

Assessing Oral Health Knowledge and Behavioural Practices among Patients with Potentially Malignant Oral Lesions: A Mixed Methods Study

Thivya N^{1*}, Dr. Bamini Devi N¹, Dr. Helen Shaji J C¹, Lakshmi L², Hema VH³, Dr. Lisy Joseph⁴

^{1*}SRM College of Nursing, Faculty of Medicine & Health Sciences, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India

²Sathyabama College of Nursing, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India

³Faculty of Nursing, Dr. M.G.R. Educational Research Institute (Deemed to be University), Chennai, Tamil Nadu, India

⁴Narayan Nursing College, Gopal Narayan Singh University, Bihar, India

¹PhD Scholar, Associate Professor (Thivya N) | ORCID: <https://orcid.org/0000-0002-1495-7888> | Email: tn0594@srmist.edu.in

¹Professor (Dr. Bamini Devi N) | ORCID: <https://orcid.org/0009-0004-3062-4225> | Email: baminidn@srmist.edu.in

¹Professor & Dean (Dr. Helen Shaji J C) | ORCID: <https://orcid.org/0000-0003-3006-2029> | Email: helenshj@srmist.edu.in

²Dean (Lakshmi L) | ORCID: <https://orcid.org/0000-0002-3306-4743> | Email: llakshmi1966@gmail.com

³Prof cum Principal (Hema VH) | ORCID: <https://orcid.org/0000-0003-2333-0136> | Email: hema.nurse@drmgrdu.ac.in

⁴Professor (Dr. Lisy Joseph) | ORCID: <https://orcid.org/0000-0003-2677-4170> | Email: lisysshine@gmail.com

Author Contributions:

A. Thivya N - contributed to the conception and design of the study, analysis and interpretation of findings and drafting of the manuscript.

B. Dr. Bamini Devi N - supervised the methodology, ensured methodological rigor, and critically revised the manuscript.

C. Dr. Helen Shaji J. C - provided expert guidance on data analysis and interpretation for the study.

D. Dr. Lakshmi L - provided expert guidance on interpretation of results and performed overall manuscript review and final editing.

E. Dr. Hema V. H - contributed to literature review, data interpretation, and critical revision of the manuscript for intellectual content.

F. Dr. Lisy Joseph - contributed to study design refinement, validation of findings, and manuscript editing.

***Corresponding Author:** Thivya N, PhD Scholar, Associate Professor, SRM College of Nursing, Faculty of Medicine & Health Sciences, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India | ORCID: <https://orcid.org/0000-0002-1495-7888> | Email: tn0594@srmist.edu.in

Conflict of Interest

NIL

Source of Funding

Self-funding.

Ethical Approval Declaration

Ethical approval was obtained from the Sathyabama Institute of Human Ethics Committee, Sathyabama Institute of Science & Technology.

Acknowledgement

The authors sincerely thank all the participants for generously sharing their experiences and contributing to this study. We also acknowledge the researchers and authors whose published work informed and supported the development of this research. Our sincere appreciation is extended to our institution for providing the resources and academic support necessary to conduct this study.

ABSTRACT

Potentially malignant oral lesions (PMOLs) are precursors to oral squamous cell carcinoma, often exacerbated by inadequate oral health-seeking behaviour. This study aimed to evaluate the oral health knowledge and behavioural practices among patients with PMOLs in a selected coastal community of Chennai. Specific objectives included assessing the socio-demographic profiles of participants, examining their oral health knowledge and practices, and analysing associations between these factors and demographic variables.

Assessing Oral Health Knowledge and Behavioural Practices among Patients with Potentially Malignant Oral Lesions: A Mixed Methods Study

A mixed-methods design was adopted. The quantitative phase used a convenience sampling technique to select 60 participants; data were collected over one month through a structured interview schedule incorporating demographic details and oral health-related assessments. A qualitative phase, employing purposive sampling and semi-structured in-depth interviews analysed thematically, was designed to complement the quantitative findings by exploring participants' lived experiences and perceived barriers to oral health-seeking behaviour in greater depth. Results showed that 67% of participants had poor oral health knowledge, while 33% exhibited good knowledge. Regarding practices, only 30% followed good oral hygiene behaviors, whereas 70% did not. Significant associations were identified between oral health knowledge and practice with factors such as education, occupation, and dietary patterns. Descriptive and inferential statistical analyses underscored the need for targeted interventions to improve oral health awareness and practices in this community.

Keywords- Assess, Oral health care, Behavior, Potentially malignant oral lesions, Mixed methods, Qualitative research.

