

# MATERNAL KNOWLEDGE ATTITUDE AND PRACTICE OF PREVENTING DIARRHEA AMONG CHILDREN UNDER FIVE IN MIGRANTS IN MAE SOT DISTRICT, TAK PROVINCE, THAILAND

Kaung Myat, Nutta Taneepanichskul\*

College of Public Health Sciences, Chulalongkorn University, Bangkok 10330, Thailand

**ABSTRACT:** A cross-sectional research's objectives was to study the factors influencing the maternal practice of diarrhea prevention in under five children in migrants, Mae Sot, Tak province, Thailand. One hundred and twelve samples were both illegal and legal migrants living in Hua Fai village, Phatadpadaeng sub-district, Mae Sot district. Data collection was conducted on March to April 2014. A structured questionnaire in 4 parts was used for interviewing. The overall reliability value was 0.87. Statistics used were frequency, percentage, mean, standard deviation and chi-square test. The results revealed that most of the respondents were mothers aged 19-48 (46.4%). They were married (91.1%), Burma (82%), did not have work permit (78.6%), finished primary school (46.4%), and were housewives (72.3%). Average number of their family was three. Average income was 5,030 Thai baths monthly. Respondents were chosen if they had a diarrhea history in the past two months. Most of the respondents had longer duration of stay in Thailand over two years (89.3%). The respondents had their knowledge level on prevention of diarrhea for 85.7% (good level), had their attitude level on prevention of diarrhea for 87.5% (neutral level) and their practice on prevention of diarrhea for 61.6% (intermediate level). Demographic characteristics which were found to be significant with the practice of prevention of diarrhea were marital status ( $P=0.001$ ), educational status ( $P=0.002$ ), average income per month (0.028) and enough income ( $P=0.009$ ). The Spearman's correlation test was used to investigate the relationship between the demographic variables, knowledge, attitude and practice of diarrhea prevention. There were weak positive correlations between knowledge and prevention practice of diarrhea as well as between attitude and prevention practice of diarrhea. The findings indicate that if people are supported with sufficient knowledge through various channels, they will come to have good practice in preventing diarrhea in children under five years.

**Keywords:** Maternal health, Child health, Diarrhea, Knowledge attitude and practice, Migrants, Thailand

## INTRODUCTION

Diarrhea, a symptom of gastrointestinal tract infection, can be caused by a various kind of pathogens, such as bacteria, virus and protozoa. It is common in all ages in the world as one of the communicable diseases. Each year, 1 to 2.5 billion people are infected and 1.5 million child deaths [1] and it is noted as the second leading cause of

mortality in children under five in the developing countries with nearly 90% in South Asia and Sub-Saharan Africa [2].

Children are especially at high risk because of their poor resistance and they are getting more contact with contaminated things through eating or playing something like water and ground. Children with inadequate nutritional support and those living in poor environmental status are more prone to get severe diarrhea than normal children [3].

There are around 1 billion migrants in the

\* Correspondence to: Nutta Taneepanichskul  
E-mail: Nutta.T@chula.ac.th

### Cite this article as:

Myat K, Taneepanichskul N. Maternal knowledge attitude and practice of preventing diarrhea among children under five in migrants in Mae Sot district, Tak province, Thailand. *J Health Res.* 2014; 28(Suppl.): S63-8.

world in which 214 million are international migrants and 740 million are internal [4]. Flows of these migrants become a huge size of populations composed of workers, refugees, students, unregistered migrants and others with different levels of health status, needs and vulnerability.

Mae Sot is a district in western Thailand that shares a border with Myanmar to the west. It is notable as a trade hub and for its substantial population of Myanmar migrants and refugees. The town is part of the larger Tak province and is the main land gateway between Thailand and Myanmar. It has a population of 120,999 but with the presence of a large number of unregistered Myanmar migrants this is probably to be higher. The figures quoted for the number of migrant workers in the Mae Sot area range from between 150,000 to 300,000 with around 10% of these children [5].

Migrant children situation is different from that of children living in the refugee camps. The food supply for the latter is regular; access to health care is free; immunization coverage is excellent. Success in reducing malnutrition among children depends on the sustainability of the intervention and whether the children are likely to get benefit from it for an adequate length of time; both criteria are presently unmet for this particular population and need further consideration. Non-Government Organizations in collaborating with health agencies supervise and report annual surveys mostly in children less than 5 years in all refugees' camps along the Thai-Myanmar Border [6].

