

Cultural Influences on Oral Health: Insight from Tribes in Jawadhu Hills of Tamil Nadu

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Abstract Background: Even though oral health is highly valued in Tamil Nadu, tribal nomads have a difficult time getting access to quality dental treatment. Disparities in access to oral health care are made worse by a lack of adequate healthcare infrastructure, which includes a dearth of dental offices and qualified personnel in remote and nomadic locations. Despite their rich cultural heritage, nomadic communities often face marginalization and socioeconomic challenges, which can impact their access to healthcare services, including oral healthcare. Understanding the oral health beliefs, traditional practices and overall oral health status of these nomadic groups is therefore crucial for designing effective healthcare interventions tailored to their specific needs. Therefore the aim of the current study was to understand their cultural practices and their association with oral health status. **Aim:** To evaluate and oral health status and their knowledge, perceptions and practice of oral health among tribal gypsies in Jawadhu Hills of Tamilnadu. **Methods:** A cross-sectional study was conducted among nomadic populations residing in Tamil Nadu. Data collection employed a prevalidated questionnaire covering socio-demographic details and 10 questions on oral health perceptions, attitudes, beliefs and practices. Oral health status data were gathered using the WHO proforma 2013 and oral examinations (ADA Type III) were conducted by a single trained examiner with good intra-examiner reproducibility (kappa value of 0.8) after training and calibration. Version 26 of IBM SPSS (software statistical package for social sciences) was used to conduct the statistical analysis. There was use of descriptive statistics, such as frequencies and percentages. In order to identify significant differences at $p < 0.05$, the Chi-Square test was used. **Result:** The consolidated data from the study reflects that the most commonly observed dental condition was dental erosion (19.41%), followed by dental trauma (7.89%). A highly significant association was found between enduring pain as a perceived weakness and avoiding dentists due to dignity, with a p -value < 0.001 . 82.38% of participants self-treated themselves, with 59.04% believing home remedies were better than treatments offered by dentists; the association between these two was highly significant ($p < 0.01$). The oral health practices of the Indian tribal population are diverse and often influenced by traditional methods and beliefs. The tribes have poor periodontal health status due to their isolation, awareness and less accessibility to dental resources. There is a need to improve the level of education and knowledge related to oral health among the tribal population for overall improvement of oral health-related quality of life.

Key Words Oral health, health education, tribal oral health awareness, oral hygiene measures, cultural belief

INTRODUCTION

Background

The tribal gypsies, or nomadic communities, of Tamil Nadu are endowed with a diverse range of cultural customs and beliefs about oral health that have been handed down through the ages. [1] Their ancient way of life is intricately entwined with these beliefs and traditions, which are influenced by their close-knit social structures and nomadic existence. To

effectively address the oral health needs of Tamil Nadu's nomadic communities, it is imperative to comprehend these cultural facets.[2]

The tribal gypsies of Tamil Nadu place a great deal of cultural significance on oral health, with ideas derived from both traditional medicine and social mores [3]. Many people in these areas see dental problems as markers of more serious health problems and feel that oral health and general health

are strongly related [4]. As a result, keeping one's oral health is frequently seen as crucial to retaining one's health and vitality [5,6].

Tamil Nadu's tribal gypsies base their oral health regimens mostly on cultural customs. In some tribes, mouth rinses made of herbal concoctions or the chewing of neem sticks are common examples of traditional oral hygiene practices [7]. Elders frequently transmit these customs verbally to younger generations, preserving cultural continuity and group identification [8,9].

Additionally, the dental health of Tamil Nadu's tribal gypsies is influenced by their dietary choices and way of life. If oral hygiene habits are not up to par, traditional meals, which may contain significant amounts of carbs and sugars, might exacerbate dental decay. Furthermore, in some nomadic environments, there may be restricted availability to clean water for dental hygiene needs, which could further affect oral health outcomes [10].

Rationale and Knowledge Gap

Research on oral health among tribal populations in the Jawadhu Hills of Tamil Nadu is essential due to significant health inequalities and access challenges faced by this community. Untreated oral diseases, including dental caries, periodontal disease and oral cancers, are common in isolated tribal areas. These conditions often go undiagnosed due to inadequate access to dental care, negatively impacting their overall health, nutrition and quality of life. Understanding these unique issues could guide customized interventions to improve health outcomes [11].

