Description of Characteristics and Behavior Prevention of UTIs in Mothers of Children Aged 1-3 Years

Lili Suryani[1], Meri Neherta[2], Rahmadevita[3]
[1,2,3]Andalas University, Padang, Indonesia
Email: lily.suryani2003@gmail.com

Abstract

Urinary tract infections in children in Indonesia reach 90-100 cases per 100,000 population per year or about 180,000 new cases per year. Risk factors for urinary tract infections in children include environmental sanitation, personal genital hygiene, child nutritional status, age, and gender. This study aims to look at the characteristics of health education respondents to prevent urinary tract infections in children aged 1-3 years. This study uses a descriptive design with a quantitative approach. This research was conducted from May to August 2023. The population in this study were mothers who had children aged 1-3 years in the Pondok Tinggi Health Center Region. The sampling method is non-probability sampling, namely by means of Purposive Sampling, a sample of 110 people was obtained. The research results showed that respondents: 85.5% were early adults (20-35 years), 82.7% were housewives, 62.7% had high school education, 56.4%) were of the Kerinci ethnicity. Then 72.7% had children aged 2-3 years, 63.6% of the respondents' children were female, 73.6% of the children had normal weight, and 89.1% of the children had normal height. Then 44.5% of respondents had poor knowledge of environmental sanitation, 51.8% had poor knowledge of genital hygiene, 45.5% had poor knowledge of nutritional value. Furthermore, 60.0% have negative attitudes about environmental sanitation. 63.6% of respondents had a negative attitude towards genital hygiene, as many as 60.0% had a negative attitude towards the importance of nutritional value, 59.1%% had poor environmental sanitation practices, as many as 53.6% had poor genital hygiene practices and 43.6% had poor nutritional value measures. Where it can be concluded that research respondents have insufficient knowledge, negative attitudes and poor actions to prevent urinary tract infections. It is hoped that the responsible officers (Health Service) can provide interventions to increase knowledge, attitudes and actions to prevent urinary tract infections in mothers who have children aged 1-3 years.

Keywords: *Urinary Tract Infection, Knowledge, Attitudes, Actions, Children.*

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A. INTRODUCTION

UTI or urinary tract infection is one of the most common bacterial infections in children, in fact it is one of the highest infectious diseases after upper respiratory tract infections and diarrhea (Sita Dewi et al., 2021). According to WHO (2018) in Tanaka et al. (2021) there are as many as 25 million deaths worldwide, one third of which are caused by UTIs. According to the Indonesian Ministry of Health, (2021) the number of UTI sufferers in children in Indonesia reaches 90-100 cases per 100,000 population per year or around 180,000 new cases per year, of the 200 children evaluated, 35% are children 1 to 5 years old and 22% are children aged 6 to 10 years suffer from Urinary Tract Infections or around 33% of boys and 67% of girls.

In 2022 , the Jambi Provincial Health Office said that every year urinary tract infections in children have increased, in 2020 there were 453 and in 2021 there were 564 cases (Jambi Provincial Health Office, 2022). Sungaifull City is one of the Municipalities in Jambi Province which has a high incidence of Urinary Tract Infections in children and continues to increase, in 2021 there were 157 cases, increasing in 2022 to 190 cases in children, from 11 Community Health Centers in Sungaifull City, the highest incidence occurred in the Pondok Tinggi Community Health Center area, with the most cases aged 1-3 years, namely 48 cases, 25 cases in infants and 15 cases in preschool and school age children (Sungaifull City Health Office, 2023), toddler age children are children who are being trained for toilet training, at this age they experience and do many new things, such as tending to be unable to hold urine, often wet and damp. Parents themselves have things to pay attention to, such as how to wash the toilet properly, so as not to trigger urinary tract infections in children (Sudung, 2018).