The aim of this research was to study the factors influencing the maternal practice of diarrhea prevention in their under five children, Mae Sot, Thailand.

## MATERIALS AND METHODS

This is a cross-sectional survey. Study area was in Ban Hua Fai, Phatadpadaeng sub-district, Mae Sot district, Tak Province, Thailand. It was conducted through Myanmar migrants' residences. As migrants were living hidden and scattered, survey was conducted through almost all the mothers who were eligible to the inclusion criteria which were Myanmar migrant mothers who had children under five years old, willing to participate and she must have at least one experience of diarrhea in the child. Study population was all Myanmar migrant mothers who had children under five years old. The number of mothers who had children under five years old was almost 1000 in the Hua Fai village as far as collected as a primary survey.

From the sample size calculation by using the formula,

$$n = \frac{z^2 p(1-p)}{d^2} = \frac{1.96^2 \times 0.5 \times 0.5}{0.1 \times 0.1} = 96 \text{ was obtained}$$

By adding 20% non-respondent rate, sample size became 116 [7]. The population of 116 children less than five years had been collected. From the data of vaccination campaign of Shoklo Malaria Research Unit (SMRU), proportion of children under five years of age in Mae Sot district is 13.4% (662 under five years old children in 4,938 total population) [8].

Self-administered questionnaires which were related to prevention of diarrhea in children under-five years were used. Reliability scores of questionnaire were obtained as 7.40 for knowledge and 7.23 for attitude after doing a pilot test at Kanchanaburi migrant school students who were eligible to the research criteria. Validity of questionnaire was 0.87 by using index of item-objective congruence (IOC) [9]. The questionnaires were asked in Hua Fai village, Phatadpadaeng sub-district, Mae Sot district. Both illegal and legal migrants living in the village were interviewed during March to April 2014, when they were in accordance with the research criteria. Face to face interview of the study subjects was closely trained to two interviewers for 2 days. Information and questions were conveyed in participant information sheet and obtain informed consent.

## Data analysis

For the data analysis the questionnaires that had been collected are grouped, edited and coded, data was entered and analyzed using SPSS version licensed by Chulalongkorn University. Descriptive statistics was described to show frequency distribution, percentage distribution, mean, median and standard deviation appropriately. Pearson's chi-square test and Fisher's exact test was used to show association between each independent variable and diarrhea among under-five migrant children in Mae-Sot. Spearman's correlation test was used to find the magnitude and direction of association between the variables.

## Ethical Consideration

Ethical approval was obtained from Chulalongkorn University Ethical Committee. The approval number was 047/2014.

## RESULTS

A total of one hundred and twelve participants

**Table 1** Distribution of the respondents by socio-demographic characteristics

Characteristics	Number (n=112)	Percentage
<b>Age group of mothers (years)</b>		
19-30	52	46.4
31-40	44	39.3
>40	16	14.3
Min=19, Max=48, SD=7.491, Mean =31.66		
<b>Age group of children (months)</b>		
0-24	63	56.3
24-59	49	43.8
Median=24 month, Min=2 month, SD= 17.727		
Mode=36 month, Max=59 month		
<b>Breast feed or not</b>		
No	31	27.7
Yes	81	72.3
<b>Presence of work permit</b>		
No	88	78.6
Yes	24	21.4
<b>Ethnicity</b>		
Burma	82	73.2
Karen	25	22.3
other	5	4.5
<b>Marital status</b>		
Marriage	102	91.1
Widowed	8	7.1
Separate	2	1.8
<b>Education</b>		
Illiterate	8	7.1
Primary school	52	46.4
Middle school	27	24.1
High school	25	22.3
<b>Occupation of mother</b>		
Housewife	81	72.3
Seller	5	4.5
Factory worker	18	16.1
Construction worker	2	1.8
other	6	5.4
<b>Occupation of father</b>		
Laborer	5	4.5
Seller	10	8.9
Factory worker	26	23.2
Construction worker	48	42.9
other	23	20.5
<b>Average income (Thai Baht per month)</b>		
<3000	5	4.5
3000-5000	41	36.6
5001-10000	58	51.8
10001-20000	8	7.1
<b>Duration of stay in Thai</b>		
< 1year	3	2.7
1-2 year	9	8
>2year	100	89.3
<b>Thai language skill</b>		
Cannot speak	45	40.2
Can speak basis (few words)	57	50.9
Can speak but cannot read and write	10	8.9

