

# KNOWLEDGE, ATTITUDES AND PRACTICES REGARDING DIABETES MELLITUS AMONG MYANMAR MIGRANT WORKERS IN BANG KHUN THIAN DISTRICT, BANGKOK, THAILAND

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## ABSTRACT:

**Background:** There is an increasing trend of diabetes mellitus in developing countries. Economic development in low and middle income countries makes for increased life expectancy which is in turn related to incidence of non-communicable diseases in people of those countries. Diabetes mellitus is a chronic metabolic disease which affects the population of the whole world. More than 80% of diabetes related deaths are from low and middle income countries (WHO). The purpose of this study is to assess the knowledge, attitudes and practices regarding diabetes mellitus among Myanmar migrant workers in Bang Khun Thian district, Bangkok Thailand.

**Methods:** A cross-sectional study was conducted in 437 Myanmar migrant workers who resided in Tha Kham sub-district, Bang Khun Thian district of Bangkok metropolitan area during May and June, 2015. Structured questionnaires based on socio-demographic characteristics, awareness, and presence of some risk factors, knowledge, attitudes and practices regarding diabetes mellitus were used in this study. SPSS software was used in data analysis. Frequency, percentage and mean were used as descriptive statistics. Chi square test, least square regression and logistic regression were used as inferential statistics.

**Results:** Most of the respondents had ever heard of diabetes mellitus. Most of them got good knowledge scores (>80% of total score), moderately positive attitude scores (70-80%) and good practice score (>80%). By interviewing, only three of the respondents reported that they have diabetes mellitus according to the diagnosis by the medical doctor. Most of the respondents have no risk factors for diabetes mellitus according to their family history, pregnancy history in women, smoking status, BMI and status of whether having hypertension or not. There were associations between knowledge, attitudes and practices regarding diabetes mellitus on bivariate analysis. There were positive associations between knowledge and attitude but no association between knowledge and practice on multivariate analysis.

**Conclusion:** The knowledge and attitude level regarding diabetes mellitus were high in most of the respondents. Most of the males got good practice scores whereas most of the females got poor practice scores. Association between socio-demographic characteristics and awareness, presence of risk factors, knowledge, attitudes and practices regarding diabetes mellitus varied among the individuals.

**Keywords:** Diabetes mellitus, Knowledge attitudes practices, Myanmar migrant workers, Thailand

DOI:

Received: July 2015; Accepted: September 2015

## INTRODUCTION

Diabetes mellitus is a chronic disease which causes the lifelong morbidities as its complications [1]. Although it was considered to be prevalent among the old age people, the trend of prevalence

also shifts to the younger population [2]. Imbalance between economic development and lifestyle changes cause early onset of diabetes. Asians have strong genetic predisposition to diabetes mellitus compared to the Western population. Those Asian people even with normal BMI and normal waist circumference might have diabetes mellitus [3]. Health education is still need to be comprehensive

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## Cite this article as:

Win N, Xenos P. Knowledge, attitudes and practices regarding diabetes mellitus among Myanmar migrant workers in Bang Khun Thian district, Bangkok, Thailand. *J Health Res.* 2015; 29(Suppl.2): 201-6. DOI:

**Table 1** Socio-demographic characteristics

Socio-demographic characteristics	Frequency	Percentage (%)
<b>Age (years) (n=428)</b>		
18-30	273	63.8
31-43	141	32.9
≥44	14	3.3
<b>Gender (n=437)</b>		
Male	286	65.0
Female	151	35.0
<b>Marital status (n=433)</b>		
Single	143	33.0
Married	281	64.9
Divorced	4	0.9
Widowed	2	0.5
Separated	3	0.7
<b>Education (n=433)</b>		
Can read and write, never attended the school	22	5.0
Primary school level	126	29.1
Middle school level	169	39.0
High school level	99	22.9
University level	16	3.6
Other	1	0.2
<b>Occupation (n=433)</b>		
Factory worker	368	85.0
Construction worker	24	5.5
Dependent	24	5.5
Other	17	3.9
<b>Working status (n=432)</b>		
With work permit	391	90.5
Without work permit	41	9.5
<b>Duration of living in Thailand (n=427)</b>		
2 weeks to 1 year	51	11.9
Above 1 year	376	88.1
<b>Ethnicity (n=433)</b>		
Burmese	231	53.3
Mon	18	4.1
Rakhine	105	24.2
Shan	30	6.9
Kayin	13	3.0
Other	36	8.3

regarding diabetes mellitus in the developing countries. There are increasing numbers of people who migrate to Thailand from the neighboring countries. According to 2009 data, there are about 2 million of Myanmar migrant workers in Thailand, both legal and illegal [4]. Health services for those migrant workers is the important health issue of the host country since they might reflect the health care sector of the host country. Due to the migrant nature of the workers, they rather don't get enough health service. There were just few studies on diabetes mellitus regarding the migrant population. This study aimed to describe the knowledge, attitudes and practices regarding diabetes mellitus among the migrant works in suburb Bangkok.

