Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

Title	Writer
Relationship between History of Infectious Diseases and Toddler Development in the Region Work of Rundeng Sub-district Health Center The City of Subulussalam Aceh Province in 2024	**Nada** e-mail:nada260474@gmail.com **Yasrida Nadeak** e-mail:yasrida.nadeak@gmail.com Mitra Husada Health College

Abstract.
Infection is one of the diseases that often occurs in toddlers, where one of the causes of infection is the poor nutritional status of toddlers, which is directly influenced by the lack of parental knowledge about nutritious food. One type of infectious disease in children that often occurs is diarrhea, the cause of which is 60-70% is rotavirus. Rotavirus is an infection that causes inflammation in the digestive tract so that it is susceptible to dehydration. Diarrhea is the leading cause of death in developing countries, the second cause of infant mortality worldwide and the number one cause of infant mortality worldwide.
Infant development can be viewed from four aspects of development, namely gross motor skills, fine motor skills, personal social skills, and language skills. Gross motor skills are the ability to make movements that involve large muscles and form body postures such as lifting the head, while fine motor skills are the ability to make finer movements and involve the flexibility of small muscles such as picking up small objects with fingers. Personal skills are the ability to socialize and interact with the environment, for example smiling at mom, while language skills are responding to sounds, following commands and speaking spontaneously.

Keywords :Toddlers, Diarrhea, Toddler Nutrition

I. INTRODUCTION

According to data from the World Health Organization (WHO, 2014), around 200 million infants and toddlers experience gross and fine motor disorders. (The Ministry of Health of the Republic of Indonesia (Depkes RI), 2013) reported that 0.4 million (16%) of Indonesian infants and toddlers experience developmental disorders, both fine and gross motor development, hearing disorders, low intelligence, and speech delays.

National data according to the Indonesian Ministry of Health that in 2016 as many as 11.5% of toddlers in Indonesia experienced growth and development disorders (Ministry of Health of the Republic of Indonesia 2016). Disrupted child development will contribute to morbidity that occurs throughout the child's life cycle, the transmission of poverty between generations, and in the long term can hold back the pace of development of a country (Susenas and Riskesdas, 2018)

Human development in Indonesia continues to progress, this is based on the results of the Central Statistics Agency (BPS) records. Where the achievement of 71.92 Human Development Index (HDI) in Indonesia, there was an increase of 0.53 points to grow by 0.74 percent compared to 2018. One indicator of the increasing HDI in Indonesia is its success, namely being able to suppress the incidence of infectious diseases such as Upper Respiratory Tract Infections (URTIs), Pneumonia, Pulmonary Tuberculosis, Hepatitis, Diarrhea and Malaria (BPS, 2020).

In 2011, globally there were around 101 million children under the age of 5 who

Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

were underweight and 165 million children experienced stunting. Based on the 2013 Basic Health Research (Riskesdas) data, there were 37.2% of toddlers in Indonesia experiencing stunting. This means that there was an increase compared to 2010, which was (35.6%) and 2007 (36.8%). Public health problems are considered severe if the prevalence of stunting is 30-39 percent and serious if the prevalence of stunting ≥ 40 percent. Malnourished children tend to have an increased risk of morbidity and mortality and will often suffer from mental developmental delays, poor school performance and poor intellectual achievement.

There are 16% of Indonesian toddlers experiencing developmental disorders, both fine and gross motor development, hearing disorders, low intelligence and delays. The highest prevalence of developmental disorders occurs in language disorders (13.8%), followed by fine motor development disorders (12.2%). At the age of 4 years, children usually have mastered the basics of language development, but 5% to 8% of children experience language delays or disorders in preschool which may later be related to learning disorders, socio-emotional or behavioral problems until they are adults.

In North Sumatra in 2018, the number of toddler diarrhea sufferers served was 86,442 sufferers (33.07%). The highest cases of toddler diarrhea were in Toba Samosir Regency with 3,2426 sufferers or 99.39% and Mandailing Natal Regency with 6,124 sufferers or 70.14%. (Manalu, 2020).

