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ORIGINAL RESEARCH

Myths Related to Dental Decay and Tobacco Consumption: Debunked

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ABSTRACT

Aims: To assess the prevalence of myths related to dental decay and tobacco consumption in the general population of Navi Mumbai, Maharashtra, India.

Materials and methods: A cross-sectional, questionnaire study was carried out to understand the myths related to dental decay and tobacco consumption. The study included 14 close-ended questions. The statistical analysis was carried out using Statistical Package for the Social Sciences (SPSS) version 17.0 software. analysis of variance and t-test were used to compare the prevalence of myths.

Results: The mean age of the study population was 40.48 ± 3.8 years with 77.9% males and 22.1% females. A total of 94.4% people believe that "worms on the tooth surface are responsible for tooth decay." All the respondents (100%) believed that "only aged people get cancer of the mouth because of tobacco consumption," while 95.3% participants had a perception that "chewing 'paan' after heavy meals helps in digestion." In comparison, females showed higher prevalence of myths (5.31 ± 1.000), and the prevalence of myths was highest in the upper lower class (5.44 ± 0.771) ($p < 0.05$).

Conclusion: Results of the current study show that there is a higher prevalence of myths in the general population of Navi Mumbai, Maharashtra, India. Overall, there is a need to increase awareness among people on various oral health aspects.

Keywords: Dental decay, Myths, Tobacco, Tobacco consumption.

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INTRODUCTION

The word "myth" originates from the Greek word "mythos," which means stories shared by a group of people, which are part of their cultural identity, having a strong influence in seeking treatment during illness.[1] It is a traditional story usually concerning some being, an event with or without a determinable basis, facts, or explanation. The stories are passed on from one generation to the next. Why, when, and how myths came into existence is still a mystery. In spite of the development of science and technology, there are many people who are superstitious and credulous in their beliefs. Lack of education, irrational traditional beliefs, and sociocultural factors could be the possible factors for the development of false perceptions and myths.

Human health and hygiene cannot be isolated from its social context. In ancient times, health and illness were interpreted in a cosmological and anthropological perspective by the people. Medicine was dominated by magical and religious beliefs, which were an integral part of ancient cultures and civilizations.[2] Oral diseases make significant contributions to the global burden of diseases, which is particularly high in the underprivileged groups of both developed and developing countries. The underlying cultural beliefs and practices influence the conditions of the teeth and mouth, through diet, care-seeking behavior, or use of home remedies.[3] Oral health is an overlooked component of overall health. Oral health problems, such as dental caries, periodontitis, and oral cancer are global health problems. Poor oral health may inflict intimidation, hamper social relations, lead to chronic diseases, and can bring upon high financial cost for treatment. Oral diseases are the fourth most expensive diseases to treat.[4] Oral diseases have shown an increasing trend in developing countries in the past few decades.[5] A study conducted in the North Indian rural population reported 81% prevalence of one or more dental myths.[6] An individual's perception of oral health measures the value attached to oral health and the likelihood of seeking oral care to achieve optimal oral health status.[7] Many people consider oral signs and symptoms to be less important than indications of general illness and have false beliefs toward oral treatments. As a result, they avoid or postpone the treatment, thus exacerbating the problems.[8] It is important to know about these myths and misconceptions prevalent in the population as understanding them is essential to plan an oral health education program. Therefore, this study was undertaken

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to assess the prevalence of myths related to dental decay and tobacco consumption among the general population of Navi Mumbai.

MATERIALS AND METHODS

Sampling Design

A cross-sectional questionnaire survey was conducted to determine the prevalence of myths related to dental decay and tobacco consumption among the general population of Navi Mumbai, Maharashtra, India. The study was conducted for the duration of 4 months from April to July 2015. The sample size of the study was 1,067, which was calculated based on the results of a pilot study done on 30 subjects to assess the feasibility and validity of the proforma. Ethical clearance was obtained from the ethical committee of the institution, and informed consent was taken from all the participants. The socioeconomic status of the participants was calculated using the Kuppuswamy Socioeconomic Status Scale 2014.[9]

