

Oral Health-Related Quality of Life among Elderly People in Mohnyin, Myanmar

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ABSTRACT

Introduction: Issues with oral and dental health rank high on the list of concerns and complaints expressed by the elderly. The purpose of this study was to determine oral health-related quality of life (OHRQoL) among elderly people from Mohnyin, Myanmar.

Methods: We conducted a community based cross-sectional study among 312 elderly people of Mohnyin, Myanmar. Ethical approval was obtained. We conveniently recruited the participants in the study. General characteristics, dental status and denture status were obtained from all the participants. We used Geriatric Oral Health Assessment Index (GOHAI) to assess oral health-related quality of life (OHRQoL). Data was entered in EpiData and transported to SPSS version 18 for further analysis.

Results: Of the total, 46.1% had a high GOHAI score, whereas 53.8% had a low GOHAI score. The mean score of GOHAI was 41.18 ± 5.7 (mean $\pm$ SD). About 56.1% of the elderly had at least 20 remaining natural teeth and the prevalence of wearing dentures was only 19.9%.

Conclusions: This study's results support the implementation of preventative and restorative public health policies aimed at enhancing oral health care and education for the elderly.

Keywords: *Geriatric oral health assessment index; Myanmar; Oral health-related quality of life.*

INTRODUCTION

Since life expectancy has increased around the world, oral health is becoming more important for good health and nutrition.¹ Individuals' oral health may vary within a nation and/or across countries, including geographical regions, based on variables such as personal information, environment, and socioeconomic situation.^{2,3} Although dental caries have a high prevalence in children and young age groups, it still remains as a serious problem in elderly because it can lead to pain and loss of teeth. A tooth loss, cavities, periodontal disease, dry mouth, and a oral cancer are the most prevalent oral health issues among the elderly.^{4,5} As the people in the world are growing older, the public health concern on Oral Health-Related Quality of Life (OHRQoL) also becomes increasing in elderly population.

The aim of this study was to determine Oral Health-Related

Quality of Life (OHRQoL) among elderly people from Mohnyin, Myanmar, by utilizing Geriatric Oral Health Assessment Index (GOHAI).

METHODS

We conducted a community based cross-sectional study among 312 elderly people from Mohnyin district, Myanmar. Data was collected after obtaining an ethical approval letter from the Ethical Research Committee. Before data collection, the consent was taken from all respondents. All the respondents were explained in detail about the objectives of the study and asked permission from the participants if they were willing to participate in this study. Written consent was obtained from participants.

The study population for this study was elderly people

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aged 60 years or above. We included those who were able to communicate verbally to answer the questions.

This study was conducted from March 2019 in Mohnyin township, Mohnyin district, Kachin State, Myanmar which is located in the northern part of the country. In this district, the total population was over 160,000 and around 8% of them were older than 60 years.

Sample size was calculated by this formula ⁶;

$$n = (Z^2_{\alpha/2} \times \sigma^2) / d^2$$

n = required sample size

Z = standard normal deviate, which correspond to 95% confidence level, usually set at 1.96

SD = 8.6 (SD = standard deviation of GOHAI taken from pervious study⁷)

d = 1 (d = accepted error of mean)

n = 284

The minimal sample size that was included in this study was 284 elderly people who were 60 years and over. In case of a missing and an incomplete data, 10% was added to cover it up. Therefore, the total collected sample size was 312.

There were 5 main quarters in Mohnyin township with slightly different distribution of the elderly population in each quarter. The proportion of elderly in quarter 1 and quarter 2 was around 19% of the total elderly population, 27 % in quarter 3, 20% in quarter 4, and 15% in quarter 5. The sample was collected according to the proportion of the elderly population in each quarter in order to get the representativeness of the subjects. Convenience sampling was done to obtain the number of participants in each quarter.

We contacted the local authority or administration and explained about the purpose of data collection where the study was conducted. Data collection was done by face to face interview to elderly people who matched with the inclusion criteria.

The research instrument used for data collection was a structured questionnaire that has been developed by reviewing literature and previous studies as well as consultation with experts. General characteristics: dental status and denture status were obtained from all the participants. In order to check the number of remaining natural teeth, only visual inspection with torch light was used in this study. We used Geriatric Oral Health Assessment Index (GOHAI) to assess Oral Health-Related Quality of Life (OHRQoL).⁸

GOHAI included 12 questions composed of 3 domains: physical, physiological, and psychosocial function. Physical function was related to questions number 1,2,3, and 4; Physiological condition such as pain/discomfort was related to questions 5,8, and 12; Psychosocial function was related

to questions 6,7,9,10, and 11 respectively. The answer was recorded as a 5-point Likert scale, 5 for never, 4 for seldom, 3 for sometimes, 2 for very often, and 1 for always. Total score was calculated by summation of all scores from each question. As it has 12 items, the minimum score was 12 and the maximum was 60. Median was used to determine lower or higher GOHAI. Since the data was not normally distributed, median was used as a cut-off point to categorize GOHAI. Therefore, a higher score of GOHAI indicates higher OHRQoL. A Score ≥ 42 represented higher GOHAI and 12-41 represented lower GOHAI.

