Analysis of Mouth Self-Examination Awareness Among Medical Students

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Abstract-

Introduction*: Oral cancer remains a major public health concern in India, with high morbidity and mortality largely due to late diagnosis. Mouth self-examination (MSE) is a simple, cost-effective method for early detection of potentially malignant disorders. However, its awareness and practice among future healthcare providers remain uncertain.*

Objectives:To assess the knowledge, awareness, and practice of mouth self-examination among undergraduate MBBS students.

Methods*:A cross-sectional study was conducted among 150 undergraduate MBBS students (first to third year) at Government Medical College, Omandurar Government Estate, Chennai, over two months (May–June 2026). Participants were selected using a calculated sample size of 150. Data were collected using a pre-designed, self-administered structured questionnaire distributed via Google Forms. The questionnaire assessed socio-demographic details and domains related to knowledge, awareness, and practice of MSE. Data were analyzed using Statistical Package for Social Sciences software (Version 16).*

Results*:Among the participants, 50.7% had heard of MSE, and 59.3% correctly identified its purpose. While 64.7% were aware of the components of MSE and 68.7% recognized its role in early detection of oral cancer, only 32% had ever performed MSE. Knowledge regarding risk factors was high, with 84.7% identifying tobacco as a major risk factor. However, only 49.3% could differentiate between white and red lesions. Despite limited practice, 86.7% expressed willingness to recommend MSE to others.*

Conclusion*:The study reveals moderate awareness but poor practice of mouth self-examination among medical students, with notable gaps in detailed clinical knowledge. Integrating structured training and practical demonstrations into the undergraduate curriculum is essential to bridge the gap between knowledge and practice, thereby enhancing early detection of oral cancer.*

Keywords: Mouth self-examination, Oral cancer, Medical students, Early detection

I. INTRODUCTION

Oral cancer is a major public health challenge globally, but it has reached epidemic proportions in India, often referred to as the "oral cancer capital of the world." [1] It accounts for nearly 30–40% of all cancer cases in the country. [1, 2] The incidence of lip and oral cavity cancer reported at 15.5% among males, 5% among females, and approximately 10% across both sexes. [1] This high prevalence is largely attributed to the widespread consumption of tobacco (both smoking and smokeless forms), betel quid, and areca nut, combined with poor oral hygiene practices and late-stage diagnosis. [3, 1]

Despite significant advances in oncological treatment, the survival rate for oral cancer continues to depend largely on the stage at which the disease is detected. [3, 4] Early diagnosis markedly improves prognosis, treatment outcomes, and overall quality of life. [3, 5] In this regard, maintaining optimal oral hygiene and undergoing regular oral examinations are essential preventive strategies. [3] Although professional screening remains the gold standard for early detection, it is resource-intensive and often limited by access to healthcare services. [4] Consequently, Mouth Self-Examination (MSE) has emerged as a cost-effective, non-invasive, and practical adjunct for the early identification of potentially malignant disorders (PMDs) and early-stage oral carcinomas. [3, 4]

However, accurate detection is critical, as misclassification carries significant clinical and financial implications. [4] Incorrectly identifying disease-free individuals as having disease may lead to unnecessary anxiety, inappropriate referrals, and increased healthcare costs. [4] Conversely, failing to identify individuals with PMDs or oral cavity cancer may delay diagnosis until the disease reaches a more advanced and severe stage. [3, 4] Therefore, while MSE serves as a valuable supportive measure, general dental

practitioners and dental care professionals must remain vigilant for signs of PMDs and oral cancer during routine oral examinations to ensure timely and accurate diagnosis. [6, 4]

Medical students represent a critical demographic for research in this domain. [5, 6, 7] As future healthcare providers, they are expected to possess a superior baseline knowledge of pathology and preventive medicine compared to the general population. [5, 7] However, their understanding and actual practice of oral self-examination serve a dual purpose: it reflects their personal preventive health behaviour and predicts their professional efficacy. [5, 6] A physician who practices self-care is more likely to advocate it convincingly to patients. [5, 7]

Therefore, this study aims to assess the knowledge, awareness, and practice of self-examination of the mouth among medical students, highlighting the importance of self-assessment as a foundation for both personal health maintenance and professional responsibility.

II. MATERIALS AND METHODS

After getting approval from The Institutional Ethics Committee of Government Omandurar Medical College and Hospital , this cross-sectional study was conducted at Government Medical College, Omandurar Government Estate, Chennai, under the Department of Community Medicine over a duration of two months (May–June 2026). The study population included undergraduate MBBS students from the first, second, and third years studying at the institution year who provide consent to participate in the study.

