Original Article

Bridging the Gaps between Urban and Rural Oral Health Care: A Questionnaire-based Study in Udaipur, Rajasthan

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Abstract

Introduction: Oral health is one of the most valuable assets and is important for every individual and every country as a whole. The broad categories of factors that may influence individual and community health behavior include: Knowledge, beliefs, values, attitudes, skills, finance, time and the influence of family, friends, and health workers themselves. **Aims and Objectives:** The aim of the present study was to assess the levels of oral health knowledge, attitudes, and behavior among rural and urban patients and to compare these levels between the two groups. **Materials and Methods:** The study population consisted of 100 patients above 18 years of age who visited the Department of Oral Medicine And Radiology, Pacific Dental College, Udaipur, of which 50 belonged to the rural areas and 50 to the urban areas. A self-administered questionnaire including 17 questions based on knowledge, attitudes, and behavior was used in the study. **Results:** The mean score for oral health knowledge, attitude, and behavior were significantly higher in urban population as compared to rural population ($P < 0.05$). **Conclusions:** Within the confines of this study, it can be concluded that oral health awareness needs to be increased with special focus on rural population.

Keywords: Attitudes, Behaviour, Oral health knowledge.

Introduction

Health is defined by the World Health Organization as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. In recent years; this statement has been amplified to include the ability to lead a "Socially and economically productive life."[1] Oral health may be defined as a standard of health of the oral and related tissues which enables an individual to eat, speak, and socialize without active disease, discomfort, or embarrassment and which contributes to general well-being.[2]

Oral health is an imperative aspect of quality of life, but is still the most neglected, as oral diseases are not considered life-threatening. In developing countries like India, there have been substantial changes in the eating habits and other lifestyle-associated factors. This has led to the emergence of oral diseases as one of the problems affecting the Indian population, which has paved the way for a sizeable increase in tooth morbidity and mortality.[3] According to the WHO, the provision of oral health care services is very little in rural India.[4]

According to oral health experts, a lot of people suffer from poor oral health without being aware of it and at times it can impact a person's quality of life.[5,6] The broad categories of factors that may influence individual and community health behavior include: Knowledge, beliefs, values, attitudes, skills, finance, materials, time, and the influence of family members, friends, community, opinion leaders, and even health workers themselves.[1] Many oral diseases can be prevented if proper education or awareness is provided such as tooth brushing and flossing which are useful for reducing the amount of bacterial plaque. Knowledge of oral health is considered to be a prerequisite for health-related behavior.[5,7]

India has an astonishing demographic dividend. More than 70% of the people of India live in more than 5,50,000 villages and the remainder in more than 200 towns and cities.[5] The largest Indian state of Rajasthan has an estimated population of 3,685,681and an area of 22,850 square km.[8] The city

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of Udaipur ranks 6th based on the population which is approximately 475,150 and has an average literacy rate of 62.74%. In rural areas of Rajasthan, the literacy rate is 76.16% for males and 45.8% for females.[9] It has also been shown that rural Indian community has low level of oral health awareness and practice as compared to urban.[5,7] Thus, the purpose of the present study was to assess the oral health knowledge, attitudes, and behavior among the urban and rural population visiting Pacific Dental College, Udaipur, according to demographic characteristics.

Materials and Methods

Before commencement of the survey, ethical approval was obtained from the Ethical Committee and official permission was received. This was a questionnaire-based study which included the urban and rural population visiting the Department of Oral medicine, Pacific dental college, Udaipur, by random sampling method. The study population consisted of randomly selected, 100 subjects, of which 50 belonged to the rural areas and 50 belonged to the urban areas in and around Udaipur. A self-administered structured questionnaire including 17 close-ended and open-ended questions was designed to evaluate the oral health knowledge, attitude, and behavior among all the participants.

It included seven questions to check oral health knowledge, four to know attitude, and six for behavior (Table 1). Translation of the questionnaire in Hindi was also structured to make it easy for patients coming from rural areas. All subjects were above 18 years of age, so that they could easily understand and answer the questionnaire.

The purpose of the survey was informed and explained to the participants and those who voluntarily agreed to participate in the survey and gave a written consent for the same were asked to fill the questionnaire according to the response format provided in the questionnaire.

Data analysis

For data analysis, each positive response was given a score "1" and each negative response was assigned as a score of "0". Individual scores were summed up to yield a total score. Data were analyzed using SPSS version 15.0 (SPSS, Chicago, IL, USA). Descriptive statistics were obtained and frequency distribution, means, and standard deviation were calculated. Student's t test was used to find the significance of difference in the means of oral health knowledge, attitude, and behavior in relation to gender and location of the participants at $P < 0.05$. Each positive answer was given a score of 1 and each negative answer was given a score of 0.

Results

The total study population comprised of 100 individuals visiting Pacific Dental College and Hospital, Udaipur, out of which 42 were females and 58 were males.

The results in the present study showed that the urban people had higher levels of oral health knowledge, attitude, and behavior as compared to the rural people ($P < 0.05$) (Table 2).

