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Self-Assessment of Oral Health Status among Adults Residing at Chautara, Sindhupalchowk, Nepal

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ABSTRACT

Background: Little is known about attitudes and practices regarding oral health of developing countries. This study aimed to determine the self-assessment of oral health status among adults residing at Chautara, Sindhupalchowk, Nepal.

Methods: A descriptive cross-sectional study was conducted among 440 adults selected by convenience sampling method. Interview using WHO oral health questionnaire for adults 2013 was taken after receiving informed consent. Data were entered in Microsoft Excel Sheet and analysed in SPSS version 24. Mean, standard deviation, frequency and percentage were calculated.

Results: Majority had positive assessment regarding their teeth (366, 83.18%) and gums (384, 87.27%). Many (417, 94.77%) cleaned their teeth ≥one times a day. Majority used toothbrush (434, 98.64%) and paste (411, 93.41%) for cleaning their teeth. Some, (184, 41.82%) visited a dentist at least once in their lifetime and the main reason was pain or trouble in teeth/gums/mouth (94, 51.09%). Very often, they faced problems chewing (31, 7.0%) and biting (27, 6.1%) foods. They mostly consumed tea with sugar (132, 30.0%) and biscuits, cakes and cream cakes (59, 13.4%) several times a day. Most of them smoked cigarettes every day (93, 21.1%), followed by tobacco chewing (67, 15.2%). In the past 30 days, 179 (40.7%) drank one or more drinks of alcohol.

Conclusions: The study findings showed that most of the adult residents of Chautara, had positive self-assessment of their oral health status. However, they faced many oral health problems which may be due to their unhealthy lifestyle suggesting need for oral health awareness programs.

Keywords: Adults; oral health; self-assessment.

INTRODUCTION

Oral health is an important but often neglected aspect of overall health and wellbeing.[1] Oral diseases are among the most prevalent chronic conditions in the world,[2] with an estimated 3.7 billion people being affected by oral diseases.[3] According to the Global Burden of Disease 2021, untreated dental caries in permanent teeth is the most common health condition.[3] A significant global health concern is the discrepancy in oral health among at-risk populations.[4]

Self-assessed oral health is a patient-based evaluation of oral health status that reflects a person's opinion of their current state of oral health.[5] Self-reported health measurements, particularly for patients without a history of health issues, are effective patient-centered way to detect health outcomes.[6]

According to published research, understanding how people perceive their oral health could provide crucial information that can be utilized to improve public oral health and encourages the appropriate use of oral health services.[7] Therefore, this study was conducted to investigate self-assessment of oral health among adult residents of Chautara, Sindhupalchowk, Nepal.

METHODS

A community based descriptive cross-sectional study

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was conducted among 440 adult residents of Chautara, Sindhupalchowk from April to May 2023. The study was approved by Institutional Review Committee of Institute of Medicine [Reference no. 489(6-11) E2 079/080]. Chautara, Sindhupalchowk was selected as the study site from the institute as Community Diagnosis Program from the department was conducted in the same place. Institute of Medicine has an Outreach Tribhuvan University Field Training Center at ward no. 5, Chautara, Sindhupalchowk. Due to its lower cost and easier operation, the study participants were selected based on convenience sampling method. Before data collection, informed consent was received from each study participant.

Sample size was calculated based on the similar study conducted in Folkyan, Nepal[1] where the self-assessment of oral related discomfort was 60.7%. Placing this value in the formula, $n= Z^2pq/e^2$, where Z=1.96, p=prevalence=60.7%, q=100-p, e=margin of error=5%, n= 366.57. Adding 20% non-response rate, total final sample of 439.88 ≈ 440 was obtained. Adult residents, more than 18 years of age without any mental or physical disability were selected. WHO oral health questionnaire for adult 2013 questionnaire, that has undergone pilot testing in several nations worldwide, offers reliable data regarding oral health status and risk to oral health.[8] This questionnaire, validated in Nepali language by Singh et al. was used in this study for data collection.[1] Self-assessment regarding state of teeth and state of gums were dichotomized where "very bad" and "bad" was classified as "negative" and "normal", "good" and "very good" were classified as "positive". Face to face interviews with the participants were done through home visits by the dental students of BDS fourth year. Time taken for each interview was 15-20 minutes. Dental students were trained in the department before final data collection.

