Original Research Article

Dental Myth, Fallacies and Misconceptions in rural population of Bhopal city: A cross-sectional study

Abstract Aim- The aim of the study was to determine the prevalence of myths related to dentistry in the rural population of Bhopal city. The minimum sample size calculated was 100 individual persons.

Introduction- The underlying cultural beliefs and practices influence the conditions of the teeth and mouth, through diet, care-seeking behaviour, or use of home remedies. Myths may arise as either truthful depictions or over elaborated accounts of historical events, as allegory or personification of natural phenomena, or as an explanation of ritual.

Materials and methods - The questionnaire consisted of two parts. The first part included a provision for recording socio-demographic data of the participant. The second part consisted of a set of 23 closed-ended questions on myths related to dentistry classified under five domains—decayed tooth, oral hygiene, primary dentition, tobacco, and treatment.

Statistical evaluation- The questionnaire was investigator administered. A calibrate examiner was asked the question to the participants for the better response rate of the study. For the statistical analysis, SPSS version 23 was used.

Result- In the present study 24% of the study participants were 20 to 30 years of age 56% participants were 30-40 years of age 16% participants were 40-50 years of age and 4% participants were more than 50 years of age. In the present study, 54% were male and 46% were female. 41% of study participants were educated and 59% of study participants were uneducated. There was 91% of study participants had a dental history.

Discussion- Inequalities in oral health persist worldwide, with mainly affected being the deprived population. India has a low budget to meet the general populations' oral health treat-

ment needs, a high disease burden and a low literacy rate. All these factors predispose the general population to poor oral healthcare, false treatment needs assumptions and false beliefs.

Key words-dental myths, myths, fear of treatment.

INTRODUCTION

Oral health is a critical but an underestimated component of overall health and well-being among children and adults. Oral health problems, such as dental caries, periodontitis and oral cancer are global health problems. They are present in different populations belonging to developed and developing countries. There are reports suggesting that oral diseases are showing an increasing trend in developing countries in the past few decades. The resources are limited and the health infrastructure is not geared up in the developing countries to cope with the increased demand on oral healthcare needs. Oral health inequalities are a prime issue to be addressed by dental public health personnel. India is the 6th largest country area wise with a population of 1.21 billion.[1] Health inequalities including oral health inequalities between urban and rural populations in India. Majority of the population in India live in rural areas and have limited health and oral healthcare services available to them.

Despite remarkable worldwide progress in the field of diagnostics, curative and preventive health, there are people still living in isolation in natural and unpolluted surroundings far away from civilization with their traditional values, customs, beliefs and myths intact.[2,3] Cultural forces bind people and also profoundly shape their lives. Culture has its own influence on health and sickness and that is greatly depicted by the values, beliefs, knowledge and practices shared by the people. Oral health is not an exception. Alike all health problems, dental and oral diseases are a product of economic, social, cultural, environmental and behavioural factors.[4-7] Oral diseases make significant contributions to the global burden of disease, which is particularly high in the underprivileged groups of both developed and

developing countries. The underlying cultural beliefs and practices influence the health conditions of the teeth and mouth, through diet, care-seeking behaviour, or use of home remedies.[5] Myths related to oral diseases and oral health-related practices are very common in the rural population of India.

Myths may arise as either truthful depictions or over elaborated accounts of historical events, as allegory or personification of natural phenomena, or as an explanation of ritual. They are used to convey religious or idealized experience, to establish behavioural models, and to teach. Dental myths usually emerge from false traditional beliefs and non-scientific knowledge. This is embedded in the psyche of generations over a period of time and thus, creates hindrance in the recognition of scientific and contemporary dental treatment.[8] Lack of education along with traditional beliefs and socio-cultural factors leads to the development of false perceptions and myths. Actions are preceded by perceptions generally in people. Perception is a process through which an individual becomes conscious about and interpret information regarding the situation, but the course of a perception is essentially subjective in nature because it is not a precise reflection of the situation. Hence, a situation may be the same for two individuals but the interpretation of that situation by both of them may be immensely different. Myths are imaginary, generally false beliefs. However, they are considered truthful and often shared by the societies that told them earlier. In scientific terms, myth is referred a traditional story, especially one concerning the early history of a people or explaining a natural or social phenomenon, and typically involving supernatural beings or events.[8] Exploration of available literature related to myths in dentistry revealed hardly any data from Uttar Pradesh. In general, the research output related to this issue is very limited. The present study deals with the exploration of myths related to dentistry. An attempt to assess the prevalence of dental myths and perceived knowledge regarding decayed tooth, oral hygiene,

diet, tobacco, dental problems and treatment among the population of Bhopal, Madhya Pradesh, India was done.