## METHODS

The study design was cross-sectional and analytical study. The ethical approval of this study was given on 25<sup>th</sup> May 2015 with protocol no. 089.1/58. The study population was the migrant workers living in Bang Khun Thian district, Bangkok, Thailand. Cochran's formula was used to calculate the sample size and the required sample size was 422. Total 437 participants (286 males and 151 females) were interviewed. Random sampling from Bang Khun Thian district was done according to inclusion and exclusion criteria. Inclusion criteria are Myanmar migrant worker who were 18 years of age and above and those who have been living in Thailand for at least 2 weeks. Exclusion criteria are

**Table 2** Total knowledge, attitude and practice score

	Male number (%)	Female number (%)
<b>Knowledge score level (n=436)</b>		
Poor	9 (3.1)	6 (4.0)
Moderate	56 (19.6)	14 (9.3)
Good	221 (77.3)	130 (86.1)
<b>Attitude score level (n=436)</b>		
Poor	79 (27.6)	39 (26.0)
Moderately positive	154 (53.8)	75 (50.0)
Good	53 (18.5)	36 (24.0)
<b>Practice score (n=434)</b>		
Good	102 (35.9)	85 (56.7)
Moderate	64 (22.5)	27 (18.0)
Poor	118 (41.5)	38 (25.3)

those who wouldn't want to answer the questions voluntarily and those who didn't understand Burmese language. Face to face method of interview was used. Structured questionnaires which comprised of socio-demographic characteristics, awareness, risk factors, knowledge, attitudes and practices regarding diabetes mellitus were used for the research. Two sets of questionnaire for practice regarding diabetes mellitus were used: one for all respondents and one just for diabetes patients only. The questionnaires were coded. The scores were classified as good (above 80% of the total score), moderate (70 to 80% of the total score) and poor (less than 70 % of the total score) for knowledge, attitude and practice regarding diabetes mellitus. Data analysis was done by using SPSS software version 22 (University licensed).

Frequency, percentage and mean calculation were used as the descriptive statistics and Chi square test, least square regression and logistic regression were used as the inferential statistics.

## RESULTS

### Socio-demographic characteristics

Socio-demographic characteristics are shown in Table 1. Most of the respondents are below or equal to 30 years of age and the mean age is 28.7 years. Most are married and the majority of the ethnic group is Burmese. Most of the respondents are registered migrant workers and have been living in Thailand for more than one year. Most of them attended up to middle school education and the majority or all respondents are the factory workers.

### Awareness of diabetes mellitus

Most of the respondents aware of the diabetes mellitus. Only 3 of them reported that they have diabetes mellitus according to the diagnosis of the medical doctor. Majority of them have not ever heard of gestational diabetes and insulin.

### Risk factors regarding diabetes mellitus

Most of the people don't have the risk factors for diabetes mellitus. Risk factors such as gestational diabetes history, family history of diabetes mellitus, increased BMI, smoking and hypertension were assessed.

### Knowledge, attitude and practice scores

Most of the respondents gave correct answers in knowledge, attitude and practice questionnaires regarding diabetes mellitus. But most of them didn't answer the negative statements correctly. Table 2 shows the total knowledge, attitude and practice scores for all respondents.

### Bivariate analysis

Association between socio-demographic characteristics and awareness level, risk factors, knowledge, attitudes and practices regarding diabetes mellitus were calculated. There are significant associations between awareness of diabetes mellitus and ethnicity ( $p=0.026$ ), and duration of living in Thailand ( $p=0.015$ ). There are significant association between awareness of gestational diabetes and age ( $p=0.004$ ), and status of having work permit or not ( $p=0.018$ ). There is no significant association between socio-demographic characteristics and awareness of insulin. There is a significant association between awareness having diabetes mellitus or not and ethnicity ( $p=0.033$ ).