Urinary tract infections have several risk factors that cause urinary tract infections in children, including environmental sanitation, personal hygiene, genetics, nutritional status of children, age and gender (Irawan & Mulyana, 2018). Based on journal analysis that has been carried out from several studies, the factors that most often cause urinary tract infections in children include environmental sanitation, personal genetic hygiene, and nutritional status (Maknunah et al., 2018). Research conducted by Kusuma, (2018) stated that environmental sanitation has an influence on the increase in urinary tract infections in children , where an unclean environment can increase the proliferation of bacteria which can cause urinary tract infections in children (Kusuma, 2018)

Research conducted by Irawan & Mulyana, (2018) stated that poor hygiene habits are the factor that most often causes UTIs. Poor genital hygiene also increases the occurrence of urinary tract infections in children, where poor genital hygiene has a 4 times higher risk of having a UTI compared to children with better genital hygiene (Siringoringo et al., 2022).

Research conducted by Renko et al. (2022) stated that nutritional status in children influences the incidence of urinary tract infections related to with endurance. Research conducted by Hidayati et al. (2022) shows that there is a significant relationship between nutritional status and an increase in the incidence of urinary tract infections, treatment must be carried out immediately considering the serious impact of urinary tract infections (Hidayati et al., 2022).

The impact of a urinary tract infection (UTI) if not treated adequately and too late will cause kidney scarring with all the long-term consequences such as hypertension and chronic kidney failure and can even cause the child to have to undergo dialysis and a kidney transplant. this can interfere with their growth and development (Sita Dewi et al., 2021). Research conducted by Kim et al. (2022) stated that it is feared that urinary tract infections will recur, because the infection will spread through the ureters to the kidneys, causing pyelonephritis. Infected urine will come back in, stimulating an immune response and inflammation which will ultimately

cause injury and scarring to the kidneys, therefore prevention is needed to prevent urinary tract infections from recurring in children, with the help of several policies that must be supported by the government (Kim et al., 2022).

Several policies have been implemented by the Government regarding the prevention of infectious diseases, namely promotive and preventive approaches, through family and Germas approaches, where community health centers become an extension of the government to reduce the incidence of infectious diseases. The healthy community movement (germas) is like providing education to the community as the first step to control the spread of disease, with the behavioral changes we make being one of the first steps to improve health status (Ministry of Health of the Republic of Indonesia, 2018).

B. METHODS

This research uses a descriptive design with a quantitative approach. This research was carried out from February to August 2023. The population in this study were mothers who had children aged 1-3 years in the Pondok Tinggi Community Health Center area. The sampling method is *non-probability sampling*, namely by *Purposive Sampling* method A sample of 110 people was obtained.

The instrument for collecting respondent data is a questionnaire sheet consisting of questionnaire A, namely a respondent characteristics questionnaire consisting of mother's age, occupation, education, ethnicity, child's age, child's gender, child's weight and child's height, questionnaire B regarding knowledge of environmental sanitation which consists of 10 questions, questionnaire C regarding knowledge of genital hygiene which consists of 9 questions, questionnaire D regarding knowledge of nutritional status, which consists of 10 questions, where the correct answer is given a value of 1 and an incorrect answer is given a value of 0.

Questionnaire E regarding attitudes towards environmental sanitation consisting of 10 statements, questionnaire F regarding attitudes towards genital hygiene consisting of 10 statements and questionnaire G regarding attitudes towards nutritional status consisting of 10 statements. If the statement is positive, it is given a value: Always (S) with a value of 4, Often (SR) with a value of 3, Sometimes (KD) with a value of 2 and Never (TP) with a value of 1, if the question is negative; Always (S) value 1, Often (SR) value 2, Sometimes (KD) value 3 and Never (TP) value 4.

Questionnaire H regarding environmental sanitation measures consisting of 5 statements, questionnaire I regarding genital hygiene measures consisting of 3 statements, and questionnaire J regarding nutritional status measures. If the statement is positive, it is given a value: Always (S) with a value of 4, Often (SR) with a value of 3, Sometimes (KD) with a value of 2 and Never (TP) with a value of 1, if the question is negative; Always (S) value 1, Often (SR) value 2, Sometimes (KD) value 3 and Never (TP) value 4.

