

EXECUTIVE SUMMARY

Category

Community based Assessment and Intervention in an un-deserved community at Suratkal, Karnataka, India

Date of survey and assessment

26th April, 2016

Co-ordinator and Lead Researcher

¹Professor Chitta Chowdhury
Head

Department of Oral Biology and Genomic Studies
Environment and Community

A.B.Shetty Memorial Institute of Dental Sciences (ABSMIDS)
Nitte University, Mangalore, India

Team members

¹Dr Shahnawaz Khijmatgar, Lecturer, Oral Biology, ABSMIDS, Nitte University

²Dr.Nanjesh Kumar.S, Assistant Professor, Community Medicine, KS Hegde Medical Academy (KSHEMA).

²Dr. Vinayak, Post Graduate Student, Department of Community Medicine KSHEMA

²Dr.Shruthi Shetty, Post Graduate Student, Community Medicine, KSHEMA

³Dr. Mustak M, Assistant Professor, Department of Botany, Mangalore University

¹Ms Bangera Pallavi Chandrakanth, Dental Intern, Department of Oral Biology, ABSMIDS ¹

Ms Ayshath Sharmina Serin Dental Intern, Department of Oral Biology, ABSMIDS

Collaborator

- ² Professor Udayakiran, Head, Department of Community Medicine, K.S.Hegde Medical Academy, Nitte University, Konaje, Mangalore, India
- ³ Dr. Mustak M, Lead Genetic Study, Assistant Professor, Department of Botany, Mangalore University, Mangalore, India

Title

Health Indicators in an underserved population at Surathkal: A pilot study

Chitta Chowdhury¹, Nanjesh K S², Mustak M³, Shahanawaz K¹, Vinayaka², Shruthi Shetty², Pallavi Bangera¹, Ayshath Sharmina Serin¹, and Udayakiran².

Background

Poverty is still a major problem in many countries of growing economy, and India is one of them. Recently, a report from Planning Commission revealed that 29.8% of India's 1.21 billion people live below the poverty line, a sharp drop from 37.2% in 2004-2005 and 2015-16¹. It means around 360 million people currently live in poverty. The cause of the problem is thought to be multi-factorial. The changing trends of country's economy induce huge inequalities between the rich and poor. As a consequence the essential determinates of wellness, such as- education, health, housing, sanitation, social security, good life-style and eco-friendly environment are compromised.

Poverty affects the general health of the population, and it is more among illiterate group of a population. Illiteracy is one of the major determinates keep the people away of awareness og health and wellness.

Various governmental organisations, private companies, health institutes have come forward to tackle health related problems to improve the general health of the population. But many of the groups do not focus on literacy and life-style. Therefore, a community based health care and follow-up may help maintain health and wellness in remote areas of the country. It helps promote detections to develop positive approaches systematically.

In this context, we targeted an underserved population to understand their health determinants in Surathkhal. We have surveyed, and interviewed and examined through a pilot study below on the following objective.

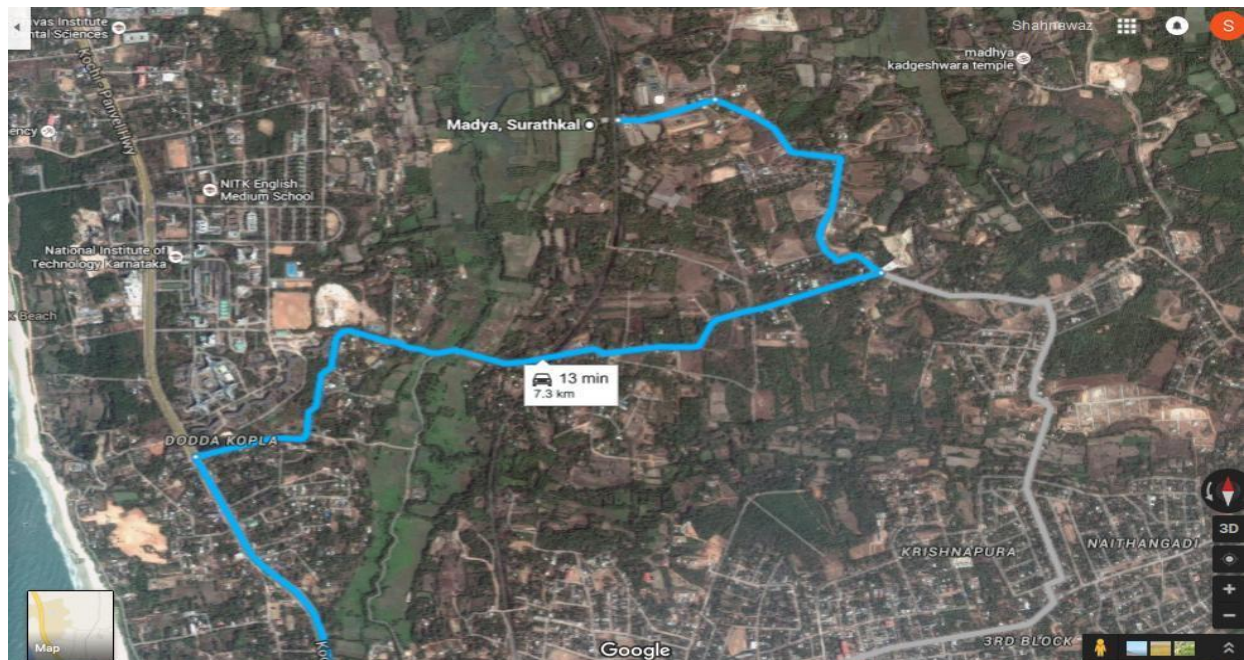
Objective: Understanding of a situation in an un-deserved community at Surarhkhal: A pilot study for further intervention for wellness.

