

**Original Research Article**

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

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**Abstract** **Aim-** The aim of the study was to determine the prevalence of myths related to dentistry in the rural population of Bhopal city

**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.

**Material method-**A copy of the questionnaire is enclosed in the annexure. Questionnaire consisted of two parts. First part included a provision for recording socio-demographic data of the participant. 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. Questionnaire was investigator administered. 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% study participants were educated and 59% study participants were uneducated. There was 91% of study participants had dental history.

**Comment [Rd1]:** The sample has to be mentioned/outlined into the abstract

24 Discussion- Inequalities in oral health persist world-wide, with mainly affected being the  
25 deprived population. India has a low budget to meet the general populations' oral health treat-  
26 ment needs, a high disease burden and a low literacy rate. All these factors predispose the  
27 general population to poor oral healthcare, false treatment need assumptions and false beliefs.

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

## 29 INTRODUCTION

30 Oral health is a critical but an overlooked component of overall health and well-being among  
31 children and adults. Oral health problems, such as dental caries, periodontitis and oral cancer  
32 are global health problems. They are found in different populations belonging to developed  
33 and developing countries. There are reports suggesting that the oral diseases are showing an  
34 increasing trend in developing countries in the past few decades. The resources are limited  
35 and the health infrastructure is not geared up in the developing countries to cope with the  
36 burgeoning oral healthcare needs. Oral health inequalities are a prime issue to be addressed  
37 by dental public health personnel. India is the 6th largest country area wise with a population  
38 of 1.21 billion.<sup>1</sup> There exist health inequalities including oral health inequalities between  
39 urban and rural populations in India. The majority of the population in India live in rural areas and  
40 have limited health and oral healthcare services available to them.

41 Despite remarkable worldwide progress in the field of diagnostics, curative and preventive  
42 health, there are people still living in isolation in natural and unpolluted surroundings faraway  
43 from civilization with their traditional values, customs, beliefs and myths intact.<sup>2,3</sup> Cultural  
44 forces bind people and also profoundly shape their lives. Culture has its own influence on  
45 health and sickness and that is greatly depicted by the values, beliefs, knowledge and  
46 practices shared by the people. Oral health is not an exception. Alike all health problems,  
47 dental and oral diseases are a product of economic, social, cultural, environmental and  
48 behavioral factors.<sup>4-7</sup> Oral diseases make significant contributions to the global burden of

Comment [Rd2]: underestimated

Comment [Rd3]: present

Comment [Rd4]: increased demand on

Comment [Rd5]: Health .....exist  
between.....

49 disease, which is particularly high in the underprivileged groups of both developed and  
50 developing countries. The underlying cultural beliefs and practices influence the conditions  
51 of the teeth and mouth, through diet, care-seeking behavior, or use of home remedies.<sup>5</sup> Myths  
52 related to oral diseases and oral health-related practices are very common in rural population  
53 of India.

54 Myths may arise as either truthful depictions or over elaborated accounts of historical events,  
55 as allegory or personification of natural phenomena, or as an explanation of ritual. They are  
56 used to convey religious or idealized experience, to establish behavioural models, and to  
57 teach. Dental myths usually emerge from false traditional beliefs and non scientific  
58 knowledge. This is embedded in the psyche of future generations over a period of time and  
59 thus, creates hindrance in the recognition of scientific and contemporary dental treatment.<sup>8</sup>  
60 Lack of education along with traditional beliefs and socio-cultural factors leads to  
61 development of false perceptions and myths. Actions are preceded by perceptions generally  
62 in people. Perception is a process through which an individual becomes conscious about and  
63 interpret information regarding the situation, but the course of a perception is essentially  
64 subjective in nature because it is not a precise reflection of the situation. Hence, a situation  
65 may be the same for two individuals but the interpretation of that situation by both of them  
66 may be immensely different. Myths are imaginary, generally false beliefs. However, they are  
67 considered truthful and often shared by the societies that told them earlier. In scientific terms,  
68 myth is referred to as extensive and unquestioned false perspective.<sup>8</sup> Exploration of available  
69 literature related to myths in dentistry revealed hardly any data from Uttar Pradesh. In  
70 general, the research output related to this issue is very limited. The present study deals with  
71 exploration of myths related to dentistry. Here is an attempt to assess the prevalence of dental  
72 myths and perceived knowledge regarding decayed tooth, oral hygiene, diet, tobacco, dental  
73 problems and treatment among population of Bhopal , Madhya Pradesh, India.

