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Research Article

Knowledge, Attitude & Preparedness of Clinical Dental Students Towards HIV Infection: A Questionnaire Study

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Abstract
Objective: This study aimed to evaluate Clinical dental students' knowledge of HIV/AIDS transmission, their attitudes toward people living with HIV/AIDS (PLWHA), preparedness in infection control, post-exposure prophylaxis (PEP) knowledge and correlations between these domains.
Materials and Methods: A cross-sectional questionnaire-based study was conducted among 202 clinical dental students (undergraduates, interns, postgraduates) in India. A 40-item digital survey assessed demographics, knowledge (3-point Likert scale), attitudes (5-point Likert scale), infection control preparedness (5-point Likert scale), and post-exposure prophylaxis (PEP) knowledge (multiple-choice). Data were analyzed using descriptive statistics, Mann-Whitney tests, and Spearman correlations.
Results: Participants demonstrated moderate knowledge (mean score: 58.17%), with notable gaps in PEP regimens (40.47% accuracy).Their Attitudes toward PLWHA were poor (mean: 3.25/5), reflecting persistent stigma, while infection control preparedness was strong (mean: 8.35/10). Postgraduates exhibited significantly higher knowledge ($p = 0.001$) and more positive attitudes ($p = 0.049$) than undergraduates. A weak positive correlation emerged between knowledge and attitude ($r = 0.202$, $p \leq 0.05$), but no significant links existed between knowledge/preparedness or attitude/preparedness.
Conclusion: Despite reasonable technical preparedness and moderate HIV/AIDS knowledge, dental students displayed inadequate empathy and PEP understanding, highlighting systemic gaps in education. Curricular reforms integrating ethical training, experiential learning, and targeted PEP education are urgently needed to reduce stigma and align clinical competence with equitable care for PLWHA.

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Introduction

The human immunodeficiency virus (HIV), a retroviral scourge that methodically erodes the immune system, embodies a profound paradox in modern healthcare: a condition once synonymous with mortality has been transformed into a chronic, manageable entity through biomedical innovation, yet remains ensnared in a labyrinth of sociocultural stigma and systemic inequity. This duality is starkly evident in dental practice, where the convergence of clinical risk, ethical obligation, and human rights frameworks demands a recalibration of both technical proficiency and moral resolve. HIV's transmission pathways—confined to bloodborne exposure, perinatal transfer, and sexual contact—render it a pathogen uniquely mitigated by stringent adherence to universal precautions, protocols that, when judiciously applied, virtually nullify cross-contamination risks in dental settings. The advent of antiretroviral therapy (ART) has redefined the prognosis for people living with HIV/AIDS (PLWHA), enabling lifespans and quality of life akin to seronegative populations.[1] Yet, this biomedical triumph is eclipsed by persisting narratives of fear and exclusion, particularly within healthcare systems where PLWHA confront discrimination masquerading as clinical caution. Globally, ethical mandates articulated by the World Health Organization (WHO) and the 2019 Eighth World Workshop on Oral Health and Disease in AIDS (WW8 AIDS) unequivocally condemn such discrimination, framing equitable care for PLWHA as non-negotiable. In jurisdictions like the United States and Canada, refusal to treat PLWHA may precipitate legal consequences, yet in nations such as India—home to 2.3 million PLWHA per the National AIDS Control Organization (NACO)—structuralapathy[2], educational lacunae, and cultural stigmatization perpetuate a cycle of neglect, particularly in regions like Maharashtra, a high-prevalence state where oral manifestations of HIV (e.g., necrotizing ulcerative periodontitis, Kaposi's sarcoma, and oral candidiasis) serve as both clinical sentinels of disease progression and sources of profound morbidity, compromising nutrition, speech, and psychosocial well-being.

