

**Oral health status and Treatment needs among Banjara Community in Jaipur city Rajasthan, India.**

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**Abstract**

**Introduction:** Banjara is a tribe in India, known for their efficient logistics to the nation’s culture and are the best known for their migrating from one place to other. A study proposed to assess the oral health status and treatment needs in Banjara community.

**Method:** A community based descriptive study conducted among 400 subjects. Before the start of the study, official permission obtained from head of the each Banjara community and ethical clearance from Institutional Review Board. A modified survey proforma was prepared with the help of WHO oral health assessment form (1997).

**Result:** The study conducted in 400 subjects of 15-75 years with the mean age of 28.83 years. 48% & 52% were males and females respectively. The highest bleeding and calculus score was observed in 37 (18.04%) & 160

(78.04%) subjects in 15-25 years. Highest Periodontal pocket (4-5mm) score observed in 19 (65.51%) subjects in 46-55 years age group. 45 (42.45%) had dental caries in 26-35 years age group. 34 (8.50%) subjects had missing teeth due to caries.

**Conclusion:** The findings of present study suggest that the Banjara are not a homogenous group and experience-varying degrees of social exclusion as reflected in their poor oral health.

**Keywords:** Banjara, Oral Health, Dental Caries, Periodontal Health

**Introduction**

India, a country with diversified cultural heritage, spread widely with various cultures, traditions, castes based on their respective professions. Indian society is very carefully and dexterously stratified on the basis of castes

and sects. This carefulness and dexterity are used not only to divide the society into thousands of sections but also to protect and preserve this system for ages, banning and barring mobility and interaction between castes<sup>[1]</sup>.

The most neglected and oppressed groups in India are the tribal groups. They live away from the society facing the wrath of indignity and social discrimination for centuries. It was father of our nation Mahatma Gandhi who fought hard to recognize them as free citizens of India and call them the "Girizans" or the children of the forest god and brought them into main stream of the society<sup>[2]</sup>.

The tribal population of India and Rajasthan, according to the 2011 census, was 104,281,034 and 9,238,534 respectively. The tribal's formed 8.6 percent of the country's total population<sup>[3]</sup>. At present, India has the second largest tribal population in the world, next only to Africa<sup>[4]</sup>.

Banjara are a tribe in India, known for their efficient logistics is a shining beacon to the nation's culture and are best known for their migrating from one place to other in search of merchandise, with their Pack- Bullocks<sup>[1]</sup>.

Banjara is one of the biggest ethnic groups of India, but it is not a caste as conventionally construed in Indian Society. It does not fall in any category of "Manu Samriti Chatur Varnas" but is a Community or Social Group<sup>[1]</sup>.

The name Banjara is derived from Sanskrit word of Banaj or Vanijya (Trading) because of their main and age old vocation (prior to British Trade and Raj) of transportation of food grains and other commodities on back of animals, hence the name Banjara was attached to them<sup>[5]</sup>.

Total Population of Banjara Community in India and Rajasthan is 6,411,000 and 349,000 respectively. There are known by several alternate names such as Bagora, Dhari, Gavara, Jogi Kongadi, Laban, Naik, Sirkiband, Vanjari, Wanjari and many more<sup>[6]</sup>.

Historically, there is great relevance between banjaras of India, romani gypsies of the Eastern Europe and middle east countries. There is a resemblance of language, tradition; culture which is moving to integrate towards harmonious fraternity in the world of ethnic communities<sup>[7]</sup>. This particular tribe often changes their living place time to time. This migrating nature of the tribe makes them more vulnerable to many general and oral diseases. It is very difficult for them to utilize the medical and dental services provided by the government and private hospitals. In a broad sense they can be included in homeless population[8-10].

Although in India many studies have focused on oral health status of the general population but to the best of our knowledge no study is found in India and worldwide focusing on oral health status of Banjara community. Therefore, the present study proposes to be undertaken to assess the oral health status and treatment needs in Banjara community in Jaipur district.

#### **Material and method**

**Source of data:** A community based descriptive study was conducted to assess oral health status and treatment needs among Banjara people in Jaipur district. Banjara is a migratory community and its locality is dispersed throughout the district in different geographical areas of Jaipur district. Data regarding the locality is not found officially hence the samples were approached according to their location randomly till the sample size achieved.

#### **Inclusion criteria:**

- Subjects willing to participate in the survey.
- Subjects above 15 years age.

