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Assessment of Oral and Periodontal Status among Transgender Population in Western Maharashtra: A Cross Sectional Study

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Abstract.

Oral health appears to be at risk within the transgender community, yet there is a noticeable lack of available data on this issue. This absence of information hinders the development and implementation of necessary measures to address these concerns effectively. To assess the oral and periodontal status and raise awareness about oral and periodontal health, with the goal of promoting oral health care services among the transgender population in Western Maharashtra. The research spanned a duration of seven months and encompassed a participant pool of 120 individuals from the transgender community situated in Western Maharashtra. The study involved the diligent efforts of examiners who were not only trained but also meticulously calibrated in their assessments. Under the expert guidance of a subject matter specialist, these examiners meticulously recorded the oral health status of the participants. This comprehensive evaluation was conducted employing established metrics, including the Simplified Oral Hygiene Index (based on the work of Greene and Vermillon), the Gingival Index, the DMFT Index, Probing pocket depth measurements, and Clinical Attachment level assessment The study examined 120 transgender participants in Western Maharashtra, uncovering significant insights into their oral health practices. Education levels varied, with 34.17% having primary schooling, 25% middle school education, 9.17% high school degrees, and 30.83% without formal schooling. Oral hygiene practices revealed that 85.83% used toothpaste and a toothbrush, 52.50% employed mishri, and 17.50% used fingers and tooth powder, with 14.17% not brushing. Tobacco usage included 14.17% smoking and 21.67% using non-smoked tobacco, while 35.83% consumed mishri. Probing pocket depth measurements indicated potential periodontal concerns. The findings illuminate the oral health landscape among transgender individuals in Western Maharashtra, offering insights for targeted healthcare interventions and awareness initiatives. It is concluded that the study findings underscore the importance of increasing awareness about oral hygiene within the transgender community in Western Maharashtra. This information provides a valuable basis for the development of focused oral health programs aimed at reducing disparities and improving oral well-being in this specific population

Keywords: Oral health, periodontal status, transgender, underprivileged.

I. Introduction

Oral health is intrinsically connected to overall well-being, yet marginalized communities in India, such as transgender individuals, confront substantial barriers in accessing oral healthcare due to socio-demographic factors and lifestyle habits. Stigmatization intensifies their challenges, leading to familial exclusion, societal ridicule,

limited support, economic marginalization, and restricted access to welfare programs. Transgender individuals endure healthcare discrimination, exacerbated by high-risk behaviors, mental health issues, violence-related stress, and higher disease rates like HIV. Coping mechanisms like alcohol and tobacco worsen oral health.

In an era of evolving healthcare and changing norms, it's disheartening that some remain underserved in oral health awareness. To address this gap, it's essential to evaluate the oral health of transgender communities. While research on general oral health is abundant, the oral and periodontal status of the transgender population in Western Maharashtra is scarcely explored. This study aims to prioritize health promotion and awareness, contributing to the well-being of this community. By promoting oral health education, it can enhance their awareness of its significance and normalize their approach to dental treatment, marking a novel endeavor in this region.

II. Materials and methods

Study design and setting

A Prospective cross-sectional study was undertaken among self-identified transgender individuals in Western Maharashtra, India. Ethical clearance was obtained from the Institutional Ethical Committee of Krishana Vishwa Vidyapeeth. (IFC

Study sample:

Total 110 participants were, sample size of this study and it was estimated by using sample size by prevalence formula where we took prevalence of periodontal diseases by Tejaswi and Gadhiraju et al[3]. 92.2%

$$n = \frac{Z^{2pq}}{l^2}$$

Where, n-sample size, p-prevalence of periodontal disease=92.2, q-no prevalence=100-p=100-92.2=7.8, l=allowable error=5% at 95% CI

A total of 120 transgender individuals were included in the study. Complete clinical oral examination was conducted using mouth mirror and probe. The findings like gingival index, oral hygiene index, DMFT index,probing pocket depth and clinical attachment level were assessed. The demographic data and oral findings were recorded in predesigned clinical proforma. The data were entered in MS excel and analysized using SPSS software version 22 .

The educational backgrounds varied, with 34.17% having completed primary schooling, 25% with middle school education, 9.17% holding high school degrees, and 30.83% having no formal schooling.