Data collected were entered in Microsoft Excel Sheet and analysis was done in SPSS version 24 (IBM, Inc., Chicago, IL, USA) software. Mean, standard deviation, frequency and percentage were calculated.

RESULTS

The mean age of the study participants was 41.45 ± 9.99 years. Out of 440 adult respondents, 235 (53.4%) were males and 205 (46.6%) were females. Status and self-assessment of oral health are presented in Table 1. Dental/oral pain or discomfort at present was experienced by 148 (33.64%) of the adult participants. Out of 440 study participants, 124 (28.2%) were partial denture wearers. The majority had positive perception regarding state of their teeth (366, 83.18%) and gums (384, 87.27%).

Table 1. Status and self-assessment of oral health. (n=440)

Variables	Category	n (%)
Number of natural teeth	No natural teeth	1 (0.23)
	<20 teeth	27 (6.14)
	20 teeth or more	412 (93.63)
Dental/oral pain or discomfort	Yes	148 (33.64)
	No	292 (66.36)
Denture wearers		
A partial denture	No	316 (71.8)
	Yes	124 (28.2)
A full upper denture	No	426 (96.8)
	Yes	14 (3.2)
A full lower denture	No	437 (99.3)
	Yes	3 (0.7)
Self-assessment regarding state of teeth	Positive	366 (83.18)
	Negative	74 (16.82)
Self- assessment regarding state of gums	Positive	384 (87.27)
	Negative	56 (12.73)

Oral hygiene practices of the study participants are presented in Table 2. Few (2, 0.5%) reported that they did not clean their teeth regularly. However, most of the participants (417, 94.77%), cleaned their teeth once or more than one times a day. Majority used toothbrush (434, 98.64%) and paste (411, 93.41%) for cleaning their teeth. Only one (0.2%) adult used dental floss for cleaning their teeth.

Table 2. Oral hygiene practices. (n=440)

Variables	Category	n (%)
Cleaning teeth	Yes	438 (99.55)
	No	2 (0.45)
Frequency of cleaning teeth	< 1 time/day	23 (5.23)
	≥1 times a day	417 (94.77)
Materials used for cleaning teeth		
Toothbrush	Yes	434 (98.64)
	No	6 (1.36)
Use of toothpaste	Yes	411 (93.41)
	No	29 (6.59)
Use of fluoridated toothpaste	Yes	261 (63.50)
	No	150 (36.50)
Wooden toothpicks	Yes	60 (13.64)
	No	380 (86.36)
Plastic toothpick	Yes	15 (3.41)
	No	425 (96.59)
Thread (Dental floss)	Yes	1 (0.2)
	No	439 (99.8)
Charcoal	Yes	8 (1.8)
	No	432 (98.2)

Utilization of health services and oral health problems are presented in Table 3. Among 440 study participants, 184 (41.82%) had at-least one visit to the dentist in their lifetime. Among them, few (44, 10.0%) visited the dentist in the last six months. The main reason for dental visit was Pain or trouble in teeth/gums/mouth (94, 51.09%).

Table 3. Utilization of health services and oral health problems. (n=440)

Variables	Category	n (%)
Last dental visit (440)	< 6 months	44 (10.0)
	6 months to 1 year	22 (5.0)
	>1 year	118 (26.82)
	No dental visit	256 (58.18)
Reason for dental visit (184)	Pain/trouble in teeth/ gums/mouth	94 (51.09)
	Treatment/follow-up	29 (15.76)
	Routine checkup	12 (6.52)
	Don't remember	49 (26.63)

Problems faced in past 12 months because of the state of teeth or mouth is presented in table 4. Many faced difficulties very often in chewing (31, 7.0%) and biting (27, 6.1%) foods. One of them (0.2%) avoided smiling because of teeth very often 2 (0.5%) faced difficulty in doing usual activities.