Limited healthcare access is another major issue. Physical barriers like rugged terrain, lack of transportation and socioeconomic constraints hinder routine dental care access for these communities. Even though oral health is highly valued in Tamil Nadu, tribal nomads have a difficult time getting access to quality dental treatment. Disparities in access to oral health care are made worse by a lack of adequate healthcare infrastructure, which includes a dearth of dental offices and qualified personnel in remote and nomadic locations [12]. Furthermore, these populations may not have easy access to preventive and curative dental treatments due to socioeconomic reasons including discrimination and poverty [13].

The way traditional rituals, cultural beliefs and economical realities interact is reflected in the oral health status of Tamil Nadu's tribal gypsies. Studies have demonstrated that as compared to the general population, nomadic tribes had higher rates of dental caries, periodontal diseases and other oral health problems [14]. These variations demonstrate the urgent need for specially designed therapies that address the particular oral health needs of Tamil Nadu's tribal gypsies.

The tribal gypsies of Tamil Nadu require community-driven and culturally relevant oral health care initiatives. Promoting oral health awareness and easing access to dental care services require cooperative strategies that include local

healthcare providers, traditional healers and community leaders. Initiatives centered on infrastructure development, education and preventive care can also aid in addressing structural obstacles to oral health equity in nomadic groups [15].

Despite their rich cultural heritage, nomadic communities often face marginalization and socioeconomic challenges, which can impact their access to healthcare services, including oral healthcare [16]. Understanding the oral health beliefs, traditional practices and overall oral health status of these nomadic groups is therefore crucial for designing effective healthcare interventions tailored to their specific needs [17].

Aim and Objectives

Therefore the aim of the current study was to evaluate and oral health status and their knowledge, perceptions and practice of oral health among tribal gypsies in Jawadhu Hills of Tamil Nadu. The null hypothesis of the study was that there is no difference in the oral health status, beliefs and practices of oral health among tribals of Jawadhu Hills. The alternative hypothesis is that there is a significant difference in the oral health status, beliefs and practices of oral health among tribals of Jawadhu Hills.

METHODS

A cross-sectional study was conducted among nomadic populations residing in Tamil Nadu from June to July 2022, with a sample size of 210 individuals determined at a 95% confidence level with reference to a study conducted by [4] by G Power software.

The inclusion criteria included anyone from the age of 15 from both genders who were systemically healthy, were willing to participate and those who were not a part of any study previously. Those who declined participation, bed ridden and systemically ill population were excluded. Snowball sampling was employed to reach the sample size.

Data collection employed a prevalidated questionnaire covering socio-demographic details and 10 questions on oral health perceptions, attitudes, beliefs and practices [18]. Questions 1-7 focused on perception, attitude and treatment-seeking behaviors, while question eight comprised seven queries on common oral health beliefs. Questions nine and ten addressed oral health practices, including tooth cleaning materials and perceived effectiveness. Another data which was collected was through WHO Oral health proforma 2013 which collected data of dental caries experience, periodontal experience, dental trauma, fluorosis, lesions, prosthesis and urgency of dental intervention. Due to participants' illiteracy, data collection occurred via face-to-face interviews in the local language of Tamil. Oral health status data were gathered using the WHO proforma 2013 and oral examinations (ADA Type III) were conducted by a set of trained examiners who were trained by a Public Health Dentist with good intra-examiner reproducibility (kappa value of 0.8) after training and calibration.

Version 26 of IBM SPSS (software statistical package for social sciences) was used to conduct the statistical analysis. There was use of descriptive statistics, such as frequencies and percentages. In order to identify significant differences at $p < 0.05$, the Chi-Square test was used.