Oral healthcare, often the first frontier in identifying HIV-related immunosuppression, assumes critical importance in this landscape. However, studies in Delhi and Mumbai reveal that 60% of PLWHA report unmet dental needs, a statistic emblematic of systemic failures: fear of transmission, insufficient provider knowledge, and institutionalized biases that relegate PLWHA to the periphery of care. Dental professionals, as custodians of oral health, are ethically bound to dismantle these barriers, yet their capacity to do so is hamstrung by pedagogical shortcomings. India's dental education apparatus, producing over 27,000 graduates annually across 313 institutions, frequently marginalizes HIV-specific curricula, reducing critical topics such as pathophysiology, post-exposure prophylaxis (PEP), and trauma-informed communication to cursory footnotes. Prior investigations in Chennai and Pune underscore this dissonance: while 55–60% of students demonstrate rudimentary knowledge of transmission routes, attitudinal scores languish at 2.8/5, reflecting entrenched stigma and misconceptions about casual transmission—a phenomenon mirrored in China, Egypt, and South Africa, where occupational anxiety and PEP illiteracy further alienate students from engaging with PLWHA.[3,4]

This study, anchored in Navi Mumbai—a microcosm of India's dental education density yet a lacuna in HIV-related research—interrogates this fissure through a five section Demographics, knowledge (3-point Likert scale), attitude (5-point Likert scale), infection control preparedness (5-point Likert scale), and post-exposure prophylaxis (PEP) knowledge (multiple-choice). Its findings, drawn from 202 participants, reveal a mean knowledge score of 58.1%, with only 40.5% accurately identifying PEP regimens, alongside attitudinal ambivalence (3.25/5) that betrays residual prejudice despite procedural confidence in universal precautions (8.35/10). Postgraduates, bolstered by advanced clinical exposure, exhibit marginally superior knowledge and attitudes, yet these increments remain insufficient to bridge the chasm between technical competence and ethical commitment.[7,8] The weak but significant correlation between knowledge and attitude (r=0.202) suggests that education alone, while necessary, is insufficient to dismantle stigma—a revelation demanding pedagogical paradigms that integrate empathy cultivation with biomedical rigor.

The urgency of this research is magnified by India's epidemiological trajectory: since the first reported HIV case in 1986, [11]the epidemic has evolved into a mosaic of high-risk demographics, necessitating healthcare systems that harmonize scientific precision with humanitarian ethos. Yet, the paucity of localized data—particularly in regions like Navi Mumbai—impedes comparative analyses with global benchmarks, stifling evidence-based reform. By delineating the interplay between knowledge deficits, attitudinal biases, and preparedness, this study not only exposes systemic fissures but also charts a roadmap for curricular modernization, policy advocacy, and stigma mitigation. In an era where healthcare is increasingly focused on equity, these findings call for a transformation in dental education—one that moves beyond mere technical instruction to cultivate professionals who combine scientific expertise with a strong ethical commitment, ensuring people living with HIV/AIDS (PLWHA) receive the respectful, compassionate care they deserve. This shift is not just about education; it aligns with public health's urgent need to balance medical advancements with social justice, positioning dental care as a cornerstone of inclusivity in the global effort to combat HIV/AIDS.

Materials and Methods

Study Design

This questionnaire-based study assessed the knowledge, attitudes, preparedness, and willingness of dental students to treat patients living with HIV/AIDS (PLWHA). The study protocol was approved by the Research Ethics Committee of D. Y. Patil University School of Dentistry, Nerul, Navi Mumbai (Ethics Approval No. IREB/2024/OMR/08). The questionnaire

employed in this research was modified from a tool developed and reported in a prior study.

Questionnaire

This study utilized a questionnaire-based design, with data collected electronically through Google Forms. The questionnaire was divided into five sections: demographic data, knowledge assessment (featuring a 3-point Likert scale with responses of Agree, Disagree, or Not sure), attitude evaluation (using a 5-point Likert scale: Strongly disagree, Disagree, Not sure, Agree, Strongly agree), infection control practices (similarly assessed via a 5-point Likert scale), and postexposure prophylaxis (evaluated through multiple-choice questions). Participants included clinical dental students at the undergraduate level (third-year, fourth/final-year students, and interns) as well as postgraduate students, aiming to comprehensively assess their preparedness and perspectives in managing HIV/AIDS-related care.

