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Oral health myths among patients visiting a district level hospital in eastern Nepal: A cross-sectional study

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Abstract

Background: Developing countries face challenges like lack of awareness, poor accessibility, and false perception towards oral health. This has created blockade to good oral health. Southeast Asia countries have low oral health literacy and higher myths.

Objectives: To determine prevalence of oral health related myths and misconceptions among patients visiting Dhankuta district hospital of eastern Nepal.

Methods: An analytical cross-sectional questionnaire-based study was conducted from 2020 December to 2021 March among 395 individuals visiting study site. Convenience sampling method was used to select participants, after ethical approval. Interview was done to identify prevalence of oral health-related myths. Data were analysed in SPSS v.20. Mean, standard deviation, frequency, and percentage were calculated depending upon data. Chi-square test was done to determine association between categorical variables.

Results: Out of 395 individuals interviewed, 203 (51.4%) were males. Among them, 362 (91.7%) believed in at least one myth regarding oral health: 295 (74.7%) had at least one myth-related to dental caries, 271 (68.6%) regarding oral hygiene, 146 (37.0%) related to oral cancer, and 257 (65.1%) regarding general aspect of dentistry. Myths regarding dental caries were significantly associated with age ($p = 0.034$). Significant association was seen between educational level and myths regarding dental caries ($p = 0.004$), oral cancer ($p \leq 0.001$), and general dental aspect ($p = 0.001$).

Conclusion: Study findings concluded that myths related to dentistry were prevalent among study participants. Behavioural change through oral health awareness should be targeted for promoting oral health in the community and nation as a whole.

Key words: Dentistry; Mouth neoplasms; Myths; Nepal; Oral health.

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INTRODUCTION

A person's perception regarding something depends upon his/her social position, educational background, and community.[1] False impressions may foster due to inadequate knowledge, traditional beliefs, socio-economic, and cultural issues.[2] Determining health needs of indigenous communities through methods that correctly represent their problems and concerns while preserving their culture and identity is a significant public health challenge.[3]

Oral health is an important but often overlooked aspect of overall health and well-being.[4] Worldwide, there are many misconceptions about various dental procedures and their outcomes.[5] Myths are stories shared by a group

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of people which are part of their cultural identity with strong influence in the life of individuals and their way of living including seeking treatment during illnesses.[6] In the developing countries of southeast Asia, the oral health literacy is low, and myths are prevalent.[5,7,8]

Nepal also shares the same cultural values and socio-economic status of southeast Asian region. Studies conducted in two different regions of Nepal found high prevalence of oral health-related myths which could be associated with poor early health seeking behaviour and poor compliance with treatment.[9,10] This study was conducted to find the prevalence of oral health-related myths and misconceptions among people visiting district hospital of Dhankuta.

METHODOLOGY

An analytical cross-sectional study was conducted among 395 patients visiting the district hospital of Dhankuta in eastern Nepal, to assess the prevalence of myths regarding oral health by using a questionnaire based on the myths and facts related to dentistry. The data were collected between 2020 December to 2021 March. Ethical clearance for this research was received from Nepal Health Research Council (Ref. 1893). Demographic details based on age, gender, occupation, and income of the patients were obtained. The eligibility criteria for study population included all the patients above the age of 18 years, visiting the district hospital of Dhankuta, who were willing to participate in the study. Those under psychiatric medication or substance abuse were excluded. The nature and purpose of the study were explained to the participants and informed consent was obtained before taking interview.

