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Basic Oral Health Knowledge and Awareness among Adults in Western Maharashtra: A Cross-Sectional Study

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Abstract:

This descriptive cross-sectional study delves into the intricate landscape of oral health knowledge and awareness among adults residing in rural areas of Western Maharashtra, India. The primary objective is to comprehensively assess the existing knowledge levels, debunk prevalent myths, and underscore the critical need for targeted educational interventions. The study involved 662 participants, carefully selected through systematic random sampling around a dental clinic. Ethical clearance was obtained, ensuring voluntary participation and maintaining patient confidentiality. A self-designed questionnaire, validated for reliability, was administered, comprising two sections: one capturing sociodemographic details and the other focusing on oral health knowledge. Results indicate a predominantly male participation (68%), with a significant portion (42.6%) falling in the 41–50 age group. Alarmingly, only 38% of participants recognized the importance of good oral health. Furthermore, 40.2% believed that dental problems could be exclusively cured by medicines. The study identified a substantial 38.2% with low knowledge scores, revealing associations between knowledge levels and education ($p=0.016$) and occupation ($p=0.027$). In conclusion, the study underscores the inadequacy of oral health knowledge and awareness among the rural population in Maharashtra. The findings necessitate immediate attention, emphasizing the implementation of targeted dental awareness and education programs. These initiatives must consider sociodemographic factors, tailoring interventions to bridge the identified knowledge gaps. The insights provided by this study contribute to the broader discourse on oral health in rural India, urging stakeholders to act swiftly to enhance the overall well-being of the population.

Keywords. Oral health, Rural population, Knowledge and awareness, Dental care, Myths and misconceptions, Maharashtra India, Community outreach

I. Introduction

Oral health is a crucial aspect of overall well-being, influencing an individual's ability to perform daily functions and maintain a high quality of life. The significance of oral health often becomes more pronounced in rural areas, where access to dental care may be limited, and awareness about preventive measures is essential. This study aims to delve into the oral health knowledge and awareness among adults in the rural areas of Western Maharashtra, India, shedding light on the prevalent challenges and the urgent need for targeted interventions.

Given that people aged 50 years and above make up more than 70% of the Indian population, targeted community outreach programs focusing on oral health can bring about a positive change in behavior. While various studies have assessed knowledge and awareness in recent years, data specific to the majority of the Indian rural population remains scarce. Thus, this study aims to bridge that gap by assessing oral health knowledge and awareness in adults residing in a specific area of Maharashtra.

The study adhered to ethical guidelines, obtaining clearance from the Institutional Ethics Committee and relevant health authorities. Participation was voluntary, with informed consent obtained from willing participants. The study employed a descriptive cross-sectional design, targeting adults around a dental clinic in rural Maharashtra. The sample size of 662 participants was determined using a formula that considered the standard normal score, confidence interval, standard deviation, and maximum acceptable error. Systematic

random sampling was employed, enrolling participants who visited the dental clinic over a two-month period. Systemically ill individuals and those unwilling to participate were excluded.

A self-designed questionnaire in English and the local language, Punjabi, was used. The questionnaire underwent validation and reliability testing, achieving a good reliability score of 0.84. The questionnaire comprised two sections: a general section collecting sociodemographic details and a knowledge section with 12 questions related to oral health. Scores were calculated based on participants' responses, with categorization into low, medium, and high levels. Statistical analysis, including analysis of variance and t-tests, was performed using the SPSS package (version 19.0). The significance level was set at < 0.05.

The study revealed that a majority of participants were male (68%), and 42.6% belonged to the age group of 41–50 years. Alarmingly, only 38% recognized the importance of good oral health, and 40.2% believed that dental problems could be cured solely by medicines. A considerable 38.2% recorded low knowledge scores, with associations found between knowledge scores and education ($p=0.016$) and occupation ($p=0.027$).

The study concludes that oral health knowledge and awareness among the rural population in Maharashtra are not satisfactory. Urgent measures, including dental awareness and education programs, are necessary to address the gaps identified. By targeting specific demographics, such as those with lower education levels, these programs can bring about positive changes in oral health behavior, ultimately contributing to the overall well-being of the population.

