International Business Management 11 (3): 624-627, 2017
ISSN: 1993-5250

Woman Hygiene Practice in Malaysia: A Quantitative Study

[1]M. Nor Dalila, [2]N. Azmawati, [2]H. Rozita, [1]M.S. Che Rusuli, [1]M.Y. Nurul Hafizah and [1]N. Nurhaiza
[1]Department of Entrepreneurship, Faculty of Entrepreneurship and Business,
Universiti Malaysia Kelantan, Kota Bharu, Bharu, Malaysia
[2]Department of Community Health, Faculty of Medicine, National University of Malaysia,
Bangi, Malaysia

Abstract: Diarrhea disease is one of the leading causes of death for children below 5 year of age. It is preventable and treatable disease and also greatly affects society and economy. The World Health Organization (WHO) and United Children's Fund (UNICEF) has tried to encourage communities and families to promote desirable hygienic behavior. A cross sectional study was carried out in Mei-December 2013 in Kuala Terengganu district, Malaysia to determine the prevalence of diarrhea and practice of hygiene among women who manage homes. A total number of 216 women have been selected by using convenience sampling selection method. Data was collected using Hygiene-Q questionnaire. Data was analyzed by using SPSS version 19.0. The response rate was (100%). Age of respondents was between 20-55 year old with the mean age of 39.8±8.2 year. Majority of respondents received secondary education (54.2%) and most of them are working (56%). Result indicated that 23.1% respondents and 15.3% household having diarrhea. Generally, respondents practice good hygiene behavior (84.7%); hand washing (85.6%); food preparation (87%); environmental cleanliness (51.4%) and water usage (86.1%). Bivariate chi-square analysis indicated that there were seven factors significantly associated with diarrhea including age, education level, occupation, household's income, hand washing, food preparation, environmental cleanliness and water usage. Multiple logistic regressions showed that the water usage is a significant predictor to the occurrence of diarrhea. Therefore, majority (84.7%) of the women who manage home have good hygiene behavior practice. Factors of age, ethnic and marital status did not influence the practice of hygiene behavior. Similarly, the demographic features of ethnic, marital status and occupational did not influence occuring of diarrhea. However, respondent who practice good hygiene behavior have lower risk having diarrhea.

Key words: Diarrhea, hygiene behavior, cleanliness, World Health Organization (WHO), Malaysia

INTRODUCTION

Diarrhea disease is widespread all over the world and does not only threaten human health but also greatly affects society and economy. World Health Organization treats the control of diarrhea disease as global strategy and the scheme of control of diarrhea disease was enacted in May, 1978 (CDC, 2005). There are diverse reasons to diarrhea disease. Several studies have presented theactual causes versus the perceivedcauses of diarrhea. Three risk factors of diarrhea have been identified are unclean water and food, unhygienicpractices of caregivers and poordomestic hygiene (Blaise and Dovie, 2007). Furthermore, perceived causes of diarrhea were thought to be spicy or bad food or water worms, flies and germs and natural causes (Masangwi *et al*., 2009). Hygiene behavior is receiving increasing attention as an important strategy for preventing faecal-oral disease transmission in developing countries. Strina conducted an epidemiological study of the relation between diarrhea and hygiene behavior, using structued observation collected over a 1 year period at very modest cost. To test the usefulness of this approach, they evaluated the role of sanitation facilities and hygiene behavior in diarrheal disease determination.

Hygiene behavior and diarrhea research in Malaysia is quite new di Malaysia and it is rapidly increasing in number. The World Health Organization (WHO), UNICEF has tried to encourage communities and families to promote desirable hygienic behavior (Sakisaka *et al*., 2002). Sultana and Rahman (2010) have shown that improving the hygiene practices of mothers is especially important as shown by that mothers are considered to be the best teachers of health and have the potential to influence family members.