Females showed higher levels of knowledge as compared to males. However, the dental attitude and behavior scores did not show a statistically significant difference between females and males (Table 3). Among the questions asked for knowledge, attitude, and behavior, the urban population was found to possess more of these three aspects as depicted in Graphs 1-5.

Discussion

Oral health knowledge, attitudes, and behavior among different groups, professionals, populations, and students had been evaluated by survey worldwide in several studies (Kwan and Holmes, 1999) performed in different countries.[10] Even, cultural differences in countries with similar or different social systems have also been investigated in the previous studies (Kawamura *et al.*, 2002).[11]

In the present study, attempts were made to assess the oral health knowledge, attitudes, and behavior among urban and rural population of Udaipur, visiting Pacific Dental College and Hospital. The overall urban patients visiting Pacific Dental College were found to possess more dental knowledge, attitude, and behavior scores. This is in accordance with the study by Singh *et al.* in 2012.[5] Among the seven questions asked for dental knowledge, 72% of urban patients gave positive responses as compared to 50% of the rural patients. About 68%

Table 1: Questions asked on knowledge, attitude, and behavior

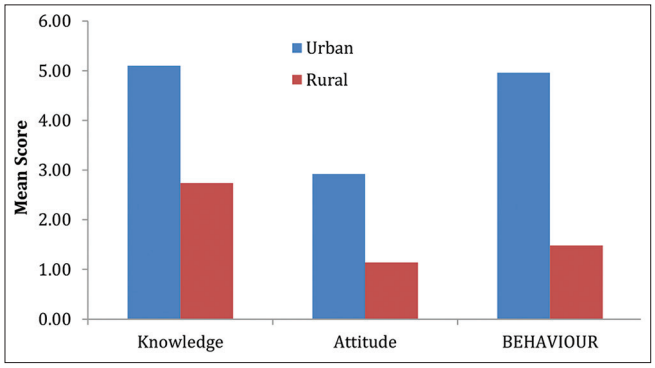
Questions based on knowledge	Questions based on attitude	Questions based on behavior
What is the importance of brushing in your daily health care routine?	Is regular visit to the dentist necessary?	What are your oral-hygiene habits?
What is the importance of bleeding gums?	What is your general response to dental pain?	What is the frequency of brushing?
How do you prevent bleeding gums?	Is only relief of pain important or uprooting its cause?	What is the duration of brushing?
What is the reason for tooth decay?	Is professional cleaning of teeth important?	What other oral hygiene aids do you use?
What is the reason for oral cancer?		Which is the best technique of brushing?
What is the importance of oral health for the general health of a person?		Do you have any adverse habits?
What are the different methods to prevent tooth decay?		

Table 2: Showing the oral health knowledge, attitude, and behavior scores between urban and rural patients

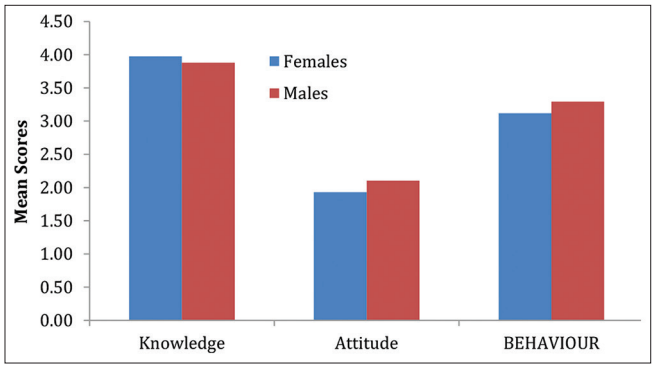
Type	Knowledge	Attitude	Behavior
Urban	5.1±0.99	2.92±0.88	4.96±0.90
Rural	2.74±1.37	1.14±1.07	1.48±1.11
P value	<0.0001 (HS)	<0.0001 (HS)	<0.0001 (HS)

Table 3: The oral health knowledge, attitude, and behavior scores between male and female patients

Type	Knowledge	Attitude	Behaviour
Females	3.98±1.69	1.93±1.16	3.12±1.90
Males	3.88±1.69	2.10±1.44	3.29±2.11
P value	>0.05 (NS)	>0.05 (NS)	>0.05 (NS)

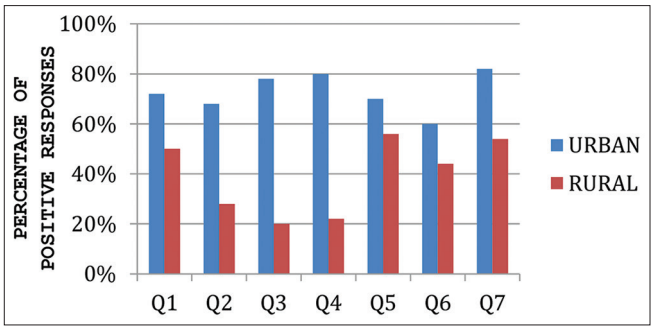


Graph 1: Depicting the knowledge, attitude, and behavior scores between urban and rural patients

