Original Article

A Pilot Study of Oral Health Situation of Chin Population in West Hilly Regions of Myanmar

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Abstract

Objective: The purpose of this study was to investigate the oral health status, oral hygiene habits and oral health knowledge of Chin population in Myanmar.

Methods: A community based cross-sectional study was done in fifty respondents (20-45 years) from Mindat township of Chin state, Myanmar. Oral examination and a structured questionnaire was conducted.

Results: The caries prevalence for all participants was 90.8%, with mean DMFT of 3.08 ± 3.26. Decayed teeth was the major component than MT or FT in both gender groups. The education level was significantly associated with DMFT in this study (p=0.002). There was strongly associated between DMFT and tooth brushing frequency (p<0.001). The frequency of tooth brushing was significantly related with their education level. A significant relation was occurred between oral health knowledge and education level (p<0.001), and tooth brushing frequency (p=0.037).

Conclusion: Oral health status of Chin population is poor and it is necessary to provide preventive measures and oral health promotion programs in people especially who are living in rural areas.

Keywords: oral health situation, Chin population, Myanmar.

Introduction

Oral health is an integral component of general health and people's daily life. Although dental diseases are not often life threatening, they can constitute serious public health problem and a negative influence on well-being and quality of life. [1,2] Oral diseases are strongly related with general diseases, and it has been increasing attention in recent years. [3] Oral diseases are demonstrated to be significantly improved by changing oral health behaviors. [4] Dental caries and periodontal diseases, the two foremost oral diseases, still make a significant contribution to the burden of general diseases worldwide, especially in developing countries. [1, 5] These were attributed to many factors including oral-

hygiene, dietary factors, effective uses of fluoride and oral health promotion programs. [6]

The Republic of the Union of Myanmar, the largest country in Southeast Asia, is one of the developing countries and people awareness on oral diseases is still weak. Furthermore, people oral health status is not much good and oral health knowledge is poor. People with poor oral health education background may lack in awareness for the oral health care and thus their self-care ability will not facilitate. 5As there is high expenditure for oral health care services, it is also a big threat for people to cure effectively even though they know treatment is actually needed. Therefore, these factors may be attributed to increase the incidence and prevalence of dental diseases in Myanmar especially in rural areas, whereas 70.0% of population reside. There are 8 major ethnic groups and Chin population is one of the tribes, who live in hilly region of western Myanmar. Chin state is sparsely populated and remains one of the least developed areas of the country. [7]

Epidemiological studies on oral health status of people are scarce and no nation-wide oral health survey has been implemented in Myanmar. [8, 9] Beside the national survey, only regional surveys could be performed and there have been a few reports on oral health status in Myanmar population. [5, 8-10] However, no data related with oral hygiene habits is available in Chin population. Therefore, the purpose of this study was to investigate the oral health status, oral hygiene habits and oral health knowledge of Chin population in Myanmar.

Materials and Methods

A community based cross-sectional study was performed in Mindat Township of Chin state, west hilly region of Myanmar. The subjects were 20-45 years old volunteer participants who came to out-patient department of a charity dental treatment group to seek dental care and services. The purpose and procedures of the study was explained to each participant and fifty respondents who agreed to participate in the study were included. The clinical oral examination and questionnaire survey were conducted in May 2012.

All the participants were examined for oral health status by a dentist with one recorder. First, dentition status was assessed using a dental mirror, WHO-CPI probe and handheld light based on WHO criteria for dental caries. Subsequently, gingival status was evaluated with the LÖe&Silness Gingival Index (GI). [11]

Each volunteer participant answered a structured questionnaires concerned with socio-demographic characteristics (age, gender, education level and occupation), oral hygiene habits (tooth brushing frequency and materials), oral care services (distance to dental care service and dental visit) and oral health knowledge. Questions about oral health

knowledge consisted of 9 items: (1) Oral diseases are important as other general diseases, (2) Oral diseases can affect the general health, (3) Tooth brushing can prevent dental caries and periodontal diseases, (4) It will cost extra charges when we go to dental clinic, (5) Oral diseases are not important and can recover spontaneously, (6) Oral diseases could cause infection and spread to face and other parts of body, (7) Oral diseases can affect the daily works, (8) The main effect of fluoride is to prevent dental caries, (9) Regular dental check-up is more important than emergency dental care. The participant answered "agree", "disagree" or "don't know" to these questions. Each question was scored as 1 if the answer was correct and 0 if it was not correct or they answered "don't know". The scores of each question were added, and the total score was ranged from 0 to 9. Oral health knowledge score was categorized into two according to the number of correct answers: low (0-5 scores) or high (6-9 scores).