Aim and objectives-

The aim of the study was to determine the prevalence of myths related to dentistry in the rural population of Bhopal city.

Methodology-

A cross-sectional survey was conducted to assess the myths related to dentistry in Bhopal district. The minimum sample size calculated was 100 individual persons. The study protocol was presented in front of Research approval committee and after making required changes the study was approved by the Research approval committee of People's College of Dental Sciences & Research Centre. Then research got approval from the Institutional Ethical Committee. Before the study commenced, informed voluntary written consent (local language) was obtained from the participating subjects. A self-designed questionnaire was used for collection of data. The questionnaire was prepared in the English language as per the requirement of the subjects. A copy of the questionnaire is enclosed in the annexures. The questionnaire consisted of two parts. The first part included a provision for recording sociodemographic data of the participant. The second part consisted of a set of 23 closed-ended questions on myths related to dentistry classified under five domains—decayed tooth, oral hygiene, primary dentition, tobacco, and treatment. The questionnaire was investigator administered. A calibrate examiner was asked the question to the participants for the better response rate of the study. For the statistical analysis, SPSS version 23 was used.

Inclusion Criteria and Exclusion Criteria

Inclusion Criteria

- Subjects who were above 15 years of age.

- A patient who was willing for a signed consent form

Exclusion Criteria

- People who refused to participate in the study.
- People who could not comprehend the questions of the study despite the assistance.

RESULT-

Table 1: Miths about oral hygiene practices

s.no.	myths	Response to participants	
		Yes	No
1	Brushing since once a day is required only to maintain good oral hygiene	88	12
2	Using finger with powdered salt charcoal, brick powder, ash to clean the teeth is as effective as the use of toothbrush and toothpaste	61	39
3	Harder brushing for a longer time makes teeth cleaner	58	37 *

*= 5 individuals' response : don't know

Table 2: Miths towards dental decay

s.no.	Myths towards dental decay	Response to participants	
		Yes	No
	Eating sweets cause tooth decay	70	29
	The worm is there inside the decayed tooth	71	28
	Tooth decay is the result of past sins	62	28
	Application of catechu prevents tooth decay	54	27 *
	Hot water fermentation gives relief in swelling and pain caused by tooth decay	82	18
	Keeping tobacco in a decayed tooth relives tooth pain	65	25

*= 19 individuals' response : don't know

Table 3. Myths towards primary dentition

s.no.	Myths towards primary dentition	Response to participants *	
		Yes	No
	Baby tooth are not important as they are going to fall out anyway	55	36
	Throwing the exfoliated milk tooth of the children on the roof of the house and keeping fallen teeth in rat holes of	71	26

	underneath a stone can lead to the eruption of health and strong permanent teeth		
	A baby with teeth at birth believed to be a threat	68	28

*= Other individuals' response : don't know

Table 4. Myths towards treatment

s.no.	Myths towards treatment	Response to participants*	
		Yes	No
	All dental treatments are painful	68	28
	Dental treatment is always expensive	67	29
	Home remedies are better for dental treatment that what the dental prescribes	50	46
	If I am not pain I don't need to visit the dentist	68	30
	Extraction of teeth of upper jaw causes loss of vision	81	16
	A decayed painful tooth can't be saved and better extract	49	39
	Cleaning of teeth by dentist cause loosening of teeth	65	33
	Extracted teeth need no replacement with artificial teeth	57	39

*= Other individuals' response : don't know

Table 5. Myths towards tobacco

s.no.	Myths	Response to participants *	
		Yes	No
	Chewing betel quid removes foul odour from the mouth	57	25
	Betel quid chewing with slaked lime and tobacco keeps gum health	50	26
	Chewing tobacco helps in maintaining good oral hygiene	44	26

*= Other individuals' response : don't know

In the present study 24% of the study participants were 20 to 30 years of age 56% participants were 30-40 years of age 16% participants were 40-50 years of age and 4% participants were more than 50 years of age. In the present study, 54% were male and 46%

were female. 41% of study participants were educated and 59% of study participants were uneducated. There was 91% of study participants had a dental history.

