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# Oral Health of Myanmar Migrants along the Thai border in Mae Sot District, Tak Province, Thailand

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## ABSTRACT

**Objectives:** To assess dental caries status, knowledge, attitudes and practices (KAP) regarding oral health among Myanmar migrant workers in Mae Sot District, Tak Province, Thailand. **Materials and methods:** This cross-sectional study was conducted among 130 Myanmar migrant workers aged 26.83±5.77 years who participated in an oral examination and were interviewed by structured questionnaires. **Results:** Prevalence of caries among this group of workers was 86.9%. Mean DMFT index was 2.09±1.39 teeth/person with untreated decayed teeth only. The majority of workers had good knowledge and attitudes in oral health, but poor score on practices, especially in using oral health services. However, mean DMFT increased when KAP score in oral health decreased. **Conclusion:** This study suggested changing decayed teeth to filled teeth among in population by increasing oral health facilities and services accessible to Myanmar migrants, especially simple treatment of fillings and oral prophylaxis, including annual oral examination.

## INTRODUCTION

Health and quality of life among migrants are usually concerns. Thailand shares a long border with Myanmar. Displaced persons from Myanmar have been forced to migrate, owing to the abusive military regime in Myanmar and poverty. They usually suffered from continued poverty, family fragmentation, discrimination, difficulties in communication, finding work and accessing health care and lack of secure housing, adequate food and clean water[1].

Oral health is essential to general health and quality of life. Good oral health is a state of being free from mouth and facial pain, oral cancer, oral periodontal (gum) disease, tooth decay, tooth loss and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking and psychosocial wellbeing[2]. Among underprivileged groups such as migrants, oral health care is a priority for workers to maintain a high number of work hours and production leaving little room for absence from work[3]. In addition, the health of workers often goes

uncared for due to stressful working conditions, busy schedules and poor economic conditions. Until now, the oral hygiene practices and dental caries status of migrant workers along the border of Thailand have not been reported.

Mae Sot is one of nine districts in Tak Province where many foreign migrants (mostly Myanmar) are located. Mae Sot is a district in western Thailand sharing a border with Myanmar to the west. The town has a substantial population of Burmese refugees and economic migrants. The exact number of Burmese in Mae Sot is unclear, but estimates claim over 100,000 exist in addition to the 106,000 already recorded in the official census. In recent years, the ongoing refugee situation has prompted NGOs and international aid agencies to establish programs in the towns and surrounding areas[4]. However, the Thai government provides health care services for migrants. For adult migrants, Mae Sot General Hospital and Mae Tao Clinic provide general and dental health care services. It has been estimated that over 2 million people from Burma live as migrant workers in Thailand (the vast majority as illegal migrants). Though it is now easier for migrant workers to get passports and work permits than in the past, many workers are illegal, making it difficult for them to access services in Thailand including health care[4].

This study aimed to assess caries status and knowledge, attitudes and practices in oral health including use of oral health care services and their association among Myanmar migrant workers in Mae Sot District, Tak Province, Thailand. The results will help oral health education and dental caries prevention programs.

## MATERIALS AND METHODS

### Study design

A cross-sectional study was carried out among Myanmar migrant workers in Mae Sot District, Tak Province, Thailand from January to February 2013. The study population comprised Myanmar migrant workers living in 14 communities of Mae Sot District, Tak Province, Thailand. The study was approved by the Ethics Committee on Human Rights related to Human Experimentation, Faculty of Public Health, Mahidol University, COA No. MUPH 2013 039.

### Population

The inclusion criteria comprised Myanmar migrants aged 25 to 60 years working in Mae Sot District, Tak Province, Thailand who consented to participate in this study. Migrants with physical or mental disorders preventing them from participating in oral health examination and answering questionnaires were excluded.

### Sampling strategy

The district of Mae Sot has 10 subdistricts, further subdivided in 86 villages. Purposive sampling was used to select one congested community and one non-congested community among the villages where Myanmar migrants lived. Convenience sampling was used to select the study sample according to the inclusion criteria. The sample size totaled 129, calculated from the prevalence of having at least one DMFT, i.e., 86.7% in Thailand [5]. A total of 130 subjects were included in the analysis.

