Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v30i18.3023

THE NEED TO RAISE AWARENESS OF SEXUALLY TRANSMITTED INFECTIONS AMONG DENTAL UNDERGRADUATES IN DEVELOPING COUNTRIES – A NARRATIVE REVIEW

Dr. Rohan Shinkre[1*], Shayori Mitra[2], Dr. Pooja Balurkar[3], Dr Pallavi Pawar[4] , Dr. Sujithra S B[5], Dr. Anjana Sathyanath[6]

[1*]Research Consultant, Central Research Wing, KLE Society's Institute of Dental Sciences, Bengaluru, Karnataka
[2]Special Educator, weCan Learning Resource Institute, Kolkata, West Bengal, India
[3]Research Consultant, KVG Dental College, Sullia, Karnataka
[4]Senior lecturer, Department of Public Health Dentistry, Tatyasaheb Kore Dental College and Research Centre, New Pargaon, Kolhapur, Maharashtra
[5]Senior Lecturer, Department of Public Health Dentistry, D.A Pandu Memorial RV Dental College, Bengaluru, Karnataka
[6]Adjunct Faculty, Department of Allied Health Sciences, Faculty of Life and Allied Health Sciences, Ramaiah University of Applied Sciences, Bengaluru, Karnataka

***Corresponding Author:** Dr. Rohan Shinkre
*Email: rohanshinkre@gmail.com, Contact number- +91-8788810421, Orcid ID: 0000-0001-6693-6344

Abstract :
In developing nations, the frequency of sexually transmitted diseases (STIs), a serious public health issue, is alarmingly high. Dental students are a distinct population within the healthcare system, and their level of understanding and preparedness to manage STIs can have an impact on public health outcomes. This review analyses the effects of low STI awareness among dentistry students through a sociological and scientific lens, investigates the causes of this knowledge gap, and suggests recommendations for educational improvements. To that purpose, we chose relevant scientific publications published in PubMed, Embase, Web of Science, Google Scholar, and Scopus scientific information databases using specific selection criteria. By addressing this matter, we hope to advance thorough sexual health education and equip dental students with the tools they need to make a meaningful contribution to STI prevention and control initiatives.

Keywords: Awareness, Dental undergraduates, Developing countries, Education, Sexually Transmitted Infections

1. Introduction

The incidence of sexually transmitted infections (STIs), which are particularly common in nations with fewer resources, is a huge global public health concern. Dental undergraduates, as part of the broader healthcare community, are uniquely positioned to contribute to STI prevention, diagnosis, and patient education. However, their awareness of STIs and their role in addressing them is often

inadequate. This review aims to shed light on the importance of raising awareness of STIs among dental undergraduates in developing nations.

2. Methodology

An in-depth search was undertaken in electronic databases (PubMed, Embase, Web of Science, and Scopus) for pertinent articles published between January 1970 and June 2023. The following keywords were used in the article: "STIs," "Sexually Transmitted Infections," "dental undergraduates," "awareness," "education," and "developing countries". Studies on STI awareness and education that were conducted among dental students in underdeveloped nations were the inclusion criteria. Studies undertaken outside of English, case studies, reviews, and studies carried out in wealthy nations were all excluded. An initial database search yielded a total of 246 articles. After screening and full-text review, 35 studies included in the review were finalized by two authors for final review. The results of the review are summarized under the following headings:

3. STIs- a Global Public Health Problem

Sexually transmitted infections (STIs), a serious public health concern, are a range of clinical symptoms caused by pathogenic microbes that can spread through intimate relationships via vaginal, anal, and oral sex. In low-income nations, the prevalence of STIs is disproportionately higher than it is in other parts of the world.[1] According to the World Health Organization (WHO), 340 million new instances of the four primary treatable STIs- Gonorrhea, Chlamydia, Syphilis, and Trichomoniasis- occur annually, with 75–85 percent of them occurring in developing nations.[2] Additionally, the health impact of STIs is frequently grossly underestimated. Sexually transmitted infections are a serious threat causing acute illness, complications that last a lifetime, fertility issues, medical and psychological effects, and death. For women, complications such as PIDs, ectopic pregnancies, endometriosis, absence of fertility, premature delivery, IUD, and chronic discomfort in the abdomen are common complications. For men, urethral strictures and epididymitis may be the outcomes. For MSM, the complications range from proctitis to colitis, and enteritis. Syphilis or herpes simplex virus (HSV) infection causes central nervous system disease or meningoencephalitis. Additionally, STIs enable the human immunodeficiency virus (HIV) to proliferate.[3-5]