When asked about oral hygiene practice 88% of study participants said Brushing since once a day is required only to maintain good oral hygiene, 61% participants said that Using finger with powdered salt charcoal, brick powder, ash to clean the teeth is as effective as use of toothbrush and toothpaste and 58% participants said that Harder brushing for longer time makes teeth cleaner(table no.1)

When asked about tooth decay 70% of study participants said that Eating sweets cause tooth decay, 71% participants felt that Worm is there inside the decayed tooth, 62% participants felt that Application of catechu prevents tooth decay, 82% of study participants felt that Hot water fermentation gives relief in swelling and pain caused by tooth decay and 65% participants felt that Keeping tobacco in a decayed tooth relives tooth pain (table no2)

In the present study, when asked about primary dentition 55% of study participants felt that Baby tooth/ deciduous teeth are not important as they are going to fall out anyway, 71% of study participants felt that Throwing the exfoliated milk tooth of the children on the roof of the house and keeping fallen teeth in rat holes of underneath a stone can lead to eruption of health and strong permanent teeth and 68% of study participants felt that A baby with teeth at birth believed to be a threat (table no.3).

When asked about dental treatment 68% All dental treatments are painful,67% felt that Dental treatment are always expensive, 50% felt that Home remedies are better for dental treatment that what the dental prescribes, 68% felt that If I do not pain I don't need to visit the dentist, 81% felt that Extraction of teeth of upper jaw causes loss of vision, 49% felt that A decayed painful tooth can't be saved and better extract, 65% felt that Cleaning of teeth by

dentist cause loosening of teeth and 57% felt that Extracted teeth need no replacement with artificial teeth (table no4)

When asked about tobacco use 57% felt that Chewing betel quid remove foul odour from the mouth, 50% felt that Betel quid chewing with slaked lime and tobacco keeps gum health and 44% felt that Chewing tobacco helps in maintaining good oral hygiene (table no 5)

DISCUSSION-

The latter part of the twentieth century saw a transformation in both general health and oral health unmatched in history. Yet, despite the remarkable achievements in recent decades, millions of people worldwide have been excluded from the benefits of socioeconomic development and the scientific advances that have improved healthcare and quality of life. Inequalities in oral health persist worldwide, with mainly affected being the deprived population.[10] India has a low budget to meet the general populations' oral health treatment needs, a high disease burden and a low literacy rate. All of these factors predispose the general population to poor oral healthcare, false treatment needs assumptions and false beliefs. This also increases the tendency to discover other measures in the form of home remedies rather than consulting a professional dentist. Very scanty epidemiological data are available in this connection, where village communities still comprise more than two-thirds of the country's citizens.

The present study showed that a majority of subjects believed that using a finger with charcoal to clean the teeth is better than using a toothbrush with toothpaste. It is in accordance with the findings of Vivek S et al which revealed that indigenous tooth cleaning systems (charcoal) are still most commonly used practices among the Paniyan tribes of Kerala.[2] Charcoal powder is coarse and it could abrade the enamel and damage periodontal

ligament.[2] A prominent percentage of respondents perceived that brushing can keep the teeth clean and using finger to clean the teeth is better than using toothpaste and toothbrush. A poor level of oral hygiene practices would not have been observed if oral health education, promotion and preventive programs had been carried out in communities that lack access to care. Good level of oral hygiene can be achieved through developing personal skills and raising the awareness level of the individual and society through the concerted efforts of community healthcare professionals.

The importance of baby teeth should be communicated to masses as they are vital for masticatory function, aesthetics, and serve as a guideline for the eruption of permanent dentition and proper jaw development. Findings of the present study revealed that a high percentage of study population believed that swelling caused by painful tooth should be fomented with hot water and also keeping tobacco in a decayed tooth relieves its pain. This shows that their knowledge is poor and is possibly associated with their educational level and poor awareness of oral health. To overcome this problem, education should be provided at all age levels, which helps in rising of internal consciousness, empowerment and also alters unhealthy behaviour and practices.

The present study showed that a majority of respondents are of the opinion that home remedies are better for dental treatment, which is in accordance with what is revealed by the study of Bhasin done on Bhils of Rajasthan[3] and by Lee et al in the study done on Chinese population.5 In the present study, a higher percentage of respondents agreed with the statement that cleaning of teeth by a dentist causes loosening of teeth, which is in concordance as a myth in Hispanics/Latinos found by Vazquez et al.[12] A majority of the population believed in the myth that tooth loss is a part of the aging process, which was also found by Watson et al in their study done on Latinos.[13] Keeping these perspectives in view, the aim should be to counsel the community members, where myths are prevalent. This can

be achieved through ‘reorientation of health services’, in which every healthcare professional should take an active role to educate not only at an individual level but also at the mass level. A high percentage of respondents believed that oral health does not affect general health. This is contrary to what was proposed by World Health Organization to educate the public about the manner in which general health influences the overall health.[14] Future studies could benefit by focusing on a more qualitative interpretation of what the rural population understands about the basic concepts of oral health, disease and hygiene and by experimenting the methods of improving their attitude towards oral health. The results of the present study showed that a targeted program to spread scientific dental practices to them is required.

