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Mothers' knowledge of the causes and prevention associated with diarrhea among under-five children in Hlaing Thar Yar Township, Yangon, Myanmar

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ABSTRACT

Background: Diarrhea among under-five children remains a major public health problem in developing countries, such as Myanmar. Its complications contribute to the worse health outcomes as well as increase the child mortality in Myanmar. Hlaing Thar Yar was recognized as a township with the highest incidence of diarrhea in Yangon region.
Aims: This study aimed to identify the association of mother's knowledge on diarrhea with the diarrheal disease among under-five children in Hlaing Thar Yar Township, Yangon, Myanmar.
Methods: This was a cross-sectional study by collecting primary data in the Hlaing Thar Yar Township of Yangon, Myanmar from November to December 2016. About 277 records of mothers and their under-five children have been collected through multistage random sampling. A dependent variable in this study was the occurrence of diarrhea among under-five children whilst independent variables consisted of socio-demographic characteristics of parents and five domains of mother's knowledge on diarrhea. Data were analyzed by using univariate, bivariate and multivariate analysis.
Results: This study found that a half (53.43%) of under-five children suffered diarrhea within two weeks prior to the survey. Based on multivariate analysis by controlling all socio-demographic factors, two out of five domains of mother's knowledge showed significant association. An increased one score of mother's knowledge on causes and prevention of diarrhea contributed to decrease the likelihood of diarrheal disease by 37% (OR=0.63; 95%CI=0.44-0.90) and 27% (OR=0.73; 95%CI=0.54-0.99), respectively.
Conclusions: This study confirmed that the knowledge of mothers on causes and prevention of diarrhea appears to have important effects on the occurrence of diarrhea among the under-five children. Therefore, health promotion program with an emphasis on providing information related to diarrhea causes and prevention is worth to enhance mother's knowledge and their ability to prevent diarrhea among under-five children in Hlaing Thar Yar Township, Yangon.

INTRODUCTION

Diarrhea is the second leading cause of death among under-five children. It is estimated that 525,000 under-five children die because of diarrhea every year [1]. Not surprisingly then, the incidence of diarrhea among under-five children remains a major public health issue in low- and middle- income countries which plays important role as a key driver to child mortality [2]. In developing countries, nearly

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half of the babies delivered within a year, they did not pass their first birthday mainly due to pneumonia, diarrhea and malnourishments [3]. Similar to the situation in Myanmar as developing country, the main direct causes of death among under-five children continue to be diarrhea, acute respiratory infection, and malaria, exacerbated by underlying malnutrition contributing to 50% of total deaths [4].

Ministry of Health reported that 7.7 % of the total deaths among under-five children in Myanmar were caused by diarrhea [5]. According to the report from Multiple Indicator Cluster Survey in Myanmar, the prevalence of diarrhea in last two weeks accounted for 6.7% among children under five years old in 2010 [6]. Diarrhea is one of the seasonal diseases in Myanmar which commonly occurs in rainy and summer seasons. The reported number of diarrhea cases in Yangon as the populous region in Myanmar increased from 11,016 in 2011 to 13,919 in 2013 [7].

Hlaing Thar Yar is one of the townships in Yangon, Myanmar which comprises 20 wards, 18 villages under 9 village tracts [8]. The total population of Hlaing Thar Yar was 687,867, consisting of 322,862 males and 365,005 females and 70.1% of population settled in urban area [9]. Concerning the housing condition, 68% of the total houses in Hlaing Thar Yar Township were made from bamboo, 12% were timber house, 6% were with brick foundation, and the remaining were bungalow [9]. Under-five mortality rate in Hlaing Thar Yar Township was quite high compared to other townships in Yangon. A study conducted by United Nations Human Settlements Programme (UN-Habitat) in 2013, found that Hlaing Thar Yar Township was the highest incidence in Yangon for the diseases related to poor environmental conditions and lack of water and sanitation facilities (diarrhea, dysentery, malaria, and tuberculosis). This township was also designated as the highest prevalence of diarrhea of among all townships in Yangon [10].