completed the survey questionnaires. All respondents were Myanmar migrant women who had children less than five years of age. The mean age of the respondents was 31 years with a standard deviation of 7.49. The range of age was from 19 to 48 years. Table 1, it was shown that the majority of the respondents (46.4%) were in the age range of 19-30 years, 39.3% were between 31-40 years and the rest 14.3% were older than 40 years. About 65.2% of them had 1-2 children and 72.3% breast-fed their children. Most of the respondents were Burma (73.2%) and Karen (22.3%) and did not have work permit (78.6%). Many of them were married (91.1%) and lived together as a family whereas (7.1%) were widowed and (1.8%) separate. Education status was quite fair with primary school (46.4%), middle school (24.1%) and high school (22.3%). Most of the respondent mothers were dependent (72.3%) and occupations of husbands were (42.9%) construction work mostly. Out of those who were employed and economically active, the common income was between (5001-10000 baht/month) (51.8%) but only (25%) of respondents said it was "always enough".

Results of knowledge on prevention of diarrhea of the respondents showed that there were no participants with poor knowledge, 14.3% with intermediate knowledge and 85.7% with high knowledge. According to the results from the attitude part, 7.1% had negative attitude, 87.5% had neutral attitude and 5.4 % had positive attitude on the prevention of diarrhea. From the results of practice scores, there were 13.4% people with poor practice, 61.6% with moderate practice and 25% with good practice.

Table 2, marital status had strong significant association with level of practices ( $p=0.001$ ) indicating widowed mothers and separate mothers had better practices than married mothers. Also, it was detected that education level of mothers had significant association with the level of practices ( $p=0.002$ ). Different educational statuses might have different conditions of prevention practices. Occupations of both mother and father were not found out to be significant with levels of prevention practices of diarrhea. Duration of stay in Thailand and Thai-language skill as a foreigner had no association with prevention practices of diarrhea. There was a significant association with average income per month and levels of prevention practices of diarrhea ( $p=0.028$ ). Poor practices were mostly found in low income respondents (40%) compared to high income respondents (25%). Having enough

**Table 2** Association of socio-demographic variables with practice of prevention of diarrhea

	Level of practice			Fisher's exact test	P value
	High N (%)	Fair N (%)	Poor N (%)		
<b>Age group of mothers (years)</b>					
19-30	16(30.8)	29(55.8)	7(13.5)	5.198	0.260
31-40	9(20.5)	27(61.4)	8(18.2)		
Over 40	3(18.8)	13(81.2)	0(0)		
<b>Age group of children (months)</b>					
0 - 24	11(17.5)	42(66.7)	10(15.9)	4.534 (x <sup>2</sup> )	0.099
25 - 59	17(34.7)	27(55.1)	5(10.2)		
<b>Ethnicity of respondent</b>					
Burma	21(25.6)	53(64.6)	8 (7.1)	3.380	0.149
Other	7 (6.2)	16(14.3)	7 (6.2)		
<b>Marital status</b>					
Married	21(20.6)	66(64.7)	15(14.7)	9.419	0.001
Others	7 (70)	3 (30)	0 (0)		
<b>Education status</b>					
Poor level	21 (35)	28(46.7)	1 (18.3)	12.135	0.002
Good level	7 (6.2)	41(36.6)	4 (3.6)		
<b>Mother's occupation</b>					
Domestic/Others	24(24.2)	62(62.6)	13(13.1)	0.691	0.758
Factory/Construction	4 (30.8)	7 (53.8)	2 (15.4)		
<b>Father's occupation</b>					
Factory/Construction	12(31.6)	23(60.5)	3 (7.9)	2.214	0.337
Others	16(21.6)	46(62.2)	12(16.2)		
<b>Income per month(Baht)</b>					
0-3000	2(40)	1(20)	2(40)	12.587	0.028
3001-5000	15(36.6)	21(51.2)	5(4.5)		
5001-10000	11(19)	41(70.7)	6(10.3)		
10001-20000	0(0)	6(75)	2(25)		
<b>Enough income</b>					
Not enough	7 (31.8)	15(68.2)	0 (0)	12.947	0.009
Sometimes enough	18(16.1)	31(50)	13(11.6)		
Always enough	3 (10.7)	23 (82.1)	2 (7.1)		