### Questionnaires

Questionnaires were constructed by the researcher. The content was divided in 4 parts: general characteristics, knowledge, attitude and practices related to oral health. Pretest for content validity of the questionnaire was reviewed by a dental expert and reliability by Cochran's C test was 0.71 regarding attitude toward oral health. Therefore, the questionnaires were revised after pretest.

### Oral health examination

Oral examination was performed after interviewing by questionnaire. Oral examination was conducted in natural daylight according to oral health survey basic methods by WHO with modified oral health examination[6]. Decayed (D), missing (M), filled (F) teeth (DMFT) index as caries experience was used in oral examination to determine caries status or severity of caries experience[6]. The survey team consisted of 2 examiners, 2 recorders and 1 dental assistant. The calibration of teeth examination was performed twice between two examiners, and disagreements in examination were discussed. Kappa statistics was 0.92.

### Data Analysis

Individual DMFT index was calculated from recoded forms by summing up of decayed, missing, and filled teeth; the average or mean DMFT were presented as unit of teeth/person. Prevalence of dental caries was proportional to at least 1 DMFT/person. Frequency, proportion and mean standard deviation were used for descriptive statistics. Multiple linear regression was used to demonstrate the relationship between DMFT and knowledge, attitude and practices in oral

health. A p-value less than 0.05 was considered statistically significant.

**RESULTS**

This group of 130 participants had a mean age of 26.83±5.77 years (minimum 19, maximum 38) and an equal ratio of males to females, 1:1. The majority attended high school (64.6%) and graduated from university at 35.4%. Mean length of stay in Thailand was 3.6±2.54 years with a minimum of 1 year and maximum of 10. Prevalence of having caries at least 1 tooth was 86.9%. (Table 1) Using a mean DMFT of 2.09±1.39 teeth/person, only the component of decayed teeth was found and no component of filled teeth and extracted teeth by caries. The minimum number of decayed teeth was 1 and maximum was 5 teeth. (Table 2) However, no associations were found between sex, education, different living places of participants and caries status (caries free/having at least 1 decayed tooth) (Table 3). All the participants in the caries free group had good knowledge, good attitude and good oral health practice (Table 3). Results from multiple regression demonstrated a significantly negative relationship between mean DMFT and score of knowledge, attitude and practices in oral health. When the score of knowledge, attitude and practice increased, mean DMFT decreased (Table 4).

**Table 1Characteristics of study population**

| Variables | Number | percentage |
|---|---|---|
| **Sex** | | |
| Male | 65 | 50 |
| Female | 65 | 50 |
| **Age in years** | | |
| <20 | 18 | 13.8 |
| 21-30 | 75 | 57.7 |
| >30 | 37 | 28.5 |
| **Education** | | |
| No education | 0 | 0 |
| Attending high school | 84 | 64.6 |
| Attending university | 46 | 35.4 |
| **Living place** | | |
| Congested area | 75 | 57.7 |
| Noncongested areas | 55 | 42.3 |
| **Length of stay (years)** | | |
| Less than and 5 years | 110 | 84.6 |
| More than 5 | 20 | 15.4 |
| Mean 3.6 ± 2.5 years (minimum 1 year, maximum 10 years) | | |
| **Prevalence of caries** | 113 | 86.9 |
| Having at least 1 DMFT | 17 | 13.1 |
| Caries free | | |

**Table 2 Severity of caries by mean DMFT and each component of DMFT with SD (n=130)**

| Caries status | N | Mean | SD | Minimum | Maximum |
|---|---|---|---|---|---|
| DT | 113 | 2.06 | 1.39 | 1 | 5 |
| MT | 0 | 0.00 | 0.00 | 0 | 0 |
| FT | 0 | 0.00 | 0.00 | 0 | 0 |
| DMFT | 113 | 2.06 | 1.39 | 1 | 5 |