Infection is one of the diseases that often occurs in toddlers, where one of the causes of infection is the poor nutritional status of toddlers, which is directly influenced by the lack of parental knowledge about nutritious food. One type of infectious disease in children that often occurs is diarrhea, the cause of which is 60-70% is rotavirus. Rotavirus is an infection that causes inflammation in the digestive tract so that it is susceptible to dehydration. Diarrhea is the leading cause of death in developing countries, the second cause of infant mortality worldwide and the number one cause of infant mortality worldwide. (Sumampow, 2017).

The morbidity and mortality rate due to diarrhea is still relatively high. Several surveys in Indonesia show that the morbidity rate of diarrhea for all ages is around 120-360 per 1000 population (12%-36%) and for toddlers suffering from one or two episodes of diarrhea each year, 76% of diarrhea deaths occur in infants and toddlers, especially in the first 2 years of age. (Hijriani, 2020)

II. LITERATURE REVIEW

Infectious Diseases

Concept of Infectious Diseases

Infectious diseases are diseases caused by the entry and growth of microorganisms, a broad group of microscopic organisms consisting of one or many cells such as bacteria, fungi, parasites and viruses. Infectious diseases occur when interactions with microbes cause damage to the host body and the damage causes various symptoms and clinical signs. Microorganisms that cause disease in humans are called pathogenic microorganisms, one of which is pathogenic bacteria. Bacterial infections can occur in children and attack various organ systems in the child's body. Respiratory tract infections (27%) bacteria that often cause infection are Streptococcus pneumonia, Streptococcus group A and Haemophilus influenzae type B. Skin infections (7-10%) in children are usually caused by Staphylococcus aureus or Streptococcus group A. Gastrointestinal tract infections (5%) are often caused by Shigella, Escherchia coli, Camphylobacter. Urinary tract infections (0.7 -0.9%) are often caused by Escherchia coli, Klebsiella pneumonia, Proteus mirabilis. (Novard, 2016).

Types of Infectious Diseases

1. Covid-19

Exposure to Covid-19 which remains a problem in various countries, the virus which was first detected around November 2019 in

Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

Wuhan City, China can infect everyone and does not recognize the rich, officials, parents of teenagers, pregnant women, children and even babies are susceptible to exposure to the virus. Babies, young children and those with weaker immune systems are more vulnerable and the level of infection of this virus can occur in anyone. (Marzuki, 2021).

Lifestyle habits implemented by the community, especially in Indonesia, in suppressing positive cases of Covid-19 and to break the chain of transmission of this virus by getting used to wearing masks, washing hands with running water and maintaining distance from others, reducing travel outside the home, reducing direct meetings with others, increasing the body's immunity by regulating diet, consuming foods high in vitamins and minerals, consuming fruits and vegetables high in antioxidants, high in protein and amino acids, getting enough rest, not touching your face often, getting used to exercising regularly in open spaces and exposure to the morning sun and thinking positively about the things around us and living peacefully and happily (Purwanto, 2020).

The main clinical symptoms of Covid-19 are Fever, Cough, Shortness of Breath, Headache, Sore Throat and Rhinorrhea. Loss of smell or sense of smell was not among the common symptoms of Covid-19 until March 2020 when the pandemic began in western countries. However, with many cases worldwide until now, the general symptom that occurs in Covid-19 sufferers is loss of the sense of smell. According to Aziz et al. (2020) that dysfunction or loss of smell is a common symptom in Covid-19 patients, besides that with loss of smell it seems to have a milder disease course. (Marzuki, 2021)

2. Diarrhea

Diarrhea is a major cause of morbidity and mortality in children in developing countries with an estimated 3-5 billion cases each year worldwide. Approximately 5-18 million deaths each year are caused by diarrhea. The main cause of death due to diarrhea is dehydration as a result of loss of water and electrolytes through stool that is not replaced in balance. Diarrhea in its meaning is an increase in the amount and/or decrease in the consistency of stool that is excreted. Germs that cause diarrhea are usually spread through the fecal-oral route, including through food/drinks contaminated with feces and/or direct contact with the patient's feces. Some behaviors that can cause the spread of enteric germs and increase the risk of diarrhea are behaviors such as:

