ORIGINAL RESEARCH ARTICLE

Perception and Preparedness of Medical Students Towards the Health Care Needs of LGBTQIA+ Community: A Cross-Sectional Study in Vadodara, Western India

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ABSTRACT

Introduction: The legalization of LGBTQIA+ community will bring a new stream of patients and their specific issues to healthcare community. Despite getting their place in society, they face discrimination and stigma from healthcare professionals, which will roadblock them from accessing healthcare. This study aims to document the perception of upcoming healthcare providers towards the LGBTQIA+ community and their preparedness to address their healthcare needs.

Methodology: A cross-sectional survey conducted among 299 final MBBS students and Interns during "Pride month" June, 2022. An investigator-designed, validated, pre-tested, semi-structured questionnaire using Google forms, documented sexual-orientation of participants and their existing knowledge, attitude and practice towards the healthcare needs of LGBTQIA+ community.

Results: Total 299 participants were enrolled, having a Response Rate of 94.9% (315 total participants). Proportion of female and male was 44.8% and 54.8% as sex (biological) respectively and 54.5% of participants identified themselves as man and 44.8% as woman as gender. Awareness about LGBTQIA+ community was among 98.33% of the participants. Mean Knowledge, Attitude and Practice Scores were 18.4 +2.7, 80.5 +12.4 and 31.4 +5.9, respectively and were positively correlated to each other. Female participants scored significantly higher, statistically than male participants in knowledge, attitude and practice domains.

Conclusion: Despite of good knowledge and positive attitude toward LGBTQIA+ people, pockets of ignorance and discomfort reside among medical undergraduates and interns.

Key words: Attitude, Doctors, Knowledge, LGBTQIA+ community, Health Care Need

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INTRODUCTION

LGBTQIA+ is an abbreviation for Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, Intersex and Asexual people collectively to describe a person's sexual orientation or gender identity.[1] The report shows that 3% of the Indian Population identify themselves as homosexual (Including Gay and Lesbian), 9% identify as bisexual, 1% identify as pansexual and 2% identify as asexual.[2] About 17% identify themselves as not heterosexual.[2] In many cultures sexual minorities such as gays, lesbians, bisexuals and transgender are considered as suffering from some sort of psychological issue which is resulting in their different vision of sexual orientation.[3] The act of engaging in sexual activity with the same sex was considered 'against the order of the nature' which as per Section 377 Indian Penal Code (IPC) includes homosexuality as well transgendered community.[4,5] On 6th September 2018, the Honorable Supreme Court of India ruled that the application of Section 377 to consensual homosexual sex between adults was unconstitutional, "irrational, indefensible and manifestly arbitrary".[6]

However, its legalization has not been readily accepted at the social level. Homophobia is still rampant in Indian societies.[7] Mental, physical, emotional and economic violence against the LGBTQIA+ community in India continues to be a problem.[8] Data analysis of 2017, National Crime Victimization Survey, USA showed that LGBTQIA+ people experienced 71.1 victimizations per 1,000 people, compared to 19.2 victimizations per 1,000 people for non-LGBTQIA+ people.[9] They also experience greater psychological distress with higher levels of depression, anxiety, body image and eating disorders than the general adolescent population.[10,11] Suicide risk is also higher among adolescents in the LGBTQIA+ community with significantly higher risk among younger than 20 years.[12]

The World Health Organization (WHO) has identified the poor health of LGBTQIA+ persons as an area for improvement.[13] Required level of health care and prevention services for sexual and gender minorities requires providers to be sensitive to and informed about stigmatization, continued barriers to care access and the specific risk factors and health conditions in these populations. Also, the need of each subgroup is different from the other both at a physical and mental level.[14]

Sensitivity trained professionals are inadequate in Anti-Retroviral Therapy Center (ART) mandatorily required in all medical colleges, Oral Substitution Therapy Center, STI clinic and centers for Gender affirmative surgeries where there is an influx of patients from the LGBTQIA+ community.[15]

Likewise, LGBTQIA+ patients experience barriers to access adequate healthcare due to a lack of specific knowledge and/or heterosexist attitudes on the part of health professionals. For example, heterosexist attitudes could lead to erroneous risk assessment of sexually transmitted infections and pregnancy as well as insufficient or improper use of screening tools. Such barriers can harm the management, treatment and finally the health of these patients.[16] Many incidents go unnoticed when the members of the LGBTQIA+ community were often treated irrationally and not even screened properly when they come to a health care facility to avail treatment services, as the health care providers are themselves not ready yet to screen and treat a group of people who have a different orientation towards life.[17] LGBTQIA+ members also have an issue with the generic pronoun (he/she) usage which divides them into strictly two categories. Such issues need to be handled with utmost care.