With several complications of diarrhea among under-five children, it obviously impacts to their physical development. Moreover, dehydration caused by severe diarrhea is one of the major causes of child mortality in Myanmar [11]. A study in Pakistan found that children who suffered diarrhea during the last one year were more likely to become malnutrition than children who did not suffer diarrhea [12]. Indeed, diarrhea is a preventable disease, but the inadequate knowledge of mother as the one who mainly takes care children and their improper approach towards the prevention, care, and management of diarrhea lead to the high likelihood of diarrhea among children as well as its mismanagement [13]. A previous literature from India showed that only 44% of mothers knew that the diarrhea can be prevented [14]. Given to those issues, it is necessary for mothers to have relevant information on diarrhea in order to prevent diarrhea as well as have adequate management for children with diarrhea.

The prevalence of diarrhea in Hlaing Thar Yar Township is the highest one compared to other townships in Yangon. To our knowledge, no study has been conducted to reveal factors associated with the occurrence of diarrhea among under-five children in Hlaing Thar Yar Township. In the context of Myanmar, mothers play a major role in taking care children which implies that their knowledge on diarrhea might contribute to the occurrence of diarrhea among under-five children and hence, it needs to be assessed. Mothers' knowledge is one of the possible predictors of diarrheal disease among under-five children. The comprehensive knowledge on diarrhea might play an important role in the decision-making and action among mothers related to diarrhea prevention for their children. Therefore, this study was intended to examine the association between mothers' knowledge on diarrhea with diarrheal disease among under-five children in Hlaing Thar Yar Township, Yangon, Myanmar.

METHODS

Population and samples

This was a cross-sectional study by collecting primary data in Hlaing Thar Yar Township, Yangon, Myanmar from November to December 2016. The population of this study was children aged under-five years old with an inclusion criterion that mother can be interviewed at the time of survey. Sample for this study was calculated based on the formula for two population proportions with an assumption 95% confidence interval (CI), 80% power, 45% as the proportion of diarrhea among under-five children from previous study (p2) [3], and 30% (15% lower than p2) as the estimation of diarrhea among under five children where their mothers have good knowledge on diarrhea (p1), resulting in a minimum samples of 256 married women with under-five children. This study successfully collected 277 samples through multistage random sampling procedure, consisting of 1) selecting four wards and three villages from the 20 wards and 18 villages in Hlaing Thar Yar Township by cluster

random technique and 2) selecting a number of households from selected wards and villages through simple random sampling by using a sampling frame of household data from Township Administrative Department. Mothers who had under-five children were interviewed to document their socio-demographic characteristics, knowledge on diarrhea, and the diarrhea occurrence of their last under-five child. A self-designed and pretested structured questionnaire was employed. In addition, written informed consent was obtained before face-to-face interview.

The variables

For this study, diarrhea was defined as one of the followings: passage of three or more loose watery motion, more than usual loose watery motion, a single large watery motion in a day, or mother's assessment that her child passed more frequent liquid stools. The dependent variable in this study was the occurrence of diarrhea in two weeks prior to the survey in order to minimize recall bias and that recall period has been used in several surveys [6, 11]. Independent variables consisted of socio-demographic characteristics of parents and five domains of mother's knowledge on diarrhea as presented by following conceptual framework (Figure 1). Those indicators of knowledge developed in this study followed the indicators presented in WHO report [1, 15]. There are five domains of knowledge, consisting of knowledge on causes, symptoms, complications, management, and prevention of diarrhea. The number of questions used to measure knowledge varied by domain, such as 3 items for a domain on causes, 5 items for symptoms, and 4 items for each domain on complications, management, and prevention. Each item was scored one for a given correct answer. Furthermore, the score of each domain was summed up with the maximum score is equal to the total number of questions. A high score of a particular domain approaching the maximum value reflects high level of knowledge on that domain.

Statistical analysis

Data were analysed descriptively to present data distribution of variables. Moreover, Chi-square test and Independent sample t-test were used for bivariate analysis purpose. Meanwhile, binary logistic regression analysis was performed for multivariate analysis in order to examine the effects of socio-demographic characteristics and knowledge of mother toward the occurrence of diarrhea among under-five children. Odds ratio (OR), 95% confidence interval (CI) OR and p-value were reported in this study.