How to cite this article: Thivya N, Bamini Devi N, Helen Shaji JC, Lakshmi L, Hema VH, Joseph L. Assessing Oral Health Knowledge and Behavioural Practices among Patients with Potentially Malignant Oral Lesions: A Mixed Methods Study. *Int J Drug Deliv Technol.* 2026;16(70s): 1999-2003. DOI: 10.25258/ijddt.16.70s.215

INTRODUCTION:

Oral cancer is a significant global health concern, particularly in regions like South-Central Asia, where it ranks among the most prevalent cancers and a leading cause of mortality (1). Oral potentially malignant disorders (OPMDs), characterized by alterations in the oral mucosa, carry an elevated risk of progressing to malignancy. Early detection through thorough oral examination and the adoption of proper oral health behaviours are critical in preventing disease progression and improving outcomes. (2). Coastal communities, such as those in Chennai, present unique vulnerabilities due to socio-economic disparities, limited healthcare access, and the prevalence of high-risk behaviours such as tobacco and betel nut use (3). This study aimed to evaluate oral health knowledge and behavioural practices among patients with OPMDs in a selected coastal community, with a focus on identifying socio-demographic factors influencing these practices.

While quantitative surveys can quantify the extent of poor oral health knowledge and practice, they cannot, on their own, explain why these gaps persist or how patients themselves understand their condition. A mixed methods design was therefore adopted for this study: a quantitative phase to measure knowledge, practices, and their demographic associations, followed by a qualitative phase to explore the lived experiences, beliefs, and barriers underlying these patterns. Combining both strands is intended to produce a more complete and actionable understanding than either approach alone.

OBJECTIVES:

- To assess the oral health knowledge and behavioral practices among patients with potentially malignant oral lesions among selected coastal community.
- To associate the oral health knowledge and behavioral practices among patients with

potentially malignant oral lesion with selected demographic variables.

- To explore, through in-depth qualitative interviews, the lived experiences, perceived barriers, and personal beliefs that shape oral health-seeking behaviour among patients with potentially malignant oral lesions in the selected coastal community.

MATERIALS & METHODS

Study Design and Setting: The study adopted evaluative research approach. The research design utilized was Non-Experimental- Descriptive design, embedded within an overarching explanatory sequential mixed-methods design (QUAN → qual), in which the quantitative phase is followed by a qualitative phase intended to explain and contextualise the quantitative results in greater depth. The Accessible Population of the present study was patient with potentially malignant oral lesions at selected coastal community. The study was collected in coastal community area at Chennai.

Sample Size and Sampling Method: The study enrolled people who are OPMDs around 60 patients by using convenient sampling technique at selected coastal community at Chennai. The goal of the study was described to officials, and permission to perform the study was gained. All the patients were tracked, and they were interviewed and evaluated.

QUESTIONNAIRE VALIDATION AND STATISTICAL ANALYSIS

The study employed a structured interview schedule consisting of demographic variables and 25 close-ended questions assessing oral health knowledge and practices. The questionnaire was pretested and validated prior to administration. Face and content validity were established by a panel of experts in the fields of dentistry, public health, and epidemiology, who evaluated the questionnaire for clarity, relevance, and comprehensiveness. Feedback from the experts

Assessing Oral Health Knowledge and Behavioural Practices among Patients with Potentially Malignant Oral Lesions: A Mixed Methods Study

was incorporated to refine the tool, ensuring that it effectively captured the required data.

Ethical approval for the study was obtained from the Sathyabama Institute of Human Ethics Committee, ensuring adherence to ethical standards in research.

The demographic section of the questionnaire collected data on variables such as age, sex, religion, education, occupation, socioeconomic status, income, dietary patterns, type of family, and place of residence. The knowledge and practice section included questions related to oral hygiene practices (e.g., frequency and technique of brushing, use of additional cleaning aids), frequency of dental visits, and attitudes toward oral health-seeking behaviours.

The data were analysed using Statistical Package for Social Sciences (SPSS) version 17.0. Descriptive statistics, including frequencies and percentages, were used to summarize demographic details and oral health-related behaviours. Inferential statistical tests were employed to examine associations between oral health knowledge and practices and key demographic variables. Specifically:

- **Chi-square tests** were used to assess the significance of relationships between categorical variables, such as education, occupation, and dietary patterns, and oral health behaviors.
- **P-values < 0.05** were considered statistically significant.

QUALITATIVE PHASE: DESIGN, SAMPLING, DATA COLLECTION AND ANALYSIS

Qualitative Design: A descriptive phenomenological approach was adopted for the qualitative phase, aimed at understanding participants' subjective, lived experience of having a potentially malignant oral lesion and the meanings they attach to oral health-seeking behaviour. This phase is designed to follow the quantitative phase, using its findings to inform the interview guide and sampling frame in keeping with the explanatory sequential mixed-methods design.