EpiData was used for the data entry after data collection was finished. Before entering the data into the EpiData, raw data was checked for consistency and missing information. Double checked after entering data in case of data missing before the analysis. Then the data was transported into SPSS 18 for further analysis. Description of variables was presented in terms of frequency, percentage, mean, median, standard deviation and interquartile range by performing descriptive statistical analysis.

RESULTS

Of the total participants, 46.1% had a high GOHAI score whereas 53.8% had a low GOHAI score.

Table 1. GOHAI Score (n=312)

GOHAI Score	n(%)
Lower GOHAI Score (12-41)	168(53.84)
Higher GOHAI Score (≥ 42)	144 (46.15)

The mean score of GOHAI was 41.18 ± 5.7 (mean $\pm$ SD). The minimum score for GOHAI was 12 and maximum score was 60 respectively. Total score was calculated by summation of scores from each question. The higher score of GOHAI indicated the better OHRQoL. More than 70% of elderly reported that they never had an impact on item number 6 (limit contacts with people) and 10 (self-conscious of teeth, gums, or denture), 67.9% answered never on item number 9 (worried about teeth, gums, or denture). Moreover, more than half of elderly also reported never on item number 4 (unable to speak clearly), 11 (uncomfortable eating in front of others), and 12 (sensitive to hot, cold or sweet foods). 42.6% reported never on item number 8 (use medication to relieve pain) whereas elderly who reported never on item number 1 (limit the kinds of food) and 2 (trouble biting or chewing) were more than 30%. Elderly who reported sometimes for item number 1 (limit the kinds of food), 2 (trouble biting or chewing), 7 (pleased with look of teeth), and 8 (use medication to relieve pain) were more than 20% whereas who reported sometimes for item number 4 (unable to speak clearly), 5 (able to eat without discomfort), and 12 (sensitive to hot, cold or sweet foods) were just below 20%. For the reversed

items, whose answer for item number 3 (able to swallow comfortably) was 88.8%, item number 5 (able to eat without discomfort) was 62.8%, and item number 7 (pleased with the look of teeth) was 55.8%. More than 20% of elderly reported always on item number 1 (limit the kinds of food) and 2 (trouble biting or chewing).

Table 2. Number and percentage of elderly by report on items of Geriatric Oral Health Assessment Index (GOHAI) (n=312)

GOHAI (12-items)	Individual item regarding to score of GOHAI				
	Always	Often	Sometimes	Seldomly	Never
	n (%)	n (%)	n (%)	n (%)	n (%)
Limit the kinds of food	65(20.8)	23(7.4)	72(23.1)	31(9.9)	121(38.8)
Trouble biting or chewing	70(22.4)	53(17.0)	65(20.8)	30(9.6)	94(30.1)
Able to swallow comfortably	277(88.8)	15(4.8)	17(5.4)	2(0.6)	1(0.3)
Unable to speak clearly	12(3.8)	17(5.4)	54(17.3)	44(14.1)	185(59.1)
Able to eat without discomfort	196(62.8)	30(9.6)	61(19.6)	11(3.5)	14(4.5)
Limit contacts with people	4(1.3)	8(2.6)	26(8.3)	45(14.4)	229(73.4)
Pleased with look of teeth	174(55.8)	57(18.3)	65(20.8)	7(2.2)	9(2.9)
Used medication to relieve pain	1(0.3)	5(1.6)	78(25.0)	95(30.4)	133(42.6)
Worried about teeth, gums or denture	2(0.6)	11(3.5)	42(13.5)	45(14.4)	212(67.9)
Self-conscious of teeth, gums or denture	8(2.6)	8(2.6)	23(7.4)	48(15.4)	225(72.1)
Uncomfortable eating in front of others	22(7.1)	21(6.7)	43(13.8)	42(13.5)	184(59.0)
Sensitive to hot, cold or sweet foods	17(5.4)	25(8.0)	61(19.6)	44(14.1)	165(52.9)
Total GOHAI: Min = 12, Max = 60, Mean = 41.18, SD = 5.7 Median=42.00, Interquartile Range=8					

n = number, % = percentage

Table 3 represents general characteristics of participants. Among 312 elderly, the majority of the participants were 60-69 years old (60.3%), followed by 70-74 years old (19.9%), and female elderly were around two third of the total participants in this study (63.1%). More than half of them were married (56.4%), followed by widowed (27.9%), whereas only the minority of them were divorced (3.5%). More than 40% of elderly had finished only primary school while the education level of college or above was relatively low (8.3%). In terms of occupation, 34.6% of them had private occupation, followed by laborers (27.2%), whereas being a merchant was 17.3%. Most of the elderly had income between 120001-200000 (around 60%).