Corresponding Author: M. Nor Dalila, Department of Entrepreneurship, Faculty of Entrepreneurship and Business,
Universiti Malaysia Kelantan, Bharu, Malaysia

MATERIALS AND METHODS

This study was a cross sectional study, conducted at Kuala Terengganu, Malaysia from Mei to December 2013. Sample size was calculated based on the calculation from Fleiss JL with confidence interval of 95%, rate of diarrhea 0.17 and 0.30 respectively from the previous study (Sultana and Rahman, 2010); the minimum sample size would be 181 respondents. We managed to recruit 216 patient using purposive sampling selection methods. Data was collected using Q-Hygiene questionnaire. The questionnaire contain 20 items with four dimensions of the hygiene behavior such as hand washing, food preparation, environmental cleanliness and water usage. All items are scored on likert scale of 1-4 (often, sometimes, seldom and never). The main outcome measures were test-retest coefficients Cronbach's alpha values and mean inter-item correlations of the scale items. Cronbach's alpha of the questionnaire was 0.781. Scaling decision for the questionnaire is by using the mean score as the cut off point. All statistical analyses were doneusing SPSS Version 19.0. Normaliry tests were done and all of the quatitative data were found to be normally distributed. Therefore, statistical analysis which used in this study were parametric test such as chi square test. In further analysis, multiple logistic regression was done to predict the factors that inflence the occuring of diarrhea.

RESULTS AND DISCUSSION

A demographic detail of the respondent is illustrated in Table 1. From Table 1, it shows that women who completed the survey are married, 98.6% and 1.4% single mothers. The ethnic composition was Malay (98.1%), Indians and Chinese 0.9%, respectively. Working respondents recorded 56% (N = 121) participation compared to 44% not working. The ages of the respondents ranged from 20-55 year. Total 69.9% were in the age range of 36-55 year old. Majority 73.6% (N = 159) have low household income which is less than RM 2000 per month. Status of diarrhea was asked through questionnaire. Table 2 shows only 50 of respondent (23.1%) and 33 of household (15.3%) were reported having diarrhea. Majority of respondent and household are free from having symptom diarrhea. The distribution of hygiene behavior practice was presented in Table 3.

There were 4 domains of hygiene behavior; hand washing, food preparation, environmental cleanliness and water usage which are represent hygiene behavior as overall. Generally, respondents practice good hygiene behavior; hand washing (85.6%), food preparation (85.6%), environmental cleanliness (87%) and water usage (86.1%).

Table 1: Distribution of respondents according to socio demographic characteristics and socioeconomic

Variables	N (%)	Mean±SD
Ethnic		
Malay	212 (98.1)	
Chinese	2 (0.9)	
Indian	2 (0.9)	
Marital status		
Married	213 (98.6)	
Single mother	3 (1.4)	
Age (years)		
20-35	65 (30.1)	39.8±8.24
36-55	151 (69.9)	
Education level		
Tidak bersekolah	10 (4.6)	
Primary	43 (19.9)	
Secondary	117 (54.2)	
IPT	46 (21.3)	
Occupational		
Working	121 (56)	
Unemployed	95 (44)	
Household income		
<RM 2000	159 (73.6)	1729.9±1021.72
>RM 2001	57 (26.4)	

Table 2: Diarrhea status among respondents and household

	Diarrhea status			
	Yes		No	
Variables	No	Percentage	No	Percentage
Respondent	50	23.1	166	76.9
Household	33	15.3	183	84.7

Table 3: Distribution of good hygiene practice

	Good		Bad	
Hygiene practice	No	Percentage	No	Percentage
Overall	183	84.7	33	15.3
Hand washing	185	85.6	31	14.4
Food preparation	188	87.0	28	13.0
Environmental cleanliness	111	51.4	105	48.6
Water usage	186	86.1	30	13.9

Table 4 shows the relationship between socio demographic and socio economic with hygiene behavior. Based on the bivariate analysis, there is a significant relationship between occupational, education level and household income with status hygiene behavior ($p<0.001$). Respondents who working with high education level and household income showed more positive hygiene behavior practice. However factors of age, ethnic and marital status has no relationship with hygiene behavior.

Table 5 showed the distribution relationship of respondent's diarrhea status according to socio demographic and socioeconomic characteristics. As shown in Table 5, there is a significant relationship between age, education level and household income with diarrhea status. Among respondents aged between 36-55 year old, 27.2% had the diarrhea symptom while for

Table 4: Status of hygiene behavior according to socio demographic and socioeconomic

	Hygiene behavior			
Variable	Good (%)	Bad (%)	χ^2	p-value
Age (year)				
20-35	58 (89.2)	7 (10.8)	1.46	0.227
36-55	125 (82.8)	26 (17.2)		
Ethnic				
Malay	179 (84.4)	33 (15.6)	0.02#	0.876
Non malay	4 (100.0)	0 (0)		
Marital status				
Married	181 (85.0)	32 (15.0)	0.01#	0.946
Single mother	2 (66.7)	1 (33.3)		
Occupational				
Working	114 (94.2)	7 (5.8)	19.15	<0.001*
Unemployed	69 (72.6)	26 (27.4)		
Education level				
Low	138 (81.2)	32 (18.8)	7.75	0.005*
High	45 (97.8)	1 (2.2)		
Household income				
<RM 2000	126 (79.2)	33 (20.8)	13.96	<0.001*
≥RM 2000	57 (100.0)	0 (0)		

