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研 究 題 目：Effects of psychological distress on oral health outcomes in Community-dwelling Myanmar Adults

Introduction:

The global pandemic of COVID-19 has alarming impacts on an individual's mental and emotional health. In Myanmar, the disease has also spread rapidly with severe consequences and affected the country's many health services. Additionally, the country faced many socioeconomic and political difficulties during this period. Those experiences may greatly affect the physical and mental well-being of the Myanmar population. There is little discussion of the impact on an individual's oral health-related quality of life (OHRQoL) especially in low-income countries. Moreover, the available evidence for the relationship between mental and oral health during the pandemic is also still limited. Therefore, this study aims to assess the effects of psychosocial factors on oral health in the Myanmar population.

Materials and Methods:

A cross-sectional study was conducted for 132 participants in a township health center from Yangon city from February to March 2023. From the health center's registration list, we excluded people who were not ordinary residents such as Buddhist monks, nuns, and other institutionalized personnel, aged under 18 years, and physically or mentally unable to participate. Face-to-face interviews using a paper-based questionnaire in the Myanmar language were performed, including socio-demographics, behavioral and psychosocial factors, Depression Anxiety, and Stress Scale-21 items (DASS-21), and Oral Health Impact Profile-14 items (OHIP-14). All questionnaire surveys were conducted by an interviewer in a separate room to secure privacy. A calibrated dentist conducted all clinical oral assessments, including the number of teeth present, decayed, missing, and filled permanent teeth (DMFT), and periodontal assessments.

Results:

In socio-demographic variables, significant associations were observed in individual income with periodontal pocket and OHIP-14, and history of COVID-19 infection with OHIP-14 (Table 1). However, no behavioral factors were significantly different with oral health outcomes. Participants who feel difficulty falling asleep had significantly higher periodontal pockets and poorer OHRQoL; those who feel nervous and anxious, and feel upset and frightened had

Table 1. Descriptive statistics and associations with number of present teeth or dental caries status

Variables	Number (%)	Present teeth	Dental caries status		Periodontal disease		OHIP-14
			DT	DMFT	BOP	Pockets	
Socio-demographics							
Sex							
Male	63 (47.7)	29.5 ± 3.4	2.1 ± 5.2	5.6 ± 6.8	6.1 ± 5.2	2.9 ± 4.4	7.8 ± 8.0
Female	69 (52.3)	29.8 ± 2.4	1.6 ± 4.6	4.3 ± 5.2	5.7 ± 5.0	2.5 ± 4.2	9.0 ± 7.3
Age（years）							
Adults（18 – 59）	78 (59.1)	29.5 ± 2.9	2.3 ± 5.3	5.3 ± 6.3	6.1 ± 5.1	2.9 ± 4.2	7.9 ± 8.0
Older adults（≥60）	54 (40.9)	29.8 ± 3.0	1.4 ± 4.0	4.2 ± 5.5	6.0 ± 5.2	2.4 ± 4.4	9.2 ± 7.0
Education level							
≥High school	92 (69.7)	29.4 ± 3.1	2.0 ± 5.0	5.2 ± 6.3	5.5 ± 5.0	2.8 ± 4.3	7.9 ± 7.6
≤ Middle school	40 (30.3)	30.2 ± 2.5	1.5 ± 4.4	4.2 ± 5.3	6.7 ± 5.3	2.4 ± 4.2	9.7 ± 7.7
Daily individual income							
>2.15 USD	39 (29.5)	30.1 ± 2.6	1.4 ± 4.4	4.7 ± 5.1	4.7 ± 4.9	**0.5 ± 1.7**	**5.0 ± 6.2**
≤2.15 USD	93 (70.5)	29.5 ± 3.0	2.0 ± 5.0	4.9 ± 6.4	6.4 ± 5.1	**3.6 ± 4.7**	**9.9 ± 7.8**
COVID-19 infection							
Experienced	68 (51.5)	29.4 ± 3.3	2.2 ± 5.8	5.0 ± 7.1	6.0 ± 4.5	3.7 ± 4.4	**9.5 ± 8.0**
Not experienced	64 (48.5)	29.9 ± 3.3	1.5 ± 3.6	4.8 ± 4.7	5.8 ± 5.7	2.9 ± 4.2	**7.3 ± 7.1**
Behavioral factors							
Tooth brushing							
≥ 2 times/day	50 (37.9)	29.9 ± 2.9	2.6 ± 6.5	5.2 ± 7.2	6.0 ± 4.8	2.3 ± 3.4	9.3 ± 7.4
< 2 times/day	82 (62.1)	29.5 ± 2.9	1.4 ± 3.4	4.7 ± 5.2	5.8 ± 5.3	3.0 ± 4.7	7.9 ± 7.8
Smoking habits							
Yes	34 (25.8)	28.9 ± 3.5	1.6 ± 2.6	4.7 ± 6.0	5.8 ± 5.2	3.5 ± 4.5	10.3 ± 8.8
No	98 (74.2)	29.9 ± 2.7	2.0 ± 5.4	4.9 ± 6.1	5.9 ± 5.1	2.4 ± 4.1	7.8 ± 7.1
Drinking habits							
Yes	46 (34.8)	29.3 ± 3.6	2.0 ± 4.5	5.0 ± 6.7	4.7 ± 4.7	2.3 ± 2.9	10.0 ± 9.2
No	86 (65.2)	29.9 ± 2.4	1.8 ± 5.0	4.8 ± 5.6	5.6 ± 5.2	2.9 ± 4.9	7.6 ± 6.5
Psychological factors							
Feel difficult to sleep							
Yes	80 (60.6)	29.4 ± 2.8	1.7 ± 4.5	4.7 ± 5.7	6.1 ± 4.7	**3.4 ± 4.1**	**10.5 ± 8.1**
No	52 (39.4)	30.0 ± 3.0	2.0 ± 5.4	5.1 ± 6.5	5.6 ± 5.7	**0.5 ± 1.5**	**5.3 ± 5.7**
Feel nervous/anxious							
Yes	89 (67.4)	29.7 ± 2.8	1.9 ± 5.0	4.8 ± 6.1	**7.0 ± 5.3**	**3.5 ± 4.8**	9.0 ± 7.8
No	43 (32.6)	29.6 ± 3.2	1.7 ± 4.4	4.9 ± 5.9	**3.6 ± 3.9**	**1.1 ± 2.1**	7.4 ± 7.3
Feel upset/frightened							
Yes	86 (65.2)	29.6 ± 2.9	1.7 ± 4.3	4.7 ± 5.6	**6.9 ± 5.2**	**3.4 ± 4.7**	9.2 ± 8.3
No	46 (34.8)	29.8 ± 3.0	2.2 ± 5.7	5.2 ± 6.7	**4.0 ± 4.3**	**1.4 ± 2.9**	7.0 ± 6.1
Depression scale							
Score 0 – 9	101 (76.5)	**30.2 ± 2.3**	**1.3 ± 3.9**	4.1 ± 4.7	5.6 ± 5.2	**1.9 ± 4.2**	**6.4 ± 6.5**
Score ≥ 10	31 (23.5)	**27.9 ± 3.9**	**3.7 ± 6.9**	7.3 ± 8.7	6.7 ± 4.7	**5.2 ± 3.5**	**15.2 ± 7.2**
Anxiety scale							
Score 0 – 7	85 (64.4)	**29.9 ± 2.9**	1.3 ± 3.4	4.4 ± 5.1	5.6 ± 5.5	**1.1 ± 2.6**	**6.4 ± 6.7**
Score ≥ 8	47 (35.6)	**29.0 ± 2.8**	2.8 ± 6.7	5.7 ± 7.3	6.3 ± 4.5	**5.5 ± 5.2**	**12.2 ± 7.8**
Stress scale							
Score 0 – 14	114 (86.4)	**29.9 ± 2.7**	1.8 ± 5.1	4.7 ± 5.9	5.7 ± 5.1	**2.3 ± 4.1**	**7.3 ± 6.9**
Score ≥ 15	18 (13.6)	**28.1 ± 3.8**	1.9 ± 3.1	6.2 ± 6.6	7.2 ± 5.1	**4.3 ± 4.4**	**15.6 ± 8.2**