Questionnaire

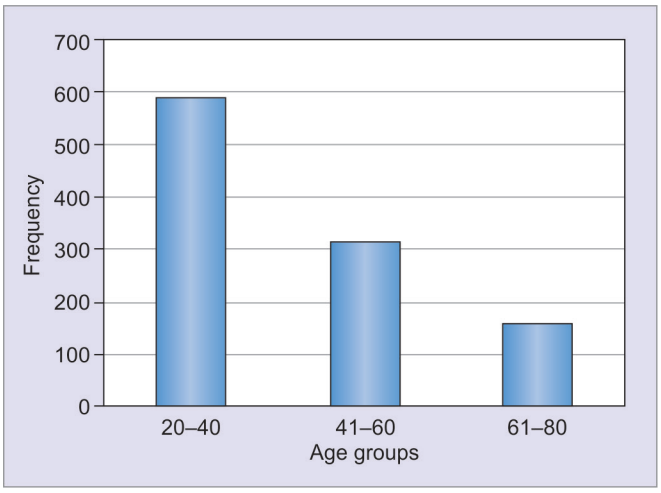
The data was collected by a questionnaire designed for the study. The questionnaire was divided into 2 main parts. The first part was the demographics, which included the age, gender, religion, educational qualification, and monthly family income of the participants. The second part had two main headings: "Myths Related to Dental Decay" and "Myths Related to Tobacco Consumption." There were a set of 14 close-ended questions. Every respondent was given marks according to preformed criteria as "yes" = 1, which shows prevalence of myths, and "no" and "don't know" = 0. The data was collected and entered in a Microsoft excel sheet and the statistical analysis was carried out using Statistical Package for the Social Sciences (SPSS) version 17.0 (SPSS Inc., Chicago, IL, USA). The p value was taken as significant when less that 0.05 (with confidence interval of 95%). Frequency distribution was calculated. The t-test and analysis of variance test were used to compare the prevalence of myths with different study variables.

RESULTS

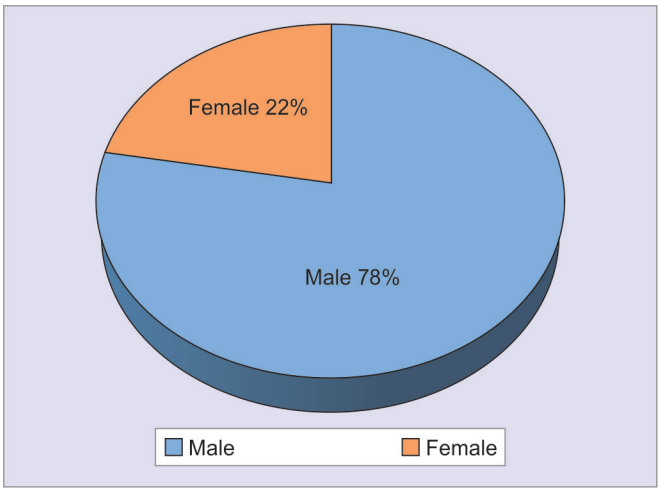
A total of 1,067 respondents were randomly selected from the population of Navi Mumbai. Around 591 respondents (55.39%) were in the age group 18 to 40 years, 316 (29.61%) in the age group 41 to 60, and 160 (14.99%) in the age group 61 to 80 (Graph 1). Of these, 831 (77.88%) were males and 236 (22.11%) were females (Graph 2). According to the Kuppuswamy Socioeconomic Status Scale,[4] 25 (2.34%) respondents belonged to the upper class, 205 (19.21%) belonged to the middle/lower middle class, 832 (77.97%) were from the lower/upper lower class, while 5 (0.47%) were from the lower class (Table 1).

Table 2 shows the responses for the questions on "Myths Related to Dental Decay." About 960 (90%) people believed that decay occurs because the teeth are soft; 889 (83.3%) considered that placing clove in a decayed tooth relieves pain. That calcium helps prevent tooth decay was the opinion of 456 (42.7%) respondents. About 362 (33.9%) believed that dental decay is a hereditary process. That worms are responsible for tooth decay is still the belief of 1,007 (94.4%) people, and about 927 (86.9%) still consider placing a "pain-killer" tablet around a tooth to relieve pain.