One important strategy for improving knowledge and attitudes about LGBTQIA+ people among providers is to train medical students during their medical studies to enable them to feel more comfortable when caring for patients from the LGBTQIA+ community and to provide more adequate care. In the current literature, few studies have examined the knowledge and attitudes of medical students towards LGBTQIA+ people.[18–21]

The role of medical teachers is imminent in shaping the careers of the upcoming doctors by imparting them knowledge as well as guiding them to treat all equally regardless of their orientation towards religion, society, and sexuality. The current study aims to document the knowledge and attitude of medical students and interns towards the LGBTQIA+ community and their preparedness to address their healthcare needs.

METHODOLOGY

Study design: A cross-sectional survey was carried out on final-year MBBS students and Interns.

Sample size: A total of 315 participants were invited for sensitization of LGBTQIA+ and their healthcare needs on the day of Pride Month's (is celebrated in moth of June for LGBTQIA+ history, fighting against discrimination and honoring difference across the world) celebration in June, July 2022. During this celebration members from LGBTQIA+ community were invited to share their struggles and experiences with healthcare providers and community. Out of them, responses from 299 participants were analyzed and the rest 16 incomplete forms were excluded from the study.

Duration of the study: The study was conducted in June-July 2022.

Ethical approval: The permission was obtained from the Sumandeep Vidyapeeth Institutional Ethics Committee on 22.7.2022. Prior to the data collection, participants were informed about the study on LGBTQIA+. Participants willing to give consent for

the study were included in the study. If they agreed to participate and fill out the Google forms, they were giving their consent and it was implied that they were participating voluntarily without any coercion.

Study tool: An investigator-designed, validated, semi-structured questionnaire was distributed as Google forms. The questionnaire was explained to the participants and was filled out by the participants themselves while each question was explained alongside. The questioner was prepared in English language and taking 30 minutes time to complete the procedure of participants enrolment by providing participants information about study, consent and self-administer up questioner.

It was prepared by researchers after a review of the literature. The questionnaire was divided into five parts assessing "Socio-Demographic characteristics", "Sexual Orientation", "Knowledge", "Attitude" and "Practice" of participants. The Kinsey scale also called the Heterosexual–Homosexual Rating Scale is used in research to describe a person's sexual orientation based on one's experience or response at a given time. [22] The scale typically ranges from 0, meaning exclusively heterosexual, to 6, meaning exclusively homosexual. A semi-structured Likert scale (5-point likert, score ranging from 1-5) was developed (based on the existing literature review) and involved stakeholders from the LGBTQIA+ community. The tool was piloted among 15 interns to know local and cultural acceptance to assess Knowledge, Attitude and Practice (level of comfort in history taking, examining and providing care to LGBTQIA+ community) by responding to 10 questions, 23 questions and 11 questions respectively.[3,17] Knowledge: 5 likert scale each having 5-point scale (range 1-5) and 1 dichotomous (0 and 1), so, total 26 scores as maximum and 5 minimum scores. Attitude: 22 likert scales of 5 points ranging from 1-5, so total score ranges from 22- 110. Practice: 8 likert scales of 5 points ranging from 1-5, so total score ranges from 8-40. After the data collection participants were sensitized by the faculty of the Department of Psychiatry on Gender and sexuality and members of the LGBTQIA+ community shared their life experiences and struggles and problems in availing medical services. Data was downloaded from Google Forms in the form of MS Excel.

Data Analysis: Data analysis was done in SPSS 26 for Windows (IBM Corp. Chicago, U.S.). Both dichotomous (are you aware of LGBTQIQA+ community? etc.) and polychotomous (sources of knowledge etc.) variables were assessed. Univariate analysis was done including descriptive statistics using mean, standard deviation, frequency and percentage. Bivariate analysis was done by t-test and Pearson Correlation. Participants' confidentiality was ensured by removing personal identifiers and presenting cumulative data.