*Significant difference at p<0.05

Table 5: Status diarrhea according to sociodemographic and socioeconomic

	Diarrhea status			
Variables	Yes (%)	No (%)	χ^2	p-value
Age (year)				
20-35	9 (13.8)	56 (86.2)	4.52	0.033*
36-55	41 (27.2)	110 (72.8)		
Ethnic				
Malay	50 (23.6)	162 (76.4)	1.23#	0.268
Non malay	0 (0)	4 (100.0)		
Marital status				
Married	49 (23.0)	164 (77.0)	0.18	0.674
Single mother	1 (33.3)	2 (66.7)		
Occupational				
Working	22 (18.2)	99 (81.8)	3.81	0.051
Unemployed	28 (29.5)	67 (70.5)		
Education level				
Low	45 (26.5)	125 (73.5)	16.17	0.026*
High	5 (10.9)	41 (89.1)		
Household income				
<RM 2000	44 (27.7)	115 (72.3)	6.93	0.008*
>RM 2000	6 (10.5)	51 (89.5)		

*Significant difference at p<0.05

age group 20-35 year old it was 13.8%. For respondents with low education level, (26.5%) had diarrhea. The prevalence of all diarrhea symptoms was higher (27.7%) among those with low household income less than RM 2000.00 per month).

We found significant relationship between all hygiene behaviors with the occurrence of diarrhea (Table 6). Respondents who practice good hygiene behavior such as hand washing, food preparation, environmental cleanliness and water usage had lower risk to suffer from diarrhea.

We also performed a multiple logistic regression and found that women who manage households with bad water usage practice had 10.4 times higher of getting diarrhea compared to those who practice good water usage behavior (Table 7).

Table 6: Status of diarrhea according hygiene behavior factor

	Diarrhea status			
Hyginene behavior	Yes (%)	No (%)	χ^2	p-value
Hand washing				
Good	31 (16.8)	154 (83.2)	29.60	<0.001
Bad	19 (61.3)	12 (38.7)		
Food preparation				
Good	34 (18.1)	154 (81.9)	20.90	<0.001
Bad	16 (57.1)	12 (42.9)		
Environmental cleanliness				
Good	17 (15.3)	94 (84.7)	7.88	0.005*
Bad	33 (31.4)	72 (68.6)		
Water usage				
Good	30 (16.1)	156 (83.9)	37.09	<0.001
Bad	20 (66.7)	10 (33.3)		
Overall				
Good	30 (16.4)	153 (83.6)	30.72	<0.001
Bad	20 (60.6)	13 (39.4)		

*Significant difference at p<0.05

Table 7: Multiple logistic regression

	Multiple logistic regression			
Variables	B	Adjusted ods ratio	p-value	CI 95%
Water usage				
Good		1.00		
Bad	2.14	10.40	<0.001	4.43-24.42
Constant	-1.28	0.28	0.005	

From this study, we found a significant relationship between occupational, education level and household income with hygiene behavior. Respondents who work have higher education level and higher household income showed more positive hygiene behavior practice. Experience may explain the difference in practice of hygiene behavior amongst women who have not attended any formal education. Mothers with no education may have no or little knowledge or experience in practicing good hygiene behavior compared to older women who acquired their knowledge through years of experience. This is consistent with a study in Malawi (Morse *et al*., 2007) which found that lack of education at household level is an implicating factor in the contraction of cryptosporidiosis. Other studies (Woldemicael, 2001) observed that education translates to better skills andknowledge that are essential in understanding and using existing healthcare resources.