1) Not giving full breast milk (ASI) for the first 4-6 months of life. Babies who are not breastfed have a greater risk of suffering from diarrhea than those who are fully breastfed and the possibility of suffering from severe dehydration is also greater.
2) Using a milk bottle. Using unclean milk bottles makes it easier for germs to nest
3) Storing cooked food at room temperature. If food is stored for several hours at room temperature, the food willcontaminated and germs will grow
4) Using contaminated drinking water. Water may be contaminated at the source or when stored at home. Contamination at home can occur if the storage container is not covered or if contaminated hands touch the water when taking water from the storage container.
5) Not washing hands after defecating and after disposing of children's feces or before eating and feeding children
6) Not disposing of feces (including baby feces) properly. People often assume that baby feces are not dangerous, when in fact they contain large amounts of viruses or bacteria. (Soegijanto, 2016)

The relationship between patient attitudes and behavior is very complex in the occurrence of diarrhea, from 30 respondents who have poor breastfeeding behavior, 18 children (60%) suffer from diarrhea. This is caused by the influence of various factors

Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

such as age, ethnicity/tribe, culture, economic status, work, education, environment, medical history and others. (Arza, 2017).

3. ISPA

Acute respiratory tract infection (ARI) especially pneumonia is still the biggest cause of death in infants and toddlers, more than AIDS, malaria and measles. Even the World Health Organization (WHO) calls it "the forgotten killer of children". Pneumonia is said to be the main killer of toddlers in the world, based on WHO data from 6.6 million toddlers who died in the world, 1.1 million died from pneumonia in 2012 and 99% of childhood pneumonia deaths occurred in developing countries. While in Indonesia from the results of the 2012 SDKI it was stated that the toddler mortality rate was 40 per 1000. Toddler pneumonia is a disease that can be diagnosed and treated with technology and low cost, but if it is too late it will cause death in toddlers. (Directorate General of Disease Prevention and Control, 2018)

4. HIV/AIDS

Since it was first discovered in 1987 until March 2015, HIV/AIDS was the largest in 390 districts/cities out of 514 districts/cities in all provinces of Indonesia. Various efforts have been made to find PLWHA, including providing treatment and care for PLWHA to prevent and transmit to people who are not yet infected. (Directorate General of Disease Prevention and Control, 2018)

5. Zoonosis

Zoonosis is a disease and infection that is transmitted naturally between vertebrate animals and humans (WHO). Rabies is an acute central nervous system infection in humans and warm-blooded animals caused by the lussa virus and causes death in almost all rabies sufferers, both humans and animals. (Directorate General of Disease Prevention and Control, 2018)

6. Filiariasis and Worms

Soil Transmitted Helminthiasis (STH) is still a public health problem in tropical and subtropical countries including Indonesia. Efforts to control worms with a strategy of mass deworming are carried out in an integrated manner with a nutrition program by providing vitamin A to early childhood and through the UKS (School Health Effort) Program for school-age children.

III. RESEARCH METHODS

Types and Design of Research

This research method is observational/survey, namely data collected from respondents using questionnaires or surveys without intervening in the research subjects. The type of research is descriptive analytical with cross-sectional, namely studying the correlation between risk factors with effects in the form of certain diseases or health statuses. (Charsel, 2018).

Conceptual Framework

The conceptual framework of research is a description and visualization of the relationship or connection between one concept and another concept, between one variable and another variable of the problem to be researched (Notoadmojo, 2017).

A concept is an abstraction formed by generalizing a concept. Therefore, the concept cannot be measured and observed directly, in order to be observed and measured, the concept must be described into variables and from these variables the concept can be observed and measured (Notoadmojo, 2017).

Location and Time of Research

Research Location

The location of this research is in the Rundeng Health Center Working Area, Rundeng District, Subulussalam City in 2024.

Research Time

This research was conducted from April – June 2024.

Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

IV. RESEARCH RESULTS AND DISCUSSION

Research result

Based on the results of the study entitled "The Relationship between History of Infectious Diseases and Child Development at the Rundeng Health Center, Rundeng District, Subulussalam City, the following results were obtained:

Table 4.1 Frequency Distribution Based on Child Age

No	Child Age	Amount	%
1	1-12 months	43	47.4
2	13-24 months	32	52.6
	Total	75	100

Based on table 4.1 above, it shows that the majority of children aged 13-24 months were 32 respondents (52.6%) and the minority aged 1-12 months were 43 respondents (47.4%).

