Assessment of Knowledge, Awareness and Attitude towards Oral Precancer and Cancer among Narikuravar Population in Pondicherry State

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Abstract

Objective  Literature revealed that oral health status and awareness about oral hygiene measures of Narikuravar tribes were very poor. There was also an increased prevalence of tobacco usage among this population. Considering this, incidence and prevalence of oral precancerous and cancerous lesions are expected to be high in this population. Surprisingly, the literature search revealed a lack of data on the awareness, knowledge, and prevalence of oral cancer and precancer in this group. The primary objective of this survey is to assess knowledge, awareness and attitude toward oral precancer and cancer among the Narikuravar tribal population in Pondicherry state.

Materials and Methods  This questionnaire survey is a part of the Model for Oral Cancer Eradication project conducted among the Narikuravar population in Pondicherry, which is funded by Indian Council of Medical Research (ICMR). A total of 153 participants were recruited for the survey. A prevalidated questionnaire was used for the survey.

Results  The results indicated that 47% of the participants were aware of what is oral precancer and cancer. As much as 62% knew that chewing tobacco causes oral cancer and 44% thought that the growth of tissue in the mouth could be a sign of oral cancer. Almost 100% did not think that the presence of a red lesion, white lesion, or limitation of mouth opening could be signs of cancer or precancer. Only 16% thought that oral cancer is preventable.

Conclusion  Awareness about oral cancer and precancer is inadequate among the Narikuravar population of Pondicherry. Majority of the population is not aware of the risks, signs, or treatment options of oral precancer and cancer. The National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) identified the people’s knowledge gaps, and improving awareness is one of the strategies of the program.

Keywords

► Oral cancer
► awareness
► knowledge
► tribal population
► Narikuravar tribe

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Introduction

Oral cancer indices and mortality show major differences worldwide, but the highest rates of incidence and prevalence are noted in India and neighboring countries, where it ranks among the top three types of cancer. The real challenge in the control of oral cancer lies in early diagnosis and prevention. Widening inequities in oral health status and treatment needs exist among different social groupings. Some ethnic groups live in isolation, even today, either geographically or socially with their traditional values and beliefs. They are commonly referred to as tribal population and considered to be the autochthonous people of the land. The Narikuravar tribal community is indigenous to Tamil Nadu state. They face common but consequential issues like poverty, illiteracy, communication problems, poor health care, and social discrimination.

An earlier study on oral health status and awareness about the oral hygiene measures of Narikuravar tribal population found that their oral health knowledge and status was very poor and needed greater attention of the dentists. This population also does not avail of oral health services as needed and tend to follow the traditional indigenous way of cure. One study reported that Narikuravar women had low rates of allopathic health care utilization, as they face stigma and discrimination while accessing health care.

There was also wide long-term use of smokeless tobacco among both the genders. Considering this, the prevalence of cancerous or, at least, precancerous lesions are expected to be high is this group. To our knowledge, only a few studies have assessed the oral health status of Narikuravar population in Tamil Nadu. In addition, there was poor knowledge and lack of awareness about oral health among the Narikuravar population in Tamil Nadu. However, these studies focused on oral hygiene and periodontal status and not the prevalence of oral cancer or knowledge of it. Thus, no studies are available on the prevalence of cancerous and precancerous lesions in the Narikuravar population. In lieu of the above, we proposed a study to explore a model for oral cancer screening and prevention among Narikuravar population in Pondicherry, and this research was conducted by two trained dental specialists and a research assistant trained for the aforementioned project.

Materials and Methods

This questionnaire survey is a part of a larger research project, Model for Oral Cancer Eradication, conducted among the Narikuravar population in Pondicherry. Prior permission from the local governing authority was also obtained for implementation of the research project. This research was approved by the institutional ethical committee. The Narikuravar population residing in the Narikuravar colony at Lawspet, Pondicherry, was considered for this study. This is the largest Narikuravar settlement in Pondicherry state.

A total of 153 participants in the settlement were recruited for the survey. Both male and female participants of age ranging between 15 to 70 years were selected randomly. Demographic details of the population is described in Table 1. A prevalidated questionnaire was used for the survey. The questionnaire comprised items with a dichotomous response. The first question was: Do you know about oral cancer? Those who answered yes were taken through the rest of the survey. After completion of this survey in the initial phase, an awareness program regarding oral precancer and cancer was conducted for the population at their settlement. Informed consent was obtained from the participants of the study subjects after explaining to them about the aim of the study and methods employed. The entire survey was conducted by two trained dental specialists and a research assistant trained for the aforementioned project.

The willingness to participate was very less, and they had to be explained in detail about the importance and usefulness of the project. It took a lot of time to convince the people. In the initial phase, inauguration of the project was conducted and information regarding the project was provided; also doubts of the people were cleared by the principal investigator (S.M.).

Although their native language is Vargiboli, as they have long settled in Tamil Nadu, most of them are well versed in Tamil (the language of Tamil Nadu and Pondicherry). Hence, the survey was conducted in Tamil and their response was marked by the investigators. Only a few old people had difficulty in understanding the language, and we had a translator to facilitate the survey.