Study Participants

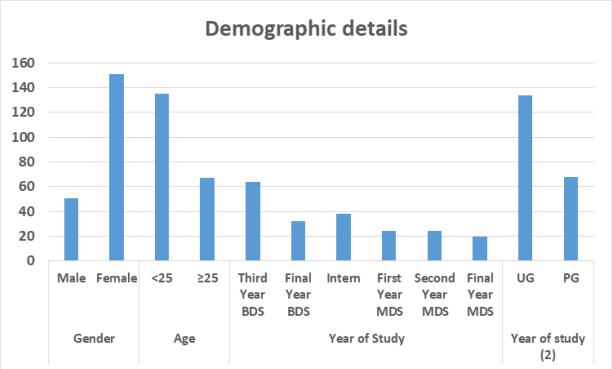
A questionnaire-based study was conducted at D. Y. Patil University School of Dentistry, Nerul, Navi Mumbai, involving clinical dental students, including undergraduates, interns, and postgraduates. The study employed a 40-item digital survey administered via Google Forms to assess five domains: demographic information, knowledge (measured using a 3-point Likert scale: Agree, Disagree, Not sure), attitudes (evaluated with a 5-point Likert scale: Strongly disagree to Strongly agree), infection control preparedness (similarly assessed via a 5-point Likert scale), and knowledge of post-exposure prophylaxis (PEP) through multiple-choice questions. Statistical analysis included descriptive statistics and Chi-square tests to interpret the collected data.

Results

Table 1: Demographic details

The demographic data of respondents are shown in Table 1. The total number of respondents was 202, with female students (n=151; 74.8%) almost three times higher than male students (n=51; 25.2%). 135 students (66.8%) were less than 25 years of age. Most of the students were in their third year BDS (n=64; 31.7%) with 33.75 post-graduates participating in the study.

Variable	Category	n	%
Gender	**Male**	51	25.2
	Female	151	74.8
Age	**<25**	135	66.8
	≥25	67	33.2
Year of Study	**Third Year BDS**	64	31.7
	Final Year BDS	32	15.8
	Intern	38	18.8
	First Year MDS	24	11.9
	Second Year MDS	24	11.9
	Final Year MDS	20	9.9
Year of study (2)	**UG**	134	66.3
	PG	68	33.7



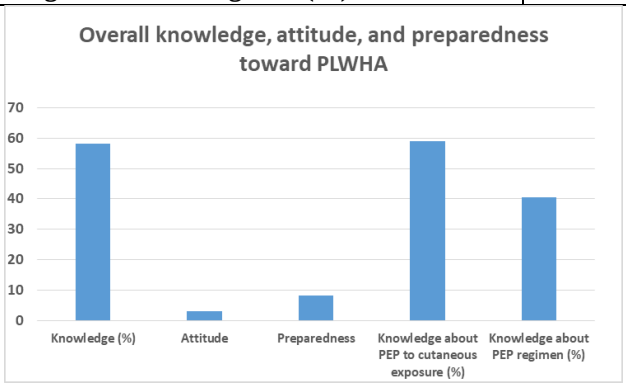
GRAPH 1: DEMOGRAPHIC DETAILS

Table2: Overall knowledge, attitude, and preparedness toward PLWHA

The overall knowledge (in %), attitude, and preparedness scores toward PLWHA are presented in Table 2. On average, 58.17% of the answers were correctly reported by the respondents with 81 students (40.2%) scoring 70% or higher. This study used 11 statements to assess students' attitudes toward PLWHA. The attitude toward PLWHA was poor among the students which is reflected by the mean attitude score of 3.25 ± 1.33. This study used 11statements to assess students' preparedness for infection control when

treating PLWHA. The results of this study showed that overall, dental students had good preparedness for infection control with a mean score for preparedness of 8.35 ± 2.41. Around 59.03 and 40.47% of the answers regarding PEP to cutaneous exposure and PEP regimen were correctly reported by the respondents.

Domain	Mean ± SD
Knowledge (%)	58.17 ± 18.74
Attitude	3.25 ± 1.33
Preparedness	8.35 ± 2.41
Knowledge about PEP to cutaneous exposure (%)	59.03 ± 25.35
Knowledge about PEP regimen (%)	40.47 ± 20.23



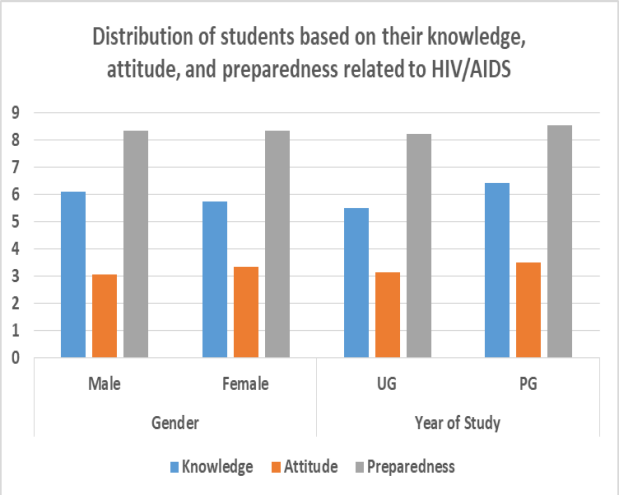
GRAPH 2: OVERALL KNOWLEDGE, ATTITUDE, AND PREPAREDNESS TOWARD PLWHA

Table 3: Distribution of students based on their knowledge, attitude, and preparedness related to HIV/AIDS