Table 4.2 Frequency Distribution Based on Child Order

No	What order do you come in your family	Amount	%
1	1st child	18	40.7
2	2nd child	26	41.8
3	3rd child	21	9.3
4	5th child	10	8.2
	Total	75	100

Based on table 4.2 above, it shows that the majority of children are 26 respondents (41.8%) and the minority are 5th, 10 respondents (8.2%).

Table 4.3 Frequency Distribution Based on Type of Infection

No	Infection History	Amount	%
1	There is a history of infection	44	52.6
2	No history of infection	31	47.4
	Total	75	100

Based on table 4.3 above, it shows that the majority of children with a history of infectious diseases were 44 respondents (52.6%) and the minority of children with no history of infectious diseases were 31 respondents (47.4%).

Table 4.4 Frequency Distribution Based on Child Development

No	Development	Amount	%
1	In accordance	32	47.4
2	Doubtful	20	36.4
2	Deviation	23	31.0
	Total	75	100

Based on table 4.4 above, it shows that the majority of children with appropriate development are 32 respondents (47.4%) and the minority of children with developmental deviations are 23 respondents (31%).

Table 4.5 Tabulation of Infectious Disease History with Child Development

No	History of Infectious Diseases	Progress Check						Amount		p-value
		In accordance		Doubtful		Deviation				
		f	%	f	%	F	%	f	%	
1	There is a history of infectious disease	52	35.6	32	9.0	28	7.9	186	52.5	0.017
2	No History of Infectious Diseases	23	11.9	97	27.4	29	8.2	168	47.5	
		75	47.5	129	36.4	57	16.1	354	100	

Based on table 4.5 above, it shows that there is a relationship between a history of infectious diseases and child development at

Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

the Rundeng Health Center, Rundeng District, Subulussalam City in 2024 where the p-value is 0.017 (p <0.05).

DISCUSSION

Based on the results of the study, it shows that the majority of children with a history of infectious diseases were 52 respondents (52.6%) and a minority of children with no history of infectious diseases were 23 respondents (47.4%). The majority of children with appropriate development were 32 respondents (47.4%) and a minority of children with developmental deviations were 23 respondents (31%). And there is a relationship between a history of infectious diseases and child development at the Rundeng Health Center, Rundeng District, Subulussalam City in 2024 where the p-value is 0.017 (p <0.05).

Infection is one of the diseases that often occurs in toddlers, where one of the causes of infection is the poor nutritional status of toddlers, which is directly influenced by the lack of parental knowledge about nutritious food. One type of infectious disease in children that often occurs is diarrhea, the cause of which is 60-70% is rotavirus. Rotavirus is an infection that causes inflammation in the digestive tract so that it is susceptible to dehydration. Diarrhea is the leading cause of death in developing countries, the second cause of infant mortality worldwide and the number one cause of infant mortality worldwide. (Sumampow, 2017).

Diarrhea is a major cause of morbidity and mortality in children in developing countries with an estimated 3-5 billion cases each year worldwide. Approximately 5-18 million deaths each year are caused by diarrhea. The main cause of death from diarrhea is dehydration as a result of loss of water and electrolytes through feces that are not replaced in balance. Diarrhea in its meaning is an increase in the amount and/or decrease in the consistency of stool that is excreted. Germs that cause diarrhea are usually spread through the fecal-oral route, including through food/drinks contaminated with feces and/or direct contact with the patient's feces. Several behaviors can cause the spread of enteric germs and increase the risk of diarrhea.

Acute respiratory tract infection (ARI) especially pneumonia is still the biggest cause of death in infants and toddlers, more than AIDS, malaria and measles. Even the World Health Organization (WHO) calls it "the forgotten killer of children". Pneumocystis is said to be the main killer of toddlers in the world, based on WHO data from 6.6 million toddlers who died in the world, 1.1 million died from pneumonia in 2012 and 99% of childhood pneumonia deaths occurred in developing countries. While in Indonesia from the results of the 2012 SDKI it was stated that the toddler mortality rate was 40 per 1000. Toddler pneumonia is a disease that can be diagnosed and treated with technology and low cost, but if it is too late it will cause death in toddlers. (Directorate General of Disease Prevention and Control, 2018).