Table 4. Problems faced in past 12 months because of the state of teeth or mouth. (n=440)

Variables	Very often n (%)	Fairly often n (%)	Sometimes n (%)	No n (%)	Don't know n (%)
Difficulty in biting foods	27 (6.1)	34 (7.7)	109 (24.8)	259 (58.9)	11 (2.5)
Difficulty chewing foods	31 (7.0)	94 (21.4)	287 (65.2)	24 (5.5)	4 (0.9)
Difficulty with speech / trouble pronouncing words	8 (1.8)	12 (2.7)	36 (8.2)	376 (85.5)	8 (1.8)
Dry mouth	12 (2.7)	17 (3.9)	49 (11.1)	352 (80.0)	10 (2.3)
Felt embarrassed due to appearance of teeth	2 (0.5)	18 (4.1)	38 (8.6)	374 (85.0)	8 (1.8)
Felt tense because of problems with teeth or mouth	5 (1.1)	21 (4.8)	38 (8.6)	371 (84.3)	5 (1.1)
Have avoided smiling because of teeth	1 (0.2)	5 (1.1)	24 (5.5)	406 (92.3)	4 (0.9)
Had sleep that is often interrupted	6 (1.4)	11 (2.5)	30 (6.8)	380 (86.4)	13 (3.0)
Have taken days off work	3 (0.7)	13 (3.0)	24 (5.5)	389 (88.4)	11 (2.5)
Difficulty doing usual activities	2 (0.5)	12 (2.7)	26 (5.9)	388 (88.2)	12 (2.7)
Felt less tolerant of spouse or people who are close to you	1 (0.2)	5 (1.1)	21 (4.8)	386 (87.7)	27 (6.1)
Have reduced participation in social activities	-	4 (0.9)	13 (3.0)	408 (92.7)	12 (3.4)

Frequency of eating sweet food items is presented in Table 5. Most of the adults drank tea with sugar (132,

30.0%) followed by intake of biscuits, cakes and cream cake (59, 13.4%) several times a day.

Table 5. Frequency of eating sweet food items.

Sweet food items	Several times a day n (%)	Every day n (%)	Several times a week n (%)	Once a week n (%)	Several times a month n (%)	Seldom / Never n (%)
Fresh fruit	22 (5.0)	43 (9.8)	108 (24.5)	74 (16.8)	119 (27.0)	43 (9.8)
Biscuits, cakes, cream cake	59 (13.4)	75 (17.0)	59 (13.4)	41 (9.3)	59 (13.4)	175 (39.8)
Sweet pies, buns	14 (3.2)	51 (11.6)	47 (10.7)	41 (9.3)	65 (14.8)	222 (50.4)
Jam or honey	7 (1.6)	10 (2.3)	16 (3.6)	16 (3.6)	37 (8.4)	354 (80.4)
Chewing gum containing sugar	7 (1.6)	8 (1.8)	22 (5.0)	11 (2.5)	40 (9.1)	352 (80.0)
Sweets/candy	12 (2.7)	16 (3.6)	28 (6.4)	18 (4.1)	53 (12.0)	313 (71.1)
Tea with sugar	132 (30.0)	212 (48.2)	24 (5.5)	15 (3.4)	15 (3.4)	42 (9.5)
Coffee with sugar	6 (1.4)	32 (7.3)	25 (5.7)	12 (2.7)	38 (8.6)	327 (74.3)

Most of the study participants smoked cigarettes every day (93, 21.1%), followed by tobacco chewing (67, 15.2%, Table 6). In the past 30 days, 179 (40.7%) drank one or more drinks of alcohol. However, 261 (59.3%) of them did not drink at all.