Table 3 shows the prevalence of "Myths Related to Tobacco Consumption." The major myth prevalent among the population is that cancer of the mouth is a disease only of the aged people and not the young ones, as 1,067 (100%) agreed to it. The results show that 1,017 (95.3%) people believe that chewing "paan" after heavy



Graph 1: Distribution of the study population according to age group



Graph 2: Distribution of the study population according to gender

Table 1: Distribution of the study population according to socioeconomic status

Class	*Frequency*	*Percentage*
I	0	0
II	25	2.3
III	205	19.2
IV	832	78.0
V	5	0.5

Table 2: Prevalence of myths related to dental decay

No.	*Question*	*Yes (%)*	*No (%)*	*Do not know (%)*
1	Dental decay occurs because the teeth are soft.	960 (90)	62 (5.8)	45 (4.2)
2	Placing clove in a decayed tooth relieves pain.	889 (83.3)	136 (12.7)	42 (3.9)
3	Calcium should be taken to prevent tooth decay.	456 (42.7)	239 (22.4)	372 (34.9)
4	Decay in the teeth is a hereditary process.	362 (33.9)	428 (40.1)	277 (26)
5	Tooth decay is caused by the God for sins committed.	14 (1.3)	973 (91.2)	80 (7.5)
6	Worms on the tooth surface are responsible for tooth decay.	1007 (94.4)	20 (1.9)	40 (3.7)
7	Keeping a "pain-killer" tablet near the painful tooth relieves pain.	927 (86.9)	88 (8.2)	52 (4.9)

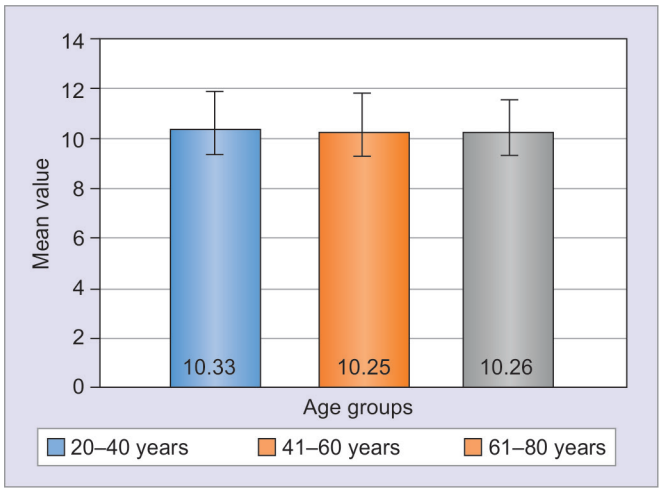
Table 3: Prevalence of myths related to tobacco consumption

No.	*Question*	*Yes (%)*	*No (%)*	*Do not know (%)*
8	Chewing tobacco is safer than smoking tobacco.	462 (43.3)	445 (41.7)	160 (15)
9	Betel quid chewing with slaked lime can keep gum problems away.	329 (30.8)	703 (65.9)	35 (3.3)
10	Chewing "paan" is good for oral health.	444 (41.6)	623 (58.4)	0
11	Only aged people get cancer of the mouth because of tobacco consumption.	1067 (100)	0	0
12	Chewing betel quid helps to remove foul odor from the mouth.	987 (92.5)	40 (3.7)	40 (3.7)
13	Chewing "paan" after heavy meals helps in digestion.	1017 (95.3)	35 (3.3)	15 (1.4)
14	Cleaning the teeth with "mishri" is effective in maintaining oral hygiene.	889 (83.3)	178 (16.7)	0

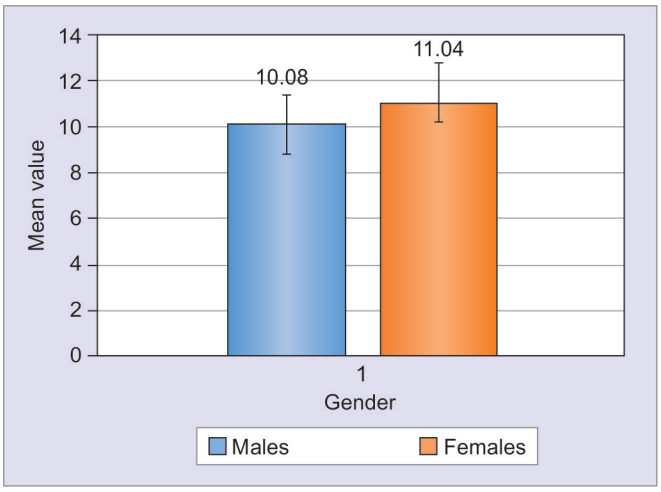
meals aids in digestion, while 889 (83.3%) respondents consider "mishri" is effective in maintaining oral hygiene, and 987 (92.5%) people consider that chewing betel quid helps to remove foul odor from the mouth; 462 (43.3%) people believe that chewing tobacco is safer when compared to smoking tobacco, while 445 (41.7%) oppose this idea. Around 703 (65.9%) people consider that betel quid chewing with slaked lime helps to keep gum problems away.