II. Background

The rural landscape often presents unique challenges when it comes to healthcare, and oral health is no exception. Hidden oral diseases can lead to disabilities that impact daily functions, making it imperative to identify and address these issues at an early stage. Collaborative efforts between dental health professionals and patients are essential for maintaining a good oral profile. However, studies have shown that a lack of perceived need and the absence of serious dental problems are common reasons cited by individuals for not visiting a dentist.

The outlook of a population towards their dentition significantly contributes to overall oral health. In developing countries like India, the distribution of dental health professionals is uneven between urban and rural areas, posing a challenge in delivering oral care to the needy population. Moreover, an individual's knowledge about oral health directly influences their overall health. A previous study in Maharashtra highlighted prevailing myths, such as tooth loss being an extension of old age or dental caries being preventable by chewing tobacco. These myths hinder the utilization of dental services and contribute to multiplying dental problems among the population.

III. Materials and Methods

The study employed a rigorous methodology to assess oral health knowledge and awareness among adults in rural areas of Western Maharashtra, India. The ethical considerations, participant selection, data collection tools, and statistical analysis are outlined below.

Ethical Considerations:

Ethical clearance for the study was obtained from the Institutional Ethics Committee and relevant health authorities. Participants were informed about the voluntary nature of their participation, and written informed consent was obtained from those willing to take part. The study adhered to ethical standards, ensuring the privacy and confidentiality of participant information.

Study Design:

A descriptive cross-sectional study design was chosen to capture a snapshot of oral health knowledge and awareness among the target population.

Participant Selection:

The study targeted adults residing in rural areas around a dental clinic in Western Maharashtra. The sample size of 662 participants was determined using a standard formula that considered the standard normal score, confidence interval, standard deviation, and maximum acceptable error. Systematic random sampling was employed over a two-month period, enrolling participants who visited the dental clinic for treatment. Exclusion criteria included systemic illness and unwillingness to participate.

Data Collection Tools:

Questionnaire Development: A self-designed questionnaire was crafted in English and the local language, Punjabi, to ensure comprehension among the diverse population. The questionnaire underwent validation for content accuracy by oral health specialists and was pretested for validity and reliability. The reliability of the questionnaire was confirmed with a good score of 0.84.

Questionnaire Structure:

Section A (General Section): Captured sociodemographic details of participants, including age, gender, occupation, and education.

Section B (Knowledge Section): Comprised 12 questions assessing oral health knowledge, covering aspects such as the number of primary and permanent teeth, smoking and chewing tobacco habits, and sources of oral health information.

Scoring System: Participants' responses were scored, with a score of "1" for each positive response and "0" for each negative response. The total knowledge score was calculated by summing the responses on a Likert Scale.

Data Collection Procedure:

Participants were approached in the waiting area of the dental clinic and asked to fill the questionnaire. To ensure comprehension, investigators clarified any doubts participants had regarding the questions.

Statistical Analysis:

The collected data were analyzed using the SPSS package version 19.0. Categorical measurements were presented using numbers and percentages. Analysis of variance (ANOVA) and Student's t-test were employed to determine the significance between different groups. The significance level was set at < 0.05.

IV. RESULT

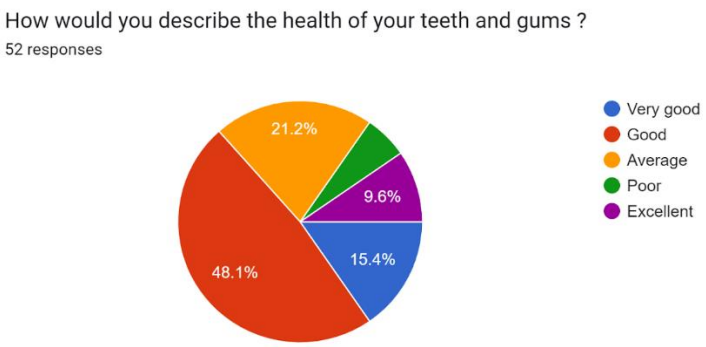
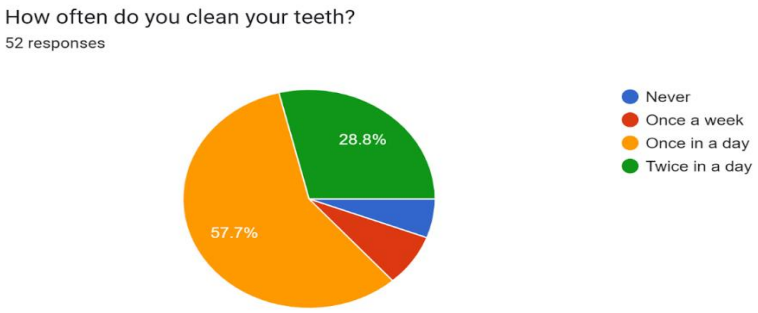