Statistical analysis: The data was recorded by an assistant and entered into excel spreadsheet [Microsoft Office 2013, Microsoft Corp]. The data was then analyzed and reported as frequency distribution and proportions.

III. Results

The study encompassed a total of 120 transgender participants. The educational backgrounds of the participants varied, with 34.17% having completed primary schooling, 25% having middle school education, 9.17% holding high school degrees, and 30.83% having no formal schooling.

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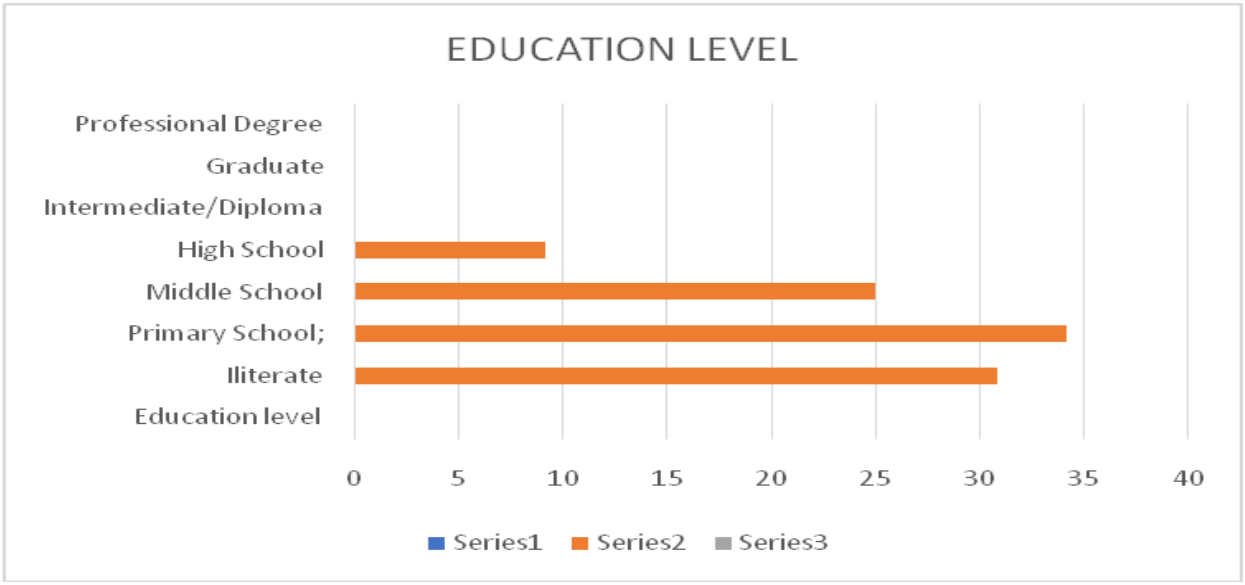

Figure 1. Education Levels

Among oral hygiene practices, approximately 85.83% of the participants used toothpaste and toothbrush for teeth cleaning, while 52.50% employed mishri. A smaller portion, 17.50%, used their fingers and tooth powder, and 14.17% did not engage in tooth brushing at all (see Graph 2).