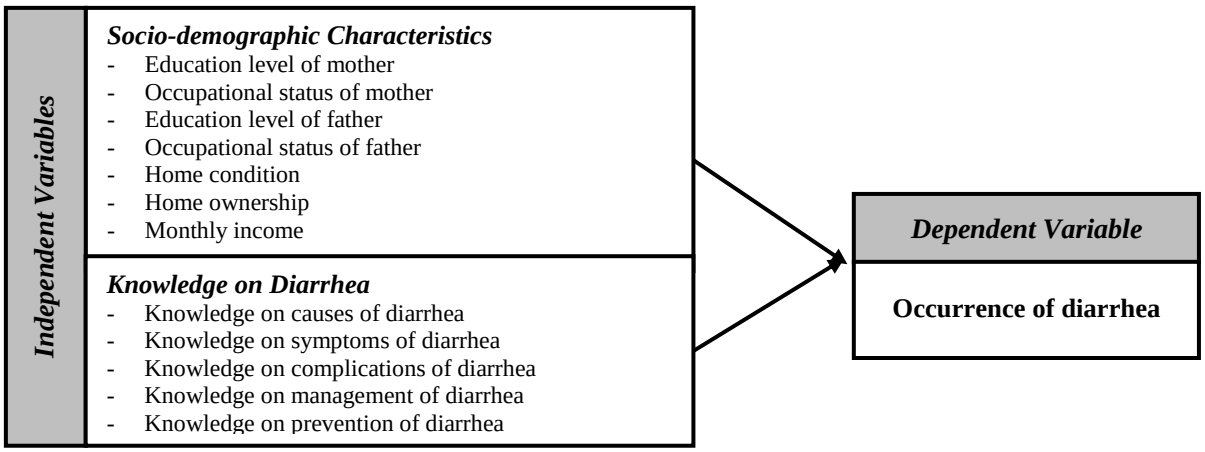

Figure 1. Conceptual framework showing association between independent variables and the occurance of diarrhea

RESULTS

Table 1 shows the percentage distribution of socio-demographic characteristics of respondents. Nearly 80% of the mothers completed secondary and higher education and 42.96% of them reported as full-time housewife at the time of survey. Regarding husband's characteristics, 78.70% completed secondary and higher education and they worked in odd job (37.55%), company (35.74%), and run small owned business (26.71%). More than half of couples lived in the house with brick foundation (58.12%) and did not own the house (59.21%). Regarding the monthly income, about a half of the couples had income more than 150,000 kyats (51.62%). Importantly, this study found that more than a half (53.43%) of under-five children experienced diarrhea in past two weeks.

Table 1. Respondents' distribution (N=277)

Variables	N	%
Education level of mother		
No education and primary	56	20.22
Secondary and higher	221	79.78
Occupational status of mother		
Employed	158	57.04
Unemployed	119	42.96
Education level of father		
No education and primary	59	21.30
Secondary and higher	218	78.70
Occupational status of father		
Odd job	109	39.35
Small owned business	70	25.27
Staff at private company	99	35.74
House condition		
Condo/bungalow	62	22.38
Brick foundation	161	58.12
Timber house	54	19.49
House ownership		
Yes	113	40.79
No	164	59.21
Monthly income		
≤ 150,000 kyats	134	48.38
> 150,000 kyats	143	51.62
Occurrence of diarrhea		
No	129	46.57
Yes	148	53.43

Table 2 exhibits the mothers' knowledge on causes of diarrhea. There were three main causes of diarrhea used in this study which included eating unclean food, eating food with fly infestation, and drinking unclean water. About 91.34% of the mothers were aware that unclean food can cause diarrhea and 67.51% knew the diarrhea can be caused by taking fly infested food, and less than a half (45.85%) of them were aware on drinking unclean water can cause diarrhea. Results present the mother's knowledge on symptoms of diarrhea. The symptoms during suffering diarrhea consisted of child drinks liquid eagerly, dry tear when child is crying, child's skin becomes normal slowly when punching the skin of forehead and abdomen and child shows sunken eye. Among these symptoms, 94.58% of the mothers knew the symptom of dry tear when baby is crying and 77.62 % were aware on the sunken eye during when child is suffering diarrhea. If related to mother's knowledge on complications of diarrhea, most of the mothers understood that malnutrition and dehydration are the complications of diarrhea, accounting for 83.39% and 76.53%, respectively. Unfortunately, the majority did not know that shock and convulsion are also the severe complications of diarrhea.