There are no significant associations between socio-demographic characteristics and history of gestational diabetes, and family history of diabetes mellitus. There are significant associations between BMI and age ( $p=0.033$ ), marital status ( $p=0.018$ ) and ethnicity ( $p=0.031$ ). There are significant associations between smoking and gender ( $p<0.001$ ), occupation ( $p=0.015$ ) and ethnicity ( $p=0.002$ ). There are significant associations between hypertension history and age ( $p<0.001$ ), and marital status ( $p=0.004$ ).

**Table 3** Relationship between knowledge and attitudes regarding diabetes mellitus

	Attitude scores			Chi-square	p-value
	Poor	Moderately positive	Good		
	No. (%)	No. (%)	No (%)		
Knowledge scores(n=436)				53.612	<0.001 *
Poor	12 (80.0)	2 (13.3)	1 (6.7)		
Moderate	35 (50.0)	32 (45.7)	3 (4.3)		
Good	71 (20.2)	195 (55.6)	85 (24.2)		

\* Statistically significant

**Table 4** Relationship between knowledge and practices regarding diabetes mellitus

	Practice scores			Chi-square	p-value
	Poor	Moderately positive	Good		
	No. (%)	No. (%)	No (%)		
Knowledge scores(n=434)				21.56	<0.001 *
Poor	10 (66.7)	4 (26.7)	1 (6.7)		
Moderate	44 (63.8)	9 (1.3)	16 (23.2)		
Good	133 (38.0)	78 (22.3)	139 (39.7)		

\* Statistically significant

**Table 5** Relationship between attitudes and practices regarding diabetes mellitus

	Practice scores			Chi-square	p-value
	Poor	Moderately positive	Good		
	No. (%)	No. (%)	No (%)		
Attitude scores(n=434)				11.396	0.018 *
Poor	54 (46.2)	29 (24.8)	34 (29.1)		
Moderately positive	91 (39.9)	54 (23.7)	83 (36.4)		
Good	42 (47.2)	8 (9.0)	39 (43.8)		

\* Statistically significant

There are significant associations between knowledge and gender ( $p=0.021$ ), knowledge and educational status ( $p=0.018$ ) and status of having work permit or not ( $p=0.001$ ) and duration of living in Thailand ( $p=0.025$ ). There are no significant associations between attitude level and most of socio-demographic characteristics except with the status of having work permit or not ( $p=0.015$ ). There are significant associations between practice level of all respondents and gender ( $p<0.001$ ), marital status ( $p=0.007$ ), occupation ( $p=0.001$ ), status of having work permit or not ( $p=0.002$ ) and duration of living in Thailand. ( $p=0.018$ ) and ethnicity ( $p=0.044$ ).

In bivariate analysis there are significant associations between level of knowledge and level of attitudes ( $p=0.000$ ), level of knowledge and practices ( $p=0.000$ ), and level of attitudes and practices ( $p=0.018$ ) regarding diabetes mellitus.

### Multivariate analysis

Multivariate analysis was done to assess association of socio-demographic characteristics with risk factors, knowledge, attitude and practices regarding diabetes mellitus by using the linear and logistic methods. (Data not shown). There is the

significant associations between awareness of diabetes mellitus and duration of living in Thailand ( $p=0.02$ ). Age is found to be significantly associated with awareness of gestational diabetes ( $p=0.002$ ).

There is no significant association between history of gestational diabetes and all socio-demographic characteristics. There is a significant association between family history of diabetes mellitus and duration of living in Thailand ( $p=0.043$ ). Males have a significant association with smoking status ( $p<0.001$ ). Duration of living in Thailand is also significantly associated with smoking status ( $p<0.001$ ). Age is found to be significantly associated with the presence of hypertension ( $p<0.001$ ). Age is significantly associated with BMI and people who are 44 years of age and above tend to have more BMI than people who are under 31 years of age ( $p=0.046$ ). Marital status also has significant association with BMI and married respondents tend to have more BMI than singles ( $p=0.031$ ). Shan ethnic group have more BMI compared to Burmese ( $p=0.005$ ) and the ethnic group which is labelled as other tends to have less BMI compared to Burmese ( $p=0.04$ ). Respondents who don't have work permit have significant

association with knowledge, attitude and practice with p-value of <0.001, 0.017 and <0.001. Males have significant association with knowledge level (p=0.027). Respondents who have middle school level of education have more knowledge compared to those who never attended the school (p=0.038). Rakhine ethnic group has significant association with knowledge (p=0.026). Respondents who have University level of education have significant association with attitude level (p=0.032). Males have significant association with practice compared to females (p=0.001). Rakhine ethnic group has significant association with practice level (p=0.023). There are significant associations between knowledge and attitude, and knowledge and practice. But there are significant association of attitude and practice level.