RESULTS

A total of 299 participants were enrolled in this study having a response rate of 94.9% (A total of 315 participants were invited in the study). About 86% of study participants were pursuing final year MBBS students and 14% were interns. The mean (+ SD) age of study participants was 21.16 + 1.36 years and ranged from 20-28 years. The proportion of females was 44.8% and males were 54.8% as sex (biological) and 54.5% of participants identified themselves as man and 44.8% as women as a gender. Sexual orientation based on the Kinsey scale revealed 76% to be exclusively heterosexual, 22% were predominantly heterosexual with slight inclination towards homosexual and 2% were predominately homosexual but slight inclination towards heterosexual behavior. Internal consistency (Cronbach's alpha) of knowledge, attitude and practice scale was 0.5, 0.9 and 0.9 respectively.

Mean Knowledge Score was 18.4 + 2.7 out of a total of 26, Mean Attitude Score was 80.5 + 12.4 out of a total of 110 and Mean Practice Score was 31.4 + 5.9 out of a total of 40.

Details of KAP statements have been provided in Tables 1,2,3,4.

Awareness about LGBTQIA+ community was among 98.33% of the participants. The predominant source of knowledge was assessed. Most of them, 192 (64.21%) were aware via social media, followed by friends 33 (11.04%), decriminalization of IPC 31 (10.37%), teachers 27 (9.03%) and family members 2 (0.67%) were aware via other sources.

Table 1: Responses to Questions related to Knowledge towards LGBTQIA+ (n=299)

Questions related to Knowledge towards LGBTQIA+	Frequency (%)
Responses with good awareness	
Being LGBTQIA+ is not a criminal offence in India	204 (68)
The LGBTQIA+ community doesn't differ from other people	141 (47)
There is a difference in the healthcare needs of the LGBTQIA+ community in comparison to the general population	96 (32)
Responses with lack of awareness	
A sensitization session is required to enhance the knowledge regarding the challenges faced by the LGBTQIA+ community	234 (78)
Not aware of the abbreviation LGBTQIA+	123 (41)
Existing knowledge regarding the LGBTQIA+ community is not enough to treat them in future	114 (38)

Table 2: Responses to questions on Attitude towards LGBTQIA+ (n=299)

Questions	Strongly Agree/ Agree (%)	Strongly Disagree/ Disagree (%)
LGBTQIA+ people should be generalized with common public in availing medical services	247 (82.3)	9 (3)
Talking about LGBTQIA+ community does not embarrass me	241 (80.3)	17 (5.6)
Adoption should be legalized for the LGBTQIA+ community	234 (78)	18 (6)
The problem associated with one's sexuality could be reduced if society can liberalize its attitude towards the LGBTQ+ community	225 (75)	15 (5)
Problem associated with one's sexuality could be reduced if society can liberalize its attitude towards LGBTQIA+ community	223 (74.3)	15 (5)
LGBTQIA+ people are capable of forming stable friendly relationships	219 (73)	33 (11)
Legal age of consent for members of LGBTQIA+ community should be same as that of general population	213 (71)	17 (5.6)
Homosexuality is sexual orientation	209 (69.6)	21 (7)
Same-sex marriages should be legalized in India	207 (69)	24 (8)
Identifying oneself in LGBTQIA+ in general is a result of disturbed relationship with one or both parents	178 (59.3)	40 (13.3)
Any doctor can treat LGBTQIA+ patients	178 (59.30	56 (18.6)
Scientific material and reading of LGBTQIA+ has not really affected my views on subject	136 (45.3)	73 (24.3)
Most male homosexuals have effeminate trait and female homosexuals have masculine trait	135 (45)	59 (19.6)
Most female homosexuals would prefer to be identified as male	132 (44)	40 (13.3)
Most male homosexuals would prefer to be identified as female	128 (42.6)	45(15)
Identifying oneself in LGBTQIA+ in general are easily recognizable	127 (42.3)	63 (21)
LGBTQIA+ people in general are promiscuous	100 (33.3)	27 (9)
Identifying oneself in LGBTQIA+ is acquired behaviour	96 (32)	96 (32)
Identifying oneself in LGBTQIA+ is constitutionally determined	48 (16)	114 (38)
Identifying oneself as LGBTOIA+ in general is neurotic	33 (11)	141 (47)
Identifying oneself in LGBTQIA+ should not be employed in schools	21 (7)	242 (80.6)
Identifying oneself in LGBTQIA+ is an illness	17 (5.6)	246 (82)
LGBTQIA+ people are a danger to children	15 (5)	241 (80.30