Materials and Methods:

Description of the area.

Name of the area: Madhyapadav, Surathkal

Geographic location with a map (birds eye) : Suratkal, Karnataka India



Population density: 500

House-hold: 50-70

Access to school: Ashram and government schools available

Access to health centre: Poor and difficult

Intervention:

Recently, a community based health care assessment was organised by the Department of Oral Biology and Genomic studies of A.B. Shetty Memorial institute of Dental Sciences, Mangalore Karnataka in collaboration with the Department of Community Medicine, K.S. Hegde Medical Academy Nitte University and Department of Botany, Mangalore University.

The purpose of the community study was performed in Surathkal area of Madhyapadav. General health status, dietary practice, nutritional status, Body mass Index (BMI), Blood pressure (BP), family history, personal habits etc. were recorded. The oral health status was also a part of screening where performed to detect dental caries, gum problem, periodontal status, severity of malocclusion were examined and recorded. World Health Organisation (WHO) criteria were used to assess the Oral Health status² Nutritional status and other health indicators were examined according to a standard protocol³

Results:

The results are shown in table 1 to 3 below

Table 1: Demographics (n= 33)

Variables		N (%)	Range (Mean) in yr
Age			5-52 yrs (18.42)
Gender	Male	9 (27)	
	Female	24 (72)	
Occupation	Labour (carer of the children examined)	32 (100)	^
	Business	0	
	Service	1	
	Others	0	
Marital Status	Unmarried	24 (72)	
	Married	9 (27)	
Literacy Status	Illiterate	1 (3)	
	Primary	20 (60)	^
	High School	5 (15)	
	Pre University College (PUC)	2 (6)	
	University	1 (3)	
Personal habit	Tobacco Chewing	5 (15)	
	Alcohol	0	
	Smoking	5 (15)	
Dietary Habit	Vegetarian	0	
	Non-veg	33 (100)	^
Drinks	Fizzy drinks	10 (30)	
	Fruit Juices	5 (15)	
Exercise	Yes	21 (63)	^
	No	12 (36)	

Highlights: Age group between 5 to 52 years (Mean age =18.42). 72% of the examined population were females and 28% of them were males mostly children belonging to the age group of 5-15 years old. The children were from the parents who live on daily labour. Twenty responders studied upto primary level, 5 high schools, 2 high school and one person completed University. Most of them have primary level education. Hundred Percent (100%) of population investigated are non-vegetarian. Ten of 33 population drinks Fizzy drinks and five of them drink fruit juices in a week. Twenty out of 33 do their regular exercises.

Table 2: General and Oral Health Status of the population

Variables		N (%)	Mean
Medical Condition	Yes	1 (4)	
	No	32 (96)	
Genetic Diseases	Yes	2 (8)	
	No	31 (92)	
Familial	Yes	2 (8)	
	No	31 (93)	
Non-communicable Disease	Yes	0	
	No	33 (100)	
Blood Pressure		33 (100)	Systolic: 90-130 Diastolic: 60-90
BMI		33 (100)	15.13 (7.5 -21.51)
Anaemia	Yes	0	
	No	33 (100)	
DMFT		33 (100)	4.46 (0-18)
IOTN		33 (100)	0.9 (0-5)
Others	Fluorosis/Hypoplasia	5 (15)	

Highlights: The Body mass Index (BMI) for age group between 5-15 years old was 13.49 (7.5 -17.5) which is underweight*, and the BMI for age group 20-52 was 17.98 (13.6-25), which is underweight. The overall BMI was between 15.13 (7.5 -21.51).

* 18.5 is underweight

The Decayed Missing Filled Teeth (DMFT/dmft)* Score is 4.46.

* It is higher than expected (it should be 3 DMFT/ dmft)

Table 3: CPI for Age > 18 years (N= 12)

Scores	16	11	26	36	31	46	Total
0	5	10	5	2	6	0	28
1	3	1	3	4	2	6	19
2	2	1	2	5	4	5	19
3	2	0	2	1	0	1	6
4	0	0	0	0	0	0	0

Highlights: The population with above 18years have CPITN scores 2 and 3, suggestive of more than 50% of population suffering from gingivitis and periodontal disease.

Images



Figure 1: Doctors of the Department of Community Medicine of KS Hegde Medical Academy are screening the general health status, BMI and blood pressure



Figure 2: Estimating blood pressure of a middle aged-woman during a home visit



Figure 3: Oral Health Status of the women having tobacco related habits



Figure 4: Faculty Dr. Mustak M, Department of Department of Botant and Bio-science, Mangalore Univeristy and his team planned a genetic study among children at Madhyapadav, Surathkal.