### DISCUSSION AND CONCLUSION

Although the prevalence of diabetes mellitus in Thailand and Myanmar are known the actual prevalence of this disease among the Myanmar migrant populations in the study area was not known [5]. So 50% prevalence is considered to cover for enough sample size. After interviewing all respondents, only 3 reported that they have diabetes mellitus according to the diagnosis by medical doctor. From remaining respondents, there may be missing cases of diabetes mellitus. This study only concerned on knowledge, attitudes and practices; and to know the actual prevalence of diabetes mellitus, blood test is required.

Most of the people answered the questions enthusiastically. There were not so much problems in introducing the research team to each respondent before conducting the study. The problems that were encountered by the principal researcher are that some respondents missed to answer some questions and some research assistants missed to fill out some responses.

According to the descriptive statistics, most of the respondents showed good level of knowledge, moderately positive level of attitudes and good level of practices regarding diabetes mellitus. Exception is clear only on the negative statements of the knowledge and attitude questionnaires to which most respondents gave wrong answer.

Asia constitutes more than 60% of global diabetic population. Socio-economic development and narrowing of urban rural difference make lifestyle disorders of the people in developing countries which in turn affect the health of those people. Asians have lower threshold for diabetes mellitus. People at younger age could have diabetes mellitus even with normal BMI and waist

circumference. So comprehensive health care involving preventive and curative measures for diabetes mellitus crucial in health care of the developing countries. Health financing is inadequate and health care outcome is still unsatisfactory for diabetes mellitus in developing world [1]. Due to the migrant nature of the workers, they have limited health care and need more comprehensive healthcare. Non-communicable diseases should be equally emphasized as infectious diseases because of their increasing trend of prevalence in developing countries and all over the world. Since lifestyle modification is the important factor in prevention and control of diabetes mellitus, effective health education is important to implement that modifications. People at working age have to know about the diabetes mellitus so they can prevent the disease prevalence to certain extent when they get old. So they could get benefits from doing certain healthy preventive measures regarding diabetes mellitus.

### RECOMMENDATIONS

The health of the migrant populations is considered as the important health issue by the host country. As the increasing numbers of migrants flee to the neighboring countries for their employment, health profiles of them reflect the health system of the host country to the certain extent. As the migrant workers tend to emphasize more to earn money for their survival rather than the healthcare, the vulnerability of them to expose to certain health problems might become dominant [4].

Similarly, the difficulty of getting correct data from that migrant population because of their unstable migrant nature make to get the actual prevalence of the diseases [4].

Diabetes mellitus prevalence is strongly related to unhealthy behaviors of the individuals [1]. It is important for these individuals to be fully informed about the nature of that disease and preventive measures [6]. So health education is important for the migrant workers of this research [7]. There should be policy implementation of the health issues of the migrant workers to provide effective health care both for preventive and curative measures [8]. Health workforce is also important in implementation of health policy and there should be enough health workers for health education and prevention programs and curing of diabetes mellitus and other non-communicable diseases. There should be sufficient technologies, financing and equipment or health research among the migrant population.

Further researches to estimate the prevalence and morbidities concerning diabetes mellitus should

be done since there were few researches regarding diabetes mellitus among the migrant populations. Regular and routine blood glucose test is needed for that purpose so that the estimation of diabetes prevalence could be figured out. Effective health care for the diabetes patients among the migrant workers should be provided to prevent the complications. People who are at risk of having diabetes mellitus have to ensure that they have been informed about the preventive measures and have to follow lifestyle modifications effectively to prevent the diabetes mellitus to the certain extent.

### ACKNOWLEDGEMENTS

Authors would like to acknowledge all lecturers and staff at College of Public Health Sciences for guidance and support to students during the study course and all participants in the study from Bang Khun Thian for participating in the study. This publication was partially supported by the Ratchadapisek Sompoch Endowment Fund, Chulalongkorn University (CU-57-065-AS).

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