RESULTS

The study involved 210 participants aged between 15 and 74 years, with the majority falling within the 15-24 age group as shown in Figure 1. Among the participants, a greater proportion were male (56.42%) compared to female (43.58%) as depicted in Figure 2. The prevalence rates of decayed, missing and filled teeth among the participants were 78.57%, 24.76% and 10% respectively. A significant percentage of subjects exhibited gingival bleeding (71.9%), while probing pocket depth was observed in 11.89% of participants (Table 1). The most commonly identified dental condition was dental erosion (19.41%), followed by dental trauma (7.89%). Enamel fluorosis was present in 5.65% of subjects and 2.8% wore dentures as shown in Figure 3. Over 30% of subjects had at least one associated oral mucosal lesion; among them, 5.98% had abscesses, 16.85% had pouch keratosis and 7.52% had aphthous ulcers as shown in Figure 4.

Significant associations were found between enduring pain as a perceived weakness and avoiding dentists due to dignity, with a p -value < 0.001 . Approximately 74.8% expressed fear of being diagnosed with life-threatening conditions and seeking treatment after diagnosis was significantly associated with this fear ($p < 0.05$). However, a high proportion of participants (82.38%) reported self-treating themselves, with 59.04% believing home remedies were superior to treatments offered by dentists; the association between these factors was highly significant ($p < 0.01$). The most commonly used materials for tooth brushing were toothbrushes (70%), fingers with toothpaste/brick powder (21.9%) and twigs (8.09%) (Table 2). Significant associations were observed between the materials used for tooth brushing and the perceived effectiveness of fingers/twigs ($p < 0.01$). A notable percentage of participants (66.19%) believed that

dental cleaning by a dentist causes tooth loosening, while 62.85% believed that tooth extraction from the upper jaw leads to loss of vision. Regarding dental decay, 45.71% reported that placing cloves in a decayed tooth always relieves pain, and 6.66% believed that chewing pan is beneficial for oral health (Table 3).

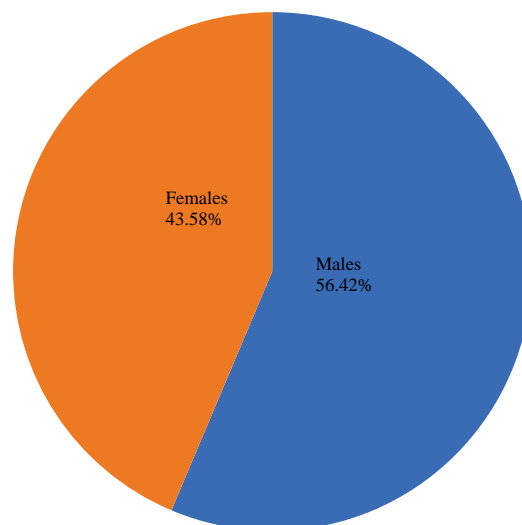


Figure 1: Distribution of study participants according to age

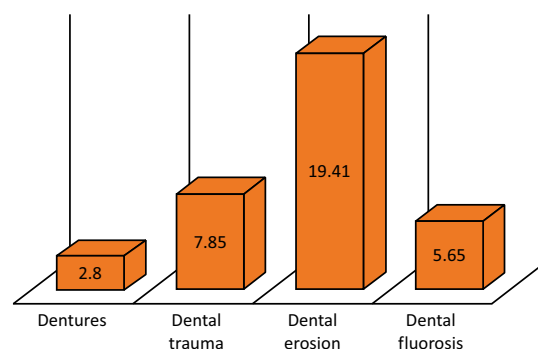


Figure 2: Distribution of study participants according to gender

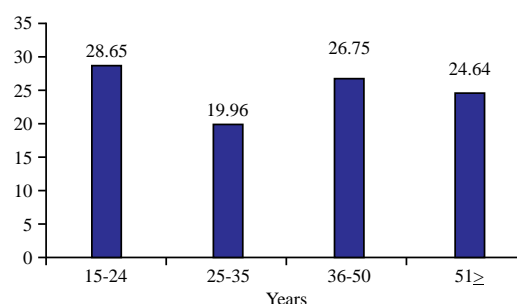


Figure 3: Distribution of the study participants with respect to oral diseases

Table 1: Distribution of the study participants according to oral health conditions

Variables	N	Percentage
DMFT		
DT	165	78.57
MT	52	24.76
FT	21	10
Gingival bleeding		
Present	151	71.9
Absent	59	28.09
Probing pocket depth		
Absence of condition	185	88.09
Pocket 4-5 mm	17	8.09
Pocket 6 mm or more	8	3.8