This table compares the knowledge, attitude, and preparedness scores related to HIV/AIDS according to demographic characteristics. The mean knowledge, attitude, and preparedness scores did not differ significantly among male and female students. However, post-graduate students had a significantly greater mean knowledge and attitude score as compared to undergraduate students. The mean preparedness score was almost similar among UG and PG students.

Variable	Knowledge		Attitude		Preparedness	
	Mean ± SD	p-value	Mean ± SD	p-value	Mean ± SD	p-value
Gender						
Male	6.08 ± 2.12	0.225	3.06 ± 1.22	0.266	8.33 ± 2.60	0.838
Female	5.73 ± 1.79		3.32 ± 1.36		8.35 ± 2.35	
Year of Study						
UG	5.51 ± 1.91	0.001*	3.13 ± 1.32	0.049*	8.24 ± 2.54	0.465
PG	6.41 ± 1.67		3.50 ± 1.31		8.56 ± 2.11	

Mann Whitney test; * indicates a significant difference at p≤0.05



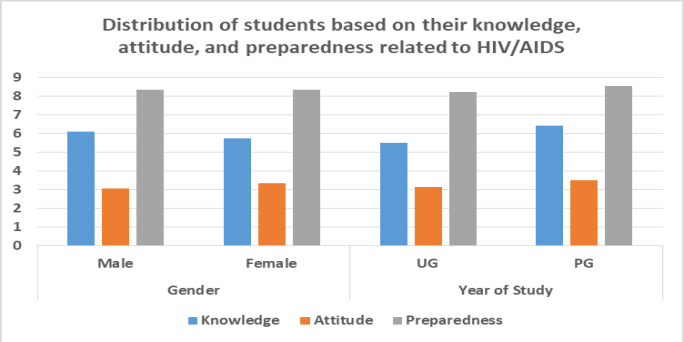
GRAPH3: DISTRIBUTION OF STUDENTS BASED ON THEIR KNOWLEDGE, ATTITUDE, AND PREPAREDNESS RELATED TO HIV/AIDS

Table 4: Distribution of students based on their knowledge about post-exposure prophylaxis to cutaneous exposure and post-exposure prophylaxis (regimen)

This table compares the knowledge about post-exposure prophylaxis to cutaneous exposure and post-exposure prophylaxis (regimen) related to HIV/AIDS according to demographic characteristics. The mean knowledge scores about post-exposure prophylaxis to cutaneous exposure and post-exposure prophylaxis (regimen) did not differ significantly among male and female students. However, post-graduate students had significantly greater mean knowledge scores about post-exposure prophylaxis to cutaneous exposure and post-exposure prophylaxis (regimen) as compared to undergraduate students.

Variable	PEP to cutaneous exposure		PEP (regimen)	
	Mean ± SD	p-value	Mean ± SD	p-value
Gender				
Male	2.35 ± 1.09	0.807	1.65 ± 0.77	0.973
Female	2.36 ± 0.99		1.61 ± 0.82	
Year of study				
UG	2.17 ± 1.05	<0.001*	1.50 ± 0.80	0.002*
PG	2.74 ± 0.82		1.85 ± 0.78	

Mann Whitney test; * indicates a significant difference at p≤0.05



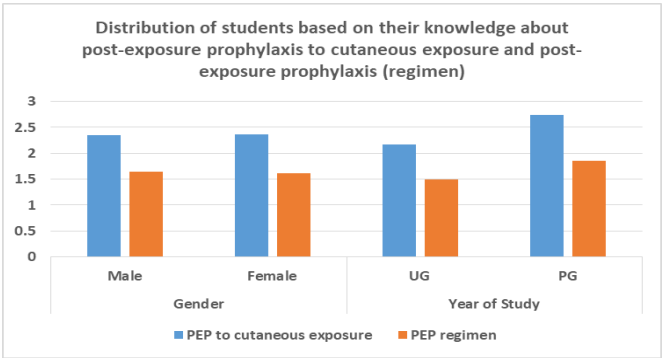
GRAPH 4: DISTRIBUTION OF STUDENTS BASED ON THEIR KNOWLEDGE ABOUT POST-EXPOSURE PROPHYLAXIS TO CUTANEOUS EXPOSURE AND POST-EXPOSURE PROPHYLAXIS (REGIMEN)