Table 2. Mothers' knowledge on diarrhea (N=277)

Mothers' knowledge to	%
Causes of diarrhea	
Unclean water	45.85
Fly infestation to food	67.51
Unclean food	91.34
Total Score (Mean ± SD)	***2.05 ± 0.87***
Symptoms of diarrhea	
Drinking liquid eagerly	52.35
Sunken eye	77.62
When pinching abdominal skin, it reaches normal slowly	31.77
When pinching forehead skin, it reaches normal slowly	3.61
Dry tear when baby is crying	94.58
Total Score (Mean ± SD)	***2.60 ± 0.80***
Complications of diarrhea	
Malnutrition	83.39
Dehydration and loss of mineral salt	76.53
Shock	5.05
Convulsion	5.42
Total Score (Mean ± SD)	***1.71 ± 0.77***
Managements of diarrhea	
Drinking ORS	97.83
Drinking Coconut	13
Drinking gruel	27.44
Taking fresh food	23.83
Total Score (Mean ± SD)	***1.62 ± 0.78***
Prevention of diarrhea	
Washing hand before handle of food	91.34
Covering food to prevent flies blown	78.34
drinking water sterilized by boiling	61.01
Washing hand after going toilet	70.40
Total Score (Mean ± SD)	***2.60 ± 1.07***

Regarding the first management of diarrhea at home prior to hospital visit as presented by Table 2, about 97.83 % of the mothers were aware that their child needs to drink oral rehydration solutions (ORS) as an important treatment of diarrhea. Meanwhile, less than a half of them knew that taking fresh food, drinking gruel, and coconut water are also the treatment of diarrhea at home. Considering to the mothers' knowledge in preventing the diarrhea, the majority of the mothers believed that the occurrence of diarrhea

can be prevented through some approaches such as washing hand before handling food (91.34%), covering food to prevent flies blown (78.34%), and drinking sterilized boiling water (61.01%), whereas only 29.60% of mothers knew that washing hand after using toilet can prevent diarrhea. The total score (Mean ± SD) of each domain of mothers' knowledge in Table 2 indicates the mothers acknowledge the symptomps of diarrhea and how to prevent. However, mothers may need more knowledge in managing the diarrhea and how to deal with the complications. The statistical analysis (Table 3) acknowledges there were seven variables included such as educational level and occupational status of the couples, house condition, house ownership status, and monthly average income. However, no statistically significant association between socio-demographic characteristics with diarrheal disease among under-five children was found. As shown in Table 4, this present study found that all domains of knowledge were found significantly associated with occurrence of diarrhea. Mothers with no child suffering diarrhea in last two weeks had significantly higher level of knowledge on causes, symptoms, complications, management, and prevention of diarrhea.

Table 3. Association between socio-demographic characteristics and the occurrence of diarrhea (N=277)

Variables	Occurrence of diarrhea		Chi-square test	*p* value
	No (%)	Yes (%)		
Education level of mother				
No education and primary	26 (46.43)	30 (53.57)	0.0006	0.981
Secondary and higher	103 (46.61)	118 (53.39)		
Occupational status of mother				
Employed	78 (49.37)	80 (50.63)	1.1561	0.282
Unemployed	51 (42.86)	68 (57.14)		
Education level of father				
No education and primary	27 (45.76)	32 (54.24)	0.0197	0.889
Secondary and higher	102 (46.79)	116 (53.21)		
Occupational status of father				
Odd job	51 (46.79)	58 (53.21)	0.0281	0.986
Small own business	32 (45.71)	38 (54.29)		
Staff at private company	46 (46.94)	52 (53.06)		
House condition				
Condo/bungalow	31 (50.00)	31 (50.00)	1.0567	0.590
Brick foundation	76 (47.20)	85 (52.80)		
Timber house	22 (40.74)	32 (59.26)		
House ownership				
Yes	53 (46.90)	60 (53.10)	0.0085	0.927
No	76 (46.34)	88 (53.66)		
Monthly income				
≤ 150,000 kyats	55 (41.04)	79 (58.96)	0.3358	0.562
> 150,000 kyats	74 (51.75)	69 (48.25)		