Table 2: Responses of participants and its associations

Parameters	N (%) (Yes)	Chi square value	p-value
Accept suffering because it is a sign of weakness?	10 (4.76)	51.896	0.001*
Does going to the dentist impact one's dignity?	8 (3.80)	57.568	0.000*
Are you afraid about receiving a life-threatening diagnosis?	189 (90)	23.52	0.042*
After receiving a critical health diagnosis, would you prefer to receive treatment?	18 (8.57)	28.47	0.031*
Would you ever treat yourself?	173 (82.38)	24.56	0.002*
Do you think home remedies help you better than prescribed medicines by a dentist?	124 (59.04)	29.561	0.045*
What do you brush your teeth with? Toothbrush	147 (70)	29.63	0.042*
What do you brush your teeth with? -Fingers with Toothpaste/Brick powder	46 (21.9)		
What do you brush your teeth with? -Twigs	17 (8.09)		
Will using your fingers or twigs in place of a toothbrush help you maintain proper dental hygiene?	24 (11.42)	38.521	0.001*

Table 3: Attitude of the participants regarding Oral health related quality of life

Questions	N (%)		
	Yes	No	Don't know
Chewing gum is beneficial to dental health	14 (6.6%)	157 (74.7)	39 (18.5)
Putting cloves in a tooth that has decay always eases discomfort	96 (45.7)	63 (30)	51 (24.2)
Only aged people are prone to oral cancer	25 (11.9)	141 (67.14)	44 (20.9)
Hot water should be utilized to stimulate swelling brought on by dental discomfort	35 (16.66)	142 (67.6)	33 (15.7)
Loss of vision results from upper jaw tooth extraction	132 (62.8)	30 (14.2)	48 (22.85)
Alcohol use will lessen dental pain	74 (35.23)	102 (48.5)	34 (16.19)
Teeth cleaned by dentist might become loose	139 (66.19)	23 (10.9)	48 (22.85)

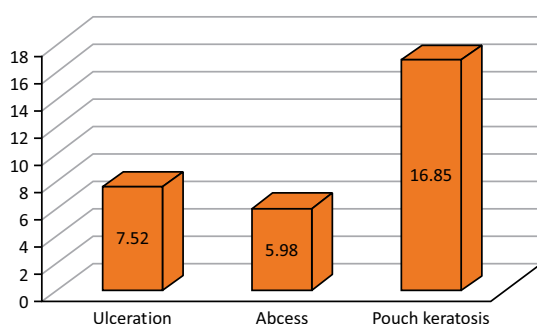


Figure 4: Distribution of the study participants with respect to oral mucosal lesions

DISCUSSION

Key Findings

Key findings include more than half of participants having caries experience, more than half had gingival experience. Common dental conditions included dental erosion and enamel fluorosis and some had oral mucosal lesions. The study highlighted several behavioral and cultural factors, such as a significant association between pain, perceived weakness and avoidance of dental care due to dignity. Common tooth brushing materials included toothbrushes and twigs.

Strengths and Limitations

The strength of the study include this study provided a platform for tribals who were mostly inaccessible to the study. There were few limitations in the study. Firstly there is only one tribal group that was assessed in the study. The sample size of the study was low to generalise the results with every tribe.

Comparison with Other Studies

There are many different ethnic minority and cultural groups in the world; some are native to the same nation, while others are immigrant communities. India is a pluralistic society with a very diverse population made up of many different ethnic groups. The ethnic group that was specifically chosen for this study was chosen because of the documented impact of cultural beliefs on their views on oral health [19-21].

The oral health practices of the Indian tribal population are diverse and often influenced by traditional methods and beliefs. The traditional oral hygiene practices of both tribes in Telangana, India, were found to be insufficient to maintain good oral health, according to a study on their periodontal health and oral hygiene habits. The study also discovered that the tribes' lack of awareness, accessibility to dental resources and isolation contributed to their poor periodontal health status [10].

