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**KNOWLEDGE, LIVING ENVIRONMENT, ATTITUDES, AND EDUCATION  
RELATED INCIDENCE OF DIARRHEA IN TODDLERS IN THE WORK  
AREA OF THE SUKA MERINDU HEALTH CENTER,  
BENGKULU CITY**

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**ABSTRACT**

The purpose of this study was to determine whether the relationship between knowledge, education level, living environment, attitude, nutritional status simultaneously with the incidence of diarrhea among toddlers at Sukamerindu Health Center, Bengkulu City. This research is an analytic study with a design research approach (cross-sectional), where the research was done by measuring the independent variables (knowledge, living environment, attitudes) and the dependent variable (diarrhea) at the same time. The results showed that some (50.6%) of respondents had good knowledge, less than some (49.4%) of respondents had a supportive attitude and some (50.6%) of respondents had an unhealthy living environment. The results of the bivariate analysis using test Chi-square found no significant association between knowledge and attitudes as well as environmental temp a t live with diarrhea ( $p = 0.000$ ). Can in conclude for Health workers to improve health education programs, especially about the importance of good hygiene practices and healthy so that the diarrhea can be prevented and reduced.

**Keywords :** Knowledge, attitudes, living environment and incidence of diarrhea

**INTRODUCTION**

In Indonesia alone, around 162,000 children under five die every year or around 460 children under five every day due to diarrhea. West Java area is one of the highest cases of death due to diarrhea in children under five. Generally, death is caused by dehydration due to late parents giving the first treatment when a child has diarrhea.

The highest prevalence of diarrhea was detected among children aged 1-4 years (16,7%) and is the leading cause of death of children under the age of 12-59 months (25.2%). This happens because children in this age group start playing actively and are at risk of infection. A high rate of morbidity and mortality due to diarrhea, especially in developing countries has been a concern of the UN so that the decline in child mortality into 2/3 from 1990 to 2015 was one of the targets contained in the Millennium Development Goals (MDG's) by 2015 (MOH, 2011).

Diarrhea factors can be influenced by two factors, namely direct factors and indirect factors. Indirect factors include education, knowledge, attitudes, environment, clean and healthy living habits, nutritional status, personal hygiene, socio-economic conditions, while direct factors can be caused by bacterial infections, viruses and parasites, malabsorption,



allergies, chemical poisoning or poisoning, which are produced by microorganisms, fish, fruit and vegetables. The nutritional status of children also affects diarrhea.

## RESEARCH DESIGN AND METHODOLOGY

This research is an analytic study with a design research approach (cross-sectional), where the research was done by measuring the independent variables (knowledge, education level, living environment, attitudes) and the dependent variable (diarrhea) at the same time. (Notoatmodjo, 2002)

The population in this study were all under five with diarrhea in Puskesmas Sukamerindu Bengkulu city is estimated at 440 respondents. The sample of this research is some mothers who have children under five in the working area of Puskesmas Sukamerindu.

## RESULTS AND DISCUSSION

### A. Univariate Analysis

#### 1. Frequency Distribution according to the incidence of diarrhea

Tabel 1. Frequency Distribution according to the Incidence of Diarrhea in Puskesmas Sukamerindu, Bengkulu City in 2014

No	Incidence of Diarrhea	Jumlah	Persentase (%)
1	Yes	44	54.3
2	No	37	45.7
	Jumlah	81	100

Respondents who experienced diarrhea there are 44 people (54,3%) is large compared to respondents without diarrhea, there are 37 people (45,7%).

#### 2. Frequency Distribution According to the Factor of diarrhea

Tabel 2. Frequency distribution by factor at Puskesmas Sukamerindu Kota Bengkulu in 2014

No	Factor	Jumlah	Persentase (%)
1	Pengetahuan:		
	Kurang	41	50.6
2	Baik	40	49.4
	Pendidikan:		
3	Rendah	48	59.3
	Tinggi	33	40.7
4	Lingkungan Tempat Tinggal:		
	Kurang bersih	49	60.5
5	Bersih	32	39.5
	Sikap:		
6	Kurang	38	46.9
	Baik	43	53.1

Respondents who lacked knowledge were 41 people (50.6%) greater than respondents with good knowledge there were 40 people (49.6%). Respondents were Education Low are 48 people (59.3%) greater than the respondents of higher education there are 33 people (40.7%). Respondents whose living environment was less clean were 49 people (60.5%) bigger than the clean neighborhood there were 32 people (39.5%). Respondents were less attitude, there are 38 people (46.9%) than with the good attitude there are 43 people (53.1%).

**B. Bivariate Analysis**  
**1. Distribution of Respondents by Knowledge Factor with the Incidence of Diarrhea**

Tabel 3. Distribution of Respondents based on the factor with Diarrhea incidence in Puskesmas Sukamerindu Bengkulu City in 2014

No	Factor	Diarrhea incidence				Total		OR 95% CI	P Value
		Yes		No		n	%		
		n	%	N	%				
1	Knowledge: Kurang Baik	28	68.3	13	31.7	41	100	3.231 1,297-8,047	0,020
		16	40	24	60	40	100		
2	Pendidikan: Rendah Tinggi	35	72.9	13	27.1	48	100	7.179 2,652-19,439	0,000
		9	27.3	24	72.7	33	100		
3	Lingkungan Tempat Tinggal: Kurang Bersih Bersih	35	71.4	14	28.6	49	100	6.389 2,376-17,176	0,000
		9	28.1	23	71.9	32	100		
4	Sikap: Kurang Baik	27	71.1	11	28.9	38	100	3.754 1,481-9,516	0,009
		17	39.5	26	60.5	43	100		

Tabel 3 is the results of analysis of the relationship 4 Variable are Pengetahuan, Pendidikan, Lingkungan Tempat Tinggal dan Sikap. The significant of statistical tests of Pengetahuan obtained p value  $< \alpha 0.05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between knowledge and the incidence of diarrhea at Puskesmas Sukamerindu, Bengkulu City in 2014. And from the analysis also Pendidikan obtained the OR value: 3, 231 means that respondents who lack knowledge have a chance 3.231 times the incidence of diarrhea compared to p value  $< \alpha 0,05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between education and the incidence of diarrhea at Puskesmas Sukamerindu, Bengkulu City in 2014. And from the analysis also obtained the OR value: 7,179 means that respondents with low education have a



chance of 7.179 times the incidence of diarrhea compared to respondents with higher education .