Bold values indicate statistically significant（p<0.05）.

significantly higher gingival bleeding and periodontal pockets. In DASS-21, depression subscale was associated with DT, but, no factor was associated with DMFT. All three subscales were significantly associated with number of present teeth, periodontal pockets, and OHIP-14.

Discussion

To our knowledge, this is the first study that evaluated the associations of socioeconomic, behavioral, and psychological factors with oral health status and OHRQoL in Myanmar with a complex environment. Overall, the experiences of oral health status in Myanmar adults were high with impaired OHRQoL, and majority of them suffer from psychological distress. Psychological distress indicated the demand for mental healthcare services in Myanmar. The results showed the most significant associations between several psychological factors and oral health outcomes. Poorer oral health status and unfavorable OHRQoL were higher in individuals with depression, anxiety, and stress than in healthy individuals. Our findings strengthen the results of previous studies that have reported similar associations, which highlighted that perceived psychosocial stressors are risk indicators for poor oral health. Moreover, significant associations were found between some socio-demographic variables and oral health outcomes. Individuals with socioeconomic disadvantages are susceptible to psychosocial risk factors that can negatively affect oral health. However, no significant association was found between behavioral factors and oral health outcomes; thus, we cannot confirm that participants with healthy behaviors have better oral health. This is perhaps because only general questions regarding these variables were queried, and the respondents may provide inaccurate or false answers to the survey questions.

As a conclusion, the findings could provide basic information on the psychosocial correlation of oral health of Myanmar people facing worse challenges, which will be useful for planning and developing an action plan to improve their oral health status. More longitudinal studies are warranted to better explain various psychosocial factors and oral health outcomes for Myanmar adults in a complex environment.

Journal Publications:

1. Thwin KM, Lin WT, Takehara S, Ogawa H. Socioeconomic, behavioral, and psychological factors related to oral health in Myanmar: A cross-sectional study. J Public Health Dent. 2023; 83(4): 340-346.
2. Thwin KM, Takehara S, Lin WT, Ogawa H. COVID-19 and Psychological Factors with Oral Health-Related Quality of Life. JDR Clin Trans Res. 2024; under review.

Academic Presentation:

1. Thwin KM, Lin WT, Takehara S, Ogawa H. Psychosocial impact on oral health-related quality of life in Myanmar. The 15th International Conference of the Asian Academy of Preventive Dentistry (AAPD), Hong Kong. (8 – 11 November, 2023)

Award:

1. Kaung Myat Thwin: "Outstanding Research Award". The 15th International Conference of the Asian Academy of Preventive Dentistry (AAPD), Hong Kong. (8- 11 November, 2023)