Figure 5: Oral health screening by Profesor Chitta Chowdhury, Head , Department of Oral Biology and genomic Studies, AB Shetty Memorial Institute of Dental Science. Nitte University



Figure 6: Professor Chitta Chowdhury, Department of Oral Biology and Genomic Studies performing oral health assessment, Intern Pallavi and Sharmin are also involved



Figure 7: Dr Shah Nawaz Khijmatgar, Lecturer in Department of Oral Biology and Genomic Studies examining patients determining Oral Health Status

Discussion

On observation, there are 50 households and 250-300 people living in the madyapada vicinity. Most of the population i.e. around 35% of the population belongs to Below Poverty Line (BPL). The average mean age of the examined population is 18.42 (Range 5-52 years). 72% of the examined group were females and 27% of them were males mostly children belonging to the age group of 5-15 years old. The parents of the children were working as a daily wage worker. 60% of the examined group have primary level education (Table 1). 100% of the population investigated are non-vegetarian. 30% of the population drinks fizzy drinks and 15% fruit juices in a week. 21% of the population replied that they do exercise.

The Body Mass Index (BMI) of 18.5 is considered as Underweight. According to a report (2003), 77% of the rural children are more likely to be underweight or under height, and the other determinants of wellness were also recorded (4). The BMI for age group between 5-15

years old was 13.49 (7.5 -17.5) which is underweight*, and the BMI for age group 20-52 was 17.98 (13.6-25), which is underweight. The overall BMI was between 15.13 (7.5 -21.51).

On oral health assessment, the oral health status of children and adults is poor. The average mean DMFT scores of 4.46 (0-18), which is higher than expected (Normal 3DMFT/dmft) (Table 2) and CPITN scores for the individuals above 18 years were 2 and 3, suggestive of gingivitis and periodontitis in 52% cases (Table 3). These groups of patients required an intervention of oral prophylaxis, restorations, oral hygiene education and instructions, effects of increased sugar intake, frequency of sugar intake etc. The children below 18 years required orthodontic treatment. The children between the ages of 5-10 years were suffering from severe decay teeth, early tooth loss due to caries. There were 5-6 cases of fluorosis/hypoplasia. The cause of fluorosis was not possible to figure it out. These patients were given camp referral form for further intervention to their respective problems.

The blood pressure of the examined individuals was between Systolic 90-130 and diastolic 60-90. Only two patients reported with diabetes and hypertension and a history of hysterectomy. Most of the residents practiced a non-vegetarian food. They had a habit of consuming fizzy drinks and fruit drinks but not significant. Some of the residents especially women's practiced tobacco chewing and smoking.

Conclusion

The study came to a conclusion that, majority of the population living in Madhya-padav, Surathkal belongs to low socio-economic status. The access to health care facility is poor who mainly rely on the community based services. The Madhya-padav community practices tobacco related habits including women and have poor gingival/periodontal health status. Dental fluorosis is not so prevalent in this region. The consumption of fizzy drinks and juices is not very high but prevail. Locus of health determinants for wellness is not satisfactory, needs awareness through interventional education. Health care access is poor, needs to be addressed.

Recommendation

1. A community health centre needs to be established with basic health care services.
2. Community needs to be educated the importance of healthy living in daily practices.
3. Oral health education needs to be given to school going children and elderly individuals in the community.
4. Increased community participation in improving status of healthcare will help to sort the healthcare problems in the region.
5. Introducing communication information technology and tele-health in serving the needs of rural people.
6. Implementation of Principles and guidelines developed by World Health Organisation (WHO) and World Organization of Family Doctors (WONCA) (WHO-WONCA) RURAL HEALTH INITIATIVE to assist educational institutions, health professional organizations, health services agencies and communities on proposed programmes.

Reference

1. planning commission, Government of India, 2013-14.
http://planningcommission.nic.in/reports/genrep/index.php?repts=b_annrep.htm
(visited 10th May 2016)
2. Oral Health survey- 5th edition, WHO, Geneva.
http://www.who.int/oral_health/publications/9789241548649/en/ (visited 10th May 2016)
3. Naidu AN, Rao NP. Body mass index: a measure of the nutritional status in Indian populations. Eur J Clin Nutr. 1994 Nov;48 Suppl 3:S131-40.
4. Strasser R. Rural health around the world: challenges and solutions. Family practice. 2003 Aug 1;20(4):457-63.

Acknowledgement and declaration

The Study was supported by Nitte University and carried out in collaboration with Mangalore University, Mangalore, India. We like to thank to local community for their cooperation and Mr Pravakar of the community who volunteered to maintain the flow of subjects during the study.

Interest of Conflict: No interest of conflict

Contact: Professor Chitta Ranjan Chowdhury

Head, Department of Oral Biology & Genomic Studies

Heath and Community, AB Shetty Memorial Institute of Dental Sciences, Nitte

University, Deralakata, Mangalore, Karnataka, India. Email. crc.ob.cod@gmail.com

Phone: 0824 22 04 623