Table 5: Correlation between knowledge, attitude, and preparedness related to HIV/AIDS

This table presents the results of the correlation between knowledge, attitude, and preparedness related to HIV/AIDS. There was no correlation between knowledge and preparedness toward treating PLWHA. The correlation between knowledge and attitude was significant although it was weak (r=0.202). here was no correlation between attitude and preparedness toward treating PLWHA.

Domain	Knowledge	Attitude	Preparedness
Knowledge	1.000	0.202*	0.093
Attitude		1.000	0.109
Preparedness			1.000

Spearman rank correlation test; * indicates a significant correlation at p≤0.05



GRAPH 5: CORRELATION BETWEEN KNOWLEDGE, ATTITUDE, AND PREPAREDNESS RELATED TO HIV/AIDS

Discussion

The chances of acquiring HIV infection in a dental setting during treatment are high. This makes it crucial for dental professionals and their staff to have proper knowledge about HIV/AIDS. Understanding how the infection spreads, using safety measures like gloves and sterilized tools, and treating all patients carefully can help reduce risks.[8,9] By staying informed and following guidelines, dental teams can protect themselves and their patients while providing safe, respectful car. It is the ethical and moral responsibility of all dental professionals to treat HIV positive patients in the same way that treat all other patients. The findings of this study offer a detailed examination of the knowledge, attitudes, and preparedness of dental students toward treating people living with HIV/AIDS (PLWHA), shedding light on their readiness to address the complex clinical and ethical challenges associated with HIV/AIDS care in dental practice. With a sample of 202 respondents, predominantly female (74.8%) and under 25 years of age (66.8%), the demographic profile mirrors that of the Indonesian study by Wimardhani et al. (2022), which included 1,280 dental students, 83.3% of whom were female. This gender skew, likely reflective of enrollment trends in dental education, did not significantly influence outcomes in either study, as evidenced by the lack of significant gender-based differences in knowledge ($p=0.225$ in our study; $p=0.12$ in Wimardhani et al.[1]) or preparedness ($p=0.838$ in our study; $p=0.01$ in Wimardhani et al[1]). However, a notable distinction emerges in the comparison of undergraduate (UG) and postgraduate (PG) students. Our study found that PG students demonstrated significantly higher knowledge ($p=0.001$) and attitude scores ($p=0.049$) compared to UG students, a pattern consistent with Wimardhani et al[1]., where students from public universities—often associated with more advanced training—outperformed their private university counterparts in knowledge ($p=0.001$) and preparedness ($p=0.009$). This suggests that extended clinical exposure and specialized education play pivotal roles in enhancing understanding and reducing stigma, both of which are essential for improving the quality of care provided to PLWHA.

In terms of knowledge, our study reports a mean knowledge score of 58.17% (±18.74), with only 40.2% of students achieving scores above 70%. This is notably lower than the 63% of Indonesian students who scored above 70% (mean score 15.02 ± 2.4) in Wimardhani et al[1].'s study. The disparity may be attributed to differences in curriculum design, access to HIV/AIDS-specific training, or the emphasis placed on infectious disease education within dental programs. Both studies, however, highlight persistent misconceptions about HIV transmission. For instance, Wimardhani et al. found that 50.9% of students erroneously believed saliva could transmit HIV, and 65% thought sputum was a transmission route. While our study did not directly assess specific transmission misconceptions, the lower knowledge scores for post-exposure prophylaxis (PEP) to cutaneous exposure (59.03% ± 25.35) and PEP regimens (40.47% ± 20.23) suggest similar gaps in understanding critical aspects of HIV management. The Indian study by Yousuf et al[2]. (2016) further reinforces these concerns, reporting that only 72.02% of dental students possessed fair knowledge about HIV/AIDS, with dental auxiliaries exhibiting even lower awareness (42.10%). This cross-country consistency in knowledge deficits underscores a global challenge in dental education, particularly in ensuring that students and auxiliary staff are well-versed in the modes of HIV transmission and the protocols for managing occupational risks.