Keeping confidence interval of the study at 95%, prevalence (p) 36.4%,[9] margin of error (e) 5%, and adding 11% non-response rate the sample size was decided. Therefore, the final sample size required for the study was 395. Convenience sampling method was done to select the study participants. A pretested questionnaire used by Vignesh et al.[8] was used after translating into the vernacular (Nepali) language by standard back translation method. The steps adopted were, preparation; forward translation, done simultaneously by two independent translators; forward translation reconciliation, whereby the forward translations were compared and merged into one by either one of the forward translators or an independent translator; back translation, done independently by two translators who do not have access to the source text; back translation review, performed by an expert who compared the back translations with the original text, identified discrepancies and discussed with the translator who did the reconciliation if any changes need to be made; harmonisation, whereby back translations of a number of language versions are compared to achieve a consistent approach in addressing translation issues; pretesting on a small group (10%) of patients; review of pretesting results and finalisation; and proofreading. The questionnaire included 20 closed-ended questions. The five questions were based on the myths regarding dental caries, next five were about the myths regarding oral hygiene, other five questions were related to the myths regarding oral cancer, and last five questions were based on the myths regarding general dental aspects. The survey questions were precise, short, and objective-based, that would consume minimum time of the participants to minimise response bias. Face to face interview with the enrolled participants was done by the principal investigator.

The data entry was done in Microsoft Excel Sheet. The response was labelled "1" if myth was present for response "agree" and "0" if absent for "disagree" or "don't know". The data were then analysed in IBM SPSS Statistics for Windows, version 20 (IBM Corp., Armonk, N.Y., USA). Mean, standard deviation, frequency, and percentage were computed depending upon the nature of data. Chi-square test was done to determine association between demographic variables and presence of myth. The significance level was set at $p < 0.05$.

RESULTS

A total of 395 people visiting the hospital were included in the study among which 203 (51.4%) were males and 192 (48.6%) were females. Among 395 responses received, 362 (91.7%) believed in at least one myth regarding oral health (Figure 1). The responses given by the patients regarding myths in dentists, oral hygiene, oral cancer, and general dental aspects are tabulated (Table 1).

When comparing the presence of myth in different aspects, it was seen that at least one myth related to dental caries was present among 295 (74.7%), while 271 (68.6%) believed in myth related to oral hygiene, 146 (37.0%) in myth related to oral cancer, and 257 (65.1%) in myth related to general dental aspect (Figure 2).

To compare the presence of myth in different dental aspects depending upon demographic variables, respondents were divided into three groups according to age and level of education. According to age, respondents belonging to age ≤20 years were classified as young, 21-60 years as adult and >60 years as old age group. In education level category, individuals who did not have any formal education were categorised

as illiterate, those who studied up to 12 class as school level, and those who had studied above 12 class as university level education. On analysis, presence of myth regarding dental caries was significantly higher in older age group (p = 0.034, Table 2). Illiterate respondents had significantly higher myth related to dental caries (p = 0.004, Table 2), oral cancer (p <0.001, Table 3), and general dental aspect (p=0.001, Table 3).