Table 3: Responses to questions on Practice towards LGBTQIA+ (n=299)

Questions	Very Comfortable/ Comfortable (%)
When a patient from the LGBTQIA+ community asks you whether another person from the community can come for a check-up	252 (84)
When taking general history from patient from LGBTQIA+ community	246 (82)
Taking history (STI/RTI) from LGBTQIA+ patient community	234 (78)
When a member of the LGBTQIA+ community walks into your OPD	228 (76)
Giving your contact number to a patient from the LGBTQIA+ community	228 (76)
When attending a patient from LGBTQIA+ community	225 (75)
How 4 are you in conducting general examination of patient from LGBTQIA+ community?	220 (73.3)
Conducting examination (STI/RTI related) of the patient from the LGBTQIA+ community	216 (72)

Almost three-fourths of participants (76%) agreed that they will greet the patients as per their choice and 74% will provide an attendant while the private part examination as per patients' preference for gender. About 67% of participants believed that homosexuality is not an illness. Similarly, 68% of participants were found to be aware that being LGBTQIA+ is not a criminal offence in India.

Associations between Attitude, Knowledge and Practice: Knowledge score, Attitude score and Practice score were all positively correlated with each other. Pearson correlation value and p-value between knowledge and attitude, attitude and practice, and knowledge and practice were +0.49 ($p<0.001$), +0.47 ($p<0.001$) and +0.19 ($p=0.0007$) respectively.

Table 4: Comparison of means of KAP scores among study participants (n=299)

Scale Name	Range	Intern mean score	Final MBBS mean score	t-test value	p-value
Knowledge	7- 26	19.2 + 2.9	18.4 + 2.7	1.67	0.09
Attitude	13- 105	85.4 + 11.0	79.7 + 12.4	2.77	0.0062*
Practice	0- 40	34.5 + 5.1	30.1 + 6.0	3.06	0.0024*

There was also a statistically significant higher knowledge, attitude and practice among female participants than male participants. The t-test value and p-value between female participants and male participants for Knowledge Score, Attitude score and Practice score were 4.57 ($p<0.001$), 6.44 ($p<0.001$) and 2.97 ($p=0.0003$) respectively.

Discussion

There is a different healthcare need of LGBTQIA+ when compared to the general population due to their gender identity, they go for gender-affirmative surgeries, and due to their engagement in high-risk behaviour and having a higher rate of STI and HIV/AIDS they need integrated services. The current rate of gender affirmative surgeries is between 37 to 76% among the LGBTQIA+ community, around 3.1% for transmen and 9.6% for transwomen.[23] They need integrated services under National AIDS Control Programme.

HIV prevalence among MSM is 2.69% reported by NACO during the year 2021.[24] Some of the LGBTQIA+ community are having substance abuse and IDU.

This study is done among 299 participants who were future Indian medical graduates for assessment of their knowledge, attitude and practices concerning the LGBTQIA+ community. Apart from physical illness, LGBTQIA+ individuals are at a higher risk of mental illness. According to a study done by Burgess et al., 4.2% of LGBTQIA+ individuals have suffered from discrimination during seeking health care.[25,26]

Mutual respect between doctor and patient is a must in establishing a healthy relationship. Future medical graduates although have seen good perception there is still a lacking of complete acceptance. Different scales have also been used across different studies. This study finds that there is higher knowledge among medical students toward the LGBTQIA+ community as they have an understanding that the sexuality of LGBTQIA+ community people is natural and is not nature's mistake, which is similar to the results seen in a study done among the second-year medical students in Kolkata in 2018.[3] Results have been similar to the study done by Rowe et al. and Wahlen et al. where a favourable attitude was seen among nursing and medical students respectively.[17,27] Study done by Lim et al. in Singapore and Kan et al. in Hong Kong showed less knowledge and negative attitude among students compared to this study.[28,29] This difference might be due to geographical differences, different laws across different countries and social differences.