4. STIs- a Social Problem

In the last two decades, there has been an increase in awareness of the significance of socioeconomic determinants of sexual health and structural drivers of STI epidemiology. Social factors including low socioeconomic position, social prejudices and discrimination, and limited access to high-quality medical treatment are the elements that have an impact on the emergence, development, and persistence of STIs in significant demographics.[6]

5. The Potential Role of Dental Undergraduates in Tackling this Public Health Crisis

5.1. STI Prevention

Since dentists receive academic training in medicine, their participation in multidisciplinary teams is crucial for the detection and treatment of STDs. Dental professionals assist patients, provide precise and timely diagnoses, and direct patients to the proper care as part of their vital role in public health systems.[7-9] As part of their oral health counseling, dental students should inform patients about the dangers of STIs and encourage safe sexual behavior.

5.2. Early Diagnosis.

During normal inspections, dental experts can spot oral signs of STIs with oral manifestations like syphilis or herpes, potentially enabling early diagnosis and treatment.[10, 11]

5.3. Patient Education

Dental students can accurately inform patients about the connections between oral health and general health, particularly the connection between oral health and STIs.[10,11]

6. Limited knowledge, Curriculum Gaps, and lack of training in STIs among dental students

Professionals from a variety of sexuality disciplines in a Summit on Medical School Education and Sexual Health formed to enhance sexual health education in healthcare institutions and practice contexts concluded that the inclusion of sexual wellness competencies in the undergraduate medical curriculum was critical to enhance sexual health education in healthcare. Despite the fact that doctors routinely care for patients with sexual wellness difficulties, just half of US medical programs mandate specialized training pertinent to sexual wellness, and there is a lack of stringent requirements in place, despite data demonstrating that medical students lack the expertise to deliver sexual healthcare. Medical students from most of the medical colleges in the USA felt unable to address patients with sexual health difficulties due to the dearth of standardized education pertinent to sexual health education in medical training.[12]

A study at an Austrian Medical University revealed that most medical students admitted that their medical university did a poor job of teaching crucial sexual health material (such as taking a sexual history). According to this study, more information about sexual wellness is required for it to effectively influence students' comprehension of and subsequent confidence in resolving patients' worries about their sexual wellness.[13]

The time assigned to teaching sex education in undergraduate healthcare courses is occasionally insufficient to fully prepare clinicians for their roles in treating sexual health diseases, which causes a significant deal of dissatisfaction among medical undergraduates. The daily clinical practice may be indicative of this lack of preparedness.[14] More than half of Brazilian medical students believed they lacked sufficient knowledge of human sexuality for their future roles as healthcare providers, according to a survey on the state of sexual medicine education in the country.[15]

The need for HCWs to help their patients has grown as a result of today's society's more liberal attitudes toward sexuality.[16] More than 90% of patients, according to one survey, anticipate that the doctor will start the conversation about sexual health issues.[17]

In many impoverished countries where the prevalence of STIs is unacceptably high,[1] sex education should therefore be an essential component of medical and dental school curricula to provide complete sexual health education and training. Dental students should receive comprehensive training in recognizing oral symptoms of STIs and conducting sensitive sexual health dialogues with patients.

7. Socio-cultural Stigma, Taboos, and Biases in Healthcare that impact STI detection and treatment

Even though there are well-established arguments in favor of the necessity of sexual health education for the vulnerable age groups of adolescents, it is still a divisive topic in the majority of nations. There is documentation of cultural resistance directed towards teenage sexual education in Africa and Asia. Taboos and stigma surrounding sexual health topics can discourage open discussions about STIs even in educational settings of a medical or dental school.[18]

MSM are more likely to contract gonorrhea, chlamydia, HSV, HPV, and HIV, as per the data from the CDC. Lesbians and bisexual women had higher rates of HIV, hepatitis C, and self-reported gonorrhea and were less likely to have preventive cancer tests. [19]

