

# PREVALENCE OF DIARRHOEA AND ITS TREATMENT AMONG CHILDREN UNDER FIVE IN MALAYSIA



Chan Yee Mang<sup>1</sup>, Khaw Wan-Fei<sup>1</sup>

<sup>1</sup>Institute for Public Health, National Institutes of Health, Ministry of Health Malaysia.

Corresponding author's email: chanyemang@moh.gov.my

## SUMMARY

This study aimed to identify the prevalence and treatment of diarrhoea among children under five in Malaysia using data from the Malaysian National Health and Morbidity Survey: Maternal Child Health. The prevalence of diarrhoea among children in Malaysia in the past two weeks was 3.1%, representing an estimated 75,000 children. It was concerning that only 38.4% of children with diarrhoea were treated with oral rehydration solution (ORS), and 51.1% did not receive either ORS or antibiotics. This highlights the need for educating parents on the importance of taking their children suffering from diarrhoea to healthcare facilities for adequate treatment.

## KEYWORDS

Diarrhoea, Children under five, ORS, Antibiotics, Malaysia.

## INTRODUCTION

According to the World Health Organization (WHO), diarrhoea is one of the leading causes of morbidity and mortality among children under five worldwide [1]. Diarrhoeal disease is responsible for killing around 525 000 children annually [1]. In Malaysia, diarrhoea is one of the top health issues that affects children under five in Malaysia. The existing evidence indicates that there is a prevalence of harmful practices in treating diarrhoea in certain countries where there is a significant burden of diarrhoea-related mortality [2]. Providing timely and appropriate treatment for diarrhoea is essential to ensure a positive outcome and prevent complications. In Malaysia, the 4th Edition Paediatric Protocol for Malaysian Hospitals is used to manage diarrhoea in Malaysia [3]. Hence, this study aimed to identify the prevalence of diarrhoea and its treatment among children under five in Malaysia.

## MATERIALS AND METHODS

A secondary data analysis was conducted utilising a survey subset of children under five years of age from the Malaysian National Health and Morbidity Survey: Maternal Child Health (NHMS:MCH). NHMS: MCH is a cross-sectional nationally representative population-based survey. Trained research assistants used mobile tablet devices with a questionnaire system application developed to conduct data collection through face-to-face method. The study questionnaire was adapted from the WHO Multiple Indicator Cluster Survey [4]. Sociodemographic factors included locality, sex, age group, ethnicity, type of toilet used and main method of disposing garbage. Diarrhoea is defined as three or more loose or watery stools per day, or blood in stool as perceived by mother or caretaker in the last two weeks. Data analyses were conducted using SPSS Statistics 25.0 (IBM Corp., Armonk, NY, U.S.) taking into consideration the complex survey design.

## CONCLUSION

The prevalence of diarrhoea among children under five in Malaysia has decreased since 2016. However, it is concerning that less than 40% of children with diarrhoea were treated with ORS. Parents should be educated on the importance of taking their children suffering from diarrhoea to healthcare facilities for adequate treatment.

## ACKNOWLEDGEMENT

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## RESULTS

The prevalence of children who had diarrhoea in the last two weeks was 3.1%, who were estimated to represent 75,000 Malaysian children under five (Table 1). The prevalence has reduced in contrast to NHMS 2016 [4.4% (95% CI: 3.68, 5.33)]. The prevalence is lower in comparison to other Southeast Asian countries. A cross-sectional study conducted in five countries in Southeast Asia (Indonesia, Cambodia, Myanmar, the Philippines, and Timor-Leste) reported that prevalence of diarrhoea is known from 8.39% in the Philippines to 18.21% in Indonesia [5]. The prevalence of diarrhoea is highest among 12-23 months (4.7%), followed by 0-11 months (3.8%), 24-35 months (2.9%), 36-47 months and 48-59 months (2.2%). The Indian ethnic group has the highest prevalence of diarrhoea (4.1%), whereas the Chinese ethnic group has the lowest (2.7%). The prevalence of children who had diarrhoea is similar regardless of locality, sex, type of toilet used and main method of disposing garbage. Among children who had diarrhoea, 48.9% (95% CI: 43.11, 54.79) received treatment. Only 38.4% were given ORS (95% CI: 33.25, 43.79) and 31.3% were given antibiotics (95% CI: 25.86, 37.23). WHO recommended that diarrhoea should be treated with ORS [1]. A total of 51.1% (95% CI: 45.21, 56.89) children who had diarrhoea did not receive both treatments (Table 2).

Table 1: Prevalence of diarrhoea among children aged 0-59 months in the last two weeks in Malaysia

Sociodemographic and housing sanitation characteristics	Count	Estimated Population	Diarrhoea		
			Percentage (%)	95% CI	
			Lower	Upper	
<b>MALAYSIA</b>	<b>583</b>	<b>74559</b>	<b>3.1</b>	<b>2.79</b>	<b>3.54</b>
Location					
Urban	416	50920	3.0	2.60	3.50
Rural	167	23638	3.4	2.83	4.20
Sex					
Male	322	39430	3.2	2.80	3.76
Female	261	35128	3.0	2.50	3.69
Age group					
0 - 11 months	98	15258	3.8	2.81	5.13
12 - 23 months	181	22963	4.7	3.78	5.73
24 - 35 months	126	15065	2.9	2.27	3.65
36 - 47 months	97	10824	2.2	1.72	2.90
48 - 59 months	81	10446	2.2	1.66	2.98
Ethnicity					
Malay	452	47397	3.2	2.85	3.56
Chinese	26	8588	2.7	1.67	4.30
Indian	27	4432	4.1	2.38	7.04
Other Bumiputeras	67	9639	3.6	2.61	4.97
Others	10	-	-	-	-
Type of toilet used					
Sanitary toilet	557	71480	3.1	2.77	3.55
Unsanitary toilet	26	3077	3.3	2.07	5.17
Main method disposing garbage					
Sanitary	521	65774	3.2	2.80	3.60
Unsanitary	62	8783	2.9	2.07	4.15

Table 2: Percentage of children aged 0-59 months with diarrhoea in the last two weeks who received ORS and antibiotics treatment (n=583)

Treatment of diarrhoea	Count	Estimated Population	Percentage (%)	95% CI	
				Lower	Upper
<b>Received treatment</b>	<b>303</b>	<b>36369</b>	<b>48.9</b>	<b>43.11</b>	<b>54.79</b>
ORS only	117	13151	17.7	14.25	21.76
Antibiotics only	54	7841	10.6	7.08	15.44
ORS and antibiotics	132	15377	20.7	16.43	25.81
<b>Not receiving ORS and antibiotics treatment</b>	<b>277</b>	<b>37952</b>	<b>51.1</b>	<b>45.21</b>	<b>56.89</b>