The distributions were reported to mean or percentages by using descriptive statistics. The associations between dental caries and related factors were analyzed by using Chi-square test for categorical data and ANOVA test for continuous data. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS 18.0). The level of statistical significance for all tests was set at $p < 0.05$.

Results

The mean age for all participants was 35.2 ± 7.9 years, and 42.0% of them were male (n=21) while 58.0% were female (n=58.0%). The caries prevalence was higher in female (94.1%) than in male (87.5%), with no significant difference (Table 1). The caries prevalence for all participants was 90.8%, with mean DMFT of 3.08 ± 3.26. Decayed teeth was the major component than MT or FT in both gender groups. There was no significant difference in DMFT between male and female population. The mean gingival scores of male and female were 1.44 ± 0.62 and 2.12 ± 0.68, respectively. No participant had healthy gingiva (gingival score of 0), while most of them (46.0%) had moderate gingival inflammation (gingival score of 2).

Table 2 showed the relationship between DMFT and socio-demographics, oral health habits and knowledge of Chin tribes. Half of participants (50.0%) had higher education level, with better dental caries status (DMFT=1.72 ± 1.42) than lower educated persons (DMFT=4.44 ± 3.99). The education level was significantly associated with DMFT in this study (p=0.002). In fifty respondents, about 36% of participants were employed staffs with the low DMFT, followed by farmers (28%) who had the highest dental caries status (DMFT=4.86 ± 4.65). However, their occupation was not related with dental caries status.

Over half of the participants (58.0%) answered they brushed their teeth once a day and 32.0% brushed twice or more a day. A surprise result was occurred, 10.0% of participants brushed their teeth once or less than one time in a week. There was strongly associated between DMFT and tooth brushing frequency (p<0.001). The frequency of tooth brushing was significantly related with their education level. Participants with higher education level were aware of oral hygiene more than those with lower education level (p=0.039). Of tooth brushing materials, 96.0% of participants used toothbrush and toothpaste, while 2% of them used combined ashes and charcoals, another 2% used wooden toothpicks. The type of tooth brushing materials was a significant indicator of DMFT.

About 36.0% of respondents were so far to get dental care services such as public hospitals, private dental clinics. Only 4.0% of participants had regular dental check-up, while 30.0% had never experience of dental visits and 66.0% visited dental clinic for emergency dental treatment. An apparent decrease of DMFT was occurred in those who visited dental clinic regularly than those who had never or emergency dental visits. High oral health knowledge showed significantly lower DMFT than low oral health knowledge (p<0.001).

Oral health knowledge was related with some factors in this study (Table 3). The mean oral health knowledge score of fifty respondents was 6.63 ± 2.61. About 80.0% of high educated respondents had better oral health knowledge than low educated respondents. Then, participants who brushed their teeth frequently had good oral health knowledge. A significant relation was occurred between oral health knowledge and education level (p<0.001), and tooth brushing frequency (p=0.037). On the other hand, oral health knowledge was not related with tooth brushing materials (p=0.118), and experience of dental visits (p=0.313).

Table 1. Oral health status of participants by gender (n=50)

Gender	n	Caries prevalence (%)	DT	MT	FT	DMFT	Gingival score
Male	21	87.5	2.13 ± 2.36	0.56 ± 0.89	0.06 ± 0.25	2.75 ± 2.69	1.44 ± 0.62
Female	29	94.1	2.76 ± 2.57	0.44 ± 1.18	0.03 ± 0.17	3.24 ± 3.53	2.12 ± 0.68
Total	50	90.8	2.56 ± 2.50	0.48 ± 1.09	0.04 ± 0.19	3.08 ± 3.26	1.90 ± 0.73

Values are presented as mean ± standard deviation. n: number, DT: decayed teeth, MT: missing teeth, FT: filled teeth, DMFT: decayed, missing and filled teeth.

Table 2. Socio-demographics and oral health care related with DMFT (n=50)