Comment [Rd6]: Health conditions

Comment [Rd7]: Past en future???

Comment [Rd8]: Add alsodefinition from Oxford dictionary!

Comment [Rd9]:

74 **Aim and objectives-**

75 Aim of the study-

76

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

79 Objectives of the study-

- 80 1. To assess the prevalence of dental myths and perceived knowledge regarding decayed  
81 tooth,  
82 2. To assess the prevalence of dental myths regarding oral hygiene practices.  
83 3. To assess the prevalence of dental myths regarding diet.  
84 4. To assess the prevalence of dental myths regarding tobacco use  
85 5. To assess the prevalence of dental myths regarding dental problems.  
86 6. To assess the prevalence of dental myths regarding treatment

**Comment [Rd10]:** I consider this term not very be proper, it concerns the prevalence of the knowledge about causes (wether they are true or false (=myth) of decay

**Comment [Rd11]:** Likewise remark 10, it concerns the prevalence of the method of oral hygiene practices

87 **Methodology-**

88 A cross-sectional survey was conducted to assess the myths related to dentistry in Bhopal  
89 district. The minimum sample size calculated was 100. The study protocol was presented in  
90 front of Research approval committee and after making required changes the study was  
91 approved by the Research approval committee of People's College of Dental Sciences &  
92 Research Centre. Then research got approval from Institutional Ethical Committee. Before  
93 the study commenced, informed voluntary written consent (local language) was obtained  
94 from the participating subjects. A self-designed questionnaire was used for collection of data.  
95 The questionnaire was prepared in English language. A copy of the questionnaire is enclosed  
96 in the annexures. Questionnaire consisted of two parts. First part included a provision for  
97 recording sociodemographic data of the participant. Second part consisted of a set of 23

**Comment [Rd12]:** Reconsider the description of "myths" or at least describe it in the discussionpart with respect to the remarks nr 10 and 11 etc

**Comment [Rd13]:** This is an insufficient description of the sample and unclear to me, moreover because in all the tables it is not described wether it are percentages or numbers and tot totals don't reach "100"

**Comment [Rd14]:** All participants understand English language???

98 closed-ended questions on myths related to dentistry classified under five domains—decayed  
 99 tooth, oral hygiene, primary dentition, tobacco, and treatment. The questionnaire was  
 100 investigator administered. A calibrated examiner was asked the question to the participants for  
 101 the better response rate of the study. For the statistical analysis SPSS version 23 was used.

102 **Inclusion Criteria and Exclusion Criteria**

103 **Inclusion Criteria**

- 104 ➤ Subjects who were above 15 years of age.
- 105 ➤ Patient who were willing for signed consent form

106 **Exclusion Criteria**

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

109 **RESULT-**

110

111 Table no 1

s.no.	myths	Response of 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 use of toothbrush and toothpaste	61	39
3	Harder brushing for longer time makes teeth more cleaner	58	37

112

113 Table no 2

s.no.	Myths towards dental decay	Response of participants	
		Yes	No
	Eating sweets cause tooth decay	70	29
	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

114

**Comment [Rd15]:** Add legends to all tables, for example see study: <https://www.hindawi.com/journals/prm/2018/8746858/>

**Comment [Rd16]:** 5 missing data

**Comment [Rd17]:** apart from the hot water fermentation question, all responds don't have the 100 total, explain or add a column to complete.

115 Table no 3

s.no.	Myths towards primary dentition	Response of participants	
		Yes	No
	Baby tooth are not important as they are going to fall out any way	55	36
	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	71	26
	A baby with teeth at birth believed to be a threat	68	28

**Comment [Rd18]:** All responds don't have the 100 total, explain or add a column to complete.

116

117 Table no 4

s.no.	Myths towards treatment	Response of participants	
		Yes	No
	All dental treatments are painful	68	28
	Dental treatment are 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 needs no replacement with an artificial teeth	57	39