Attitudes toward PLWHA in our study were generally poor, with a mean score of 3.25 ± 1.33, indicating significant apprehension and stigma among students. This contrasts with Wimardhani et al[1].'s findings, where a mean attitude score of 3.04 ± 0.3 reflected a more positive professional outlook, with over 80% of students demonstrating a commitment to treating PLWHA ethically. However, both studies reveal underlying concerns about disease transmission. In Wimardhani et al., 80% of students expressed worries about HIV transmission in dental settings, and 70% overestimated occupational risks, tendencies that align with our study's low attitude scores, which likely stem from similar fears. Yousuf et al.'s study provides additional context, noting that 41.93% of third-year students and 28.84% of interns believed HIV-positive patients could not be treated in dental settings, reflecting a reluctance driven by misinformation or fear of infection. Our study's significant correlation between knowledge and attitude ($r=0.202$, $p\leq0.05$) supports Wimardhani et al.[1]'s observation that knowledge is positively associated with willingness to treat ($p<0.05$). This suggests that enhancing knowledge could serve as a lever to shift attitudes, reducing stigma and fostering a more inclusive approach to patient care.

Preparedness for infection control emerged as a strength in our study, with a mean score of 8.35 ± 2.41, indicating that students are generally well-equipped to implement universal precautions when treating PLWHA. This aligns closely with Wimardhani et al.'s findings, where a mean preparedness score of 3.19 ± 0.4 reflected strong adherence to infection control practices, though students often intensified measures when treating known PLWHA. Yousuf [2]et al. reported that 86.53% of interns believed proper barrier techniques could prevent HIV transmission, yet 60.52% of dental auxiliaries questioned the feasibility of treating HIV-positive patients in dental settings, highlighting a disconnect between theoretical preparedness and practical confidence. Unlike Wimardhani et al., where public university students showed greater preparedness ($p=0.009$), our study found no significant difference between UG and PG students ($p=0.465$). This could indicate a more standardized approach to infection control training in our study's context, though it also suggests that advanced education does not necessarily translate to improved preparedness in all settings. The tendency to overapply infection control measures for PLWHA, as noted in both our study and Wimardhani et al., may reflect a lack of trust in universal precautions, potentially driven by stigma or exaggerated risk perceptions.

Knowledge of PEP remains a critical area of concern. Our study found that only 59.03% (±25.35) of responses regarding PEP to cutaneous exposure and 40.47% (±20.23) regarding PEP regimens were correct, with PG students significantly outperforming UG students ($p<0.001$ and $p=0.002$, respectively). Neither Wimardhani et al. nor Yousuf et al. directly assessed PEP knowledge, but the latter's finding that dental auxiliaries had particularly low awareness of HIV-related protocols suggests a broader educational gap. Inadequate knowledge of PEP is particularly alarming given its importance in managing occupational exposures in dental practice, where the risk of needle-stick injuries or cutaneous exposure is non-negligible. This gap calls for targeted interventions to ensure that dental students and auxiliaries are proficient in PEP protocols, which could enhance their confidence and safety when treating PLWHA.

The interplay between knowledge, attitude, and preparedness in our study reveals nuanced dynamics. The weak but significant correlation between knowledge and attitude ($r=0.202$, $p\leq0.05$) mirrors Wimardhani et al.[2]'s finding of a statistically significant correlation between knowledge and willingness to treat ($p<0.05$), suggesting that informed students are more likely to exhibit positive attitudes and greater willingness to engage with PLWHA. However, the absence of a correlation between knowledge and preparedness or between attitude and preparedness in our study ($p>0.05$) contrasts with Wimardhani et al.'s observation of a significant correlation between knowledge, attitude, and preparedness ($p<0.05$). This discrepancy may reflect differences in how preparedness is operationalized or taught across contexts, with our study's students possibly relying on standardized infection control protocols that do not vary with knowledge or attitude levels. Yousuf et al.'s findings further highlight the role of education, as final-year students (75.75%) outperformed third-year students (70.96%) in knowledge, likely due to curriculum progression, yet auxiliaries lagged significantly, emphasizing the need for inclusive training programs.