The morbidity and mortality rate due to diarrhea is still relatively high. Several surveys in Indonesia show that the morbidity rate of diarrhea for all ages is around 120-360 per 1000 population (12%-36%) and for toddlers suffering from one or two episodes of diarrhea each year, 76% of diarrhea deaths occur in infants and toddlers, especially in the first 2 years of age. (Hijriani, 2020).

Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Based on the results of the study, it shows that the majority of children with a history of infectious diseases were 52 respondents (52.6%) and the minority of children with no history of infectious diseases were 23 respondents (47.4%). The majority of children with appropriate development were 32 respondents (47.4%) and the minority of children with developmental deviations were 23 respondents (31%). And there is a relationship between a history of infectious diseases and child development at the Rundeng Health Center, Rundeng District, Subulussalam City in 2024 where the p-value is 0.017 (p <0.05).

Suggestion

For Research Locations

There are efforts to improve children's development through regular monitoring of children's development

For institutions

Mitra Husada Medan Health Sciences College provides knowledge to respondents about the Relationship between Infectious Disease History and Child Development through counseling.

For researchers

Researchers have a more optimal ability to examine the history of infections that are more related to child development.

5.2.4 For the community

People are taking better care of their children's health so that they do not get repeated infections so that children's development can proceed according to their age.

BIBLIOGRAPHY

Carsel HR, H Syamsunie (2018). Health and Education Research Methodology. Yogyakarta: Penebar Media Pustaka

Chamidah Atien Nur, 2009. Early Detection of Growth and Development Disorders in Children. JPK (Journal of Special Education) 4 (3)

Dewi Emilia Kartika, et al. 2019. Prra Questionnaire Application for Android-Based Child Development Screening at Hompimpa Center Bengkalis. Journal of Informatics Polinema (JIP), Volume 6 Issue 1

Hamzanwadi, 2018. Early Childhood Development. Jurnal Golden Age Hmzanwadi University Vol. 3 No 1, Pages 1-12 E- ISSN 249-7367

Ministry of Health of the Republic of Indonesia. 2016. Guidelines for the Implementation of Stimulation, Detection and Early Intervention of Child Growth and Development

Janner Simarmata, et al. 2021. Covid-19 A Thousand and One Faces. Medan Our Writing Foundation

Mahanani Srinalesti, 2020. Fulfillment of Fluid and Electrolyte Needs in Children with Diarrhea. Kediri: CV. Pelita Medika

Masganti. 2017. Psychology of Early Childhood Development. Depok: Kharisma Putra Utama

Novard M Fadila Arie, et al. 2016. Description of Bacteria Causing Infections in Children Based on Specimen Types and Resistance Patterns in the Laboratory of Dr. M. Djamil Padang Hospital in 2014-2016. Journal of FK Unand

Rozana Salma, Ampun Bantali. 2020. Stimulation of Early Childhood Development. Tasikmalaya: Edu Publisher

Soegijanto Soegeng, 2016. Tropical and Infectious Diseases in Indonesia. Surabaya: Airlangga University Press

Soedjatmiko, 2001. Early Detection of Toddler Growth and Development Disorders. Sari Pediatri Vol 3 No 3175-188

Journal of Physical Activity and Health
Volumes : 2 | Number : 2 | Page. 90-97
Published : 08/31/2024
ISSN: 3032-6257

Soetjiningsih, Christiana Hari (2018). Child Development Psychology Session. Jakarta: Cendana

Sugihantono Anung. 2018. Action Plan for Disease Prevention and Control Program 2015-2019. Jakarta: Directorate General of Disease Prevention and Control

Sumantri Arif. 2010. Environmental Health. Depok: Kharisma Putra Utama

Sumampouw Oksfriani Jufri. 2017. Diarrhea Toddler. Yogyakarta : Deepublish

Susanto Ahmad. 2011. Early Childhood Development Jakarta: Kharisma Putra Utama

Udin Mucahmmad Fahrul. 2019. Practical Book of Respiratory Diseases in Children for General Practitioners. Malang: UB Press