When the overall prevalence of myths was compared with age groups, no statistically significant difference was found ($p > 0.05$) (Graph 3). The overall prevalence of myths was higher among females (5.31 ± 1.000) than males (5.15 ± 0.856), and this difference was found to be statistically significant ($p < 0.05$) (Graph 4). The prevalence of myths was highest in the lower class (5.44 ± 0.771) followed by the upper middle class (5.16 ± 1.106) ($p < 0.05$) (Graph 5).

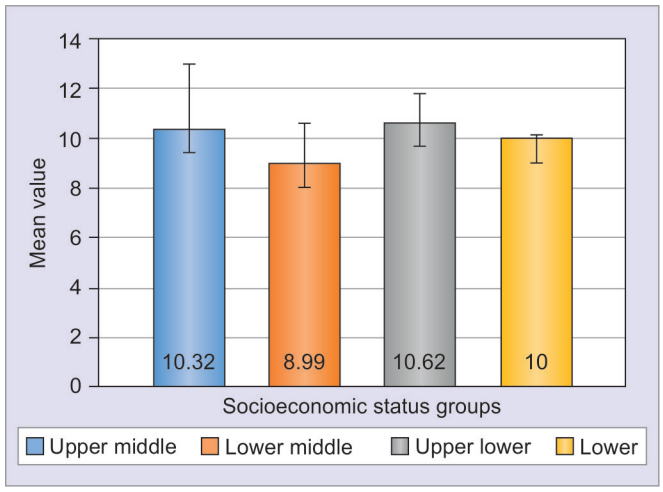
Table 4 shows a comparison of the prevalence of myths related to dental decay with different study variables. The prevalence was higher in females (5.31 ± 1.000) and the upper middle class (5.44 ± 0.771) ($p < 0.05$). The table also shows a comparison of the prevalence of myths related to tobacco consumption. Females (5.73 ± 0.886) and the lower middle class (5.18 ± 0.957) showed higher prevalence of myths, and the difference was statistically significant ($p < 0.05$).



Graph 3: Comparison of prevalence of myths according to age groups. Statistically nonsignificant $p > 0.05$



Graph 4: Comparison of prevalence of myths according to gender. Statistically significant $p < 0.05$



Graph 5: Comparison of prevalence of myths according to socioeconomic status. Statistically significant $p < 0.05$

Table 4: Comparison of the prevalence of myths related to dental decay and tobacco consumption with different study variables

	Comparison of prevalence of myths related to dental caries			*Comparison of prevalence of myths related to tobacco consumption*		
	Mean	*Standard Deviation*	*p-value*	*Mean*	*Standard Deviation*	*p-value*
Age (years)						
20–40	5.22	0.893		5.11	1.061	
41–60	5.17	0.909	0.796	5.08	1.051	0.687
61–80	5.13	0.852		5.13	0.991	
Gender						
Male	5.15	0.856	0.015	4.93	1.022	0.000
Female	5.31	1.000		5.73	0.886	
Socioeconomic status						
Class II	5.16	1.106		5.16	1.700	
Class III	4.19	0.540		4.80	1.235	
Class IV	5.44	0.771	0.000	5.18	0.957	
Class V	4.00	0.000		6.00	0.000	

DISCUSSION

Myths are deeply seated irrational thoughts in the minds of the masses. They are nonscientific beliefs developed over the years due to shortfall of rational thinking, awareness, education, social behavior, and cultural factors. Hence, people lack oral hygiene; they opt for wrong dental treatments from quacks, prefer home remedies, and lack consultation and treatment with a professional dentist.

The present study was conducted in the general population of Navi Mumbai, Maharashtra, India, to assess the prevalence of myths related to dental decay and tobacco consumption.

Myths Related to Dental Decay

Majority of the subjects believed that "worms on the tooth surface are responsible for dental caries," whereas studies have shown that dental caries belongs to a group of common diseases considered as "complex" or "multifactorial."[10] This is in contrast with the results of the study carried out by Parveen et al[11] in Multan, Pakistan, where 64.3% participants believed that sweet intake affects oral hygiene and is responsible for dental decay, while a study among school children of North Jordan reported that most subjects were aware that sweets (87%) and soft drinks (77%) have a negative impact on dental health.[12] The respondents in our study had a strong belief that placing a clove or a pain killer tablet around a painful tooth helps to relieve pain. This is a form of self-medication, and self-medication is practiced all over the world.[13] Toothache is the most likely symptom that may warrant patients to embark on self-medication.[14] The most commonly abused substances/medication is analgesics/nonsteroidal anti-inflammatory drugs and antibiotics because analgesics and antibiotics are widely available and easily procured over the counter in our environment.[15] Placing clove or using clove oil to reduce toothache is a very common practice. It has been well documented that different parts of a clove are very useful