**Table 3** Association of environmental factors with prevention practices of diarrhea

	Level of Practice			Fisher's exact test	P value
	High N (%)	Fair N (%)	Poor N (%)		
<b>Source of drinking water</b>					
Purified drinking water	19(20.7)	61(66.3)	12 (13)	5.637	0.048
Un-purified water	9 (45)	8 (40)	3 (15)		
<b>Type of latrine</b>					
Sanitary latrine	26(30.2)	50(58.1)	10(11.6)	6.123	0.043
Unsanitary latrine	2 (7.7)	19(73.1)	5 (19.2)		
<b>Waste disposal method</b>					
Sanitary	15(22.1)	47(69.1)	6 (8.8)	4.882 (x <sup>2</sup> )	0.102
Unsanitary	13(29.5)	22 (50)	9 (20.5)		
<b>Current sanitation</b>					
Generally satisfied	9 (18.4)	36(73.5)	4 (8.2)	5.157	0.076
Not generally satisfied	19(30.2)	33(52.4)	11(17.5)		

income within a family had a significant association with levels of practices ( $p=0.009$ ).

Table 3, mentioned above, there was a weak association between source of drinking water and levels of prevention of diarrhea ( $p=0.048$ ). Same

between type of latrine and levels of prevention practices, weak association was found ( $p=0.043$ ). Improvements in the standards of drinking water might increase the level of prevention practices of diarrhea.

**Table 4** Association of knowledge, attitude and practice scores

	Level of practice			Fisher's exact test	P value
	Poor	Fair	High		
<b>Knowledge</b>					
Poor	0(0%)	0(0%)	0(0%)		
Fair	6(37.5%)	8(50%)	2(12.5%)	11.435	0.015
High	9(9.4%)	61(63.5%)	26(27.1%)		
<b>Attitude</b>					
Negative	5(62.5%)	3(37.5%)	0(0)		
Neutral	9(9.2)	61(62.2%)	28(28.6%)	14.627	0.002
Positive	1(16.7%)	5(83.3%)			

There was a high statistically significant association among knowledge and level of attitude regarding diarrhea prevention among the respondents ( $P$  value=0.003). There was a high statistically significant association among knowledge and level of practice regarding diarrhea prevention among the respondents ( $P$  value=0.015). A highly significant association was seen between attitude and levels of practice behaviors towards diarrhea disease prevention with  $P$  value= 0.002.

Table 4, levels of knowledge and attitude scores were associated with levels of practice scores by using Fisher's exact test. There were significant associations between knowledge and practice scores ( $p < 0.05$ ) as well as attitude and practice scores ( $p < 0.005$ ).

## DISCUSSION

In general, there was a significant association between marital status of respondents and prevention practice of diarrhea ( $p=0.001$ ) showing that widowed women have higher practice on prevention of diarrhea. Recent studies had evaluated maternal behavior as related predictors of diarrheal diseases [10]. There could be another thing that influenced to the mother e.g.; education influencing on the knowledge of widowed mothers in the community. The lack of formal education demonstrated predictive properties for diarrhea ( $p=0.021$ ) [11]. According to their educational status which was found significant in this study ( $p=0.002$ ), it was observed that maternal education and literacy levels were related to the awareness of prevention practices of diarrhea. Another study was done in Iran [1] also gave a significance difference between education level and their knowledge as well as practice ( $p < 0.001$ ) and described that after finishing training programs, 80% of participants gained enough knowledge and their awareness inclined significantly. A significant association was found between average income per month and prevention practices of diarrhea ( $p=0.028$ ) showing that lower income family had poor practices.

There was a significant association between

source of drinking water and levels of practice of prevention of diarrhea ( $p=0.048$ ). This was consistent with a study in Indonesia that described a statistically significant different of diarrhea incidence between household who obtain the drinking water by buying and got it for free ( $p=0.001$ ) [9]. A significant association was detected between latrine type and prevention practices of diarrhea ( $p=0.043$ ). Diarrhea case was higher at household without latrine or used public facility or sharing with neighborhood ( $p < 0.001$ ), and higher at the household which not used septic tank for feces landfills ( $p=0.001$ ) [11]. There had been seen a statistically significant association between the knowledge and the attitude on prevention of diarrhea in under-five children ( $p=0.003$ ). It was consistent with a study in Pakistan [12] that respondents' knowledge on diarrhea had association with positive attitude with a  $p$  value= 0.000. This study had a significant association with attitude and practice of diarrhea prevention with  $p$  value= 0.002. It was agreeable with a study [13] that had done on diarrhea preventive behavior of Myanmar immigrant caregivers with children under five showing  $p$  value= 0.000 between diarrhea preventive behavior and the level of perceptions. Therefore, uniformity could be seen between chi-square testing and correlation analysis concerning the association of knowledge with attitude with practice. This implied that there was no major bias due to the preference of cut off points for clarifying the knowledge and attitude.