Variable	n (%)	DMFT (mean ± SD)	p-value
Education level			
High school and above	25 (50.0%)	1.72 ± 1.42	0.002
Middle school and below	25 (50.0%)	4.44 ± 3.99	
Occupation			
Employee	18 (36.0%)	2.06 ± 1.69	
Farmer	14 (28.0%)	4.86 ± 4.65	
Merchant	5 (10.0%)	2.20 ± 1.30	0.136
Dependent	9 (18.0%)	2.44 ± 3.39	
Religious	4 (8.0%)	4.00 ± 2.58	
Tooth brushing frequency			
≤ 1 time / week	5 (10.0%)	9.00 ± 5.47	
Once a day	29 (58.0%)	2.72 ± 2.47	<0.001
Twice or more a day	16 (32.0%)	1.88 ± 1.41	
Tooth brushing materials			
Toothbrush and toothpaste	48 (96.0%)	2.68 ± 2.27	<0.001
Others (charcoal, toothpicks)	2 (4.0%)	14.00 ± 5.65	
Distance to dental care services			
Less than 50 kilometers	32 (64.0%)	2.91 ± 2.42	0.621
50 kilometers and above	18 (36.0%)	3.39 ± 4.46	
Experience of dental visits			
Never	15 (30.0%)	2.47 ± 2.29	
Emergency dental care	33 (66.0%)	3.52 ± 3.64	0.314
Regular check up	2 (4.0%)	0.50 ± 0.71	
Oral health knowledge			
Low (0-5 scores)	23 (46.0%)	5.22 ± 3.73	<0.001
High (6-9 scores)	27 (54.0%)	1.26 ± 0.94	

n: number, DMFT: decayed, missing and filled teeth, SD: standard deviation.

Table 3. Oral health knowledge and its related factors (n=50)

	Oral health knowledge n (%)		p-value
	Low (0-5 scores)	High (6-9 scores)	
Education level			
High school and above	5 (20.0%)	20 (80.0%)	<0.001
Middle school and below	18 (72.0%)	7 (28.0%)	
Tooth brushing frequency			
≤ 1 time / week	4 (80.0%)	1 (20.0%)	
Once a day	12 (41.5%)	17 (58.6%)	0.037
Twice or more a day	6 (37.5%)	10 (62.4%)	
Tooth brushing materials			
Toothbrush and toothpaste	21 (43.7%)	27 (56.3%)	0.118
Others (charcoal, salt)	1 (50.0%)	1 (50.0%)	
Experience of dental visits			
Never	6 (40.0%)	9 (60.0%)	
Emergency dental care	17 (51.5%)	16 (48.5%)	0.313
Regular check up	1 (50.0%)	1 (50.0%)	

n:number.

Discussion

This study examined oral health status of respondents in Mindat township of Chin population. The prevalence of dental caries, DMFT and gingival score of Chin tribes were worsened in the study. Several reasons for poor oral health status in Chin population are considered. Access to health care services, particularly in oral health, is limited in rural communities. [12,13] Further, manpower of oral health care personnel in Myanmar are still few compared with the WHO standard. [14] Beside, organized oral health promotion campaign for Myanmar citizens do not exist yet. Since there is still lack of universal health insurance system, it would be a barrier to receive effective oral health care in Myanmar.

Education level of participants is reported to be associated with their dental caries status in this study. There is an understandable reason

that uneducated people would be deficient in oral health literacy. People with low oral health literacy may lack in effective oral hygiene care, which is the maintenance of oral cleanliness for preservation of oral health. [15] Regular tooth brushing with fluoridated toothpaste is fundamental to reduce the accumulation of dental plaque and control plaque-related oral diseases. [16, 17] About two-third of participants brushed their teeth just once or less than one time a day and some respondents still used ashes, charcoals and wooden toothpicks. This result indicated people lack the information about proper oral hygiene care. The daily oral hygiene routine is the main contribution that members of the community can make to reduce the incidence of oral diseases. Therefore, effective oral health education with correct information is keenly important to provide and it should be emphasized in underprivileged groups of rural areas, including Chin state. Moreover, people in rural areas cannot easily access to dental care services. It might be one of the reasons why very limited population had regular dental check-up (4.0%) in this study.

Oral health knowledge of Chin population about oral diseases and its prevention is generally low. Nearly half of respondents (46.0%) had poor oral health knowledge which will retard the strong understanding of oral hygiene care. Low level of oral health literacy could lead to poor oral health status clinically. [10. 18] Therefore, in order to strengthen and facilitate in oral health literacy,

government should develop the skillful oral health personnel into the community. Giving health education by oral health care personnel could effectively improve community's oral health knowledge and motivation of their oral health care.

The limitation of this study is that the results might not be generalized to all population of Chin tribes because it was conducted using a small convenience sample within short period. However, this study could provide the basic information of oral health status of Chin population and assist for further study. Therefore, it needs further assessments and findings of community and planning oral health promotion strategies.

Conclusion

Oral health status of Chin population is a serious oral health problem in Myanmar. Oral health care personnel have an important role to identify and maintain suitable individual oral hygiene practices and recommend oral hygiene measures according to their needs. Giving preventive measures and efficient health education to people especially who are living in rural areas is very important to reduce oral diseases.

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