Although there is a higher knowledge, some issues related to communication were seen. It is assumed that this discomfort may be due to a lack of exposure to the LGBTQIA+ community as proposed by Kelly et al.[30] or can also be due to local religious and social orthodoxy in the modern doctors in India.[31] This can also be corroborated by the fact that intern doctors who are getting more exposure have statistically significantly higher values.[32]

This study also revealed higher knowledge, positive attitude and practices among female participants compared to male participants. Similar results were seen in a study done by Chapman et al. and Rowe et al.[27,33] These results might be corroborated by the inherent accepting and positive nature of females.[34]

This study also reports that intern doctors have higher knowledge, better attitude and practice than final-year MBBS students. The difference was statistically significant for the Attitude and Practice scale. Similar results were seen in a study conducted by Banwari et al.[35] This might be due to more practical experience gained during the internship period.

A key social group that faces systemic exclusion from healthcare in India is the LGBTQIA+ community. There is no public data on the exact number of gender and sexual minorities in the country, however, in 2018 it was estimated that 8% of the total 104 million Indian population, 83,20,000 belong to the LGBTQIA+ community.[36] In addition to this is the discrimination these individuals face from health professionals who pathologise their identities and therefore prevent them from accessing healthcare. National Medical Council of India released an office order on 18th August 2022 emphasizing sensitization and more focus on the topics commonly associated with the LGBTQIA+ community by including Competency-Based Medical Education in Psychiatry subject in medical colleges.[34]

Due to many social issues, the healthcare need of the LGBTQIA+ community should be addressed separately as 96 (32%) participants believed that their healthcare needs differ from the general community in this study. The majority of participants are comfortable attending LGBTQIA+ community patients, taking the history and conducting the clinical examination which indicates their positive attitude towards the community in future when they will practice, the healthcare need of the community will be addressed in a better way and challenges in accessing service would be minimized.

Although positive results were seen, the proportion of unacceptance was noteworthy. Prejudice against the LGBTQIA+ community has been linked to inherent religious upbringings and orthodox mentality.[37] This implies the need for seminars and workshops about the issues faced by the LGBTQIA+ community and their specific needs for better care at a holistic level.

Conclusion

This study explores the positive perception and preparedness of future healthcare providers towards

the healthcare needs of the LGBTQIA+ community. They are prepared to provide safe, inclusive and self-affirming services in the context of gender and sexuality. However, pockets of unacceptance in healthcare should be taken care of promptly. More practical exposure would reduce stigma and increase acceptance among healthcare professionals. Healthcare needs for LGBTQIA+ should be integrated with National AIDS Control Program. There is a need to develop a training module for future providers on sensitization of health issues of LGBTQIA+ community.