The results of statistical tests obtained of Lingkungan Tempat Tinggal p value  $< 0.05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between the neighborhood and the incidence of diarrhea at the Sukamerindu Health Center, Bengkulu City in 2014 . And from the analysis also obtained the OR value: 6 , 389 means that respondents whose environment is less clean have a chance of 6 . 389 times the incidence of diarrhea compared to respondents who had a clean environment .

The results of statistical tests obtained Sikap is p value  $> \alpha 0.05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between attitudes and the incidence of diarrhea at Puskesmas Sukamerindu, Bengkulu City in 2014 . And from the analysis also obtained the OR value: 3.754, meaning that respondents who lacked attitudes towards cleanliness had a chance of experiencing 3,754 times the incidence of diarrhea compared to respondents with good attitudes .

## 5.2 DISCUSSION

The results of statistical tests obtained p value = 0.020  $\square \alpha 0.05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between knowledge and the incidence of diarrhea at Puskesmas Sukamerindu, Bengkulu City in 2014 . And from the analysis also obtained the OR value: 3 , 231 means that respondents who lack knowledge have a chance 3 . 231 times the incidence of diarrhea compared to respondents with good knowledge .

The results of this study are in accordance with the research (Titik Haryanti, 2009). It is concluded that the knowledge of respondents about the incidence of diarrhea is that 21% of respondents have good knowledge, 71.6% of respondents have sufficient knowledge and 7.4% of respondents have insufficient knowledge. There is a significant relationship between knowledge and the incidence of diarrhea in children under five in the working area of the Polokarto Community Health Center, Sukoharjo Regency.

The results of statistical tests obtained p value = 0.000  $\square \alpha 0.05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between education and the incidence of diarrhea at Puskesmas Sukamerindu, Bengkulu City in 2014 . And from the analysis also obtained the OR value: 7 , 179 means that respondents with low education have



a chance of 7 . 179 times the incidence of diarrhea compared to respondents with higher education .

According to Notoatmodjo (2005). Besides that, mothers with low education will have an effect on knowledge and health, which in turn will affect the selection of foodstuffs for the family according to him, not only taste but also nutritional requirements that must be adequate. The level of education is closely related to the emergence of health problems. This greatly affects the pattern of thinking and healthy living behavior, for example in maintaining health to avoid diarrhea. When education is low, the knowledge about diarrhea and how to live a healthy life will not be biased understood.

The results of statistical tests obtained  $p \text{ value} = 0.000 < \alpha 0.05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between the neighborhood and the incidence of diarrhea at the Sukamerindu Health Center, Bengkulu City in 2014 . And from the analysis also obtained the OR value: 6 , 389 means that respondents whose environment is less clean have a chance of 6 . 389 times the incidence of diarrhea compared to respondents who had a clean environment .

The results of the analysis of the relationship between attitude with Diarrhea incidence was found that out of 38 respondents are less there are 27 people ( 71 .1%) who experienced diarrhea incidence greater than those without diarrhea that is numbered 11 ( 28 .9%) of the 43 respondents attitude well there are 17 people (39 . 5 %) who experienced diarrhea less than those without diarrhea as much as 26 ( 60.5 %).

The results of statistical tests obtained  $p \text{ value} = 0.009 < \alpha 0.05$ , it can be concluded that statistically at 5% neglect there is a significant relationship between attitudes and the incidence of diarrhea at Puskesmas Sukamerindu, Bengkulu City in 2014 . And from the analysis also obtained the OR value: 3.754, meaning that respondents who lacked attitudes towards cleanliness had a chance of experiencing 3,754 times the incidence of diarrhea compared to respondents with good attitudes .

From the research results ( Nusadewiarti, 2013), it was found that the incidence of diarrhea in children under five at Posyandu in Natar Village was 62.7%. There is a relationship between maternal attitudes and the incidence of diarrhea in children under five with a p-value of 0.001. The conclusion in this study is that the attitude of the mother is related to the incidence of diarrhea in children under five.

From the results of the study ( Sunardi, 2009) it can be concluded that respondents about the incidence of diarrhea are known to be 79% of respondents have a supportive



attitude towards statements about the incidence of diarrhea and 21% of respondents have non-supportive attitude towards statements about the incidence of diarrhea. There is significant relationship between the respondent's attitude and the incidence of diarrhea in children under five.

## CONCLUSION

Based on the results of research and discussion, the following conclusions can be drawn :

1. There is a knowledge relationship with the incidence of diarrhea in children under five in the working area of the Sukamerindu Health Center, Bengkulu City in 2014.
2. There is a relationship between the level of education and the incidence of diarrhea among children under five in the working area of the Sukamerindu Health Center, Bengkulu City in 2014
3. There is a relationship between the living environment and the incidence of diarrhea in children under five in the working area of the Sukamerindu Health Center, Bengkulu City in 2014
4. There is an attitude relationship with the incidence of diarrhea in children under five in the working area of the Sukamerindu Health Center, Bengkulu City in 2014 .

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