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International Journal of Current Research
Vol. 9, Issue, 05, pp.50720-50723, May, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

TO ASSESS THE ORAL HEALTH STATUS AND AWARENESS ABOUT THE ORAL HYGIENE MEASURES OF THE JACKAL PEOPLE (NARIKURAVAR TRIBES)-A CROSS SECTIONAL STUDY

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ARTICLE INFO

Article History:
Received 25th February, 2017
Received in revised form
11th March, 2017
Accepted 17th April, 2017
Published online 23rd May, 2017

Key words:
Narikuravar, Tribal,
Oral Health,
Indigenious Population.

ABSTRACT

Introduction: The Narikuravar are an indigenous group of people, living in Tamil Nadu in South India. The study related to health of the Narikuravar was not obtained over the last hundred years. Hence the aim of this study is to assess the oral health status and awareness about the oral hygiene measures of the jackal people (Narikuravar tribes).

Methodology: This cross-sectional survey was conducted among Narikuravar colony, Valliyoor, Tirunelveli district in Tamil Nadu, India. The total population of the Narikuravar colony is 212 and a universal sampling selection has been done for the study. A close ended, structured questionnaire, WHOperforma 2013 were used for assessing their oral hygiene methods and status and their level of tobacco addiction. Positive mean scores of all the questions were calculated using student's t and One-way ANOVA test at p value < 0.05. Pearson's correlation coefficient was used to assess the relation of age group and dental visit.

Results: Total number of Narikuravar tribes examined were 109 in which males were about 54 and females were 55. About 5 person are affected with nine carious tooth and more than ten carious are affected in 4 males and 9 females. 31 males and 30 females have no missing teeth and 23 males and 25 females had minimum one missing tooth. It is found that 2males and 1female have periodontal pocket depth $\geq$12mm. Highest of $\geq$10 carious teeth are found in 11 brushing individuals and 2 individuals who never brush their teeth. Ash and Brick powder was used majorly for tooth cleaning.

Conclusion: The study reveals poor knowledge and lack of awareness about the oral health was seen among the Narikuravar tribes. In order to achieve the greatest effectiveness of dental health interventions, dental health educators must carefully choose the target populations with poor preventive dental behaviors.

Citation: Selva Kumar, 2017. "To assess the oral health status and awareness about the oral hygiene measures of the jackal people (Narikuravar tribes)-A cross sectional study", *International Journal of Current Research*, 9, (05), 50720-50723.

INTRODUCTION

Indian populationconsists of people from different cultural backgroundsand there is a very strong influence of the variousmyths on health seeking behavior in our population.Every society has its own beliefs and practices regarding health and disease. Sociocultural pattern of the community is one of the major factors towards the availability and use of different modes of treatment. Health and disease are related to sociological and cultural resources of a community in a specific environment. The Narikurava are an indigenous group of people, living in Tamil Nadu in South India. The name Narikurava is composed of the Tamil words "Nari" and "Kurava" - "Nari" means jackal and "Kurava" means people. So Narikurava means "Jackal-People". The name relates to the former livelihood of the Narikurava - the hunting of wild animals (http://www.nafra.org/nari-info-e.html).

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In order to catch a jackal, the man builds an enclosure made of net, sits inside and mimics the howl of a jackal. When the hapless animal approaches the net to investigate, he clubs it. To trap partridges, which are much sought after for the pot, the Narikoravas use domesticated birds, which act as decoys to catch the wild ones. This is the reason why they are also called Kuruvikaran, or the birdmen (http://www.cmi.ac.in/gift/narikorava.htm). In fact, supplying game birds to town dwellers has been one of their traditional occupations. The main occupation of the people of the indigenous tribes, is hunting. After the implementation of the Wild Life Protection Act, they were prohibited from entering into the forests to pursue their livelihood and so they were forced to take up other alternatives, hence they have consequently switched over to making beads and selling knick-knacks. Hence, they migrate from place to place to find a market for their beads. Children accompany the adults wherever they go, which means they never get to attend school (https://en.wikipedia.org/mwiki/Narikurava). After independence, they were given small