The sample size was calculated using the formula $n = Z^2pq/d^2$, where p represents the prevalence from a previous study (10.4%), q is 1−p (89.6%), Z is 1.96 corresponding to a 95% confidence interval, and d is taken as 5% of p. The calculated sample size was $(4 \times 10.4 \times 89.6)/25 = 149$, which was rounded off to 150 participants.

Exclusion criteria included fourth-year undergraduate students since they regularly attend clinical postings ,ward rounds and have a good knowledge about MSE and those undergoing the Compulsory Rotatory Medical Internship Program at Government Medical College, Omandurar Government Estate, as well as students who had recently participated insimilar oral health awareness research.

III. BRIEFPROCEDURE

The study used a pre-designed, self-administered structured questionnaire with carefully formulated questions in English based on previously published studies reviewed by specialists containing

1) First section including socio-demographic details(Age, Gender, Year of Study, Place of Residence)
2) Second section covering key domains such as oral health knowledgeand awareness regarding the steps, purpose and importance of mouth self-examination.

After obtaining informed consent , the questionnaire was distributed to students as a Google Form and they were instructed to complete it independently to avoid bias. Completed questionnaires were reviewed for completeness and all valid responses were entered into Microsoft Excel for data management.

IV. RESULTS

The study included a total of 150 undergraduate MBBS students. The age distribution showed that the majority of participants were 19 years (49; 32.7%) and 20 years (48; 32%), followed by 18 years (30; 20%). Smaller proportions were observed among 21 years (14; 9.3%), 22 years (6; 4%), 17 years (2; 1.3%), and 23 years (1; 0.7%). Regarding gender, 82 (54.7%) participants were male and 68 (45.3%) were female. In terms of academic year, most participants were from the first year (78; 52%), followed by second-year students (49; 32.7%) and third-year students (23; 15.3%). With respect to residence, the majority of students belonged to urban areas (131; 87.3%), while 19 (12.7%) were from rural areas.

Upon asking the participants whether they had ever done mouth self examination , findings revealed that the majority of participants had not performed mouth self-examination, accounting for 68% of the study population, while only 32% reported that they had ever performed mouth self-examination. This indicates a relatively low level of practice of mouth self-examination among the undergraduate MBBS students included in the study.

The assessment of knowledge regarding mouth self-examination (MSE) among the study participants showed that 76 (50.7%) students had heard about MSE, while 74 (49.3%) had not. Regarding its purpose, 89 (59.3%) participants correctly identified that MSE involves examining one's own oral cavity for suspicious lesions, whereas 19 (12.7%) responded incorrectly and 42 (28%) were unsure. A majority, 97 (64.7%), were aware that MSE includes examination of the inside of the mouth, gums, tongue, and throat for unusual signs and symptoms; however, 20 (13.3%) were unaware and

33 (22%) did not know. Furthermore, 103 (68.7%) participants acknowledged that regular MSE helps in identifying early signs of oral cancer, while 15 (10%) disagreed and 32 (21.3%) were uncertain. Knowledge regarding risk factors was relatively high, with 127 (84.7%) students recognizing that tobacco use increases the risk of oral cancer, thereby emphasizing the importance of MSE; 10 (6.7%) responded negatively and 13 (8.7%) were unsure. However, only 74 (49.3%) participants reported being able to differentiate between white and red patches during MSE, while 76 (50.7%) could not. Despite this, a large majority of students, 130 (86.7%), expressed willingness to recommend MSE to others for better oral health, whereas 20 (13.3%) did not. Overall, the findings indicate moderate awareness with certain gaps in detailed knowledge regarding mouth self-examination among medical students

Table 1 : Sociodemographic details of the participants (N = 150)

Variables	N (%)
Age (Years)	
17	2 (1.3 %)
18	30 (20%)
19	49 (32.7 %)
20	48 (32 %)
21	14 (9.3 %)
22	6 (4 %)
23	1 (0.7 %)
Gender (Years)	
Male	82 (54.7 %)
Female	68 (45.3 %)
Year	
1st Year	78 (52 %)
2nd Year	49 (32.7 %)
3rd Year	23 (15.3 %)
Residence	
Urban	131 (87.3 %)
Rural	19 (12.7 %)

Figure 1 : Pie Chart depicting the proportion of participants who have ever performed Mouth Self Examination (MSE)

Table 2 : Distribution of respondents according to knowledge about Mouth Self Examination (MSE)