Table 1: Responses given for questionnaire related to myths in dentists

Q. N.	Question	Agree n (%)	Do not agree n (%)	Do not know n (%)	Total n (%)
1	**Responses given for questions related to myths regarding dental caries.**				
1A	Chocolate is the only cause of cavities.	203 (51.4)	170 (43.0)	22 (5.6)	395 (100)
1B	Decay in milk teeth need not be treated as they are going to fall anyways.	109 (27.6)	257 (65.1)	29 (7.3)	395 (100)
1C	Any tooth pain due to decay, it is better to extract rather than saving it.	143 (36.2)	228 (57.7)	24 (6.1)	395 (100)
1D	Once a tooth is treated, the decay stops in that tooth.	50 (12.7)	301 (76.2)	44 (11.1)	395 (100)
1E	There is no pain after a Root Canal Treatment, so I do not need to place a crown.	64 (24.3)	235 (59.5)	96 (24.3)	395 (100)
2	**Responses given for questions related to myths regarding oral hygiene.**				
2A	More you brush using hard bristles, the more white your teeth becomes.	55 (13.9)	325 (82.3)	15 (3.8)	395 (100)
2B	Brushing your teeth using salt, whitens your teeth.	145 (36.7)	197 (49.9)	53 (13.4)	395 (100)
2C	Brick powder and charcoal cleans your teeth better than a toothpaste.	39 (9.9)	305 (77.2)	51 (12.9)	395 (100)
2D	When gums bleed, it is better not to brush and floss your teeth.	121 (30.6)	233 (59.0)	41 (10.4)	395 (100)
2E	Poor brushing is the only cause of bad breath.	128 (32.4)	250 (63.3)	17 (4.3)	395 (100)
3	**Responses given for questions related to myths regarding oral cancer.**				
3A	Chewing tobacco helps in maintaining good oral hygiene.	23 (5.8)	360 (91.1)	12 (3.0)	395 (100)
3B	Smokeless tobacco is less harmful and a safe alternative to smoking.	47 (11.9)	304 (77.0)	44 (11.1)	395 (100)
3C	Taking a puff of smoke or a chew of smokeless tobacco every now and then, would not harm me.	68 (17.2)	292 (73.9)	35 (8.9)	395 (100)
3D	If there is any relative of mine with an oral cancer, then I am at higher risk of getting cancer.	48 (12.2)	306 (77.5)	41 (10.4)	395 (100)
3E	A friend of mine drinks, smokes, and chews tobacco more than what I do, but still, he does not have oral cancer, and neither will I.	34 (8.6)	328 (83.6)	33 (8.4)	395 (100)
4	**Responses given for questions related to myths regarding general dental aspects**				
4A	I do not have pain in my teeth, so it is not required to visit a dentist.	97 (24.6)	287 (72.7)	11 (2.8)	395 (100)
4B	It is better to avoid dental treatment during pregnancy.	91 (23.0)	213 (53.9)	91 (23.0)	395 (100)
4C	Extracting any upper teeth leads to loss of vision.	66 (16.7)	229 (58.0)	100 (25.3)	395 (100)

4D	Extracted teeth needs no replacement with an artificial tooth.	96 (24.3)	258 (65.3)	41 (10.4)	395 (100)
4E	Professional scaling leads to sensitivity, mobility in teeth, and creates gap between them.	140 (35.4)	160 (40.5)	95 (24.1)	395 (100)

Table 2: Association of demographic variables with presence of myths regarding dental caries and oral hygiene

Questions	Variables	Categories	Myth not present n (%)	At least one myth present n (%)	p-value
Dental caries	Sex	Male	49 (24.1)	154 (75.9)	0.58
		Female	51 (26.6)	141 (73.4)	
	Age	Young	12 (32.4)	25 (67.6)	0.034
		Adult	87 (26.1)	247 (73.9)	
		Old	1 (4.2)	23 (95.8)	
	Education	Illiterate	-	4 (100.0)	0.004
		School level	70 (22.2)	245 (77.8)	
		University level	30 (39.5)	46 (60.5)	
Oral hygiene	Sex	Male	59 (29.1)	144 (70.9)	0.305
		Female	65 (33.8)	127 (66.2)	
	Age	Young	11 (29.7)	26 (70.3)	0.956
		Adult	105 (31.4)	229 (68.6)	
		Old	8 (33.3)	16 (66.7)	
	Education	Illiterate	-	4 (100.0)	0.106
		School level	94 (29.8)	221 (70.2)	
		University level	30 (39.5)	46 (60.5)	

Table 3: Association of demographic variables with presence of myths regarding oral cancer and general dental aspects

Questions	Variables	Categories	Myth not present n (%)	At least one myth present n (%)	p-value
Oral cancer	Sex	Male	120 (59.1)	83 (40.9)	0.097
		Female	129 (67.2)	63 (32.8)	
	Age	Young	26 (70.3)	11 (29.7)	0.142
		Adult	212 (63.5)	122 (36.5)	
		Old	11 (45.8)	13 (54.2)	
	Education	Illiterate	-	4 (100.0)	<0.001
		School level	188 (59.7)	127 (40.3)	
		University level	61 (80.3)	15 (19.7)	
General dental aspect	Sex	Male	63 (31.1)	140 (68.9)	0.094
		Female	75 (39.1)	117 (60.9)	
	Age	Young	19 (51.4)	18 (48.6)	0.061
		Adult	113 (33.8)	221 (66.2)	
		Old	6 (25.0)	18 (75.0)	
	Education	Illiterate	-	4 (100.0)	0.001
		School level	98 (31.1)	217 (68.9)	
		University level	40 (52.6)	36 (47.4)	