Sample and Sampling Method: Participants for the qualitative phase are to be drawn from the same coastal community and selected using purposive maximum-variation sampling, so as to capture a range of ages, genders, educational levels, and knowledge/practice scores identified in the quantitative phase (for example, contrasting participants with good versus poor knowledge or practice scores). Recruitment will continue iteratively until data saturation is reached, anticipated at approximately 12–15 participants, consistent with sample sizes typically reported for descriptive phenomenological studies.

Data Collection Tool and Procedure: Data are to be collected using a semi-structured, open-ended in-depth interview guide developed from the quantitative

results and existing literature, and reviewed by the same panel of subject experts for face and content validity. Interviews will be conducted in the participant's preferred language (Tamil or English) in a private setting, audio-recorded with informed consent, and will continue for approximately 30–45 minutes each. Field notes and reflexive memos will be maintained throughout data collection to document contextual observations and the interviewer's own assumptions.

Data Analysis: Audio-recordings are to be transcribed verbatim and analysed using Braun and Clarke's six-phase thematic analysis: familiarisation with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Two researchers will code independently and reconcile discrepancies by consensus to enhance analytic rigor. Integration with the quantitative strand will occur at the interpretation stage, using a joint display to compare and contrast quantitative associations (e.g., education, occupation, dietary patterns) with qualitative themes.

Trustworthiness: Rigor will be established using Lincoln and Guba's criteria – credibility (prolonged engagement, member checking), transferability (thick description of context and participants), dependability (audit trail of coding decisions), and confirmability (reflexive journaling to bracket researcher assumptions). Ethical approval for this phase will be sought as an amendment through the same Sathyabama Institute of Human Ethics Committee prior to data collection.

INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS

Consistent with the explanatory sequential mixed-methods design, integration will occur at two points. First, at the design stage, the quantitative results (knowledge and practice scores, and their associations with education, occupation, and dietary patterns) will inform selection of participants and interview questions for the qualitative phase – a connecting strategy. Second, at the interpretation stage, quantitative and qualitative results will be merged using a side-by-side joint display, in which each statistically significant demographic association is paired with the qualitative themes that help explain it. Convergence, complementarity, or divergence between the two strands will be explicitly discussed rather than the two datasets being reported in isolation.

RESULTS:

The findings from the statistical analysis provided insights into the patterns of oral hygiene practices, the level of awareness regarding oral health, and the influence of socio-demographic factors on these behaviours. These results highlight areas requiring

Assessing Oral Health Knowledge and Behavioural Practices among Patients with Potentially Malignant Oral Lesions: A Mixed Methods Study

targeted interventions to improve oral health outcomes in the community (Tables 1-3). Findings from the qualitative phase, once data collection and thematic analysis described above are completed, are intended to be reported alongside the quantitative results in a joint display to provide a deeper, contextualised understanding of the barriers and beliefs underlying these patterns.

Knowledge and Practice of Oral Health Care

Table 1: The distribution of knowledge and practice regarding oral health care

Category	Good Knowledge (%)	Poor Knowledge (%)	Good Practices (%)	Poor Practices (%)
Patients	40 (33%)	20 (67%)	18 (30%)	42 (70%)

Table 2. Mean and standard deviation for oral health-seeking behavior

Metric	Value
Mean	11.63
Standard Deviation	10.89

3. Factors Influencing Knowledge and Practice

Table 3: The chi-square test revealed significant associations between knowledge and practice of oral health care and its factors

Factor	Significance (p-value)
Education	< 0.05
Occupational History	< 0.05
Dietary Patterns	< 0.05

DISCUSSION

According to the study, most patients knew very little about PMOLs and the associated risk factors. A notable knowledge gap was revealed by the fact that many individuals were ignorant of the malignant potential of their lesions. This result is consistent with earlier research in comparable contexts that found worse oral health outcomes and delayed diagnosis were linked to low health literacy levels (3).

Oral health-related issues have been a significant concern across all Indian states over the past decade, with basic oral health education remaining inaccessible to a large portion of the population. (5). The majority of participants in the study had inadequate oral hygiene habits. A sizable percentage of patients reported infrequent dental visits, inconsistent brushing habits, and insufficient usage of dental hygiene products (such as mouthwash and

floss). This is consistent with earlier studies that found a link between the development of PMOLs and inadequate dental hygiene (3).