Ever heard of Mouth self-examination	**N (%)**
Yes	76 (50.7 %)
No	74 (49.3 %)
MSE examines own oral cavity for suspicious Iesions.	**N(%)**
Yes	89 (59.3 %)
No	19 (12.7 %)
Don't know	42 (28 %)
MSE examine inside of mouth, gums, tongue, and throat for unusual signs & symptoms.	**N(%)**
Yes	97 (64.7 %)
No	20 (13.3 %)
Don't know	33 (22 %)
Regular MSE helps in identifying early signs of oral cancer	**N(%)**
Yes	103 (68.7 %)
No	15 (10 %)
Don't know	32 (21.3 %)
Tobacco use increase the risk of oral cancer, making MSE important	**N(%)**
Yes	127 (84.7 %)
No	10 (6.7 %)
Don't know	13 (8.7 %)
Can differentiate different white or red patches during practice of MSE	N (%)
Yes	74 (49.3 %)
No	76 (50.7 %)
Recommend MSE to others for better oral health	N (%)
Yes	130 (86.7 %)
No	20 (13.3 %)

V. DISCUSSION

The study has been conducted to assess the awareness and practice of self examination of the mouth among medical students in Government Medical College, Omandurar Government Estate, Chennai.

In the study, various sociodemographic factors like age, gender , year of study and where they reside are taken into consideration. About half of the students (50.7%) had heard of MSE, and a majority could correctly describe its

purpose and components, indicating that basic theoretical knowledge about MSE is reasonably present in this study population . However, only 32% reported ever having performed MSE, while 68% had never done so, reflecting a striking gap between conceptual understanding and actual behaviour that has been repeatedly observed in medical-student populations.

Knowledge of the oral-cancer link and risk factors was relatively strong, with 84.7% of students recognizing that tobacco use increases the risk of oral cancer and that MSE therefore plays an important preventive role. This aligns with several studies among Indian and international medical undergraduates as in the study of Saleem. L., et al[8]which report high awareness of major risk factors such as tobacco and alcohol, but weaker grasp of clinical signs and early lesions. Around two-thirds of students (68.7%) also acknowledged that regular MSE helps in the early detection of oral-cancer-related lesions. This mismatch between positive attitudes and low practice suggests an "intention–behaviour gap," where awareness and perceived value do not automatically translate into routine self-screening.

A notable limitation in the study population was lesion-specific and exam-specific knowledge, particularly the ability to differentiate white and red patches during MSE. Only 49.3% of students reported feeling confident in this distinction, while 50.7% could not, highlighting a vulnerable area that is critical for early detection of potentially malignant disorders. Similar gaps have been reported among medical students in India and elsewhere, as indicated in Alzabibi MA et al[5] , where recognition of leukoplakia, erythroplakia, and mixed lesions often remains suboptimal without hands-on clinical training. Moreover, 28% of students were unsure about the purpose of MSE and 22% did not know that MSE should include the inside of the mouth, gums, tongue, and throat, which is consistent with broader MSE-awareness studies that show a substantial proportion of respondents know something about self-examination but cannot confidently specify the exact structures or abnormal signs to look for.

The urban-rural gradient in the study population is also noteworthy: 87.3% of students hailed from urban areas, while only 12.7% were from rural backgrounds. This mirrors larger population-based MSE studies in India that report much higher MSE awareness and practice among urban residents compared with rural populations, often linked to higher education levels and greater access to health information.

Despite these knowledge and practice gaps, the respondents exhibited highly positive attitudes toward MSE. A large majority (86.7%) expressed willingness to recommend MSE to others for better oral health, whereas only 13.3% would not. This favourable disposition echoes findings from Fotedar V et al[9] where over 80–90% of participants, including tobacco users and medical students, indicate strong willingness to perform and recommend MSE, even when current practice rates are low.

VI. CONCLUSION

The study demonstrates that undergraduate MBBS students have moderate awareness of mouth self-examination and its role in early detection of oral cancer, particularly regarding major risk factors such as tobacco use and the general components of the exam. However, detailed knowledge—especially on lesion-specific findings such as white and red patches—and practical behaviour lag behind, with a majority having never performed MSE. This pattern is consistent with existing literature showing that medical students often possess adequate theoretical knowledge but insufficient skill-based training and routine practice. The high willingness of students to recommend MSE to others suggests that they recognize its value, yet this positive attitude has not yet translated into regular self-screening. Together, these findings underscore an urgent need to integrate structured, experiential MSE training into the undergraduate medical curriculum, so that future physicians are not only aware of the concept but also confident in performing and teaching mouth self-examination to their patient

VII. RECOMMENDATIONS

Mouth Self Examination should be introduced not just as a theoretical concept but as a standardized, skill-based competency within the undergraduate medical curriculum, with dedicated practice sessions on how to inspect the oral cavity, identify suspicious lesions, and seek timely professional evaluation. Finally, given the high willingness of students to recommend MSE to others, integrating MSE training into medical education may not only improve their own health-seeking behaviour but also empower them to promote early-detection messages effectively in their future professional roles.

DECLARATION

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Conflict of Interest : Nil

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