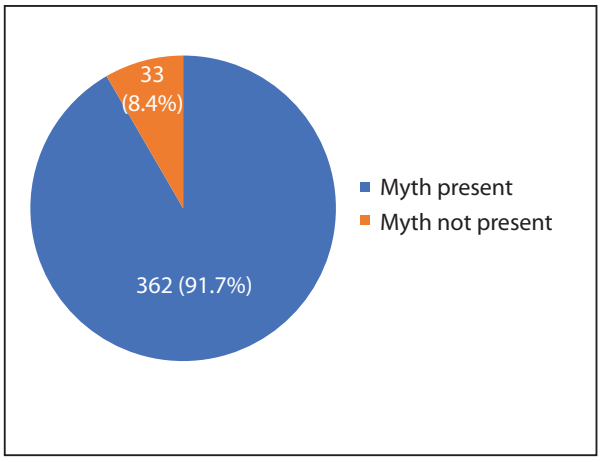

Figure 1: Distribution of study population depending upon presence of myth

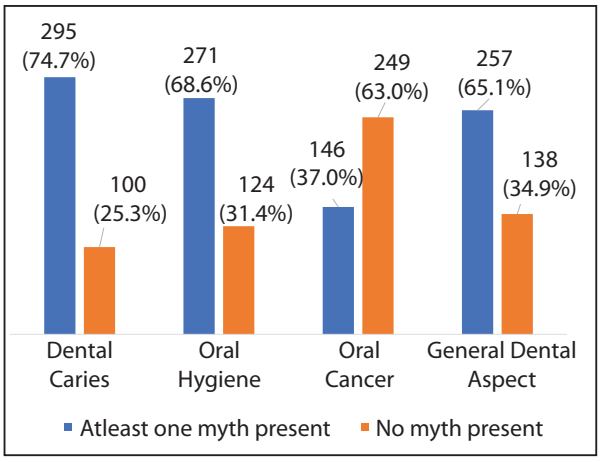

Figure 2: Presence of myth in different aspects of dentistry

DISCUSSION

Developing countries must deal with issues like lack of awareness, inadequate accessibility, cultural, economic, environmental determinants, as well as oral health beliefs, creating significant impact on access to dental care and inequality in oral health.[11] The majority of dental myths steer patients in the wrong direction when it comes to treatment, which can make it difficult for the dentist to deliver effective care.[8] People like visiting a roadside quack or a "hakim" (local traditional practitioner) rather than a dentist for any oral health issues because they believe in spiritual healing and other types of medicine.[4]

Myths and misconceptions traverse from generation to generation.[12,13] These beliefs have no scientific foundation, which makes them potentially dangerous to one's health, a hindrance to receiving treatment, and occasionally even life-threatening.[14] In this study, a questionnaire by Vignesh et al. was used that utilises commonly prevalent oral health related myths among the general population. These questions were close ended to minimise confusion and grouping of questions were done to make it easier to cover various aspects of oral health related myths.[8]

Even in the modern era of information and technology, myths related to oral diseases persist. In the present study, at least one dentistry related myth was present among 362 (91.7%) individuals. Similarly, in a study by Jain et al, majority (84.2%) harboured at least one oral health care related myth.[15] Most (295, 74.7%) of them believed in at least one myth related to dental caries. Around 36% of the study participants believed that if there is any tooth pain due to decay, it is better to undergo extraction. Likewise, in a study by Renuet al., almost 49.5% of the study participants informed that they would opt for extraction of teeth rather than saving it.[7]