in toothache.[16] The analgesic effect of clove is attributed to eugenol, which inhibits the prostaglandins and other inflammatory mediators such as leukotrines.[17] Saravanan and Thirineervannan[18] reported that people think placing tobacco and consuming alcohol help to reduce tooth pain. In a study carried out by Roberts-Thomson KF et al in Australian population, 85% of the study population believed that calcium helps in preventing dental decay, which is higher than the result obtained in our study (only 42.7%).[19] The myth that "dental decay occurs because the teeth are soft" can be attributed to the fact that hypoplastic or hypomineralized teeth are more prone to brownish/blackish discoloration, which can be misunderstood with dental decay by people who lack knowledge. In our study, only 1.3% of the study population believed that "dental decay is caused by the God for sins committed"; majority of them belonged to the age group 60 to 80; this finding was similar to a study by Saravanan and Thirineervannan.[18]

Myths Related to Tobacco Consumption

A large body of evidence exists for diseases caused due to tobacco smoke in the environment.[20] In the present study, 43.3% of the population believed that smokeless tobacco is safer than smoking tobacco. In a similar study carried out by Vignesh and Priyadarshni,[21] 52.8% people believed that smokeless tobacco is safer than smoking tobacco. Studies have shown that smokeless tobacco use can cause oral cancer and esophageal cancer and contributes to cardiovascular diseases.[20,22] A study by Dongre et al[23] reported that smokeless tobacco is most commonly used by adolescents in the rural Wardha district of Maharashtra. It was mainly associated with social status and medicinal values (e.g., for cleaning teeth, for relieving toothache, for preventing constipation, and for relieving acidity). Smoking is a major cause of cancer of the lungs, larynx, oral cavity, pharynx, and esophagus, as well as of cardiovascular diseases and chronic obstructive pulmonary diseases.[20,22,24] All the participants in the survey believed that "only aged people get cancer of the mouth because of tobacco consumption." Recent studies have shown that there is an increase in the incidence of oral cancer with the highest incidence of carcinoma of the tongue among the younger adults.[24] A cohort study conducted in Mumbai showed that men who smoked had a higher risk [risk ratio = 1.40 (0.95–2.06)] of death due to cancer because of tobacco use.[25] Many respondents had a belief that "cleaning the teeth with 'mishri' is effective in maintaining oral hygiene." "Mishri," which is roasted tobacco powder, is used for cleaning teeth. The use of tobacco products as dentifrice among adolescents (13–15 years) ranges from 6% (Goa) to 68% (Bihar).[26] A similar study done by Sinalkar et al[27] showed that "mishri" usage (45%) was the commonest form of smokeless tobacco use among women residing in a rural village of Pune, Maharashtra, India. The coarseness of "mishri" can cause damage to the enamel and the dentin, is traumatic to the gingiva, and also carries the carcinogenic risk of tobacco. The government of India has defined legislative measures that prohibit the use of tobacco as an ingredient in dental care products and sale of tobacco-related products to minors.[28] Chewing "paan" after meals is a very common practice in India, which is clearly reflected in the study, as around 95.3% people believed that it aids digestion. The main ingredients of "paan" are betel leaf, areca nut (supari), slaked lime (chuna), and catechu (katha) with or without tobacco. According to traditional Ayurvedic medicine, chewing areca nut is a good remedy for deworming, and along with betel leaf, it prevents halitosis.[29] But areca nut, in particular, is responsible for the development of a potentially malignant disorder called oral sub-mucous fibrosis.[30] The nicotine in tobacco chewed in "paan" causes stomach ulcers. Chewing tobacco in "paan" increases the production of gastric juices, which raise the acidity level and erode the stomach lining.[31]

CONCLUSION

The result of the current study shows that myths still hover in the minds of the common people. Many more such myths and irrational dental practices lurk in the society and are responsible for the increased incidence and prevalence of oral diseases. The best way to counter such situation is by increasing awareness and educating the masses through various means like television advertisements, newspapers, social media, posters, dental camps, community-level programs, oral health education at school level, etc. All these means can play a major role in eliminating the myths from the minds of the people. Further studies are required to find out the prevalence of myths in different subgroups of population, which will help us make a targeted action plan.

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