## CONCLUSION

It was sure that knowledge can be delivered to the mothers about preventing diarrhea in their children. This study was expected to give the baseline data on the patterns of prevention of diarrhea in the migrant children under five years in Mae Sot district. The result could support data for making further intervention and strategy in decreasing diarrhea and under-five mortality as well in Migrants.

## ACKNOWLEDGEMENT

I would like to say thanks to my members of thesis committee for their kind advices, insightful comments and valuable efforts. Special thanks to the Dean of the College of Public Health Sciences who has arranged everything for the good facilitation all along the study year. This publication has been supported by the Ratchadaphiseksomphot Endowment Fund of Chulalongkorn University (RES560530243-AS) and “CU GRADUATE SCHOOL THESIS GRANT”.

## REFERENCES

1. Khalili M, Mirshahi M, Zarghami A, Rajabnia M, Farahmand F. Maternal knowledge and practice regarding childhood diarrhea and diet in Zahedan, Iran. *Health Scope*. 2013; 2(1): 19-24.
2. World Health Organization [WHO]. Ending preventable child deaths from pneumonia and diarrhea by 2025: the integrated Global Action Plan for Pneumonia and Diarrhoea (GAPPD). [Geneva]: WHO; 2013.
3. United Nations Children’s Fund [UNICEF], World Health Organization [WHO]. Diarrhea: why children are still dying and what can be done. Geneva: UNICEF; WHO; 2009.
4. United Nations Educational, Scientific and Cultural Organization [UNESCO], United Nations Children’s Fund [UNICEF]. Internal migration and children; 2012. [cited May 2014]. Available from: [http://www.unicef.org/india/6\\_INTERNAL\\_MIGRATION\\_AND\\_Children\\_%2803-12-2012%29.pdf](http://www.unicef.org/india/6_INTERNAL_MIGRATION_AND_Children_%2803-12-2012%29.pdf)
5. Committee for Protection and Promotion of Child Rights (Burma). Feeling small in another person’s country: the situation of Burmese migrant children in Mae Sot Thailand. [S.l: S.n]; 2009.
6. Carrara VI, Lwin KM, Phyo AP, Ashley E, Wiladphaingern J, Sriprawat K, et al. Malaria burden and artemisinin resistance in the mobile and migrant population on the Thai–Myanmar border, 1999–2011: an observational study. *PLoS Med*. 2013; 10(3): e1001398. DOI: 10.1371/journal.pmed.1001398
7. Lwanga S K, Lemeshow S. Sample size determination in health studies: a practical manual: [Geneva]: World Health Organization; 1991.
8. Canavati S, Plugge E, Suwanjatuporn S, Sombatrungjaroen S, Nosten F. Barriers to immunization among children of migrant workers from Myanmar living in Tak province, Thailand. *Bull World Health Organ*. 2011; 89(7): 528-31.
9. Hambleton RK. Test score validity and standard-setting methods: criterion-referenced measurement: the state of the art. [S.l: s.n]; 1980. p.80-123.
10. Dikassa L, Mock N, Magnani R, Rice J, Abdoh A, Mercer D, et al. Maternal behavioural risk factors for severe childhood diarrhoeal disease in Kinshasa, Zaire. *Int J Epidemiol*. 1993 Apr; 22(2): 327-33.
11. Valerie Daw Tin Shwe. A randomized controlled trial of a household drinking water storage intervention to assess its impact on microbiological water quality and diarrhoeal diseases at Mae La temporary shelter, Tak province. Doctoral dissertation. Bangkok: Chulalongkorn University, College of Public Health Sciences; 2010.
12. Zafar M. Knowledge and attitude towards and preventive practices relating to diarrhea among mothers under five years of children: findings of a cross-sectional study in Karachi, Pakistan. *J Infect Dis Ther*. 2014; 2(1): 1-6. [cited May 2014] . Available from: <http://esciencecentral.org/journals/knowledge-and-attitude-towards-and-preventive-practices-relating-to-diarrhea-2332-0877.1000126.pdf>
13. Htay Wei Yan Aung. Diarrhea preventive behavior of Myanmar immigrant caregivers with children under five years in Muang District, Samut Sakhon Province, Thailand. Master’s thesis. Bangkok: Mahidol University; 2010.