Broader implications arise when considering the global context of HIV/AIDS care in dentistry. Wimardhani et al. emphasize the role of experiential learning in reducing stigma and increasing willingness to treat, a strategy that could address the reluctance observed in our study and Yousuf et al.'s findings, where significant proportions of students and auxiliaries were hesitant to treat PLWHA. The persistent stigma identified across all three studies aligns with global trends, as noted in Wimardhani et al.'s reference to studies in China, Kuwait, Brazil, and Canada, where dental students preferred referring PLWHA elsewhere. This suggests that cultural or institutional factors alone do not account for these attitudes; rather, they stem from universal challenges in dental education, including fear of occupational risk and insufficient exposure to PLWHA during training. Our study's findings, particularly the poor attitude scores, underscore the need for curricula that integrate direct interactions with PLWHA, as suggested by Wimardhani et[1] al., to foster empathy and dismantle misconceptions.

The ethical dimension of treating PLWHA is another critical consideration. Yousuf et al. found that 63.46% of interns believed there was no ethical right to refuse treatment to HIV-positive patients, a sentiment echoed in Wimardhani et al.'s observation that over 80% of students recognized their ethical responsibility to provide care. However, our study's low attitude scores and the reluctance noted in Yousuf et al.'s findings (e.g., 68.42% of auxiliaries unwilling to treat) indicate a gap between ethical awareness and practical application. This discrepancy may be exacerbated by inadequate training on managing HIV/AIDS patients, as evidenced by the poor curriculum satisfaction reported in Yousuf et a{2]l. (e.g., 63.15% of auxiliaries found the curriculum insufficient) and the call for curriculum revisions in both referenced studies. Our study's findings on PEP knowledge gaps further highlight the need for practical, hands-on training to ensure students are not only ethically aware but also technically competent to manage PLWHA safely.

CONCLUSION:

This study highlights the disconnect between technical proficiency and compassionate care in dental students managing HIV/AIDS. While foundational infection control knowledge exists, gaps in empathy and ethical commitment persist, exacerbated by curricula prioritizing procedural skills over psychosocial preparedness. Postgraduates showed slightly better awareness, yet stigma and anxiety remained unresolved. To bridge this gap, dental education must integrate empathy training, real-world patient interactions, and scenario-based learning. Cultivating professionals who blend scientific rigor with ethical responsibility is vital for equitable care, ensuring oral healthcare becomes a pillar of inclusivity in the global fight against HIV/AIDS.

Future Perspectives

1. Curriculum Integration: HIV/AIDS education must be standardized across dental curricula, with emphasis on transmission science, universal precautions, and ethical obligations. Interactive modules, including case studies and simulations, should replace passive learning to enhance retention and application.

2. Experiential Training: Clinical rotations involving PLWHA, as suggested in the Indonesian study, can demystify the disease, reduce stigma, and build empathy. Partnerships with HIV clinics could facilitate such exposure.

3. Auxiliary Staff Education: Training programs for dental auxiliaries, as highlighted in India, must be prioritized to ensure cohesive infection control practices and ethical alignment across all healthcare tiers.

4. Continuing Education: Lifelong learning via workshops and seminars can update practitioners on evolving HIV science and combat complacency in infection control.

5. Community Engagement: Public health campaigns led by dental professionals can dispel myths about HIV transmission, reducing societal stigma and encouraging early dental visits by PLWHA.
6. Policy Advocacy: National dental associations should enforce ethical guidelines that penalize discrimination against PLWHA, reinforcing the moral imperative to treat all patients equitably.
By addressing these dimensions, dental education can cultivate a generation of practitioners equipped not only with technical expertise but also with the compassion and ethical resolve to serve PLWHA without prejudice.

QUESTIONNAIRE

Table 1: HIV/AIDS-related knowledge of dental students

	Knowledge domain	**Agree(3)**	**Disagree(1)**	**Not Sure(2)**
1	Can HIV/AIDS patients infect Dental Health professional?	A		
2	Can Needle stick injury during dental treatment procedures transmit HIV?	A		
3	Can aerosols produced during dental treatment of HIV infection patients transmit HIV?		D	
4	Can occupational exposure to saliva in the dental setting can readily transmit HIV to the dentist?		D	
5	Can you diagnose HIV/AIDS patients with oral manifestations	A		
6	The negative HIV screening tests surely indicate that the individual is not infected		D	
7	Western blot is a definite test for HIV/AIDS diagnosis	A		
8	Does magnitude of the viral load indicative of withholding dental treatment for the patient	A		
9	Is Absolute Neutrophil Count <1000/mm3 an indicator for risk for infection and the need for consideration of prophylactic antibiotics for any dental treatment that potentially can cause bacteremia	A		
10	Do you think it is important to uphold the confidentiality of a patient with HIV positive status?	A		