#### **Exclusion criteria:**

- Subjects who are ill or under medication.
- Subjects with chronic systemic disease/condition.

As the survey proforma was modified according to local literacy rate and prevailing myths therefore feasibility was

assessed by a pilot testing on 30 study participants to assess the oral health status and treatment needs among Banjara community.

### Sample Size Calculation

Sample size will be determined after a pilot survey. Sample size was determined based upon the oral hygiene status of above 15 years of age.

$$n = \frac{z \cdot p \cdot q}{e^2}$$

p=sample proportion, q=1-p, n=size of sample, z=the value of standard variate at a given confidence level.

The survey was conducted from January to April 2015. The chief examiner was trained in the department of Public Health Dentistry, Rajasthan dental college and hospital, by senior faculty member. Before the start of the study, the purpose of study was informed and explained to the head of institution.

Sample size was calculated at 95% confidence level assuming dental sensitivity in 52.6% of homeless community as observed in the study of Donald Chi.<sup>11</sup> Hence a total number of children formed the study population was 400. A schedule for data collection was prepared. An average number of 25-30 Banjara people were examined per day.

- Before the start of the survey, official permission was obtained from.
- Head of the each Banjara community.
- Ethical clearance to conduct the study was obtained from Institutional Review Board.

A modified survey proforma was prepared with the help of WHO oral health assessment form (1997)<sup>[12]</sup>. Dental caries was recorded from the Dentition Status as described by WHO (1997)<sup>[12]</sup>. Periodontal diseases was recorded from the Community Periodontal Index (CPI) and Loss of attachment (LOA) as described by WHO (1997)<sup>[12]</sup>.

It was well planned and arranged for maximum efficiency and ease of examination. The subjects were examined seated on a chair or stool with proper back support. Examination was done under natural and artificial light. Instruments were placed within the easy reach of the examiner. Clinical findings of the subjects were recorded and referred for needed treatment to Department of Public Health Dentistry, of a private Dental College in Jaipur. Oral health education and motivation was given to the people with the help of visual aids (models, charts etc) after the completion of data collection.

### Statistical analysis

The Data was entered in Microsoft excel sheet (2007) to prepare master chart and was subjected to statistical analysis. Continuous variables were summarized as mean and standard deviation whereas nominal categorical variable as proportions (%). Chi-square test was used for nominal/categorical variables. P-value less than 0.05 was taken a significant. Medcalc 14.0.0 version software was used for all statistical calculation.

### Result

A community based descriptive study was conducted to assess oral health status and treatment needs among 400 Banjara people in Jaipur district. The study was conducted in 400 subjects of 15-75 years with the mean age of 28.83 years. Among the total 400 subjects, 192 (48 %) were males and 208 (52%) were females, and 368 (92%) were illiterate and only 32 (8%) were literate. There were only 11.55% of study subjects who were residents of Jaipur and maximum number (53%) of the subjects were outside Jaipur residents.

A highly significant (p=0.000) association was observed when the periodontal status (community periodontal index and the loss of attachment index) of the different age groups was assessed. (table 1,2)

Table 3 shows that no significant association ( $p=0.326$ ) was observed between the different age groups and dental caries present or absent, maximum number of subjects with dental caries were of the age group of 15-25 years.

Table 4 shows that no significant association ( $p=0.994$ ) was observed between the different age groups and filled teeth. Very few subjects (3) had filled teeth.

Table 5 shows that a significant association ( $p=0.000$ ) was observed between the different age groups and teeth missing due to dental caries, maximum number to teeth missing (15) were seen in the age group of 36-45 years. Same age group also has the maximum number of teeth missing due to other reasons (26). (Table 6)

Among the total study subjects only one subject had prosthesis for the missing teeth. When the extra oral examination was done almost all the subjects had normal extra oral region. On assessing the oral mucosal lesions it was observed that maximum number of subjects had OSMF (26) followed by Leukoplakia (9).

### **Discussion**

Homeless people have poorer oral health. However, no nation wide data are available on the oral health status of homeless populations, and the few available studies may skew the results due to sample size, the population surveyed (e.g., people who present at a clinic), and inability to reach the chronically homeless are among other factors. In a national survey, homeless veterans reported higher rates of oral pain, more decayed teeth, and fewer filled teeth than the general population<sup>[13]</sup>. Many homeless veterans reported having oral pain either currently or within the past year. In addition, homeless people in these surveys were more likely to perceive their oral health as poor than the general population. Homeless people also struggle to access oral health care. A national survey conducted in United state of America (2003) among homeless people found that dental care was the

most commonly reported unmet health need. In fact, homeless people surveyed at a free dental screening had not seen a dentist in, on average since 5.7 years<sup>[13]</sup>. Homeless populations face a multitude of barriers to both maintaining good oral health and accessing oral health care.