Questionnaires B, C, D, E, F, G, H, I, and J were declared valid and reliable because they had passed the Validity and Reliability test from previous research with the Validity Test Results showing that the calculated r value was > r table (0.361). The

results of the reliability test using the *internal consistency test* and then testing using the *Cronbach's alpha technique, obtained reliable results because the Cronbach's alpha* coefficient value was > 0.07.

Univariate analysis was carried out to see the frequency distribution of each research variable, namely knowledge, attitudes and actions (environmental sanitation, genital cleanliness, nutritional status). The range of knowledge scores is categorized as good (76-100%), sufficient (60-75%) and poor (< 60%). The range of attitude scores is categorized into positive (60-100%) and negative (< 60%). The range of action scores is categorized into good (76-100%), sufficient (60-75%) and poor (< 60%).

C. RESEARCH RESULT

1. Respondent Characteristics

The maternal characteristics studied include age, education, occupation, ethnicity, child's gender, child's age, child's height, child's weight.

Table 1 Frequency Distribution of Respondents Based on Maternal Characteristics (n =110)

Response Characteristics	Category	f	%
Mother's Age	Late teenage years (17-25 years old)	5	4.5
	Early adulthood (2 6 – 35 years)	94	85.5
	Late adulthood (36-45 years old)	11	10.0
Work	Civil servants	5	4.5
	Honorary	7	6.4
	Private employees	7	6.4
	IRT	91	82.7
Education	Elementary School	2	1.8
	Junior High School	8	7.3
	Senior High School	69	62.7
	College	31	28.2
Ethnic group	Kerinci	62	56.4
	Minang	10	9.1
	Malay	25	22.7
	Batak	2	1.8
	Caniago	8	7.3
	Jambak	2	1.8
	Java	1	0.9
Child Age	12 years old	30	27.3
	23 years	80	72.7
Child's Gender	Man	40	36.4
	Woman	70	63.6
Child's Body Weight (WW/U)	Normal	81	73.6
	Abnormal	29	26.4
Child's Height (TB/U)	Normal	98	89.1
	Abnormal	12	10.9

Based on table 1, it was found that respondents (85.5%) were mothers in the early adulthood category (26-35 years), (82.7%) mothers had the employment status of a housewife, the majority (62.7%) of mothers had an educational level. SMA, the majority (56.4%) of the mothers are of the Kerinci tribe, the majority (72.7%) of the children are 2-3 years old, the majority (63.6%) of the mothers have female children, the majority (73.6%) the child's weight is normal, and (89.1%) the child's height is normal.

2. Knowledge, Attitudes and Actions

Table 2 Frequency Distribution of Pretest and Posttest Knowledge, Attitudes and Actions of Mothers (n = 110)

Variable	Category	f	%
Environmental Sanitation Knowledge	Good	20	18.2
	Enough	41	37.3
	Not enough	49	44.5
Genital Hygiene Knowledge	Good	24	21.8
	Enough	29	26.4
	Not enough	57	51.8
Knowledge of Nutritional Status	Good	18	16.4
	Enough	42	38.2
	Not enough	50	45.5
Environmental Sanitation Attitude	Positive	44	40.0
	Negative	66	60.0
Genital Hygiene Attitudes	Positive	42	38.2
	Negative	68	61.8
Attitudes to Nutritional Status	Positive	40	36.4
	Negative	70	63.6
Environmental Sanitation Measures	Good	18	16.4
	Enough	27	24.5
	Not enough	65	59.1
Genital Hygiene Measures	Good	17	15.5
	Enough	34	30.9
	Not enough	59	53.6
Nutritional Status Measures	Good	21	19.1
	Enough	41	37.3
	Not enough	48	43,
Total		**110**	**100**

Based on table 2, out of 110 respondents, it was found that (44.5%) mothers had poor knowledge of environmental sanitation, (51.8%) had poor knowledge of genital hygiene, (45.5%) had poor knowledge of nutritional values. It was found that as many as (60.0%) had a negative attitude towards environmental sanitation, as many as (63.6%) had a negative attitude towards genital hygiene, as many as (60.0%) had a negative attitude towards nutritional value. It was found that (59.1%%) mothers had poor environmental sanitation measures, (53.6%) had poor genital hygiene measures, (43.6%) had poor nutritional value measures in preventing urinary tract infections in children aged 1-3 years.