plots and houses in newly constructed settlements called colonies due to the revision of Indian settlement policies. Today, there are around 900 so called Narikuravar colonies in Tamil Nadu, ranging from 20 to 400 houses in number. A number of changes among the Narikuravar occurs through the Permanent settlement. First of all, their subsistence patterns have changed: hunting, once a principal means of living, can now only be carried out privately, due to the passing of environmental laws restricting the commercial hunting of most species. As an alternative, the catching of rats from rice fields has become an important source of income for local peasants[4].The study related to health of the Narikuravar was not obtained over the last hundred years. Hence the purpose of the present study is to know the oral health status and awareness has of the Narikuravar tribes.

MATERIAL AND METHODS

A cross-sectional survey done to assess the Oral Health status among Narikuravar (Gypsie) population in Valliyoor, Tirunelveli district in Tamil Nadu, India.This study was conducted during the month of June 2015.The nature and purpose of the study was explained to the Institutional Review Board of SRM Dental College Ramapuram and ethical clearance was obtained. Informed consent was obtained from the participant of the study subjects after explaining to them about the aim of the study and methods employed.

Field work for the study

The Narikuravar population consists of 212 people comprising of adults and children. Total number of household comprises of 1 houses that were provided in the recent times by the government. They are temporary establishment. Majority of population relies on beadjewellery making, honey sales, plastic combs, hunting, tattooing for their income has been collected. Figure 1 shows houses of narikuravar colony. A universal sampling selection has been done for the study. A total of 109 subjects were recorded remaining 35 subjects of 212 were excluded as they were children and due to the absence on the day of examination and not willing to participate in the study. This study was carried out during the month of June in the year 2015.

Inclusion and Exclusion Criteria

- Every individual participant at or above 15 years were included in the study.
- Those who are not willing to participate were excluded.
- Those who were absent on the day was excluded.

Method of collection

With help of NGO in the kallakadu have reached the valliyoor, where the residents of Narikuravar colony located in tirunelveli district. A WHO proforma 2013 for adult age group were recorded For 109 person who were present on the day of examination. The oral health examination were carried out at the narikuravar colony by a single trained examiner with the mouth mirror and explorer under artificial light. Type 3 examination has been conducted by a single trained examiner. No treatments were provided to the tribes. Training and calibration exercises were carried out in the Department of Public Health Dentistry, SRM Dental College Ramapuram on the out-patients, under expertise guidance to assess the consistency of intra-examiner reproducibility. The agreement for assessments was found to be 90%.

Statistical Analysis

Data analysis was done using SPSS version 15.0. Descriptive statistics were obtained and frequency distribution, means, standard deviation were calculated. Positive mean scores of all the questions were calculated using t-test and One-way ANOVA test at p value < 0.05. Pearson's correlation coefficient was used to assess the relation of age group and dental visit.

RESULTS

Total number of narikuravar tribes examined were 109 which includes both male and female. In which male is about 54 persons and female is 55 .Table 1 shows that no caries was noted in 1 male and 3 females. About 8 male and 3 female are affected with single tooth caries in the oral cavity. Two teeth caries is seen in 1 male and 6 female .where involving three carious tooth is seen in 4 males and 4 females. Caries involving at least four teeth is seen in 7 males and 4 females. Where 21 members are affected with 5 caries tooth in which 7 were male and 14 were females. At least 9 males and 4 females are affected with 6 caries tooth.11 people are affected with 7 caries tooth in which it involves 5 female and 6 males. Eight caries tooth are seen in 4 males and 1 female. About 5 person are affected with nine carious tooth in which 3 are male and 2 are female. Where ten and more than ten carious are affected in 4 males and 9 females. The chi-square value for this table is calculated to be 18.3 with a p value 0.19.