Although there are many contributing factors to dental caries, the focus placed on chocolate and sweets by general population and even by health professionals may have given rise to this myth. In this study, myths regarding dental caries were uniformly considered by males and females without any significant difference of gender regarding the presence of myth ($p = 0.580$). The myths were prevalent more in older as compared to younger age group ($p = 0.034$). There was significant association between level of education and presence of myth regarding dental caries ($p = 0.004$).Similarly, the findings of a study by Abdul Salam et al., revealed that age, gender, and level of education impacted participants' perceptions of myths concerning dentistry. It was noted that younger individuals had a more positive perception than older individuals.[16]Similarly, a study done by Khan et al., noted that more illiterates and older people believed in one or more dental myths.[2] These investigations suggest that providing a strong educational system to all age groups can help people overcome these cultural barriers and reduce the population's ignorance regarding myths.[7]

In the present study, myths regarding oral hygiene were present among 68.6% of the respondents. Myths regarding oral hygiene were not significant in different gender ($p = 0.305$), age groups ($p = 0.956$), or people of different education levels ($p=0.106$). Beliefs regarding oral hygiene were found prevalent in a study by Assiri et al., were not associated with age, sex, and level of education.[17] Among the respondents of this study, myths regarding oral cancer were present among

37.0% of them. Correspondingly, in a study by Ain et al., majority had presence of myths regarding oral cancer-causing habits showing their ignorance regarding the susceptibility of oral cancer.[18] Regarding the general dental aspects, 65.1% of the respondents had at least one myth. Some of them, (97, 24.6%) believed that there is no need to visit a dentist unless there is pain in tooth. In a study by Gowdar et al., 46.52% of participants believed in this myth. They do not realise that routine dental checkups are necessary to identify dental problems, notably caries and periodontal diseases do not cause pain at initial stages.[19]

In this study, there was no significant association of gender ($p = 0.094$) and age ($p = 0.061$) with the presence of myth regarding general dental aspects. There was a significant association of educational level and myth regarding general dental aspect. In this study, 35.4% of individuals felt that professional scaling leads to sensitivity, mobility in teeth, and creates gap between them that is similar to a study by Basavaraj et al. where approximately 43.8% of subjects strongly perceived that undergoing professional scaling will loosen their teeth.[14]After scaling, patients may experience a false sense of teeth being loose because calculus fills the space between teeth, masking mobility. Scaling basically involves the non-surgical removal of supra- and sub-gingival deposits to stop the progression of periodontal disease.[20]

In the present study, 66 (16.7%) of the respondents believed that extracting any upper teeth leads to loss of vision. In contrast to this finding, this myth was believed by very few (6.47%) of the participants in a study by Gowdar et al.[19] However, many studies have reported comparatively higher presence of this myth.[18, 21-23]In a study conducted in Maharastra, India, 76% uneducated and 48% educated groups had false belief regarding ocular complications followed by removal of upper teeth. Among them, uneducated females of older age group showed higher prevalence.[24] This type of misunderstanding is passed along through those who have personally experienced bad dental experiences spreading erroneous, inflated information.[25] Literature also shows different dental anaesthesia related ophthalmological complications.[26-28] Fortunately, most of the reported complications like blurring of vision, blindness, and other motor complications have been transient. Even though these effects are temporary, there are still false beliefs held by the general public about tooth extractions and vision loss.[24]

This study has some limitations. Only a convenient sample of study participants was utilised in a District Hospital of a hilly region in Nepal. This may not be a true representative of the population of Dhankuta or Nepal. Future studies should be done with larger sample size and nationwide coverage for better generalisability of study findings.

CONCLUSION

The findings of this study concluded that myths about dentistry still exist in surveyed area of Nepal. Myths and misconceptions regarding dental caries, oral hygiene, oral cancer, and other aspects of dentistry were high among the illiterate and lower among the educated. Standardisation of use of oral health products and adequate information regarding oral cancer had helped to lower the myth in these areas. People were also found to be misinformed regarding the cause of dental caries because of with many believed chocolates to be the cause of dental caries. Age was associated with the presence of some oral health related myths.

Many participants of the study still possessed myths and misconceptions regarding oral health, which is comparable to studies conducted before, but not many studies have been done in Nepal. Effort to collect more data is required through more research. Moreover, less educated, and elderly people should be focussed while providing oral health education.

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