According to Stevenson *et al.* (2009), there was no significant association between knowledge level and the respondent's socio-demographic characteristics. This contradicts with a study by Siow and Norrakiah who reported a significant relationship between respondent's knowledge level and their working experience. Respondents working for >6 year have significantly higher knowledge level compared to respondents that have <1 year working experience. Martins also reported that average scores for knowledge, increases with the level of education. As stated in Table 6, Respondents

who practice good hygiene behavior such as hand washing, had lower risk for getting diarrhea. A number of authors have already demonstrated or observed that hand washing can help reduce diarrhea (Tagoe, 1995). It is important, therefore, in all educational messages to emphasize the good hygiene practice of using water for washing hands before taking any food, after using the toilets and on other occasions when hands have been soiled. Multiple logistic regression in Table 7 show that, risk of getting diarrhea among women who practice bad water usage behavior are 10.4 times higher compared to those who practice good water use behavior. There is need to teach households and more about safe water usage and management at the water sources. It has been observed that poor hygiene practices at water sources may be caused by a number of reasons that include lack of knowledge on sanitary principles, water costs, inadequate safe water sources and problems of distance (Masangwi *et al*., 2009).

It is interesting to note that in feedback meetings at the end of testing, most parents attributed reinfection to 'water usage. The discussion underlined the belief of 'water first, hygiene second' which has been noted elsewhere. Gungoren *et al*. (2007) refers to this phenomenon as an 'obsession with waterborne transmission' and states that most endemic transmission of enteric infections among poor communities in developing countries is not primarily water-borne but occurs by other routes such as contamination of hands, foods, clothes and other routes. These can be controlled by improving hygiene behaviors. We suggest that any water and sanitation intervention can employ hygiene promotion as a way to create interest in communities and build social consensus on the importance of hygiene, water and sanitation.

CONCLUSION

This study determined the prevalence of diarrhea and practice of hygiene behavior among women who manage home in Kuala Terengganu district. The following findings are concluded.About three quarter (84.7%) of the women who manage home have good hygiene behavior practice. Factors of age, ethnic and marital status did not influence the practice of hygiene behavior. Similarly, the demographic features of ethnic, marital status and occupational did not influence occuring of diarrhea. However, respondent who practice good hygiene behavior have lower risk having diarrhea. Respondent who working high education level and high household income, show more positive hygiene behavior practice. The results are based on retrospective reporting from cross-sectional data. This may result in possible biases due to incomplete and unrepresentative data. Furthermore, only information from surviving women that were present during interviews was recorded implying that no data was available for households of women who were not available. During the survey, the respondents were not given precise information of diarrhea status because of they could not remember the symptom exactly.

REFERENCES

Blaise, N.Y.H. and D.B. Dovie, 2007. Diarrheal diseases in the history of Public Health. Arch. Med. Res., 38: 159-163.

CDC., 2005. Review Research on the literature of diarrhea disease in China. National Center for Rural Water Supply Technical Guidance, China, China.

Gungoren, B., R. Latipov, G. Regallet and E. Musabaev, 2007. Effect of hygiene promotion on the risk of reinfection rate of intestinal parasites in children in rural Uzbekistan. Trans. Royal Soc. Trop. Med. Hygiene, 101: 564-569.

Masangwi, S.J., T.D. Morse, N.S. Ferguson, G. Zawdie and A.M. Grimason *et al*., 2009. Behavioural and environmental determinants of childhood diarrhoea in Chikwawa, Malawi. Desalin., 248: 684-691.

Morse, T.D., R.A. Nichols, A.M. Grimason, B.M. Campbell, K.C. Tembo and H.V. Smith, 2007. Incidence of cryptosporidiosis species in paediatric patients in Malawi. Epidemiol. Infect., 135: 1307-1315.

Sakisaka, K., S. Wakai and S.A. Wongkhomthong, 2002. Domestic hygiene behaviour of mothers with children aged 0-5 years old in Tayabo village, Nueva Ecija, the Philippines. Asia Pac. J. Public Health, 14: 91-98.

Stevenson, R.J., T.I. Case, D. Hodgson, D.R. Porzig and J. Barouei et al., 2009. A scale for measuring hygiene behavior: Development, reliability and validity. Am. J. Infect. Control, 37: 557-564.

Sultana, R.M. and M.A. Rahman, 2010. Exploring the link between food-hygiene practices and diarrhoea among the children of Garments worker Mother in Dhaka. Akmmcm. J., 1: 4-11.

Tagoe, E., 1995. Maternal Education and Infant-Child Morbidityin Ghana: The Case of Diarrhea: Evidence from theGhana DHS. In: Women's Position and Demographic Change in Sub-Saharan Africa, Paulina, M. and J.A. Magritt (Eds.). IUSSP Publications, Liege, Belgium, pp: 169-200.

Woldemicael, G., 2001. Diarrhoeal morbidity among young children in Eritrea: Environmental and socioeconomic determinants. J. Health Popul. Nutr., 19: 83-90.