When extra oral appearance (ulceration, sores, erosions, fissures) was assessed only 0.94% of the subjects had positive findings. Study conducted by J. Collins et al (2007)<sup>[9]</sup> also found similar finding that is 97% of homeless subjects had no extra oral pathologies. According to a report, the prevalence of erosions and fissure was 40% which is not in agreement with the present study. Finding least pathologies may be due to their good cultural habits<sup>[14]</sup>.

The present study showed the prevalence of leukoplakia as 2.3%. Study conducted by Grossberg AL et al (2012)<sup>[15]</sup> found 25% malignant/premalignant growth which is not in agreement with present study. Prevalence of oral submucous fibrosis (6.5%) was reported in the present study which is not similar to the study conducted by Grossberg AL et al (2012)<sup>[15]</sup> this might be because of their special habit of chewing pan and areca nut.

In the present study the prevalence of periodontal disease was found to be 98.5%. A study conducted by Luo Y et al (2006)<sup>[16]</sup> showed that prevalence of periodontal disease to be 96% which is similar to finding of the present study. Such high percentage may be due to lack of awareness, lack facilities and dental procedures being time consuming.

Bleeding gums and calculus was observed among 9.25% and 65% subjects respectively, while 0.25% of the subjects had periodontal pockets (6mm or more) which is in accordance with the study conducted by J. Collins et al (2007)<sup>[9]</sup> in which 75% of the sample had bleeding gums and calculus; however only 4% had periodontal pocket

depths of 6 mm or more. According to a review in 2008 among homeless youth and adults (age 14-28) in Seattle, WA, investigators found high percentages of periodontal disease indicators, including: sensitive teeth (52.6%), sore or bleeding gums (27%), painful chewing (26.8%), and loose teeth (11.1%)<sup>[17]</sup>.

Dental caries was seen in 34.25% of the study subjects in the present study while, in the study conducted by Luo Y et al (2007)<sup>[16]</sup> reported higher prevalence (75%) of dental caries. A study conducted by Chiu SH et al (2013)<sup>[18]</sup> reported 50.3% dental caries in homeless subjects. In comparison, a study (2010) of 409 homeless patients in Los Angeles, CA, revealed prevalence rates of untreated caries was 2-4 times higher (57.9% for adults and 63.5% for children) than the general population. The results were not in agreement with that of the present study. A high prevalence rate of dental caries (50%) was also seen in a study conducted in Midwest City in 2013 on 157 homeless children<sup>[17]</sup>. The low percentage of dental caries in the present study may be due to the dietary habit of the banjara community diet do not consist of refined food.

In the present study the mean of filled teeth was  $0.0150 \pm 0.186$ . A study conducted by de Pereira M et al (2014)<sup>[19]</sup> found mean filled teeth  $8 \pm 7.6$  which was contrary to present study. A Study conducted by Chan Ka Wai et al (2005)<sup>[20]</sup> reported that 28% subjects had dental filling which is not agreement the finding of the present study. This might be due to lack of dental coverage and homeless people struggle to maintain Medicaid coverage because they do not have a permanent address. Homeless people don't know where to seek dental care<sup>[21]</sup>.

When prosthetic status was assessed, 99.75% of the subjects had no prosthesis in both the arches. This is supported by a study conducted by Chan Ka Wai et al (2005)<sup>[20]</sup> in which Most of the participants (83.7%, 123)

had no prosthesis. This is might be due to affordability and lack of awareness about the dental treatment.

When prosthetic need of maxillary & mandibular arch was assessed 24.25% and 23.75% subjects needed prosthesis respectively. Study conducted by Chan Ka Wai et al (2005)<sup>[20]</sup> reported that despite the high prevalence of missing teeth, most of the participants had no prosthesis although many reported a need for prosthetic care. It is apparent that there is a particular need for partial dentures. A study conducted by Daly B et al (2009)<sup>[22]</sup> reported that 92% of subjects had prosthetic need which not in agreement with the present study. Pulp care was assessed in the subjects and it was found 12.25% needed pulp care while in a study conducted by Waplington J et al (2000)<sup>[23]</sup> observed that 54% of the subjects need pulp care. This is suggestive that homeless people don't seek dental care for the decayed teeth and finally they lose them. It sometimes remains as root stumps in the oral cavity.