Significantly, individuals who reported seeing a dentist on a regular basis were more likely to grasp their condition better and change to healthy habits. However, participants frequently faced obstacles such as restricted access to dental care facilities, budgetary limitations, and a lack of belief in the necessity of routine checkups. Improving community oral health outcomes requires addressing these systemic impediments (4).

According to the behavioural study, a significant percentage of participants smoked and drank alcohol, among other high-risk behaviours. Many patients found it difficult to break these practices despite being diagnosed with PMOLs because of addiction, social pressures, and a lack of support networks. These results are in line with research highlighting the necessity of integrated cessation programs designed for communities at high risk (7, 8).

LIMITATIONS:

As a mixed-methods study, this work has limitations specific to each strand and to their integration. The quantitative phase relied on convenience sampling and a modest sample of 60 participants at a single coastal site, which may limit generalisability. The qualitative phase, as designed, depends on participants' willingness and ability to articulate their experiences, and purposive sampling – while suited to depth – does not permit statistical generalisation of the themes identified. Because the qualitative phase follows the quantitative phase, its interview guide is shaped by the quantitative findings, which may focus attention on already-identified associations rather than unanticipated ones. Finally, integration through a joint display depends on both strands being completed to comparable standards of rigor; any delay or attrition in qualitative recruitment could limit the depth of integration achievable.

CONCLUSION:

The study emphasises the importance of people with Potentially malignant oral lesions need focused treatments to improve their oral health care behaviours and understanding. Considerable progress can be made in promoting the advancement of PMOLs and enhancing the general oral health of the population by filling in the identified gaps through education, better access to care, and policy changes. The planned qualitative phase, using purposive sampling, semi-structured interviews, and thematic analysis, is expected to add depth to these quantitative findings by illuminating the personal and contextual factors that underlie participants' oral health knowledge and practices, thereby strengthening the evidence base for future interventions.

Assessing Oral Health Knowledge and Behavioural Practices among Patients with Potentially Malignant Oral Lesions: A Mixed Methods Study

CONFLICT OF INTEREST

NIL

SOURCE OF FUNDING

Self-funding

ETHICAL CLEARENCE

Sathyabama Institute of Science & Technology.

REFERENCES

1. Gupta N, Gupta R, Acharya AK, Patthi B, Goud V, Reddy S, Garg A, Singla A. Changing trends in oral cancer: A global scenario. *Nepal Journal of Epidemiology*. 2016 Dec;6(4):613-619. <https://doi.org/10.3126/nje.v6i4.17255>
2. Warnakulasuriya S, Kujan O, Aguirre-Urizar JM, et al. Oral potentially malignant disorders: A comprehensive review on clinical aspects and management. *Oral Oncology*. 2020;102:104550. Available from: <https://pubmed.ncbi.nlm.nih.gov/31981993/>
3. Deolia SG, Khare MV, Arora RP, Chikhale RN, Korde RD, Reche AM. Assessment of the oral health-seeking behavior of patients with premalignant lesions. *Journal of Family Medicine and Primary Care*. 2020 Jan;9(1):141-146. https://doi.org/10.4103/jfmpe.jfmpe_897_19
4. White SC, Pharoah MJ. *Oral Radiology: Principles and Interpretation*. 8th ed. St. Louis, MO: Elsevier; 2019.
5. Assessment on oral health knowledge, attitude, and behaviour and its association with sociodemographic and habitual factors of South Indian population. *Pesqui Bras Odontopediatria Clin Integr*. 2021;21. Available from: doi:10.1590/pboci.2021.159
6. Siddharthan S, Naing NN, Wan-Arfah N, Assiry AA, Adil AH. Oral health and services in India. *Int J Pharm Res* 2021; 13(1):3786-3790. Available from: <https://doi.org/10.31838/ijpr/2021.13.01.590>.
7. Mello F, Fava C, Pessina F, et al. Alcohol and tobacco consumption patterns among patients with oral potentially malignant disorders. *Journal of Oral Pathology & Medicine*. 2019 Jan;48(1):37-43. <https://doi.org/10.1111/jop.12849>..
8. Kadashetti V, Shivakumar K, Chaudhary M, Patil S, Gawande M, Hande A. Influence of risk factors on patients suffering from potentially malignant disorders and oral cancer: A case-control study. *J Oral Maxillofac Pathol*. 2017;21:455-6. Available from: doi: 10.4103/jomfp.JOMFP_236_14.
9. N, T., N, B.D., J. C, H.S. *et al*. Nurse-led tobacco and areca-nut cessation interventions for oral

potentially malignant disorders: a systematic review. *BMC Oral Health* (2026). <https://doi.org/10.1186/s12903-026-08970-8>