Figure 1. Response to Questionnair-1



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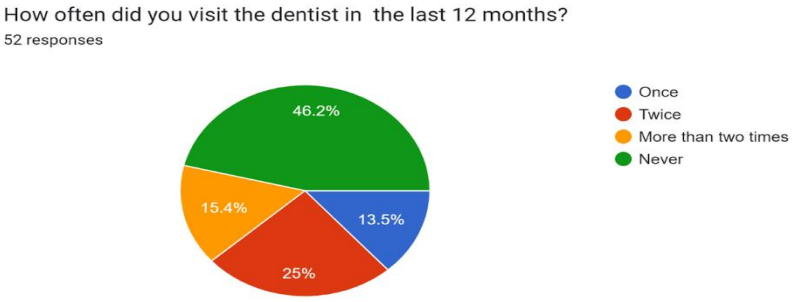

Figure 3. Response to Questionnair-3

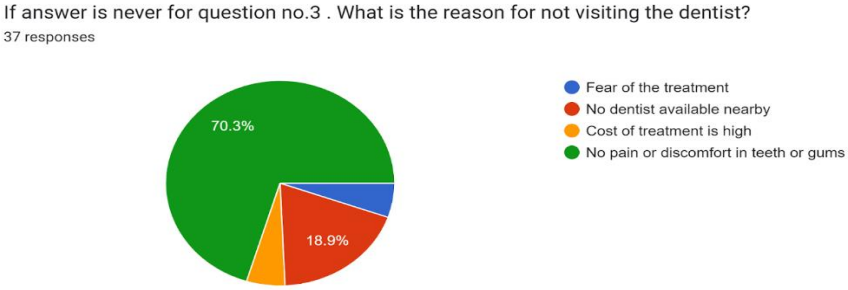

Figure 4. Response to Questionnair-4

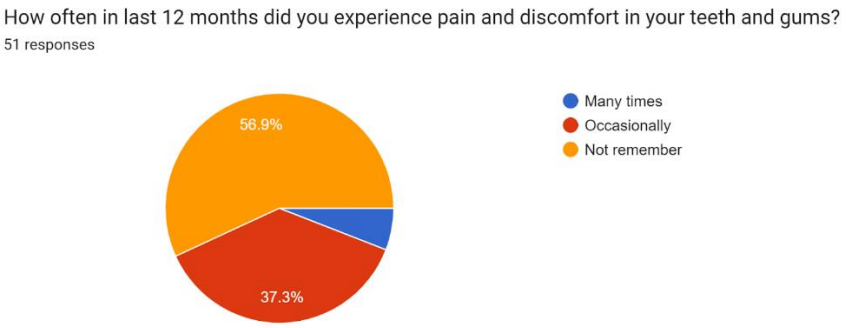

Figure 5. Response to Questionnair-5

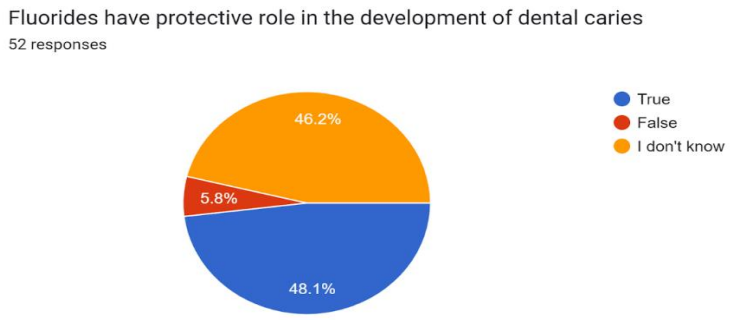

Figure 6. Response to Questionnair-6

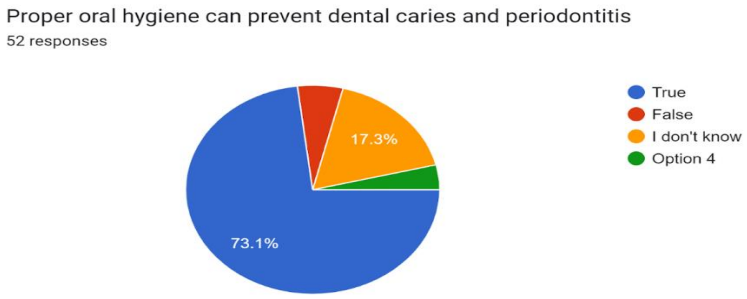

Figure 7. Response to Questionnair-7

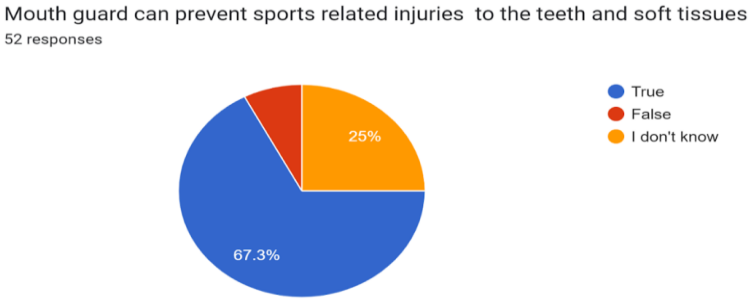

Figure 8. Response to Questionnair-8

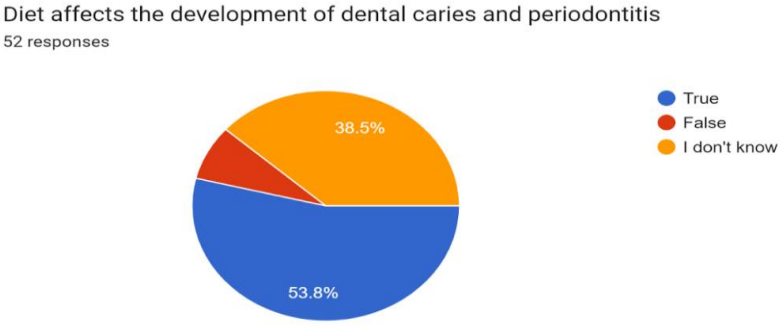

Figure 9. Response to Questionnair-9

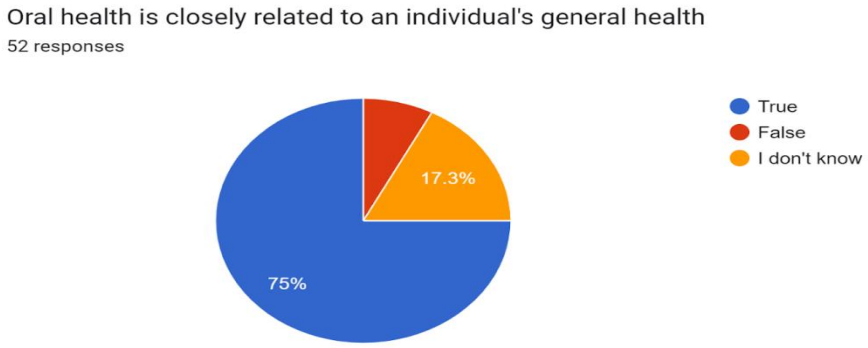

Figure 10. Response to Questionnair-10

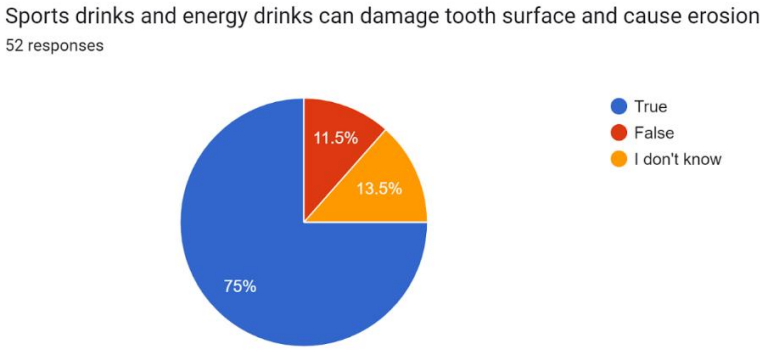

Figure 11. Response to Questionnair-11

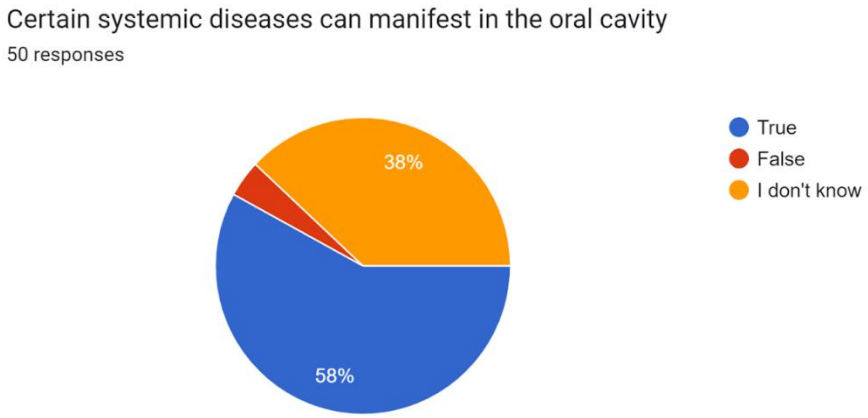

Figure 12. Response to Questionnair-12

V. Discussion

The study revealed that only 38% of participants recognized the importance of good oral health. This finding is of significant concern as it indicates a pervasive lack of awareness regarding the integral role oral health plays in overall well-being. Efforts to elevate public consciousness about the importance of maintaining optimal oral

health are imperative. Public health campaigns, community workshops, and school-based educational programs could serve as effective avenues to disseminate information and instill a proactive approach toward oral health.

Belief in Exclusive Medicinal Solutions:

A notable proportion (40.2%) of participants believed that dental problems could be solely cured by medicines. This misconception underscores the urgent need for targeted education on the multifaceted nature of oral health care. Dental problems often require a combination of preventive measures, lifestyle changes, and professional interventions. Addressing these misconceptions is critical to encourage individuals to seek timely dental care and adopt comprehensive oral hygiene practices.

Associations with Education and Occupation:

The study identified significant associations between knowledge scores and education as well as occupation. Participants with higher education levels and specific occupations demonstrated better oral health knowledge. This emphasizes the role of education in shaping health-related knowledge and underscores the need for tailored interventions for those with lower educational backgrounds. Occupational-specific programs may also prove effective in reaching diverse segments of the population.

Implications for Intervention:

The findings of this study provide a roadmap for targeted interventions aimed at improving oral health knowledge and awareness in rural areas. Community-based educational programs, incorporating culturally sensitive and language-appropriate materials, can bridge the existing gaps. Collaboration with local healthcare providers, schools, and community leaders is essential for the success of such initiatives.

Study Limitations:

While the study contributes valuable insights, certain limitations should be acknowledged. The findings may not be generalizable to other regions, and the cross-sectional design limits causal inferences. Additionally, self-reported data may be subject to recall bias.

VI. Conclusion

In conclusion, this study sheds light on the concerning gaps in oral health knowledge and awareness among adults in rural areas of Western Maharashtra, India. The findings underscore a critical need for targeted interventions to address misconceptions and enhance overall oral health literacy in the community. The data reveals a disconcerting lack of recognition regarding the importance of good oral health, with a substantial proportion of participants believing in the exclusive efficacy of medicines for treating dental problems. The identified low knowledge scores, particularly among certain demographic groups, emphasize the urgency of tailored educational programs. Associations between knowledge levels and education, as well as occupation, highlight the need for nuanced approaches in designing interventions. Educational initiatives must be crafted to suit the diverse backgrounds and literacy levels of the population. Community outreach programs could play a pivotal role in dispelling prevalent myths, encouraging preventive practices, and fostering a proactive approach to oral health. The study underscores the pivotal role of oral health in the overall well-being of the rural population, especially in a developing country like India, where access to dental care is unevenly distributed. Immediate and sustained efforts are required to bridge the identified knowledge gaps and promote a culture of preventive oral healthcare. In essence, this research serves as a clarion call for policymakers, healthcare professionals, and community leaders to collaborate in implementing targeted oral health awareness and education programs. By addressing the specific needs of the rural population in Maharashtra, these initiatives can contribute significantly to improving oral health outcomes and, consequently, the overall quality of life for the community.

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