Table 2: Responses of dental students to HIV/AIDS-related attitude statements

	Attitude domian	**Strongly disagree(1)**	**Disagree(2)**	**NOT SURE(3)**	**Agree(4)**	**Strongly agree(5)**
1	Do you feel treating HIV/AIDS patients means wasting national resources	**SD**				
2	Do you agree that treatment of all patients should be done as potentially HIV infected					**SA**
3	As a dental student are you at an increased risk of contracting HIV infection				**A**	
4	After an accident with a sharp object/needle stick injury would you be worried about being infected				**A**	

5	Specially designed discrete settings should be made available to treat HIV infected patients		**D**			
6	Do you think treating an HIV-positive patient is a moral and ethical responsibility of the dental professional					**SA**
6	Will you willingly treat a patient if you know he/she is HIV positive?				**A**	
7	Will you perform CPR if HIV/AIDS patients need it?					**SA**
8	Do you think Health professionals should have the right to refuse to provide treatment for an HIV-positive patient			**N**		
9	Do you agree that regular dental care is an essential Component of managing patients with HIV/AIDS					**SA**
10	Do you agree Infection control procedures are crucial for treating HIV patients, although they can be time-consuming and may impact the dentist's work quality	**SD**				

Table3 :Distribution of dental students preparations regarding infection control when treated for PLWHA

	Infection control practice Domain	Rarely(2)	Sometimes(3)	Usually(1)	Always(4)
1	Is it required to wear double gloves during the procedure while treating HIV patient?				**A**
2	Is it required to change gloves after treating HIV patients?				**A**
3	Does wearing gloves eliminate the need for handwashing after procedure?	**R**			
4	Is it required to sterilize instrument used to treat HIV patients?				**A**
5	Do all sterilization methods have lethal effects against HIV				**A**
6	Is it required to wear personal protective equipment (excluding gloves) while treating HIV patients?				**A**
7	Is it necessary to put on eye wear as to prevent accidental exposure to the eyes				**A**
8	Is it recommended to wash hands and other skin surfaces immediately and thoroughly with water & soap if contaminated with blood or other body fluids				**A**
9	Is it required to use disinfectants and /or replacing protectors on the unit				**A**
10	Is it recommended to bend or recap needles used on HIV patients				**A**
11	Is it stringent to dispose infected blood,blood products or tissue waste of HIV Infected patient in red color coded bins				**A**

Knowledge about Post exposure prophylaxis to cutaneous exposure	Yes (3)	No(1)	NOT SURE(2)
1] Are you aware of the post-exposure prophylaxis methods in case of accidental cutaneous exposure	YES		
2] Immediately wash contaminated skin(Hands and face/) and mucous membranes(eyes,nose ,mouth)	**YES**		
3] Assess contaminated skin for erosion,ulceration or dermatitis	**YES**		
4] Disinfect the skin and squeeze the injured area to instigate bleeding		**NO**	
Knowledge on post-exposure prophylaxis (regimen			
6] What is the likelihood of HIV transmission ,following a single needle stick injury with a contaminated needle a)0.1-0.4% (1) b)1-4%(2) c)10-40%(3) d)70-90%(4) 7]What immediate steps should be taken if there is direct contact with blood from an HIV positive patient 1)Anti AIDS Immunoglobulin should be administered(1) 2) Anti-AIDS drugs such as Zidovudine should be taken(2) 3) Blood tests should be carried out(3)	**(A)** **(2)**		
8]what is time frame for hiv post exposure prophylaxis? a) within72 hours(1) b) within 96 hours(2) c) within 1 month(3) D) within 3 month(4)	**(A)**		
9] Where do u get HIV PEP? a) Private clinic(1) b) public health centres(2) c) pharmacy(3)	**(B)**		
10) Base regimen for PEP should take for A) 1week(1) b) 4 week(2) c) 3 months(3) d) 6 month(4)	**(C)**		

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