Results

Out of the 153 people included in the survey, 84 were men and 69 were women. Out of this, only 72 (47%) answered positively for the first question. It indicated that only 47% of participants are aware of oral cancer. These participants were taken through the rest of the survey. With regard to
the question on cause oral cancer or precancer, 49 (32%) participants answered that smoking causes cancer; 45 (29.4%) participants attributed it to chewing tobacco, and only 21 (13.7%) participants reported that consumption of alcohol causes oral cancer. For the question what they thought might be oral cancer, 32 (20.9%) participants answered that it is the growth of tissue, 23 (15%) participants thought that ulcer might be cancer, and only one participant opined that red color change in the mouth is oral cancer. No one reported that white color change, or reduced mouth opening could be a sign of oral cancer or precancer. Further probing was carried out to determine whether they knew oral cancer treatment is possible if detected early. Only 22 (14.4%) answered positively with regard to treatment, and the remaining participants did not even know that oral cancer is treatable. Of the total participants, 27 (17.6%) participants thought medicines would cure oral cancer, 12 (7.8%) participants thought surgery is needed, and 4 (2.6%) participants thought both are necessary as a treatment modality for oral cancer. Further, the participants were asked whether they liked to know more about oral cancer, and all participants expressed that they are willing (Table 2).

**Table 2** Frequency distribution of the responses for the items in the questionnaire

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you know about oral cancer/precancer?</td>
<td>72 (47.05 %)</td>
<td>81 (52.9 %)</td>
<td></td>
</tr>
<tr>
<td>Which of the following do you think causes oral cancer/precancer?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking</td>
<td>49 (68.05%)</td>
<td>23 (31.9%)</td>
<td></td>
</tr>
<tr>
<td>Chewing tobacco</td>
<td>45 (62.5 %)</td>
<td>27 (37.5%)</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>21 (29.15%)</td>
<td>51 (70.83%)</td>
<td></td>
</tr>
<tr>
<td>Which of the following do you think is oral cancer/precancer?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth of tissue</td>
<td>32 (44.44%)</td>
<td>34 (47.22%)</td>
<td>12 (16.67 %)</td>
</tr>
<tr>
<td>Ulcer</td>
<td>23 (31.94 %)</td>
<td>7 (9.72 %)</td>
<td>42 (58.33 %)</td>
</tr>
<tr>
<td>Red color change</td>
<td>1 (1.39 %)</td>
<td>71 (98.61 %)</td>
<td>0 (0 %)</td>
</tr>
<tr>
<td>White color change</td>
<td>0 (0 %)</td>
<td>72 (100 %)</td>
<td>0 (0 %)</td>
</tr>
<tr>
<td>Reduced mouth opening</td>
<td>0 (0 %)</td>
<td>72 (100 %)</td>
<td>0 (0 %)</td>
</tr>
<tr>
<td>What do you think about the following statements?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral cancer can kill</td>
<td>15 (20.84 %)</td>
<td>19 (26.39 %)</td>
<td>38 (52.78 %)</td>
</tr>
<tr>
<td>Oral cancer prevention is possible</td>
<td>12 (16.67 %)</td>
<td>45 (62.5 %)</td>
<td>15 (20.84 %)</td>
</tr>
<tr>
<td>Oral cancer treatment is possible if detected early</td>
<td>22 (30.56 %)</td>
<td>12 (16.67 %)</td>
<td>38 (52.78 %)</td>
</tr>
<tr>
<td>Which of the following do you think are the treatment for oral cancer?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicines</td>
<td>27 (37.5 %)</td>
<td>4 (5.56 %)</td>
<td>41 (56.94 %)</td>
</tr>
<tr>
<td>Surgery</td>
<td>12 (16.67 %)</td>
<td>14 (19.45%)</td>
<td>46 (63.89 %)</td>
</tr>
<tr>
<td>Both</td>
<td>4 (5.56 %)</td>
<td>5 (6.94 %)</td>
<td>63 (87.5 %)</td>
</tr>
<tr>
<td>Do you like to know more about oral cancer?</td>
<td>153 (100 %)</td>
<td>0 (0 %)</td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

In India, 104 million tribal people reside, constituting 8.6% of the total Indian population. It is estimated that about 30,000 Narikuravars live in Tamil Nadu, and some live in the neighboring Pondicherry state. The main occupation of the tribe involves hunting small animals for living. However, a ban is imposed on the same by the government. Hence, they have taken to other occupations such as selling beads, toys, etc. in markets, bus stands, fairs, etc., and leading a nomadic lifestyle where their children never get the opportunity to be educated. The population selected for this study lives in a settlement allotted to them by the government of Pondicherry. Although they tend to stay away from home for few days by engaging themselves in selling things, they eventually come back to the settlement. The major issues pressing this society are illiteracy, poverty, and social discrimination. Most of them live in extreme exteriors of civilization and very difficult to locate. The population in our study also lives in a settlement that is located 15 kilometers outside the city limits. Poor socioeconomic status, geographical isolation, and their discernment prevent the people from availing health care services. This led them to depend on indigenous self-health care practices. Most of them do not avail allopathic services to address chronic or nonserious illnesses. It was also found that they lack...
identified the gaps in the knowledge of the people, and awareness generation and promotion of healthy lifestyle is one of the program's strategies.\textsuperscript{13} Awareness generation about warning signs of cancer is one of the health promotion activities of the NPCDCS. Studies of this kind are very useful in identifying high-risk populations who possess poor awareness of cancers.

**Conclusion**

From the findings of this study, it is clear that awareness about oral cancer and precancer is inadequate among the Narikuravar tribal population of Pondicherry. Majority of the participants are not aware of the risks, signs or treatment options of oral precancer and cancer. Given their habits and their poor knowledge about oral cancer and precancer, a targeted and community-based approach is very essential to change the knowledge, attitude, and behaviour of these people. The study has implications with reference to NPCDCS.

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**Conflict of Interest**
None declared.

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Indian Council of Medical Research (ICMR), Government of India.

**References**