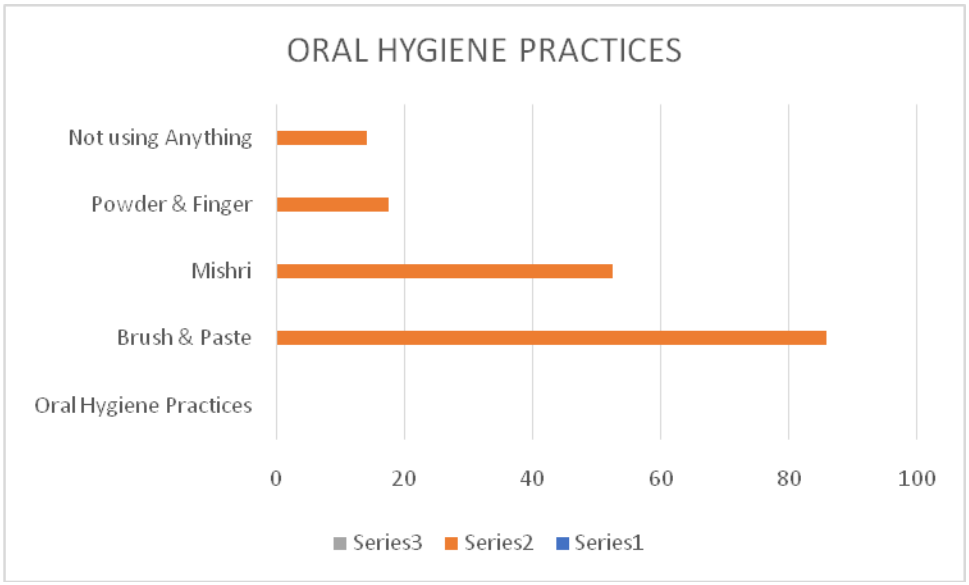

Figure 2 Oral Hygiene Practices

Regarding tobacco usage, it was observed that 14.17% of the participants smoked tobacco in various forms, 21.67% consumed non-smoked tobacco, and the majority, 35.83%, used or consumed mishri (see Graph 3).

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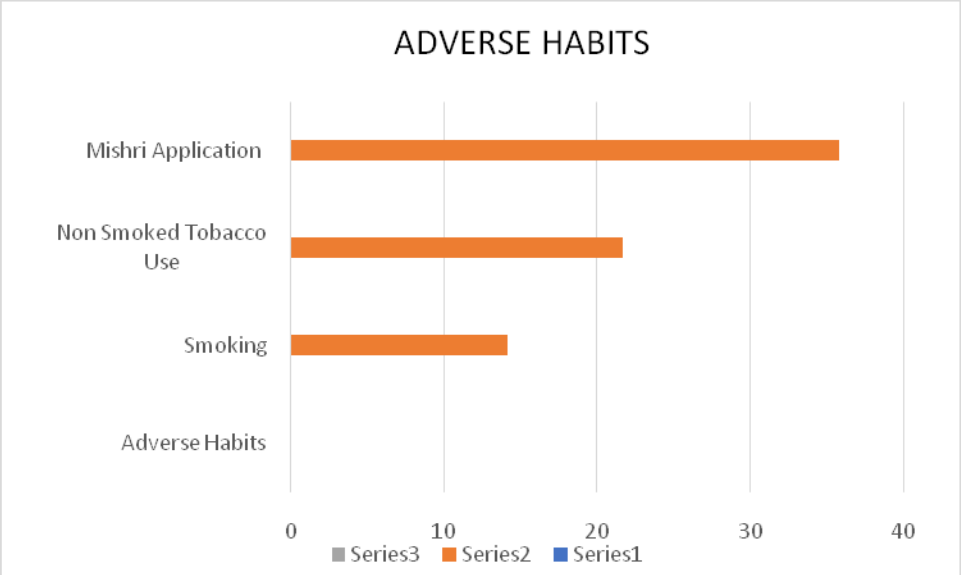

Figure 3. Adverse Habits

Clinical Attachment loss index indicated diverse conditions among the participants. A substantial 44.17% were classified as having good gingival health. Meanwhile, 35.00% were in the category of fair gingival health, and 20.83% exhibited signs of poor gingival health.