Table 6. Adverse habits.

Variables	Every day n (%)	Several times a week n (%)	Once a week n (%)	Several times a month n (%)	Seldom n (%)	Never n (%)
Cigarettes	93 (21.1)	4 (0.9)	4 (0.9)	10 (2.3)	33 (7.5)	296 (67.3)
Cigars	1 (0.2)	-	-	1 (0.2)	283 (64.3)	155 (35.2)
Hookah	1 (0.2)	-	-	5 (1.1)	269 (61.1)	165 (37.5)
Chewing tobacco	67 (15.2)	4 (0.9)	-	1 (0.2)	128 (29.1)	240 (54.5)
Use snuff	1 (0.2)	-	2 (0.5)	-	274 (62.3)	163 (37.1)

DISCUSSION

The impact of the disease process on an individual's well-being is not measured by clinical indicators, and patients' assessments of their oral health frequently diverge significantly from medical professionals' assessments.[9] Even for patients without a history of medical issues, self-reported health metrics can prove to be an effective patient-centered way to detect health outcomes.[10] Therefore, this study was conducted to determine the self-assessment of oral health status among adults residing at Chautara, Sangachokgadi, Sindhupalchowk, Nepal.

A positive assessment regarding the state of their teeth was reported by 366 (83.18%) and gums by 384 (87.27%) study participants, although 148 (33.64%) of them presently complained of dental/oral pain or discomfort. Similarly, in a study by Singh et al., the majority (82.3%) of the participants' self-perception regarding oral health status was good to average. However, more than 60.0% of the males and females were having toothache/discomfort in the past 12 month.[1] In a study by Finlayson et al., overall 28% of adults reported having fair or poor oral health and majority rated their oral health as excellent, or very good or good.[11] The respondents' self-reported oral health status in a study by Lawal et al. was related to their perceived need for treatment; those who felt they did not require any kind of dental care rated their oral health status better than those who did.[12] Evidence shows that the clinical oral condition, oral health behaviors, and demographics all affect the self-ratings of oral health.[5,12] Self-rated oral health and self-rated oral health independently explain a significant amount of variance in concurrent ratings of self-esteem and life satisfaction. General healthcare professionals

should take self-rated oral health into account when evaluating the overall health of older adults, as it plays an important part in how people perceive their overall health.[13]

The oral health behavior of an individual is important in preventing oral diseases. It is determined by brushing habits, regular dental appointments, and cleaning of the interdental spaces.[14] In the present study, 438 (99.55%) cleaned their teeth regularly among which 417 (94.77%) cleaned once or more than one times per day. Similarly, in a study by Singh et al., that more than 90% of the study participants cleaned their teeth.[1] In this study, 434 (98.64%) used toothbrush which was higher than that in a study by Singh et al., use of toothbrush was found in 85.8% of the study population.[1] In this study, 417 (94.77%) cleaned their teeth at least once a day which is similar to a study by Thapa et al. where prevalence of cleaning teeth at least once a day was 94.9%.[15] In this study, 261 (63.50%) used fluoridated toothpaste which is slightly lower than a study done by Thapa et al. where use of fluoridated toothpaste was seen among 71.4 % respondents.[15] Lack of knowledge about the benefits of using fluoridated toothpastes may be one of the reasons behind people not using fluoridated toothpaste despite the availability of fluoridated toothpaste in the market. Considering these findings, it would appear necessary to focus on educating the public about the benefits of brushing teeth twice a day by using fluoridated toothpaste.[16]