Despite being more vulnerable to these illnesses, the LGBT communities frequently face prejudice and institutional and personal barriers that prevent them from accessing quality healthcare. Stereotyping of LGBT people as manifested by HCPs (healthcare providers) in their prejudicial views, opinions, and conduct is one personal obstacle to receiving excellent healthcare. Despite their dedication towards patient care equity, students and professionals in the healthcare industry frequently have biases (implicit or explicit) toward LGBTQ patients. According to numerous studies, health outcomes, the standard of care, and accessibility to services are all negatively impacted by healthcare

practitioner biases and can result in perceived prejudice from healthcare professionals as well as outright refusal of medical care towards LGBTQ persons. Therefore, medical school graduates and care provider prejudices may harm patient interactions and treatment decisions, leading to health inequalities in such populations that are susceptible.[19-23]

A study by Chapman found a considerable potential for personal values to influence the provision of health care.[22] As prejudice and negative stereotypes, combined with HCPs' lack of understanding of the LGBT population's health hazards or healthcare needs, offer an institutional impediment to the standard of care and impact outcomes for patients, they must be addressed to tackle issues and sensitive topics such as STIs in these vulnerable groups.[21]

Culturally competent interventions in health care delivery have been studied to reduce LGBT health disparities.[20] This necessitates training for aspiring dentists on gender identity and orientation sensitization, as well as promoting a positive mindset toward LGBTQ patients and improved ease when dealing with them. Strategies that eliminate prejudice in students and clinicians are key steps toward boosting LGBTQ communities' access to care and lowering gaps in health by assuring adequate and prompt diagnosis and treatment for STIs. Doctors, particularly dentists, should strive to understand the many experiences and challenges that LGBT individuals confront, just as they do with their patients' ethnic backgrounds.

8. Implications of Lack of Adequate STI Awareness

8.1. Missed Opportunities

The majority of healthcare providers do not proactively bring up sexuality concerns with clients. Although 60% of HCPs agreed that sexual difficulties should be addressed, research in the United Kingdom found that only 6% initiated regular conversations with patients due to constraints such as the absence of training (79%), a dearth of time (67%), and shame (50%). Due to such conditions, dental students may miss opportunities to diagnose and inform patients about STIs, which could result in a delay in treatment and higher transmission rates.[24, 25]

8.2. Reinforcing the stigma and taboos

The lack of STI awareness among dental students can perpetuate the societal stigma surrounding sexual health issues, hindering broader efforts to combat STIs.[14,15]

8.3. Public health consequences

Prevention and treatment of STDs become challenging since asymptomatic or moderate infections might make the identification challenging. The requirement to increase STD awareness is a deliberate move by the WHO to combat the disease load. Hence, an unprecedented increase in the burden of STIs in underdeveloped countries may arise as a result of inadequate STI awareness among healthcare providers like dental students and practitioners.[26, 27]

9. Strategies to raise awareness of STIs

9.1. Curriculum Enhancement

Integrating comprehensive sexual health education into dental curricula, including recognition of oral manifestations of STIs and effective patient communication can be the key to addressing the growing burden of STIs in developing nations.

Incorporating LGBTQ prejudice mitigation coursework into medical, nursing, and dentistry education can alter the existing landscape of discrimination against these individuals. Such measures constitute vital steps toward boosting LGBTQ communities' access to care and eliminating health inequities. It is crucial to practice consciousness of bias techniques in a nurturing and personalized learning setting, like a patient simulation. This reduces student defensiveness by giving students the chance to get immediate feedback on apparent hidden biases.[19, 28]

9.2. Workshops and Training

A two-hour interactive workshop with experts in infectious diseases and psychology drastically improved students' short-term understanding of STIs, according to research.[29]

Programs designed to address a wide range of LGBTQ-related health care issues, such as sexual orientation, gender identity, sexual history taking, LGBTQ terminology, disclosure of orientation and gender identity, discrimination and prejudice toward LGBTQ individuals, the effect of LGBTQ-related prejudice on health, factors affecting medical access and care for LGBTQ patients, myths and stereotypes about LGBTQ individuals, transgender medical care, and legal concerns relating to transgender medical care showed significant knowledge gains in students attending them.[19]

Hence, workshops and training events for dentistry undergraduates on STIs, patient communication, sexual health counseling, and sensitization towards sexual minorities may aid in the resolution of the knowledge and awareness gaps among dental students.