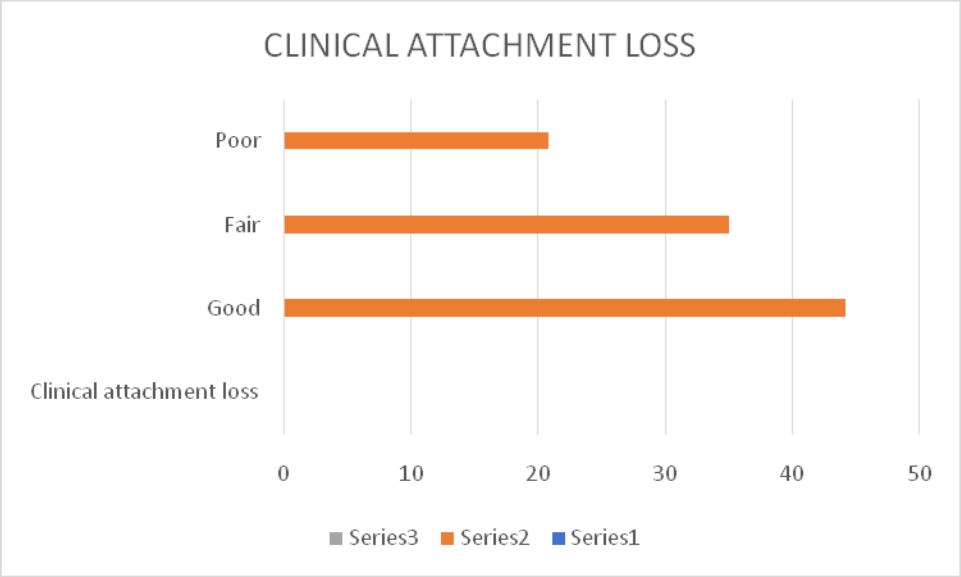

Figure 4. Clinical attachment loss

Furthermore, the examination of probing pocket depth (PPD) revealed notable results. A majority of participants, precisely 55.83%, had PPD measurements in the range of 0 to 2 mm, while 33.33% exhibited PPD in

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the range of 3 to 4 mm. A smaller fraction, 10.83%, displayed PPD measurements greater than 4 mm, indicating potential periodontal concerns among the study group.

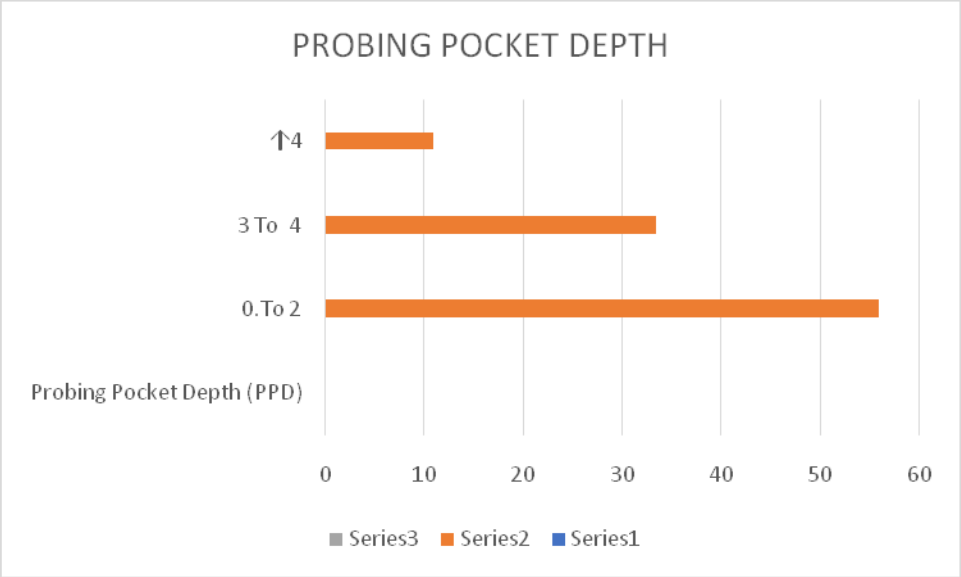

Figure 5. Probing pocket depth

In assessing the oral hygiene index, it was observed that 32.50% of the participants maintained good oral hygiene, while a higher proportion, 44.17%, were classified as having fair oral hygiene practices. Approximately 23.33% were categorized as having poor oral hygiene.

