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Factors Related to Completeness of Basic Immunization in Infants

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Abstract

Immunization is an effective health maintenance effort to reduce the incidence of illness, disability and death. Completeness of basic immunization for babies can be influenced by various factors. Objective: This study aims to determine factors related to the completeness of basic immunization in infants. Method: This research is a quantitative descriptive correlation design research with a cross-sectional approach. The population in this study were mothers who had babies in the Rejosari Community Health Center Working Area. Sampling used Purposive Sampling technique with a total of 100 respondents. The analysis used is Spearman-rank analysis. Results: The research results showed that the characteristics of respondents aged 26-35 years were 63 respondents, the mother's highest educational level was secondary school (SMA) for 79 respondents and the mother did not work as many as 84 respondents, the distance to affordable health services was 72 respondents, received support from health workers there were 90 respondents and the completeness status of basic immunization for babies was complete for 87 respondents. Factors associated with completeness of maternal occupational immunization (p-value=0.018<0.05), distance to health services (p-value=0.026<0.05), and support from health workers (p-value=0.000<0 .05) Conclusion: There are three factors related to the completeness of basic immunization for babies, namely the mother's employment status, distance to health services and support from health workers. Suggestion: This research is expected to be a source of information and knowledge for the community, especially parents who have babies.

Keywords: Completeness of basic immunization, distance to health services, support from health workers

Introduction

Infants have a higher level of susceptibility to disease compared to adults. One of the factors causing high infant mortality rates is the incomplete basic immunization received. Immunization is an effective and economical effort to maintain health to reduce the incidence of illness, disability and death. Each year, an estimated 2-3 million deaths occur due to Immunization-Preventable Diseases (PD3I) (Ministry of Health of the Republic of Indonesia, 2022)[1].

It is recommended that every baby receive complete basic immunization consisting of 1 dose of BCG, 3 doses of DPT, 1 dose of Hepatitis B, 4 doses of Polio and 1 dose of measles/MR (Ministry of Health of the Republic of Indonesia, 2020)[2].

Evaluation of the achievement of five types of basic immunization in infants is carried out through the use of basic immunization completeness indicators as an effort to fulfill the international commitment called Universal Child Immunization (UCI). The success of achieving UCI can be measured by the level of acceptance of complete basic immunization by all infants in an area, where success is considered achieved if the percentage of acceptance reaches 90% or more (Dinkes, 2022)[3]. In 2022, national basic immunization coverage reached 99.6%, exceeding the Strategic Plan (Renstra) target of 90%. There was a significant increase compared to 2021, where the number of provinces that succeeded in achieving the Renstra target increased from 6 provinces to 15 provinces. However, Riau province has not achieved the Strategic Plan (Renstra) target, which is only 86.7% (Ministry of Health of the Republic of Indonesia, 2022)[1].

Immunization is a form of behavior. Based on Lawrence Green's Theory in Notoatmodjo (2014), the success of the immunization program is influenced by three main factors related to health behavior, namely predisposing factors, enabling factors, and driving factors[4]. A preliminary study at the Pekanbaru City Health Office found that the Rejosari Health Center is the area with the highest basic immunization coverage in Pekanbaru City in 2023, which is 68%, but this figure has not reached the target of 90%. Interviews conducted with 10 mothers in the Rejosari Health Center work area, researchers obtained data that 4 out of 10 people with children aged 0-12 months had routine immunizations because the mother said immunization was important to prevent disease in her child. 3 out of 10 mothers said they brought their children for immunization if they had free time, so their children did not get complete immunization. In addition, it was found that 3 mothers refused to immunize their children because they were afraid that their children would have a fever after being immunized, the mother also thought that immunization was not very important if the baby had been breastfed.

Based on the explanation above, the researcher is interested in conducting a study entitled factors related to the completeness of basic immunization in infants. The general objective of this study is to determine the factors related to the completeness of basic immunization in infants.

Methods

This study is a quantitative descriptive correlation design study with a cross-sectional approach. The population in this study were mothers who had babies in the Rejosari Health Center Working Area totaling 1,876 people. The sampling technique used was purposive sampling and used the Slovin formula to calculate the size of the research sample. The results of the Slovin formula calculation obtained a sample size of 100 people. Sample selection requires inclusion and exclusion criteria from the population which must be stated clearly and logically.

The data collection tools in this study were questionnaire sheets and KMS/KIA. The questionnaire consisted of 4 parts where the first part was the characteristics of the respondents, the second part was the questionnaire on the distance to health services, the third part was the questionnaire on the support of health workers and the fourth part was the observational sheet on the completeness of basic immunization.