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References

1. GLAAD Media Reference Guide - 11th Edition. Available from: https://www.glaad.org/reference#guide. accessed 2023 Jan 9.
2. LGBT+ PRIDE 2021 Global Survey A 27-country Ipsos survey. Available from: https://www.ipsos.com/en/ipsos-lgbt-pride-2021-global-survey. 2023 Feb 3.
3. Kar A, Arneaud GJ, Majumder S, Bhugra D, Pal A. International Review of Psychiatry ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/iirp20 Decriminalization and medical students attitudes to same sex behaviour. 2022 [cited 2023 Jan 25]; Available from: https://www.tandfonline.com/action/journalInformation?journalCode=iirp20
4. Clark F. Discrimination against LGBT people triggers health concerns. Lancet 2014;383(9916):500–2. Available from: http://dx.doi.org/10.1016/S0140-6736(14)60169-70
5. Rights of LGBTQ in India and the Struggle for Societal Acceptance - International Journal of Law Management & Humanities. Available from: https://www.ijlmh.com/paper/rights-of-lgbtq-in-india-and-the-struggle-for-societal-acceptance/. accessed 2023 Jan 9.
6. SC decriminalises homosexuality - The Hindu. Available from: https://www.thehindu.com/todays-paper/sc-decriminalises-homosexuality/article24887363.ece. accessed 2023 Jan 9.
7. Homophobia persists in India despite court reforms. Available from: https://www.telegraph.co.uk/news/worldnews/asia/india/8618084/Homophobia-persists-in-India-despite-court-reforms.html. accessed 2023 Jan 9.
8. Violence against LGBT groups still prevails in India. Available from: https://www.dnaindia.com/delhi/report-violence-against-lgbt-groups-still-prevails-in-india-1924112. accessed 2023 Jan 9.
9. LGBT people nearly four times more likely than non-LGBT people to be victims of violent crime - Williams Institute. Available from: https://williamsinstitute.law.ucla.edu/press/ncvs-lgbt-violence-press-release/. accessed 2023 Jan 9.
10. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. Psychol Bull. 2003 Sep;129(5):674-697. doi: 10.1037/0033-2909.129.5.674.
11. Wang J, Dey M, Soldati L, Weiss MG, Gmel G, Mohler-Kuo M. Psychiatric disorders, suicidality, and personality among young men by sexual orientation. Eur Psychiatry. 2014 Oct;29(8):514-22. doi: 10.1016/j.eurpsy.2014.05.001. Epub 2014 Jun 24. Erratum in: Eur Psychiatry. 2015 Feb;30(2):355. PMID: 24972914.
12. Wang J, Häusermann M, Wydler H, Mohler-Kuo M, Weiss MG. Suicidality and sexual orientation among men in Switzerland: Findings from 3 probability surveys. J Psychiatr Res. 2012 Aug 1;46(8):980–6.
13. CD52/18: Addressing the Causes of Disparities in Health Service Access and Utilization for Lesbian, Gay, Bisexual and Trans (LGBT) Persons. Available from: https://iris.paho.org/handle/10665.2/4411. accessed 2023 Jan 9.
14. The Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health, 2nd Edition » LGBTQIA+ Health Education Center. Available from: https://www.lgbtqiahealtheducation.org/publication/textbook/. accessed 2023 Jan 9.
15. Meckler GD, Elliott MN, Kanouse DE, Beals KP, Schuster MA. Nondisclosure of sexual orientation to a physician among a sample of gay, lesbian, and bisexual youth. Arch Pediatr Adolesc Med. 2006;160(12):1248-54. doi: 10.1001/archpedi.160.12.1248.
16. Plöderl M, Kunrath S, Cramer RJ, Wang J, Hauer L, Fartacek C. Sexual orientation differences in treatment expectation, alliance, and outcome among patients at risk for suicide in a public psychiatric hospital. BMC Psychiatry. 2017 May 15;17(1):184. doi: 10.1186/s12888-017-1337-8.
17. Bize R, Wang JI, Merglen AI, Ambresin A-E. Medical students' knowledge of and attitudes towards LGBT people and their health care needs: Impact of a lecture on LGBT health Raphaë l Wahlen ID. 2020 [cited 2023 Jan 14]; Available from: https://doi.org/10.1371/journal.pone.0234743
18. White W, Brenman S, Paradis E, Goldsmith ES, Lunn MR, Obedin-Maliver J, Stewart L, Tran E, Wells M, Chamberlain LJ, Fetterman DM, Garcia G. Lesbian, Gay, Bisexual, and Transgender Patient Care: Medical Students' Preparedness and Comfort. Teach Learn Med. 2015;27(3):254-63. doi: 10.1080/10401334.2015.1044656.
19. Ortiz-Martínez Y, Ríos-González CM. Need for more research on and health interventions for transgender people. Sex Health. 2017 Apr;14(2):196-197. doi: 10.1071/SH16148.
20. Parameshwaran V, Cockbain BC, Hillyard M, Price JR. Is the Lack of Specific Lesbian, Gay, Bisexual, Transgender and Queer/Questioning (LGBTQ) Health Care Education in Medical School a Cause for Concern? Evidence From a Survey of Knowledge and Practice Among UK Medical Students. J Homosex. 2017;64(3):367-381. doi: 10.1080/00918369.2016.1190218.
21. McGarry KA, Clarke JG, Cyr MG, Landau C. Evaluating a lesbian and gay health care curriculum. Teach Learn Med. 2002 Fall;14(4):244-8. doi: 10.1207/S15328015TLM1404_8. PMID: 12395487.
22. Prevalance of Homosexuality study. Available from: https://kinseyinstitute.org/research/publications/kinsey-scale.php. Accessed 2023 Jan 14
23. Gupta R. Gender Affirmation in India-The Current State of Knowledge, Management, Legal and Legislative Situation. Indian J Plast Surg;55(2):139–43. Available from: https://pubmed.ncbi.nlm.nih.gov/36017406/. Accessed 2023 Feb 16
24. Sankalak 2021, Ministry of Health and Family Welfare NACO, New Delhi, Page No. 17
25. Burgess D, Lee R, Tran A, Van Ryn M. Effects of perceived discrimination on mental health and mental health services utilization among gay, lesbian, bisexual and transgender persons. J LGBT Health Res. 2008;3(4):1–14.
26. Hiestand KR, Horne SG, Levitt HM. Effects of gender identity on experiences of healthcare for sexual minority women. J LGBT Health Res. 2008;3(4):15–27.
27. Rowe D, Yeow A;, Ng C, O'keefe L, Crawford D. Providers'