Table 4. Association between mother's knowledge on diarrhea and the occurrence of diarrhea

Knowledge on diarrhea	Occurrence of diarrhea		t-test	p-value
	No (mean ± SD)	Yes (mean ± SD)		
Causes of diarrhea	2.29 ± 0.80	1.84 ± 0.87	4.43	<0.0001
Symptoms of diarrhea	2.74 ± 0.83	2.48 ± 0.74	2.71	0.0071
Complications of diarrhea	1.81 ± 0.64	1.61 ± 0.85	2.09	0.0377
Management of diarrhea	1.72 ± 0.96	1.53 ± 0.56	2.01	0.0457
Prevention of diarrhea	2.89 ± 1.05	2.35 ± 0.85	4.31	<0.0001

Table 5. Binary logistic regression of factors associated with the occurance of diarrhea

Variables	Model I			Model II			Model III		
	OR	**95% CI**	**p-value**	**OR**	**95% CI**	**p-value**	**OR**	**95% CI**	**p-value**
Socio-demographic characteristics									
Education level of mother									
No education and primary	Reference						Reference		
Secondary and higher	1.46	0.12 - 18.22	0.771				1.40	0.10 - 20.64	0.804
Occupational status of mother									
Employed	Reference						Reference		
Unemployed	1.40	0.84 – 2.33	0.196				1.51	0.87 - 2.59	0.140
Education level of father									
No education and primary	Reference						Reference		
Secondary and higher	0.64	0.05 – 7.87	0.727				0.70	0.05 - 10.01	0.793
Occupational status of father									
Odd job	Reference						Reference		
Small own business	1.08	0.56 – 2.09	0.821				1.70	0.82 - 3.52	0.150
Staff at private company	1.36	0.61 – 2.11	0.686				1.21	0.63 - 2.34	0.570
House condition									
Condo/Bungalow	Reference						Reference		
Brick foundation	0.99	0.53 – 1.83	0.968				0.90	0.47 - 1.74	0.761
Timber house	1.17	0.51 – 2.64	0.713				0.99	0.41 - 2.38	0.979
House ownership									
Yes	Reference						Reference		
No	0.89	0.53 – 1.48	0.645				0.88	0.51 - 1.52	0.644
Monthly income									
≤ 150000	Reference						Reference		
> 150000	0.61	0.36 – 1.04	0.068				0.59	0.33 - 1.06	0.078
Knowledge on Diarrhea									
Causes of diarrhea				**0.65**	**0.46 - 0.91**	**0.013**	**0.63**	**0.44 - 0.90**	**0.012**
Symptoms of diarrhea				0.82	0.56 - 1.20	0.308	0.80	0.54 - 1.19	0.276
Complications of diarrhea				1.12	0.76 - 1.66	0.567	1.09	0.73 - 1.61	0.680
Management of diarrhea				1.03	0.72 - 1.49	0.855	0.93	0.63 - 1.38	0.732
Prevention of diarrhea				**0.73**	**0.54 – 0.98**	**0.034**	**0.73**	**0.54 - 0.99**	**0.046**
LR chi square (df)	5.75 (9)			25.73 (5)			33.48 (14)		
Pseudo R-square	0.0150			0.0672			0.0875		