9.3. Simulation and Case-Based Learning:

The utilization of simulation-based medical training provides beneficial chances to decrease hazards to patients and learners, boost learners' confidence and competency, raise patient safety, and ultimately lower healthcare expenditures.[30] Thus, using simulation exercises and case-based learning, dental students can be trained to address STI-related patient interactions with competence and sensitivity.

9.4. Interdisciplinary Collaboration

Interconnected social, economic, and health problems continue disparities and lead to poor health outcomes, which are made worse by the absence of integrated care. To encourage integrated service delivery in the rising workforce and the purposeful integration of oral health in integrated care settings, innovative partnerships involving schools of dentistry, pharmacy, social work, and nursing that were created were found to be useful.[31] To that effect, collaboration between dental schools, public health agencies, and sexual health groups may nurse the potential to improve knowledge sharing and resource creation. Further studies along these lines are needed to test and validate such collaborations in the reduction of the STI burden.

10. Conclusion

Raising STI awareness among dentistry students in underdeveloped countries is critical for both individual patient treatment and public health. Dental students can play a unique role in STI prevention and detection, but they must be properly educated and trained to do so. This review emphasizes the importance of including more extensive and targeted STI teaching with a focus on the social barriers in the dental curriculum. Curriculum enhancement, workshops, awareness campaigns, and collaboration are critical measures for closing the knowledge gap and empowering dentistry students to successfully contribute to STI prevention and control activities. More studies are needed to assess the efficiency of various educational initiatives and their long-term influence on dental undergraduates' knowledge and practices.

Acknowledgment: Nil

Declaration of interest: The authors declare no conflicts of interest.

Funding: Nil

References

1. Kassie BA, Yenus H, Berhe R, Kassahun EA. Prevalence of sexually transmitted infections and associated factors among the University of Gondar students, Northwest Ethiopia: a cross-sectional study. Reprod Health. 2019 Nov 8;16(1):163. doi: 10.1186/s12978-019-0815-5

2. World Health Organization. Global prevalence and incidence of selected curable sexually transmitted infections: overview and estimates.
3. World Health Organization. Guidelines for sexually transmitted infections surveillance. World Health Organization; 1999.
4. WHO C, CDR E. Global prevalence and incidence of curable STIs. Geneva. World Health Organization. 2001.
5. Guaschino S. Le complicanze delle malattie sessualmente trasmesse: clinica e terapia. ANNALI-ISTITUTO SUPERIORE DI SANITA. 2000;36(4):431-6.
6. Hogben M, Leichliter JS. Social determinants and sexually transmitted disease disparities. Sexually transmitted diseases. 2008 Dec 1:S13-8.Sukumaran A. Resurgence of syphilis: Challenges for dental care providers. J Dent Res Rev 2016;3:115-6
7. Moleri AB, Lobo CB, Santos FR, Silva EJ, Gouvêas CVD, Moreira LC. Differential diagnosis of manifestations of syphilis and aids with lichen planus in mouth: case report. J Bras Doenças Sex Transm. 2012;24(2):113-7.
8. Strieder LR, León JE, Carvalho YR, Kaminagakura E. Oral syphilis: report of three cases and characterization of the inflammatory cells. Ann Diagn Pathol. 2015;19(2):76-80.
9. Smith MH, Vargo RJ, Bilodeau EA, Anderson KM, Trzcinska A, Canterbury CR, Fantasia JE, Rawal YB. Oral Manifestations of Syphilis: a Review of the Clinical and Histopathologic Characteristics of a Reemerging Entity with Report of 19 New Cases. Head Neck Pathol. 2021 Sep;15(3):787-795.
10. Birt D, Main J. Oral manifestations of herpes simplex virus infections. Laryngoscope. 1977 Jun;87(6):872-8.
11. Bayer CR, Eckstrand KL, Knudson G, Koehler J, Leibowitz S, Tsai P, Feldman JL. Sexual health competencies for undergraduate medical education in North America. The journal of sexual medicine. 2017 Apr;14(4):535-40.
12. Beebe S, Payne N, Posid T, Diab D, Horning P, Scimeca A, Jenkins LC. The lack of sexual health education in medical training leaves students and residents feeling unprepared. The Journal of Sexual Medicine. 2021 Dec;18(12):1998-2004.
13. Komlenac N, Siller H, Hochleitner M. Medical students indicate the need for increased sexuality education at an Austrian medical university. Sex Med. 2019; 7 (3): 318–25.
14. Marwick C. Survey says patients expect little physician help on sex. Jama. 1999 Jun 16;281(23):2173-4.
15. Facio Jr FN, Glina S, Torres LO, Abdo C, Abdo JA, Faria G. Educational program on sexual medicine for medical students: pilot project in Brazil. Translational andrology and urology. 2016 Oct;5(5):789.
16. Ende J, Kazis L, Ash A, Moskowitz MA. Measuring patients' desire for autonomy: decision making and information-seeking preferences among medical patients. Journal of general internal medicine. 1989 Jan;4:23-30.
17. Latifnejad Roudsari R, Javadnoori M, Hasanpour M, Hazavehei SM, Taghipour A. Socio-cultural challenges to sexual health education for female adolescents in Iran. Iran J Reprod Med. 2013 Feb;11(2):101-10.
18. Rowe D, Ng YC, O'Keefe L, Crawford D. Providers' Attitudes and Knowledge of Lesbian, Gay, Bisexual, and Transgender Health. Fed Pract. 2017 Nov;34(11):28-34.
19. Morris, M., Cooper, R.L., Ramesh, A. et al. Training to reduce LGBTQ-related bias among medical, nursing, and dental students and providers: a systematic review. BMC Med Educ 19, 325 (2019).
20. Garofalo R. The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding. The National Academies Press; 2011 Jun 24.
21. Chapman EN, Kaatz A, Carnes M. Physicians and implicit Bias: how doctors may unwittingly perpetuate health care disparities. J Gen Intern Med. 2013;28(11):1504–10.