Table 3. General characteristics of Participants (n=312)

General Characteristics	n(%)
Gender	
Male	115 (36.9)
Female	197 (63.1)
Age group	
60-64	116 (37.2)
65-69	72 (23.1)

General Characteristics	n(%)
70-74	62 (19.9)
75-79	30 (9.6)
80 and older	32 (10.3)
(Mean=68.20, SD=7.34, Median=66.50, Min=60, Max=90)	
Marital status	
Single	38 (12.2)
Married	176 (56.4)
Divorced	11 (3.5)
Widowed	87 (27.9)
Education	
Illiterate	48 (15.4)
Primary school	130 (41.7)
Secondary school	60 (19.2)
High school	48 (15.4)
College or above	26 (8.3)
Occupation	
Unemployed	9 (2.9)

General Characteristics	n(%)
Laborer	85 (27.2)
Government employment	48 (15.4)
Private	108 (34.6)
Merchant	54 (17.3)
Other	8 (2.6)
Income (missing = 11, n=301, total n=312)	
≤ 120000	78 (25.9)
120001 – 150000	90 (29.9)
150001 – 200000	90 (29.9)
> 200000	43 (14.3)
Income in Myanmar Kyats (1 US\$=1535 Kyats)	
Having Chronic disease	
Yes	182 (58.3)
No	130 (14.7)

More than half (56.1%) of the elderly had at least 20 remaining natural teeth and 42.0% of them had 1-19 natural teeth, whereas only 6 elderly (1.9%) did not have any remaining natural teeth. The prevalence of wearing dentures was only 19.9%.

Table 4. Dental status and denture status of the elderly in Mohnyin, Myanmar (n=312)

General Characteristics	n(%)
Dental Status	
No remaining natural teeth	6 (1.9)
1-19 natural teeth	131 (42.0)
≥ 20 natural teeth	175 (56.1)
(Mean=18.96, SD=8.783, Median=21.00, Min=0, Max=32)	
Denture Status	
Wear denture	62 (19.9)
Do not wear denture	250 (80.1)

DISCUSSION

This cross-sectional study was conducted among 312 elderly who were living in Mohnyin, Myanmar. The study aimed to assess the Oral Health-Related Quality of Life (OHRQoL) by using Geriatric Oral Health Assessment Index (GOHAI). Self-administrative questionnaires were used to explore general characteristics, denture, and dental status. In order to check the number of remaining natural teeth, only visual inspection with torch light was used in this study.

Oral and dental health has a big effect on the general health and quality of life of older people.^{9,10} The risk of mouth and teeth problems in this age group is taken very seriously.¹¹ People over 65 have poor dental and oral hygiene because of what is now known to be their poor overall health.¹² Despite these and other issues, older individuals often give less attention than they should to their oral and dental health, which has repercussions for their overall health and quality of life.¹³ The distribution of GOHAI scores among elderly in this study was not normally distributed. Mean and standard deviation were not able to be used, but median and interquartile range were used to determine the level of GOHAI. Median and interquartile range of GOHAI was 42.00±8, mean and standard deviation was 41.18 ± 5.7, which was lower than mean and standard deviation of previous study in Taiwan¹⁴ 47.8 ± 0.5, Thailand¹⁵ 49.94 ± 9.28, and India 44.3 ± 6.4.⁷ [12,50,51] Study in Thailand showed that only 1.8% answered always for item number 3, almost 6% answered always for item 5, more than half answered never for item 7.¹⁵ This was different from this study because more than 80% answered always for item 3, more than 60% answered always, and more than half of elderly answered never for item 7. Differences in scores of GOHAI could be related to the context of the country. Myanmar is still a developing country and the awareness of oral health is relatively low, especially in rural areas. The number of dentists, health expenditure for oral health by the government and accessibility to oral health care services are critically low compared to industrialized countries.¹⁶

In the present study, more than half (56.1%) of the elderly had at least 20 remaining natural teeth and the prevalence of wearing dentures was only 19.9%. Previous studies in Southern Palatinate¹⁷, France¹⁸, and Thailand¹⁵: showed that people who had more natural teeth had a better GOHAI than those who had less natural teeth. Similarly, a study in France showed that the presence of dentures decreased the level of GOHAI.¹⁸

The study has few limitations. First, distribution of GOHAI was not normally distributed so that median and interquartile range was used to separate GOHAI into 2 groups. Second, since the study was carried out in Mohnyin, Myanmar, the result might not be able to refer to the whole general population of Myanmar.

CONCLUSIONS

Based on the study's results, an oral health education program must be implemented in this area to improve the knowledge and oral hygiene practices of the elderly. The proportion of denture wearers in this study was relatively low, so further studies are needed to determine the denture status of the elderly.

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Not applicable

CONFLICT OF INTEREST

None

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