Evidence-based dentistry advances the use of research evidence effectively in dental practice and improves the dental health professionals’ knowledge regarding patient counselling and aids in clearing misconceptions toward various oral health issues (Kishore et al., 2014; Curro et al., 2011; Norton et al., 2014). Hence, a true evidence-based picture would hold more solid ground for the masses to recognize their false perceptions and beliefs and the need to modify them according to the truthful information attained.

Conclusion

The best means to counter the myths is to base our suggestions on the best available evidence. The onus is on the dental community and the administrative machinery to strive for the following—dental awareness programs especially targeting the rural population vis-a-vis their relative lack of mobility and mental rigidity, setting up subsidized dental care facilities close to rural population, mobile dental clinics and dental camps can play a crucial role in uplifting the oral health of the rural masses.

Consent:

As per international standard or university standard written participant consent has been collected and preserved by the authors.

Ethical approval:

As per international standard or university standard written ethical permission has been collected and preserved by the author(s).

References-

1. Census of India 2011. Available at: www.census.gov.in. Retrieved on 22 March 2014;20:10.
2. Vivek S, et al. Understanding oral health beliefs and behavior among Paniyan tribal in Kerala India. J Int Oral Health 2012; 4(2):22-27.
3. . Kumar TS, et al. Oral health status and practices of dentate. Bhil adult tribes of Southern Rajasthan India. Int Dent J 2009; 59:133-140.
4. Bhasin V. Oral health behavior among Bhils of Rajasthan. J Soc Sci 2004;8(1):1-5.
5. Bhutani Y, et al. Oral health-related cultural beliefs for four racial/ethnic groups: assessment of the literature. BMC Oral Health 2008;8(26):1-13.
6. Petersen PE, Kwan S. Equity, social determinants and public health programs—the case of oral health. Community Dent Oral Epidemiol 2011;39(6):481-487.
7. Watt RG. Emerging theories into the social determinants of health: implications for oral health promotion. Community Dent Oral Epidemiol 2002;30:241-247.
8. Saad Ahmed Khan, et al. Perceptions and myths regarding oral healthcare amongst strata of low socioeconomic community in Karachi, Pakistan. J Pak Med Assoc 2012;62(11):1198-1203.

9. Singh SV, Akbar Z, Tripathi A, Chandra S, Tripathi A. Dental myths, oral hygiene methods and nicotine habits in an aging rural population: An Indian study. J Dent Res 2013;24(2):242-244.

10. Watt R, Sheiham A. Inequalities in oral health: a review of the evidence and recommendations for action. BDJ 1998;187(1):6-12.

11. Olanrewajuige O, Olubukola PB. Teething myths among nursing mothers in a Nigerian community. Niger Med J 2013;54(2): 107-110.

12. Vazquez L, Swan JH. Access and attitudes toward oral health among Hispanics in Wichita, Kansas. J Dent Hygn 2013; 77(2):85-96.

13. Watson MR, Horowitz AM, Garcia I, Canto MT. Caries conditions among 5-year-old immigrant Latino children related to parents oral health knowledge, opinions and practices. Community Dent Oral Epidemiol 1999;27(1):8-15.

14. Sheiham A. Oral health, general health and quality of life. Bulletin of World Health Organization 2005;83(9):644-645.

15. Kishore, M., Panat, S. R., Aggarwal, A., Agarwal, N., Upadhyay, N., & Alok, A. (2014). Evidence based dental care: integrating clinical expertise with systematic research. *Journal of clinical and diagnostic research : JCDR*, *8*(2), 259-62.

16. Curro, F. A., Grill, A. C., Thompson, V. P., Craig, R. G., Vena, D., Keenan, A. V., & Naftolin, F. (2011). Advantages of the dental practice-based research network initiative and its role in dental education. *Journal of dental education*, *75*(8), 1053-60.

17. Norton, W. E., Funkhouser, E., Makhija, S. K., Gordan, V. V., Bader, J. D., Rindal, D. B., Pihlstrom, D. J., Hilton, T. J., Frantsve-Hawley, J., Gilbert, G. H., National Dental Practice-Based Research Network Collaborative Group (2014). Concordance between clinical practice and published evidence: findings from The National Dental Practice-Based Research Network. *Journal of the American Dental Association (1939)*, *145*(1), 22-31.