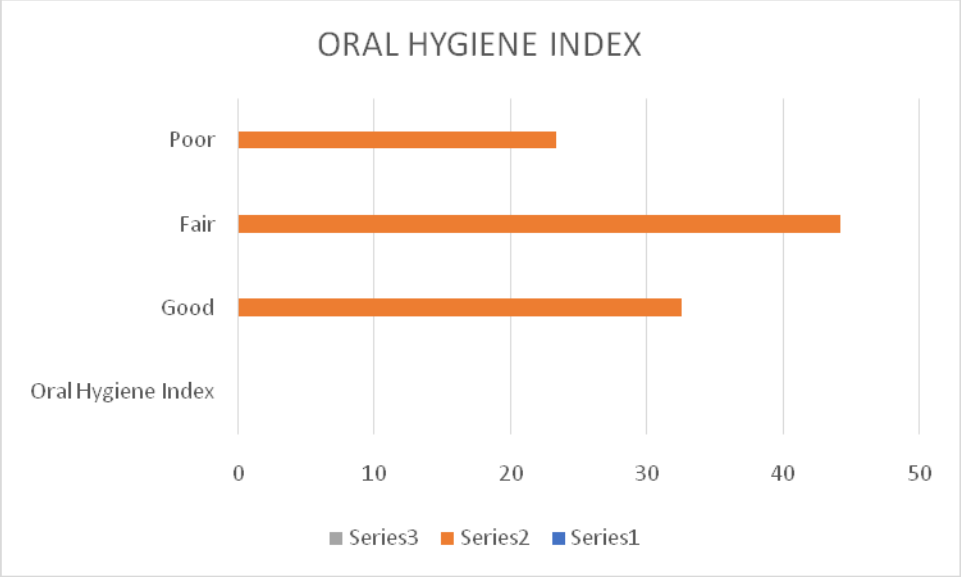

Figure 6. Oral hygiene index

The DMFS index, focusing on decayed, missing, and filled surfaces, revealed varying oral health conditions. Notably, 32.50% of the participants had DMFS scores within the range of 0 to 3, while 21.67% showed DMFS scores in the range of 3 to 6. Another 15.83% had scores in the range of 6 to 9, 17.50% in the range of 9 to 12, and 12.50% had DMFS scores in the range of 12 to 15

Finally, assessing the gingival index indicated diverse conditions among the participants. A substantial 44.17% were classified as having good gingival health. Meanwhile, 35.00% were in the category of fair gingival health, and 20.83% exhibited signs of poor gingival health.

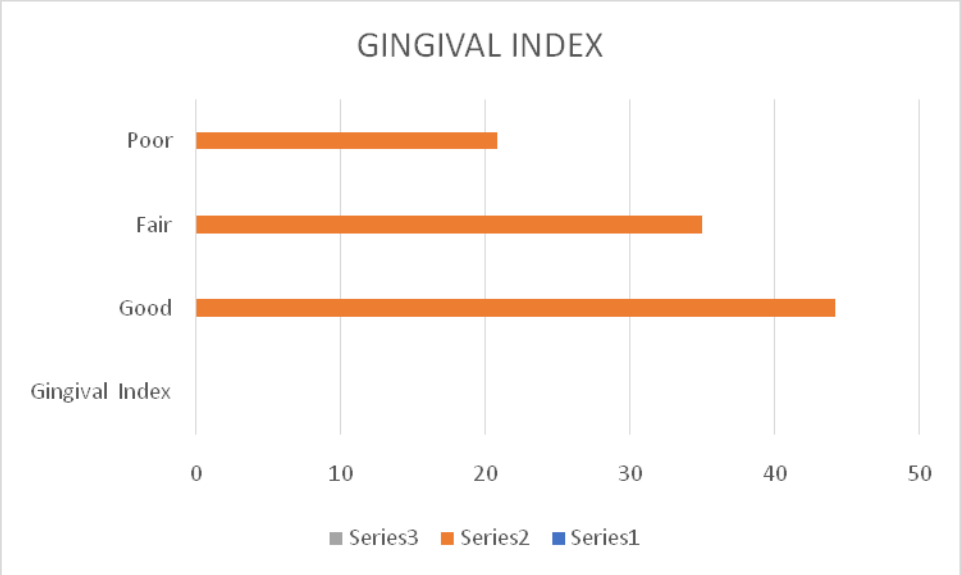

Figure 6. Gingival index

Furthermore, approximately 41.67% of the study participants had a medical history, while the majority, 58.33%, did not report any significant medical history.

These findings provide valuable insights into the oral health practices and conditions within the transgender community in Western Maharashtra, shedding light on potential areas of concern and improvement.

IV. Discussion

The compelling findings of this study shed light on a critical area that demands immediate attention – raising awareness about oral hygiene within the transgender community of Western Maharashtra, India. While oral health is an integral component of overall well-being, it is evident that transgender individuals in this region face specific challenges that need to be addressed comprehensively. This calls for a concerted effort from dental associations, healthcare institutions, and general physicians to undertake a multifaceted approach towards enhancing the oral health of transgender individuals. Transgender individuals face unique challenges related to healthcare access and discrimination. These barriers extend to oral health, where a lack of awareness, limited education, and risky behaviours further compound disparities. The data from this study reveals that the majority of transgender participants in Western Maharashtra have limited educational backgrounds, with over 70% having education levels below high school. This educational gap is a significant factor affecting their oral hygiene practices. This in contrast of study conducted by Hongal H andSatyanarayan and john[1,2].