**Comment [Rd19]:** All responds don't have the 100 total, explain or add a column to complete.

118

119 Table no 5 of tobacco

s.no.	Myths	Response of 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

**Comment [Rd20]:** All responds don't have the 100 total, explain or add a column to complete.

120

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

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

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

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

142 When asked about dental treatment 68% All dental treatments are painful,67% felt that  
143 Dental treatment are always expensive, 50% felt that Home remedies are better for dental  
144 treatment that what the dental prescribes, 68% felt that If I am not pain I don't need to visit  
145 the dentist, 81% felt that Extraction of teeth of upper jaw causes loss of vision, 49% felt that  
146 A decayed painful tooth can't be saved and better extract, 65% felt that Cleaning of teeth by  
147 dentist cause loosening of teeth and 57% felt that Extracted teeth needs no replacement with  
148 an artificial teeth (table no4)

149

**Comment [Rd21]:** Baby tooth + deciduous teeth

150 When asked about tobacco use 57% felt that Chewing betel quid removes foul odour from the  
151 mouth, 50% felt that Betel quid chewing with slaked lime and tobacco keeps gum health and  
152 44% felt that Chewing tobacco helps in maintaining good oral hygiene (table no 5)

### 153 **DISCUSSION**

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

166 The present study showed that a majority of subjects believed that using finger with charcoal  
167 to clean the teeth is better than using a toothbrush with toothpaste. It is in accordance with the  
168 findings of Vivek S et al which revealed that indigenous tooth cleaning systems (charcoal)  
169 are still most commonly used practices among the Paniyan tribes of Kerala.<sup>2</sup> Charcoal  
170 powder is coarse and it could abrade the enamel and damage periodontal ligament.<sup>2</sup> A  
171 prominent percentage of respondents perceived that brushing can keep the teeth clean and  
172 using finger to clean the teeth is better than using toothpaste and toothbrush. A poor level of  
173 oral hygiene practices would not have been observed if oral health education, promotion and

Comment [Rd22]: Add previous remarks

Comment [Rd23]: are

174 preventive programs had been carried out in communities that lack access to care. Good level  
175 of oral hygiene can be achieved through developing personal skills and raising the awareness  
176 level of the individual and society through the concerted efforts of community healthcare  
177 professionals.

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

187 The present study showed that a majority of respondents are of the opinion that home  
188 remedies are better for dental treatment, which is in accordance with what is revealed by the  
189 study of Bhasin done on Bhils of Rajasthan<sup>3</sup> and by Lee et al in the study done on Chinese  
190 population.<sup>5</sup> In the present study, a higher percentage of respondents agreed with the  
191 statement that cleaning of teeth by a dentist causes loosening of teeth, which is in  
192 concordance as a myth in Hispanics/Latinos found by Vazquez et al.<sup>12</sup> A majority of  
193 population believed in the myth that tooth loss is a part of aging process, which was also  
194 found by Watson et al in their study done on Latinos.<sup>13</sup> Keeping these perspectives in view,  
195 the aim should be to counsel the community members, where myths are prevalent. This can  
196 be achieved through 'reorientation of health services', in which every healthcare professional  
197 should take active role to educate not only at an individual level but also at the mass level. A  
198 high percentage of respondents believed that oral health does not affect general health. This is

199 contrary to what was proposed by World Health Organization to educate the public about the  
200 manner in which general health influences the overall health.<sup>14</sup> Future studies could benefit  
201 by focusing on a more qualitative interpretation of what the rural population understands  
202 about the basic concepts of oral health, disease and hygiene and by experimenting the  
203 methods of improving their attitude towards oral health. The results of the present study  
204 showed that a targeted program to spread scientific dental practices to them is required.

205 The best means to counter the myths is to base our suggestions on the best available  
206 evidence. Evidence-based dentistry advances the use of research evidence effectively in  
207 dental practice and improves the dental health professionals' knowledge regarding patient  
208 counseling and aids in clearing misconceptions toward various oral health issues. Hence, a  
209 true evidence-based picture would hold more solid ground for the masses to recognize their  
210 false perceptions and beliefs and the need to modify them according to the truthful  
211 information attained. The onus is on the dental community and the administrative machinery  
212 to strive for the following—dental awareness programs specially targeting the rural  
213 population vis-a-vis their relative lack of mobility and mental rigidity, setting up subsidized  
214 dental care facilities close to rural population, mobile dental clinics and dental camps can  
215 play a crucial role in uplifting the oral health of the rural masses.

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**Comment [Rd24]:** add general evidence based dentistry reference

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