22. Khan A, Plummer D, Hussain R, Minichiello V. Does physician bias affect the quality of care they deliver? Evidence in the care of sexually transmitted infections. Sex Transm Infect. 2008;84(2):150–1.
23. Van Ryn M, Saha S. Exploring unconscious bias in disparities research and medical education. Jama. 2011 Sep 7;306(9):995-6.
24. Verrastro V, Saladino V, Petruccelli F, Eleuteri S. Medical and Health Care Professionals' Sexuality Education: State of the Art and Recommendations. International Journal of Environmental Research and Public Health. 2020; 17(7):2186.
25. Haboubi NH, Lincoln N. Views of health professionals on discussing sexual issues with patients. Disabil Rehabil. 2003 Mar 18;25(6):291-6.
26. Nguyen SH, Dang AK, Vu GT, Nguyen CT, Le THT, Truong NT, Hoang CL, Tran TT, Tran TH, Pham HQ, Dao NG, Tran BX, Latkin CA, Ho CSH, Ho RCM. Lack of Knowledge about Sexually Transmitted Diseases (STDs): Implications for STDs Prevention and Care among Dermatology Patients in an Urban City in Vietnam. Int J Environ Res Public Health. 2019 Mar 26;16(6):1080.
27. Low N, Broutet NJ. Sexually transmitted infections—research priorities for new challenges. PLoS medicine. 2017 Dec 27;14(12):e1002481.
28. Zestcott, C. A., Blair, I. V., & Stone, J. (2016). Examining the presence, consequences, and reduction of implicit bias in health care: A narrative review. Group Processes & Intergroup Relations, 19(4), 528–542.
29. Orlando G, Campaniello M, Iatosti S, Grisdale PJ. Impact of training conferences on high-school students' knowledge of sexually transmitted infections (STIs). J Prev Med Hyg. 2019 Jun 28;60(2):E76-E83.
30. Al-Elq AH. Simulation-based medical teaching and learning. J Family Community Med. 2010 Jan;17(1):35-40.
31. Sanders KA, de Saxe Zerden L, Zomorodi M, Ciarrocca K, Schmitz KL. Promoting Whole Health in the Dental Setting: Steps Toward an Integrated Interprofessional Clinical Learning Environment Involving Pharmacy, Social Work, and Nursing. International Journal of Integrated Care. 2021 Oct;21(4).