### **Conclusion**

The findings of this study would suggest that the Banjara people have poor attitudes towards oral health, in that many try to manage their dental caries (with or without pain) and their periodontal health themselves. The oral hygiene behavior of Banjara people is poor. Dental caries experience is high and most relates to untreated decay. Few have experience of conservative care compared to extraction. Periodontal health status is poorer in general. Evidence of dental trauma is common (most untreated) and many of them report experiencing dental trauma while Banjara. The burden of oral health on daily life among Banjara people is immense compared to adults in general in India.

### **Recommendations**

The oral health care has always been neglected in our country especially for the rural or the under privileged people, the oral health care should be made assessable to



this population. This can be done the combined efforts of the public and private sectors. Dental colleges can play a vital role in this and especially the departments of public health dentistry, who can organize can for this migratory population and serve the underserved.

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**Legend Tables**

Table 1: Association between age group and Periodontal status (Community periodontal index) (Chi-square test)\*

Community Periodontal Index	Age groups (years)						Total	$\chi^2^*$	p value
	15-25	26-35	36-45	46-55	56-65	66-75			
Healthy	2	0	0	0	0	0	2	246.753	0.00 <sup>s</sup>
Bleeding	37	0	0	0	0	0	37		
Calculus	160	72	16	9	2	1	260		
Pocket (4-5mm)	6	34	31	19	6	0	96		
Pocket (6 mm or more)	0	0	1	0	0	0	1		
Excluded	0	0	0	1	3	0	4		
Total	205	106	48	29	11	1	400		

<sup>s</sup>Significant (p≤0.05)

Table 2: Association between age group and Periodontal status (Loss of attachment) (Chi-square test)

Loss of Attachment	Age groups (years)						Total	$\chi^2^*$	p value
	15-25	26-35	36-45	46-55	56-65	66-75			
Healthy (0-3mm)	196	87	19	3	4	1	310	242.638	0.00 <sup>s</sup>
4-5mm	8	19	29	25	4	0	85		
6-8mm	1	0	0	0	0	0	1		
Excluded	0	0	0	1	3	0	4		
Total	205	106	48	29	11	1	400		

<sup>s</sup>Significant (p≤0.05)

Table 3: Association between age group and Dental caries (Chi-square test)\*

Decayed teeth	Age groups (years)						Total	$\chi^{2*}$	p value
	15-25	26-35	36-45	46-55	56-65	66-75			
Absent	136	61	33	22	11	0	263	38.211	0.326 <sup>#</sup>
Present	69	45	15	7	0	1	137		
Total	205	106	48	29	11	1	400		

<sup>#</sup>Non significant (p>0.05)

Table 4: Association between age group and Filled teeth (Chi-square test)\*

Filled teeth	Age groups (years)						Total	$\chi^{2*}$	p value
	15-25	26-35	36-45	46-55	56-65	66-75			
Absent	203	105	48	29	11	1	397	4.683	0.994 <sup>#</sup>
Present	2	1	0	0	0	0	3		
Total	205	106	48	29	11	1	400		

<sup>#</sup>Non significant (p>0.05)

Table 5: Association between age group and Missing teeth due to caries (Chi-square test)\*

Missing teeth due to caries	Age groups (years)						Total	$\chi^{2*}$	p value
	15-25	26-35	36-45	46-55	56-65	66-75			
Absent	205	99	33	22	6	1	366	215.249	0.00 <sup>s</sup>
Present	0	7	15	7	5	0	34		
Total	205	106	48	29	11	1	400		

<sup>s</sup>Significant (p≤0.05)

Table 6: Association between age group and Missing teeth other than caries (Chi-square test)\*

Missing teeth (any other reason)	Age groups (years)						Total	$\chi^{2*}$	p value
	15-25	26-35	36-45	46-55	56-65	66-75			
Absent	204	100	22	5	1	1	333	471.616	0.00 <sup>s</sup>
Present	1	6	26	24	10	0	67		
Total	205	106	48	29	11	1	400		

<sup>s</sup>Significant (p≤0.05)