The research results showed that respondents (85.5%) were mothers Early adulthood age category 2 6 -35 years, almost all (82.7%) mothers have the employment status of a housewife, most (62.7%) mothers have a high school education level, most (56.4%) mothers in terms of Kerinci. The majority (72.7%) of the children were 2-3 years old, the majority (63.6%) of the mothers had female children, the majority (73.6%) of the children had normal weight, and almost all (89.1%) the child's height is normal. Most respondents had knowledge, attitudes and actions regarding environmental sanitation, genital hygiene and nutritional value in the poor category.

The results of research (Nofi, 2018) state that the average age of respondents is 35.8 years, the maximum age is 32 years with the lowest age being 27 years and the highest age being 50 years, the mother's occupation is mostly housewife 48%, the age of the children is mostly 4 years old, the gender of most children (58%) is female. Research results (Pamungkas, 2019) stated that the majority of respondents were female (55.3%). The results of the study (Hasibuan, 2017) stated that the age category of most children (62.5%) and (50%) were female, most (43.8%) had elementary school education in the control group and almost half (43.8%) level of high school education in the intervention group.

Girls are at greater risk of getting a UTI in boys because girls have a shorter urethra so it is easier for bacteria to enter and attack surrounding organs. The results show that almost all mothers are in the age category Early adults (26-35 years) have children aged 1-3 years. In this context, it is assumed that the mother's age is at the point where on average her children are still in the toddler category. The majority of mothers in this age range take on the role of housewife. This implies that most of them have more time to focus on caring for and nurturing their children in the home environment. The role of housewives is considered the most significant role in maintaining important aspects such as environmental sanitation, keeping children's genitals clean, and monitoring their children's nutritional status. This shows that housewives have more free time at home, they have main responsibilities. The level of maternal education is recognized as an important factor in influencing maternal knowledge, attitudes and actions regarding environmental sanitation, child genital hygiene and child nutritional status. Based on the results, mothers with higher education tend to have better knowledge and more positive attitudes towards these practices.

Mothers who have a low level of education have limited information regarding environmental sanitation, child genital cleanliness, and children's nutritional value. These limitations can affect their knowledge, attitudes and actions, especially in efforts to prevent health problems such as urinary tract infections (UTI). All mothers were in the early adulthood age category (2-6-35 years), where at this age the average child was 1-3 years old. Most mothers have the job of being a housewife, where housewives have more time to take care of their children at home, housewives have the greatest role in paying attention to environmental sanitation, genital cleanliness and children's nutritional value. Maternal education is one thing that can influence the knowledge, attitudes and actions of mothers in carrying out environmental sanitation, genital

cleanliness and nutritional status of children. Mothers who have a low level of education certainly have limited information about environmental sanitation, genital cleanliness and nutritional status of children so that knowledge, attitudes and actions in preventing UTIs become less.

The results of this study are in line with research Antriana & Suyanti (2019) stated that the respondents' knowledge value was still low, namely (49.30%) and was in line with research Cumayunaro et al., (2020) also found that the value of knowledge low mother (44.82%). In line with research conducted by Parvizi et al., (2019) where he stated that maternal knowledge is associated with increased prevention of urinary tract infections. and currently many mothers have negative attitudes. Research conducted by Fazel et al., (2019) stated that maternal attitudes (50.4%), maternal behavior regarding preventing urinary tract infections in children were still low, knowledge was found to be 40.5%, attitudes 50.4% and practices only 34%.