The total decayed missing filled teeth (DMFT) among the subjects in another study on the oral health condition of the tribal community in Chamarajanagar district, Karnataka, was found to be 5.5 ± 4.14 , indicating a high prevalence of dental caries. Furthermore, a high incidence of periodontal disease was indicated by the fact that 44.5% of the participants had gingival bleeding, 29.7% had pockets that were 4-5 mm deep and 5.5% had pockets that were >6 mm deep [9].

The majority of the false beliefs were observed in illiterate and rural populations, according to a study on oral health-related taboos and oral health status among a South Indian tribal population. The study found that in order to improve these groups' overall health-related quality of life, there is a need to raise their educational attainment and health-related knowledge levels [22].

Explanation of Findings

From conception to death, culture establishes society norms that influence how people see sickness and how they seek medical attention. These false beliefs may help or impede people's ability to obtain healthcare treatments. Several studies imply a relationship between oral health status and ethnicity and oral health habits are influenced by cultural beliefs [23]. Epidemiological evidence highlights the interconnectedness between ethnic minorities and oral health outcomes. Rotter's 1954 Health Locus of Control (HLOC) model is used to evaluate an individual's personal beliefs and values that have been shaped by prior health experiences. This concept plays a critical mediating role between an individual's health beliefs and actions and their social standing. The World Health Organization has identified health promotion and healthy lifestyle initiatives as one of its main goals [24].

Regarding oral health education, all of the participants in a study on addressing the inequities in oral health in a tribal population learned their dental hygiene habits from family members [25,26]. Oral health education for tribal groups is crucial in addressing the significant disparities they face in dental health. Tribal populations often reside in remote, underserved areas where access to dental care is limited and preventive education is scarce. This lack of information about oral hygiene practices, coupled with limited healthcare access, often results in a higher prevalence of dental issues like tooth decay, gum disease and oral cancers [27]. By implementing targeted oral health education programs, communities can be equipped with the knowledge and skills to maintain better oral hygiene, thereby preventing many of these common but avoidable conditions [28].

Implications and Actions Needed

The survey also discovered that the two main barriers to receiving dental care were expense and distance, with no access to dental care available in their environments [29,30]. The study suggested strengthening ties between academic institutions, public health groups and tribal governments in order to augment the resources available for oral health care and education [19]. Studies examining more diverse tribal group should be done with health interventions to benefit the community.

CONCLUSION

The results indicate the enduring presence of "Stoicism," fatalism and self-reliance within this community, which significantly influence their approach to oral healthcare. Despite experiencing dental discomfort, a significant portion of participants demonstrated hesitance towards seeking professional dental assistance, opting instead for traditional remedies. This reliance on customary treatments reflects deeply ingrained cultural beliefs and practices, serving as significant barriers to accessing vital healthcare services.

This study highlights a significant burden of oral health issues among the tribal population surveyed, with high prevalence rates of dental caries, gingival bleeding and dental erosion. Despite these concerns, traditional beliefs and self-treatment practices were prevalent, with a majority of participants favoring home remedies and natural materials over professional dental care. A notable proportion of participants held misconceptions about dental treatment, such as fears of tooth loosening and vision loss related to dental procedures, which were associated with avoiding professional care. The common use of toothbrushes was observed, yet traditional materials like fingers, brick powder and twigs were also frequently used, often based on perceptions of their effectiveness.

The study underscores the need for targeted oral health education to address both the prevalence of dental diseases and the deep-seated beliefs that may deter individuals from seeking professional care. Educational interventions should aim to debunk myths around dental treatments, encourage preventive care and promote the benefits of professional dental services. By addressing these cultural and knowledge-based barriers, future programs can foster greater acceptance of dental care and ultimately improve oral health outcomes within this community.

In conclusion the oral health practices observed among the Indian tribal population are varied and frequently shaped by traditional customs and beliefs. These tribes tend to exhibit inadequate periodontal health status, which can be attributed to factors such as their geographical isolation, limited awareness and insufficient access to dental services. Enhancing education and awareness regarding oral health within the tribal communities is imperative to elevate their overall quality of life in terms of oral health.

Ethical Statement

The ethical approval was obtained from the Institutional Ethical Committee with the number of SRB/SDC/UG-1825/23/PHD/212.

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