and treatment, along with their attitudes towards HIV-positive patients. This research elucidates the complexities encountered by healthcare professionals in delivering high-quality, equitable treatment to individuals with HIV/AIDS, establishing a foundation for enhancing training, education, and support mechanisms within healthcare organizations. The study's findings highlight two primary issues: the enduring knowledge gaps despite accessible training tools and the adverse attitudes about HIV-positive patients that continue to influence healthcare practices. These results correspond with prior studies, indicating that nurses' knowledge of HIV/AIDS transmission and treatment is typically adequate. Nevertheless, some nurses continue to possess considerable misunderstandings about the transmission of the virus. For instance, 35% of participants erroneously thought that HIV might be transmitted by coughing and sneezing, a misconception that may incite fear-driven behaviours and discriminatory actions. The views of nurses towards HIV/AIDS patients were mostly unfavourable. Approximately 70% of nurses exhibited views indicative of stigma and prejudice. A considerable proportion of nurses believed that HIV-positive patients need to be separated either at home or in medical facilities, with 40% agreeing that HIV/AIDS patients should get differential treatment compared to other patients. This stigma was notably evident in the conviction that attending to HIV/AIDS patients may adversely impact personal relationships, as well as in the hesitance to provide care without supplementary

remuneration. These results validate the knowledge-attitude disparity often reported in healthcare environments. Although the nurses exhibited enough knowledge of HIV transmission and prevention, their attitudes towards patients with HIV were frequently influenced by fear, moral judgment, and cultural prejudices rather than empirical evidence. This disparity underscores the need for holistic treatments that not only enhance knowledge but also seek to modify attitudes and diminish stigma. This study's conclusions have significant implications for nursing education, hospital administration, and healthcare practices. The continuation of negative attitudes among nurses, despite sufficient information, highlights the need for comprehensive training programs that include both cognitive and emotional dimensions of HIV/AIDS treatment. Educational treatments should extend beyond conventional information dissemination to include attitude modification, empathy cultivation, and psychological support for healthcare professionals. A primary proposal is to include HIV/AIDS teaching in nursing courses and provide continuous professional development for working nurses. These programs must prioritize contemporary medical knowledge while also addressing cultural sensitivity, ethical issues, and the significance of non-discriminatory treatment. Nurses must be informed about the intricate social, psychological, and emotional elements that might impact their care delivery and how these factors can affect the overall experience of HIV-positive patients within the healthcare system. The research underscores the need for psychosocial assistance and mental health services for nurses. It is essential to provide nurses with emotional and psychological support since they encounter distinct obstacles in caring for HIV-positive patients. Incorporating training on stress management, empathy, and self-care into regular in-service education for nurses is essential to mitigate burnout, diminish stigma, and enhance the quality of care for HIV/AIDS patients. Another significant impact is the need for institutional transformation within healthcare environments. Healthcare facilities must emphasize anti-discrimination policies that directly confront stigma and prejudice against persons living with HIV. Hospital leadership is essential in fostering a supportive atmosphere for healthcare personnel and patients alike. Policies and procedures must foster an inclusive culture, guaranteeing that all patients, irrespective of their HIV status, have the greatest level of treatment. The formulation of standards for HIV/AIDS care and their rigorous implementation might mitigate the probability of discriminatory behaviours. A notable conclusion of the research is the influence of psychological variables on nurses' attitudes towards HIV-positive patients. Fear, worry, and misinformation about HIV transmission significantly influence negative attitudes and actions. This research underscores the need to address the psychological needs of nurses since their emotional reactions to HIV treatment directly influence patient outcomes. Nurses experiencing emotional hardship or moral difficulty with the treatment of HIV-positive patients may exhibit avoidance behaviours, including refusal to give care, evasion of direct contact, or neglecting to provide essential emotional support. Such practices may lead to adverse health consequences for patients and perpetuate a cycle of stigma inside the healthcare system. Consequently, healthcare institutions must not only provide knowledge-based training but also provide psychological support services to assist nurses in managing their anxieties, prejudices, and emotions. Mental health resources, counselling services, and peer support networks may cultivate a healthier, more supportive atmosphere for healthcare professionals, hence enhancing their ability to provide superior care to HIV-positive patients. Stigma continues to be a major obstacle to the efficient treatment and care of those living with HIV. This study's findings demonstrate that misconceptions about HIV transmission and moral evaluations of HIV-positive persons perpetuate stigma within healthcare environments. These results correspond with the study of Parker & Aggleton (2003), who assert that stigma is often entrenched in cultural, societal, and personal views, making it difficult to alter via conventional

education alone. Stigma in healthcare environments shows in several ways, such as avoidance behaviours, disrespectful attitudes, and denial of treatment. Burns et al. (2005) determined that stigma within healthcare settings may lead to diminished treatment quality, patient evasion, and worse health consequences. The study's results corroborate these conclusions, emphasizing the need for extensive anti-stigma initiatives that confront the societal and cultural beliefs that sustain unfavourable perceptions of HIV-positive individuals. Mitigating stigma demands more than educational initiatives; it involves institutional reforms, policy formulation, and leadership endorsement to create an atmosphere that promotes equitable treatment. Training interventions must include efforts to mitigate stigma, alleviate fear, and foster empathy towards those living with HIV/AIDS. This study offers significant insights into nurses' knowledge and attitudes toward HIV/AIDS patients; however, major research gaps remain. The research focused only on nurses at one hospital in Lahore, Pakistan. The findings provide important insights into the issues encountered by healthcare personnel in this environment, although the generalizability of the results is limited. Future studies should investigate bigger, multi-centre studies with a diverse sample, including healthcare professionals from various locations and kinds of healthcare facilities, to provide a more thorough knowledge of the issues in HIV/AIDS care. This research found a knowledge-attitude gap among nurses; however, it did not investigate the underlying causes for the persistence of unfavourable attitudes despite the presence of information. Future studies should investigate the psychological, social, and cultural determinants that influence healthcare staff's attitudes towards persons with HIV. Comprehending these characteristics will facilitate the creation of more effective therapies that address the fundamental causes of stigma. A further direction for future study is to investigate the enduring effects of training programs on nurses' attitudes and behaviours. This study emphasized the need for ongoing education and training, yet there is less evidence on the long-term efficacy of such programs. Longitudinal studies monitoring nurses' attitudes and actions before, throughout, and after training would provide significant data about the efficacy of educational interventions and support programs.

This research has yielded significant insights into the knowledge and attitudes of nurses toward HIV/AIDS patients at Jinnah Hospital Lahore. The results highlight that while awareness of HIV transmission and treatment is typically adequate, negative attitudes stemming from fear, cultural prejudice, and misunderstandings continue to exist. The knowledge-attitude disparity is a substantial obstacle to delivering high-quality, non-discriminatory care to those with HIV. The research has significant implications for nursing education, hospital administration, and policy formulation. Recommendations include comprehensive training programs, emotional support for healthcare professionals, and the formulation of anti-discrimination policies to mitigate stigma and enhance care quality. Hospitals and healthcare institutions must implement a holistic strategy that tackles both knowledge deficiencies and adverse attitudes to foster a more inclusive and compassionate healthcare environment for HIV/AIDS patients. Additional study is required to investigate the long-term effects of training programs, the psychological determinants of stigma, and the efficacy of multi-center treatments. By addressing these deficiencies, healthcare systems may make substantial progress in eradicating stigma, enhancing care for HIV-positive individuals, and ultimately fostering improved health outcomes for those living with HIV/AIDS.

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