Table 1. Distribution of dental caries based on gender

Caries tooth	Male	Female
0	1	3
1	8	3
2	1	6
3	4	4
4	7	4
5	7	14
6	9	4
7	6	5
8	4	1
9	3	2
10 and above	4	9

Chi-square-18.3 p value-0.19

Table 2. Distribution of missing tooth based on gender

Missing	Male	Female
0	31	30
1	4	1
2	5	8
3	5	5
4	5	2
5	1	3
6	0	1
7	1	0
8	0	1
10 and above	2	4

Chi-square -13.7 p value-0.46

Table 2 shows that 31 males and 30 females have no missing teeth. About 4 males and 1 female have 1 missing teeth. 3 teeth are missing in 5 males and 5 females. It is found that 5 males and 2 females have 4 missing teeth, whereas 1 male and 3 females have 5 missing teeth. There are no patients with 6

teeth and 8 teeth missing except 1 female in each category, and no patients with 7 teeth missing except 1 male. There are 2 males and 4 females≥10 teeth missing. The chi-square value for this table is calculated as 13.7 with a p value of 0.46.

Table 3. Depth of periodontal pocket measured based on gender

Pocket	Male	female
0-3mm	29	29
4-5mm	13	12
6-8mm	7	7
9-12mm	3	6
12 mm and more	2	1

Chi-square -4.0 p value-0.5

Table 3 shows the number of patients with periodontal pocket. There are 29males and 29females with periodontal pocket depth of 0-3mm. Periodontal pocket depth of 4-5mm is seen in 13males and 12females. About 7 of the each males and females have periodontal pocket depth of 6-8mm and 9-12mm pocket is noticed in 3males and 6females. It is found that 2males and 1female have periodontal pocket depth of ≥12mm. The calculated chi-square value for this table is 4.0 with a p value (0.5).

Table 4. Distribution of caries tooth based on brushing habits

Caries	Number of patients brushing	Number of patients without brushing
0	4	0
1	9	2
2	6	1
3	8	0
4	9	2
5	19	2
6	13	0
7	10	1
8	3	2
9	4	1
10 and above	11	2

Chisquare-15.2 p value-0.3

Table 4 shows the proportion of individuals with dental caries in relation to tooth brushing. There are no caries-free individuals who do not brush their teeth, whereas there are 4 individuals who brush their teeth and are caries-free. There are 9 individuals who brush their teeth and 2 individuals who do not brush their teeth where both categories have 1 carious tooth. 2carious teeth are noticed in 6 individuals who brush and 1 individual who do not brush. Dental caries in 3 teeth are noticed only in 8 brushing individuals.

Table 5. Bleeding on probing measured on brushing habits

Bleeding	No. of patients brushing	No. of patients without brushing
No bleeding	2	0
Presence of bleeding	94	13

Chi-square-0.27 p value-0.5

There found to be 9 individuals who brush their teeth regularly 2 individuals who never brush and have 4 carious teeth. Higher number i.e., 19 brushing individuals account for 5 carious teeth and only 2 non-brushing individuals with the same caries amount. It is found that almost 13 individuals that brush their teeth and there are no individuals in this category have 6 carious teeth. 10 individuals who brush their teeth and 1 individual who do not brush accounts for 7 carious teeth. 8 teeth are affected with dental caries in 3 individuals brushing regularly and 2 individuals never brushing. 4 individuals who brush their teeth and only 1 individual without brushing have 9 teeth with caries. Highest of ≥10 carious teeth are found in 11 brushing individuals and 2 individuals who never brush their teeth. The chi-square value is15.2 and the p value is 0.3. Table 5 shows the amount of patients developed bleeding in relation with brushing their teeth. No bleeding is observed in 2 patients who brushes their teeth. Highest of 94 patients who brushes showed presence of bleeding and lowest of 13 patients who never brushes showed presence of bleeding. The chi-square value is found to be 0.27 with a p value (0.5).