**Table 3 Factors associated with caries status among participants**

| Variables | Caries free n(%) | Having at least one decayed tooth n(%) | P-value |
|---|---|---|---|
| **Sex** | | | |
| Male | 6(35.3%) | 59(52.2%) | 0.149 |
| Female | 11(64.7%) | 54(47.8%) | |
| **Education** | | | |
| Attending high school | 10(58.8%) | 74(65.5%) | 0.389 |
| Attending university | 7(41.2%) | 39 (34.5%) | |
| **Living place** | | | |
| Congested area | 7(41.2%) | 68(60.2%) | 0.113 |
| Uncongested area | 10(58.8%) | 45(38.8%) | |
| **Knowledge in oral health** | | | |
| Poor | 0 | 22(19.5%) | NA* |
| Good | 17(100%) | 91(80.5%) | |
| **Attitude toward oral health** | | | |
| Poor | 0 | 28(24.8%) | NA* |
| Good | 17(100%) | 85(75.2%) | |
| **Practice in oral health** | | | |
| Poor | 0 | 47 (41.6%) | NA* |
| Good | 17(100%) | 66(58.4%) | |

*NA = nonapplicable

**Table 4 Relationships between DMFT and score of knowledge, attitude and practices in oral health**

| Variables | Coefficient (b) | Standard error | P-value |
|---|---|---|---|
| Score of knowledge in oral health | -0.594 | 0.095 | <0.001 |
| Score of attitude toward oral health | -0.060 | 0.020 | 0.003 |
| Score of practices in oral health | -0.437 | 0.053 | <0.001 |

Note: R2 =0.821

## DISCUSSION

With a low proportion of caries free (13.1%) and average of 2 decayed teeth without treatment/person with good knowledge and attitude in oral health, the results indicated nonuse of oral health services available in Mae Sod District in these groups of Myanmar migrants. Delayed treatment was common, They spent their savings on one visit to a doctor in their home country, Myanmar, making prevention and early treatment impossible. The main reason to access oral health care facilities for these groups of Myanmar migrant workers was they didn't have an identity card at 37% (not in table). Most Myanmar migrant workers were unregistered and thus they felt they were insecure to use oral health care facilities. From this study, most could not afford the registration fees leading to delay in obtaining health insurance. They were not aware of their registration status and health insurance system because of a lack of knowledge and money to make the registration. Therefore, the importance of registration and oral health

insurance should be disseminated to this group of Myanmar migrant workers.

One of the most notable organizations is the Mae Tao Clinic, just outside the west side of town. It was established by the Burmese/Karen Dr Cynthia Maung to offer free medical services to Burmese who do not qualify for treatment at Mae Sot Hospital. The center is funded independently and supported by teams of volunteers. The community hospital provides good quality healthcare to the Burmese refugee population. The dental clinic serves as not only a treatment space, but also includes oral health promotion on what kinds of foods to eat to avoid dental problems as well as promoting oral hygiene. At the present time (2016), the dental clinic is an independent department with a staff of 11. It has new facilities with three donated chairs and high speed pneumatic dental drills. The specially trained staff see 20 to 30 patients daily[7]. However, for some time the dental department has had a shortage of instruments, as they are not available for purchase locally. Thus they must be ordered from Bangkok, which means they can take a long time to arrive at the clinic. The oral health services in clinics nearby comprised only scaling or cleaning of the teeth or treatment of gingivitis and periodontitis.

However, to achieve good oral health, improving oral health knowledge, and changing negative attitudes towards oral health status and using oral health services is needed. Some studies suggest that adherence to the messages of oral health education by migrant adults has the potential to greatly enhance the effectiveness of oral treatment because oral health can be maintained successfully with effective oral self-care [8]. A community-based oral health promotion program concerning the use of oral health services and oral health knowledge, attitudes, and practices proved to be effective among migrants. However, further research is required to test the long-term impact including the economic evaluation [9].

## CONCLUSION

Caries prevalence rate was quite high at 86.9% with average untreated decayed teeth at 2.06 ± 1.39 teeth/person. This group of migrants had good scores of knowledge and attitude in oral health, but low score in practice because unregistered status led to an unavailable health insurance system. Providing adequate information in registering migrants is important for oral health facilities and higher quality of life.

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