Knowledge is the result of "knowing" and this occurs after people sense a particular object (Notoatmodjo, 2018). Mother's knowledge plays an important role in determining action for health problems in toddlers (1-3 years), mother's understanding of disease in general is related to decision making for immediate treatment and prevention of disease. Consisting of knowledge about environmental sanitation, it is a way to make the human living environment healthy, especially the physical environment, namely land, water and air (Ministry of Health of the Republic of Indonesia , 2019) . Environmental Sanitation Elements such as Clean Water Facilities, Waste Water Disposal Facilities (Spal), Latrine Conditions, Washing Hands with Soap, Management of drinking water and household food. Knowledge of Personal Hygiene Genetelia, Personal hygiene genetelia is an activity of cleaning the genital area (cebok) after the tub and parts (Yuni, 2018). Attitudes and behavior that influence the prevention of UTI. According to Nurmala (2018), attitude is an individual's reaction to the stimulus received, attitude is not contained in action, but rather supports action or behavior.

The results show that more than half and most of the mothers have poor knowledge (environmental sanitation, genital hygiene, and nutritional status). This is because many mothers do not know how to have good environmental sanitation for children to avoid urinary tract infections, many mothers do not know how to properly clean the genitalia of children so they do not get urinary tract infections, and the nutritional status of children. What should you pay attention to so as not to get a urinary tract infection? This maternal ignorance is also caused by low education so that mothers also receive less information about preventing urinary tract infections.

The results showed that more than half and the majority of mothers had negative attitudes (environmental sanitation, genital hygiene, and nutritional status). This is because many mothers have the wrong perception of attitudes (environmental sanitation, genital cleanliness, and nutritional status). This negative attitude is caused by a lack of knowledge about environmental sanitation, genital cleanliness, and nutritional status which can prevent urinary tract infections.

The results showed that more than half and most of the mothers had poor environmental sanitation, genital hygiene and nutritional status. This is because many mothers do not know how to carry out good environmental sanitation measures for children to avoid urinary tract infections, many mothers do not know how to carry out good genital hygiene measures for children to avoid urinary tract infections, and status measures. What nutrition should be paid to children so they don't get urinary tract infections? This maternal ignorance is also caused by low education so that mothers also receive less information about preventing urinary tract infections.

Based on the results of the questionnaire answers, it was found that the majority of mothers answered the questionnaire questions about knowledge of environmental sanitation incorrectly, such as incorrectly answering the good physical quality of drinking water, the location of drinking water source reservoir holes, good waste disposal facilities, incorrectly in the correct way to wash hands. Most mothers are also wrong in answering directions for washing the genitalia, how to clean the genitalia, what to use to clean the genitalia. Most mothers also answered questions incorrectly about knowledge of nutritional status such as the amount of carbohydrate, protein and balanced nutritional needs during the toddler period (1-3 years).

Based on the results of the questionnaire answers, it was found that the majority of mothers answered that they strongly disagreed and disagreed that processing clean water by boiling water is important for health, the mother answered that she did not agree that cleaning the genitalia with a towel/tissue, did not agree that the latrine environment could cause urinary tract infections, the mother answered does not agree that waste disposal is closed and watertight, and drinking water does not need to be boiled. Based on the results of the questionnaire answers, it was found that the majority of respondents answered that they sometimes clean their hands after their child urinates or defecates using soap and running water and often only use water, never change their child's diaper every 3 hours but only change the diaper when it is full, Sometimes the water storage facility uses a closed bucket, sometimes it is open.

D. CONCLUSION

Almost all of the mothers in this study were in the early adulthood category 2 6-35 years old, almost all of the mothers had the employment status of a housewife, most of the mothers had a high school education level, and most of the mothers were of the Kerinci ethnicity. The characteristics of the children were that most of the children were 2-3 years old, most of the mothers had female children, most of the children's weight was normal, and almost all of the children's height was normal. Most respondents had knowledge, attitudes and actions regarding environmental sanitation, genital hygiene and nutritional value in the poor category.

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