More than half of the participants in the present study, 256 (58.18%) had not visited a dentist in their lifetime. Some of them, (44, 10.0%) visited dentist in the last six months which was slightly higher than that in a study by Thapa et al., where only 3.9 % made a dental visit in the last six months.[15] In a study by Singh et al., less than half of the study population visited the dentist in their lifetime due to pain.[1] Similarly, in the current study, the main reason for dental visit reported was Pain or trouble in teeth/gums/mouth (94, 51.09%). Other studies also have reported dental pain to be the most common presentation by a patient for visiting a dentist.[1,17] Lin et al., in their study noted that half of all participants and two-thirds of older persons would only seek care in the case of pain, even though they were aware that oral disease could exist without any symptoms.[18] Sharma and Basnet reported 19% to have dental visits when they suffered from dental problems. The majority in this study relied on traditional healers, home remedies or untrained people for their problems. The low utilization of dental services can be ascribed to a person's purchasing capacity, educational background, and, most importantly, the accessibility of the services in their area.[19] People living in a low-income country like Nepal, have limited access to early intervention and restorative care and is expensive enough to afford as well by everyone.[20]

In the present study, 125 (28.4%) very/fairly often faced difficulty chewing foods due to their state of teeth or mouth which is similar to other studies where prevalence was shown ranging from 20% in Florida[21] to 30% in Taiwan.[22] However, in a study by Figueiredo et al., only 15.8% reported to have problem in chewing.[23] One of the principle oral functions is mastication, and its impairment is understood through chewing difficulty caused mostly by oral health problems like missing teeth.[24] The various age ranges taken into consideration may be the cause of the variations in chewing issues documented in different studies. Tooth loss is more common in older age groups, which makes chewing more difficult.[25]

In this study, more than half (344, 78.2%) adult residents of Chautara, drank tea with sugar and 134 (30.4%) consumed biscuits, cakes, and cream cake very often / often. Consuming sugar-filled foods and beverages is an obvious behavioral risk for dental caries and other oral health issues.[26] The World Health Organization (WHO) highlights the part that free sugars that are naturally occurring in foods like fruit juices and honey as well as added sugars play major role in the prevalence of non-communicable diseases. The WHO advises limiting the consumption of free sugars to 10% of total energy intake; however, it is suggested that restricting this consumption to 5% of total food consumption will help both adults and children in addition.[27]

In this study, 93 (21.1%) adults smoked cigarettes and 67 (15.2%) chewed tobacco every day. Similar finding for daily smokeless tobacco use was described in WHO-STEP survey of Nepal 2019, where 15.3% were day-to-day users of smokeless tobacco. However, in the present study a higher number of daily smokers were observed than that according to STEP survey, where only 13.3% of the adults were reported to smoke tobacco daily.[28] Tobacco use may have risk to many health-related issues including oral health diseases like oral cancer, oral mucosal lesions, periodontal disease, and dental caries. Therefore, there is a need to focus on tobacco cessation by oral health care providers including educational, behavioral, and pharmacological interventions programs so as to help tobacco users quit tobacco use.[29] Community interaction and group problem-solving strategies that stimulate discourse about barriers to

implementing good oral health habits and are sensitive to local needs and experiences might be more effective than didactic techniques predicated on the notion that oral health knowledge is lacking.[18]

This study has some limitations. Convenience sampling was employed for the selection of study participants from a confined area of Sindhupalchowk district that created the possibility of selection bias. Also, generalizability of the study findings to the survey site and to a broader Nepali population is questionable. Face to face interview was taken for self-assessment of oral health due to which information bias could not be avoided. Oral examination was not conducted that could confirm the reported oral conditions.

CONCLUSIONS

The majority of Chautara's adult residents, according to the study's findings, provided positive self-assessment regarding their oral health. Despite being positive about their oral health status, they reported numerous dental health issues that were yet to be addressed. Most of them had frequent sweet snacking habits along with other deleterious habits like cigarette smoking, tobacco chewing and alcohol consumption. These findings indicate the necessity for oral health education, promotion and treatment campaigns at Chautara Sangachokgadi Municipality of Sindhupalchowk district of Nepal.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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