Attitudes and Knowledge of Lesbian, Gay, Bisexual, and Transgender Health. Fed Pract. 2017 Nov;34(11):28. Available from: /pmc/articles/PMC6370394/. Accessed 2023 Jan 12

28. Lim D, Ang S Bin. Primary care physicians' knowledge, attitude and perception towards homosexuality in Singapore. Glob Heal J. 2021 Dec 1;5(4):209–14.
29. Kan, R. W. M., Au, K. P., Chan, W. K., Cheung, L. W. M., Lam, C. Y. Y., Liu, H. H. W., Ng, L. Y., Wong, M. Y., & Wong, W. C. Homophobia in medical students of the University of Hong Kong. Sex Education, 2009; 9(1): 65–80. Doi: 10.1080/ 14681810802639848
30. Kelley L, Chou CL, Dibble SL, Robertson PA. A Critical Intervention in Lesbian, Gay, Bisexual, and Transgender Health: Knowledge and Attitude Outcomes Among Second-Year Medical Students. Teaching and Learning in Medicine 2008;20:248–53. doi: 10.1080/10401330802199567.
31. Gay rights, psychiatric fraternity, and India. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5100112/. Accessed 2023 Jan 27
32. Nerli LM, Shah VR, Tiwari DS, Patel VK, Vasavada DA, Sangma RD. Evaluation of Knowledge and Attitude toward LGBT Community, and the Effect of Education on Knowledge and Attitude in Medical Undergraduates. Indian J Priv Psychiatry. 2021;14(2):51–6.
33. Chapman R, Watkins R, Zappia T, Nicol P, Shields L. Nursing and medical students' attitude, knowledge and beliefs regarding lesbian, gay, bisexual and transgender parents seeking health care for their children. J Clin Nurs. 2012;21(7-8):938-45. doi: 10.1111/j.1365-2702.2011.03892.x.
34. Girls More Likely Than Boys to Approve of Gay Marriage. Available from: https://news.gallup.com/poll/9580/girls-more-likely-than-boys-approve-gay-marriage.aspx. Accessed 2023 Jan 14
35. Banwari G, Mistry K, Soni A, Parikh N, Gandhi H. Medical students and interns' knowledge about and attitude towards homosexuality. J Postgrad Med. 2015;61(2):95-100. doi: 10.4103/0022-3859.153103.
36. India's Healthcare Systems Persistently Exclude LGBTQ+ People. This Needs To Change. Available from: https://the wire.in/health/indias-healthcare-systems-persistently-exclude-lgbtq-people-this-needs-to-change. Accessed 2023 Feb 4
37. Campbell M, Hinton JDX, Anderson JR. A systematic review of the relationship between religion and attitudes toward transgender and gender-variant people. Int J Transgend. 2019 Feb 19;20(1):21-38. doi: 10.1080/15532739.2018.1545149. PMID: 32999592; PMCID: PMC6830999.