Table 6. Types of oral hygiene aids used

Materials used	Number of patients
tooth paste	4
Charcoal	19
ash	26
brick powder	24
Salt	7
neem stick	10
tooth powder	7
Not used	12

Chi-square-98.3 p value-0.4

Table 6 shows the number of patients using various types of materials used for cleaning their teeth. Toothpaste has been used by 4 patients. 19 individuals are using charcoal for cleaning. Highest number of 26 individuals are using ash and 24 using brick powder for cleaning. Salt is used for cleaning by 7 persons. 10 individuals found to be using neemstick. Toothpowder is used as a material for cleaning their teeth by 7 individuals and there are 12 individuals who do not use any material for cleaning their teeth. The calculated chi-square value is 98.3 with a p value 0.4.

DISCUSSION

Tribal studies have been traditionally pioneered by anthropologists over the last hundred years. However, the purpose of the studies were different in those times than what they are conceived now. European Scholars studied the tribes for understanding the evolution of human institutions which were imagined to have originated in the primitive cultures of the tribes. Some of the Westerners were interested in spreading the gospel of their religion. From the methodological point of view, it has been easier to study simpler tribal cultures as compared to the urban complex cultures. In the present study the prevalence of caries among tribes was found to be 96%(n=105). There was no significant difference in caries prevalence between males and females. The prevalence of missing teeth among tribes was found to be 42%(n=46). There was no significant difference in missing teeth prevalence between males and females. The prevalence of periodontal pockets among tribes was found to be 45%(n=48). There was no significant difference in periodontal pockets prevalence between males and females. The prevalence of dental caries among people who brush their teeth was found to be 85%(n=93).The prevalence of dental caries among people who never brush their teeth was found to be 11%(n=12). The prevalence of bleeding among people who brush their teeth was found to be 86%(n=94). The prevalence of bleeding among people who never brush their teeth was found to be 11%(n=13). The prevalence of dental caries was found to be high among people who use charcoal, ash and brick powder which was 63%(n=69). In a study conducted by T Santhosh

Kumar *et al*. (2009) among Bhil adult tribes of southern Rajasthan, India, the prevalence of periodontal disease among Bhil tribes was found to be 61% whereas in the present study; it is 45%. The lower prevalence in the present study could be due to relatively small sample size and lack of stratification into particular age groups. In a study done by P Krishnam Raju (2015) Children of Tribal Population of Eastern Ghats[6], 49% of the children showed poor oral hygiene with the use of oral hygiene aids like charcoal, ash and brick powder, whereas in the present study it is 63%. This may be due to the accumulated effects of using indigenous oral hygiene aids over a prolonged period that manifests as poor oral hygiene in adulthood. Dental caries is a dynamic process of continuous demineralization and subsequent demineralization of dental hard tissues, in order for the precipitation of a frankly cavitated lesion, it requires prolonged shift in the equilibrium between demineralization and remineralisation. Hence, it can be postulated that carious lesions are observed more among adult population when compared with child population. Even though the indicators for poor maintenance of personnel as well as oral hygiene such as low socio-economic status, geographical and cultural variations, social beliefs and myths, segregation, low levels of literacy, inaccessibility to obtain the tools for maintenance of hygiene are prevalent among the tribal populations seen in India, the motivation for maintenance of oral hygiene is found to be high in the subjects of the present study as witnessed by the higher proportion of individuals who reported brushing their teeth regularly(86%) as compared to the individuals reported of never brushing their teeth regularly(11%). However it is in doubt, whether all the subjects who reported that they brush their teeth regularly do brush regularly as the oral hygiene status is clinically found to be poor despite brushing regularly. In this way bias could have been introduced into the study as a result of self-reporting of their oral hygiene practices.

Conclusion

The narikuravar tribal population were not aware of basic oral hygiene practices like regular tooth brushing , materials and devices used for tooth brushing like tooth paste and tooth brushes. The study reveals poor knowledge and lack of awareness about the oral health was seen among the narikuravar tribes. The oral health education and the way of brushing and materials used for brushing should be taught to tribes to maintain a good oral hygiene which will reflect the health of the tribes. In order to achieve the greatest effectiveness of dental health interventions, dental health educators must carefully choose the target populations with poor preventive dental behaviors.

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