DISCUSSION

This study found a half (53.43%) of the under-five children in Hlaing Thar Yar Township suffered diarrhea within two weeks preceding the survey. This finding is almost similar to the result of a baseline survey conducted by World Vision Myanmar in Hlaing Thar Yar Township in 2012 which found that nearly half (45%) of under-five children suffered diarrhea in one month prior the survey [3]. Obviously, different sampling and data collection procedure, assessment, and inclusion criteria of samples might play important roles for the differences. It is important to note that the prevalence of diarrhea among under-five children in Hlaing Thar Yar Township was very high compared to other country's settings, such as in Banten, Indonesia of 18.9% [16] and in Gujarat, India of 35.3% [17]. The high prevalence of diarrhea in Hlaing Thar Yar Township might be due to poor hygienic conditions and inadequate of water and sanitation facilities [10]. Beyond those existing environmental factors that are well-known to contribute to diarrhea occurrence, this study attempts to identify the association between mother's knowledge of diarrhea with diarrheal disease among under-five children in Hlaing Thar Yar Township.

Based on multivariate analysis after controlling all socio-demographic of parents and household, two domains of knowledge, namely knowledge on causes and prevention of diarrhea were associated with

diarrheal disease among under-five children. Both domains of knowledge play an important role as preventive factors since those declined the likelihood of diarrhea. Similarly, other previous studies also confirmed the same findings. A study conducted in West Ethiopia found that not knowledgeable mothers of causes, transmission, and prevention of diarrhea were more likely to have children experiencing diarrhea in last 15 days by 3.62 times [18]. In addition, another study also supports this finding where poor level knowledge of mothers on causes and prevention of diarrhea was associated with high odds of diarrhea among infants, reported by a study in Nigeria [19].

It is understandable then, mothers who had a higher knowledge about causes and prevention of diarrhea, they were more likely to prevent diarrheal disease among children. Being knowledgeable of causes and prevention of diarrhea leads mothers to have good practices in terms of feeding their children as well as eliminating transmission of diarrhea. Meanwhile, other domains of knowledge showed insignificant association, such as knowledge on symptoms, complications, and management. Those types of knowledge might be not strong factors associated with mother's prevention acts of diarrhea, but they are more related to diarrheal management practices for children who are suffering from diarrhea.

Findings from this study suggested that enhancing knowledge of mothers related to causes and prevention of diarrhea is worth considering to prevent diarrheal diseases among under-five children in Hlaing Thar Yar Township. An advocacy can be addressed to the authorized persons of public health department at district level in order to develop health promotion program aiming to increase mother's awareness and skills of diarrhea prevention in Hlaing Thar Yar Township. Moreover, health care providers from rural health center and sub-rural health center play important roles in health promotion program to educate and provide information to mothers and other family members about diarrhea and its prevention acts. This efforts to decrease diarrhea prevalence is in line with a vision of the Global Action Plan for Pneumonia and Diarrhea (GAPPD) which aims to eliminate pneumonia and diarrhea-related deaths by 2025, by accessing universal prevention and treatment. Therefore, an investment in a program which provides comprehensive knowledge on diarrhea helps mothers to avert diarrhea. In addition, mothers also need to be equipped with adequate management skills for children with diarrhea in order to avoid unexpected complications and mortality. It should be noted however, level of knowledge and awareness might be not sufficient to prevent diarrheal disease [20]. A massive improvement of environmental quality such as adequate supply of clean water and sanitation facilities should be taken into account as a way to create enabling condition for diarrhea prevention.

CONCLUSION

The prevalence of diarrhea among under-five children in Hlaing Thar Yar Township was quite high. The occurrence of diarrhea among under-five children was significantly associated with mothers' knowledge on causes and prevention of diarrhea. Therefore, a health promotion program should be designed to enhance mother's knowledge on causes and prevention of diarrhea in order to prevent the diarrheal disease. Furthermore, it impacts positively on the health status of children that can reduce morbidity and mortality among children.

CONFLICT OF INTERESTS

Authors declared that there is no conflict of interest.