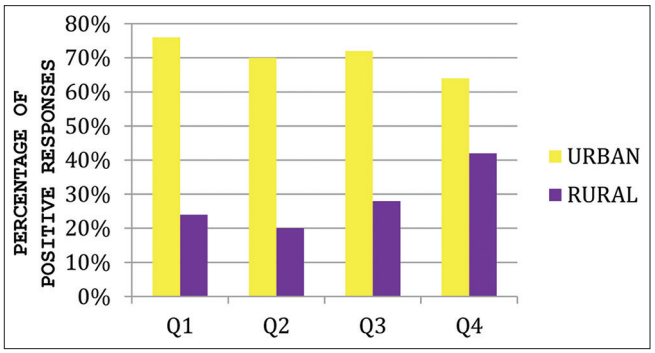


Graph 2: Depicting the knowledge, attitude, and behavior scores between male and female patients

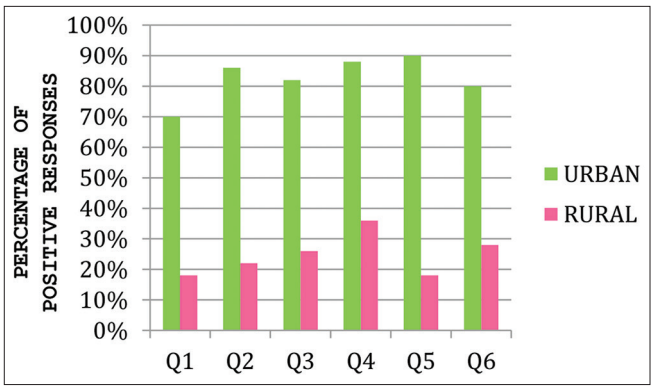
of the urban patients said that bleeding gums suggested that there was a problem in the oral health-care regimen practiced by them, whereas, only 28% among the rural patients gave a positive response to this. On methods to prevent bleeding gums, 78% of the urban patients gave importance to brushing twice daily as compared to 20% of the rural patients. For reason for tooth decay, 80% of the urban patients as compared to only 22% of the rural patients felt it depended on the oral hygiene care where as 78% of the rural patients felt teeth decayed only by sweets or presence of worms in the tooth.



Graph 3: Responses of urban and rural patients for questions based on knowledge



Graph 4: Responses of urban and rural patients for questions based on attitude



Graph 5: Responses of urban and rural patients for questions based on behavior

In the present study, 70% of the urban patients said that cigarette-smoking, guthka-chewing, tobacco, etc. are among the causes of oral cancer, as compared to 56% of rural patients. About 54% of the rural patients felt that there was no identifiable cause or it is a supernatural phenomenon. Among the questions asked on dental attitude, urban patients gave importance to visiting a dentist regularly, professional cleaning of teeth, and complete oral health care as compared to rural patients. In the present study, among the questions asked on oral health-care behavior, the urban group of patients showed higher scores as compared to the rural group.

These findings are in accordance with the findings of Diwan *et al.*, in 2011, who showed that only 56% of population brush

their teeth daily and an approximately 32% have never gone to a dentist.[12] Grewal and Kaur, in 2007, also showed that the rural Indian community has low level of oral health awareness and practice as compared to the urban.[7] These findings are in accordance with the present study.

A statistically non-significant difference was found in the scores between females and males. In a study conducted by Kawamura *et al.*, 2005,[13] females showed better oral health knowledge, attitude, and behavior as compared to males. This can be explained on the basis that – Females care more about their appearance which would motivate them to make regular dental visits and thus they would be more educated.[5]

"Dental diseases are expensive to treat, however, easy to prevent." The factors responsible for oral health knowledge, attitude, and behavior are literacy rate among the population, dental health awareness, and counseling, socioeconomic status, health-care delivery systems and access to care and utilization, and distribution of an adequate dental work-force in the rural areas. Knowledge of oral health is considered to be a prerequisite for health-related behavior.[14]

Rural areas present a bleak picture in contrast to the urban areas due to poor literacy rate, ignorance, and widely prevalent myths with low standard of living, economic status, and less importance to women's education and liberation.[15] Other parameters that lend complexity are a large variation in factors such as income and education. Information about the oral health knowledge, attitudes, and behavior among Indian population is still very limited, especially for rural people, who constitute more than 70% of the population. However, the urban population who have good access to oral hygiene care are also affected by poor oral health due to their unhealthy lifestyle and poor food habits.[4,5]

Conclusion

The present study showed that the levels of oral health knowledge, attitude, and behavior among rural people were lower than the urban people, which may be due to various factors discussed earlier.

Oral health education and motivation of people to adopt healthy behavior would play the most important role in improving the dental health status of the less privileged. Acquiring new knowledge can alter attitude and can bring about a change in behavior.[16] This somewhat simplistic representation of human behavior rarely exists and in reality a very complex relationship operates between the three domains of learning.

While this study examined the oral health knowledge, attitude, and behavior; among urban and rural population, more detailed studies probing these issues in depth are needed in different target populations and a larger sample size. In addition, specific efforts targeted to increase awareness toward oral health are required. Dental health must be given the appropriate priority and a wider range of dental care facilities must be made available to improve access to dental care.

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