However, there's a glimmer of hope as 85.83% of participants preferred using toothpaste and toothbrush for oral hygiene maintenance. This preference suggests an increasing awareness of oral health practices among transgender individuals. It's a significant step towards achieving better oral health outcomes. While the preference for toothpaste and toothbrush is a positive sign, the use of mishri by approximately 52.50% of participants is concerning. Mishri is a traditional and potentially abrasive substance. The choice to use mishri may be influenced by cultural practices, limited access to modern dental care products, or a lack of awareness regarding its potential harm to oral health. The use of potentially harmful materials for oral hygiene practices is a critical area that needs intervention. Educating

transgender individuals about the adverse effects of such practices and promoting the use of safer alternatives can significantly improve oral health outcomes in this community.

The study also highlights a segment of transgender participants (approximately 17.50%) who use their fingers and tooth powder or do not engage in tooth brushing at all (14.17%). These practices, particularly the complete absence of oral hygiene measures, indicate potential areas for immediate intervention and education. Proper oral hygiene is essential for everyone, and the lack of it can lead to various oral health issues, impacting overall well-being. Dental associations and healthcare providers need to develop targeted educational programs, workshops, and outreach initiatives that address the unique needs and challenges faced by transgender individuals in maintaining good oral hygiene. Tobacco use is another significant concern that emerged from this study, with 14.17% of participants smoking tobacco in various forms, 21.67% consuming non-smoked tobacco, and 35.83% using or consuming mishri.The results of our study similar to Hongal H Satyanarayan and john study[1,2].

Addressing tobacco use in the transgender community requires a comprehensive approach. Healthcare providers need to offer support and resources for tobacco cessation, recognizing that transgender individuals may face unique stressors that contribute to their tobacco use. This includes tailored counseling and assistance programs that consider the specific challenges they encounter. Additionally, the role of alcohol consumption should not be overlooked. Transgender individuals face a higher risk of negative health outcomes associated with tobacco use and greater secondary harm from alcohol consumption. Healthcare providers should be equipped to address these dual challenges effectively. Clinical Attachment loss index indicated diverse conditions among the participants. A substantial 44.17% were classified as having good gingival health. Meanwhile, 35.00% were in the category of fair gingival health, and 20.83% exhibited signs of poor gingival health.

The study's assessment of oral health conditions is pivotal in understanding the well-being of transgender individuals in Western Maharashtra. Probing pocket depth (PPD) measurements revealed that 55.83% had PPD measurements in the range of 0 to 2 mm, indicating relatively healthier periodontal status. However, 33.33% exhibited PPD in the range of 3 to 4 mm, suggesting potential periodontal concerns. Another 10.83% displayed PPD measurements greater than 4 mm, indicating the need for more comprehensive periodontal care. These findings emphasize the importance of regular dental check-ups and periodontal maintenance among transgender individuals.

The results of our study similar to Gunjan Kumar[6]and J prevmed'S study. The study conductedby Srinivasan raj Samuel et al[5] showed majority of the patients showed PPD index above 4mm. In addition to periodontal health, the study assessed oral hygiene and the DMFS index, focusing on decayed, missing, and filled surfaces. Approximately 32.50% of participants maintained good oral hygiene, while 44.17% had fair oral hygiene practices. However, approximately 23.33% were categorized as having poor oral hygiene. These findings underscore the need for tailored interventions and educational programs that address both hygiene and periodontal concerns. Regular check-ups, cleanings, and education about effective oral hygiene practices can significantly improve the oral health of transgender individuals. Finally, the gingival index further indicated diverse conditions among the participants. A substantial 44.17% had good gingival health, while 35.00% had fair gingival health. However, 20.83% exhibited signs of poor gingival health. These findings demonstrate that while a significant portion of transgender individuals maintain good or fair gingival health, a noteworthy segment faces gingival issues that warrant attention.

The DMFS index revealed varying oral health conditions, with 32.50% of participants having lower scores, indicating fewer decayed, missing, and filled surfaces. However, 21.67% showed moderate levels of dental issues, while 15.83% had more severe oral health problems. These variations highlight the heterogeneity within the transgender community and emphasize the importance of customized oral health programs that cater to individual needs. The results of our study similar to Srinivasan Raj Samuel's study[5].

V. Conclusion

It is concluded that the study findings underscore the importance of increasing awareness about oral hygiene within the transgender community in Western Maharashtra. This information provides a valuable basis for the development of focused oral health programs aimed at reducing disparities and improving oral well-being in this specific population

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