REFERENCES

1. World Health Organization. Diarrhea Disease Fact Sheet. Geneva: World Health Organization. 2017. Retrieved from: http://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease [Accessed: 28/07/2018]
2. Fischer WC, Perin J, Aryee M, Boschi PC, Black R. Diarrhea Incidence in Low- and Middle-income Countries in 1990 and 2010: A Systematic Review. BMC Public Health. 2010; 12(220).
3. World Vision Myanmar. Knowledge, Attitude and Practice (KAP) Survey: Maternal and Child Health (From Miracle to Reality) Project: Baseline Report. World Vision Myanmar: Yangon; 2012.
4. Myint SYS. Myanmar's Child Mortality Still Highest in Region: Myanmar Time; 2012. Retrieved from: https://www.mmtimes.com/national-news/3113-myanmar-s-child-mortality-still-highest-in-region-unicef.html [Accessed: 28/07/2018]
5. Ministry of Health (MoH) Health, Myanmar. Study on Causes of Under-five Mortality. Myanmar: MoH Myanmar; 2012.
6. Ministry of National Planning and Economic Development, Ministry of Health (MoH). Myanmar. Myanmar Multiple Indicator Cluster Survey 2009 - 2010 Final Report. Ministry of National Planning and

Economic Development and MoH Myanmar: Nay Pyi Taw; 2011.
7. Aung WW, Okada K, Mathukorn NU, Natakuathung W, Sandar T, Oo NAT, Aye MM, Hamada S. Cholera in Yangon, Myanmar, 2012–2013. Emerging Infectious Diseases. 2015; 21(3):543-544.
8. District Administrative Department. Hlaing Thar Yar Township Profile Data. North Yangon, Yangon Region, Myanmar: MIMU; 2017.
9. Department of Population. The 2014 Myanmar Population and Housing Census. Yangon Region Report. Census Report Volume 3 – L. Nay Pyi Taw, Myanmar: Ministry of Immigration and Population; 2015.
10. United Nations Human Settlements Programme (UN-Habitat). Baseline Assessment Report. Yangon. Myanmar: UN-Habitat; 2013.
11. Department of Population, Myanmar, United Nations Population Fund (UNFPA). Country Report on 2007 Fertility and Reproductive Health Survey. Nay Pyi Taw, Myanmar: Department of Population, Myanmar, UNFPA; 2009.
12. Agha A, Younus M, Kadir MM, Alir S, Fatimi Z. Eight Key Household Practices of Integrated Management of Childhood Illnesses (IMCI) amongst Mothers of Children Aged 6 to 59 Months in Gambat, Sindh, Pakistan. Journal of Pakistan Medical Association. 2007; 57(6): 288-293.
13. Rehan SH, Gautam K, Gurung K. KAP of Mothers Regarding Diarrhea. Indian Journal of Prevention and Social Medicine. 2003; (34): 1-6.
14. Rao A, Jadhav J, Ranganath TS, Dsouza L. Awareness Regarding Diarrhea, Its Prevention, and Oral Rehydration Therapy among Mothers of Under-five Children in Urban Slums of Bengaluru. International Journal of Medical Science and Public Health. 2015; 4(8):1086 – 1089.
15. World Health Organization. Childhood Pneumonia and Diarrhea. Geneva: World Health Organization; 2013.
16. Rohmawati N, Allesio P, Lertmaharit S. Factors Associated with Diarrhea among Children Under Five Years of Age in Banten Province, Indonesia. Journal of Health Research. 2012; 26(1): 31-34.
17. Seksaria SA, Sheth MK. Maternal Knowledge and Practices towards Sanitation and Their Relationships with Occurrence of Diarrhea in Children. International Journal of Public Health Science. 2014; 3(3): 206-212.
18. Nigatu M, Tadesse A. Knowledge, Perception, and Management Skills of Mothers with Under-five Children about Diarrheal Disease in Indigenous and Resettlement Communities in Assosa District, Western Ethiopia. Journal of Health Population and Nutrition. 2015; 33(1):20-30.
19. Dairo MD, Ibrahim TF, Salawu AT. Prevalence and Determinants of Diarrhea among Infants in Selected Primary Health Centers in Kaduna North Local Government Area, Nigeria. Pan African Medical Journal. 2017; 28(109).
20. Ansari M, Mohamed I, Ravi S. A Survey of Mothers' Knowledge about Childhood Diarrhea and Its Management among A Marginalized Community of Morang, Nepal. Australasian Medical Journal. 2011; 4(9):474–479.