Data analysis in this study is a univariate analysis conducted to describe the characteristics of respondents (age, education and occupation), distance to health services and support from health workers. Bivariate analysis in this study uses the Spearman-rank statistical test to determine whether there is a relationship between independent variables (maternal age, education, occupation, distance to health services, and support from health workers) with dependent variables (completeness of basic immunization in infants). This study has been declared ethically free (683/UN19.5.1.8/KEPK.FKp/2024)

Results

1. Respondent Characteristics

Table 1
Frequency Distribution of Respondent Characteristics

Characteristics	Frequency (f)	Percentage (%)
Age		
17-25 tahun	30	30,0
26-35 tahun	63	63,0
36-45 tahun	7	7,0
Education		
Primary	3	3,0
Secondary	79	79,0
Higher	18	18,0
Job		
Working	16	16,0
Not Working	84	84,0
Total	100	100,0

Table 1 shows that the majority of respondents' age range is 26-35 years, as many as 63 respondents (63.0%), the mother's last education was high school, as many as 79 respondents (79%) and mothers who did not work, as many as 84 respondents (84%).

2. Overview of Distance to Health Services

Table 2
Frequency Distribution of Respondents Based on Distance to Health Services

Category	Frequency (f)	Percentage (%)
Affordable	72	72,0
Unaffordable	28	28,0
Total	100	100,0

Table 2 shows that 72 respondents (72%) were within reach of health services, while 28 respondents (28%) were not within reach of health services.

3. Overview of Health Worker Support

Table 3
Frequency Distribution of Respondents Based on Support from Health Workers

Category	Frequency (f)	Percentage (%)
Supports	90	90,0
Does not support	10	10,0
Total	100	100,0

Table 3 shows that 90 respondents (90%) received support from health workers, while 10 respondents (10%) did not receive support from health workers.

4. Overview of Complete Basic Immunization for Infants

Table 4
Frequency Distribution of Complete Basic Immunization in Infants

Category	Frequency (f)	Percentage (%)
Complete	87	87,0
Incomplete	13	13,0
Total	100	100,0

In table 4 it can be seen that the number of babies who received complete immunization was 87 people (87%), while the number of babies who did not receive complete immunization was 13 people (13%).

5. Relationship between Mother's Age and Completeness of Basic Immunization in Infants

Table 5
Relationship between Mother's Age and Completeness of Basic Immunization in Infants

Age	Basic Immunization Completeness				total		*p-value*
	Complete		Incomplete				
	n	%	n	%	n	%	
Late Adolescence	25	25,0	5	5,0	30	30,0	0,565
Early Adulthood	56	56,0	7	7,0	63	63,0	
Late Adulthood	6	6,0	1	1,0	7	7,0	
Total	87	87,0	13	13,0	100	100,0	

Table 5 shows the results of the analysis of the relationship between maternal age and completeness of immunization. The results showed that most of the early adult respondents, namely 63 respondents, where 56 respondents (56%) of them had complete immunization status, others had incomplete immunization status as many as 7 respondents (7%). The results of the statistical test obtained a P-value = 0.565> 0.05, meaning that there is no significant relationship between maternal age and the completeness of basic immunization in infants.

6. Relationship between Mother's Education and Completeness of Basic Immunization in Infants

Table 6
Relationship between Mother's Education Level and Completeness of Basic Immunization in Infants

Education	Basic Immunization Completeness				total		*p-value*
	Complete		Incomplete				
	n	%	n	%	n	%	
Basic	1	1,0	2	2,0	3	3,0	0,057
Intermediate	69	69,0	10	10,0	79	79,0	
High	17	17,0	1	1,0	18	18,0	
Total	87	87,0	13	13,0	100	100,0	

In table 6 above, the results of the analysis of the relationship between the mother's education level and the completeness of basic immunization in infants can be seen. The results obtained were that most respondents had a secondary education level of 79 respondents, where 69 respondents (69%) of them had complete basic immunization status and 10 respondents (10%) had incomplete immunization status. The results of the statistical test obtained a P-value = 0.057> 0.05, meaning that there was no significant relationship between the mother's education level and the completeness of basic immunization in infants.

7. Relationship between Mother's Occupation and Completeness of Basic Immunization in Infants

Table 7
Relationship between Mother's Occupation and Completeness of Basic Immunization in Infants

Work	Basic Immunization Completeness				total		*p-value*
	Complete		Incomplete				
	n	%	N	%	n	%	
Working	11	11,0	5	5,0	16	16,0	0,018
Not working	76	76,0	8	8,0	84	84,0	
Total	87	87,0	13	13,0	100	100,0	

Table 7 shows the results of the analysis of the relationship between maternal employment and the completeness of immunization in infants. The results showed that most mothers did not work as many as 84 respondents, where 76 respondents (76%) had complete basic immunization status and 8 respondents (8%) were incomplete. The results of the statistical test obtained a p-value of 0.018 <0.05,

meaning that there is a significant relationship between maternal employment and the completeness of basic immunization in infants.

8. Relationship between Distance to Health Services and Completeness of Basic Immunization in Infants

Table 8
Relationship between Distance to Health Services and Completeness of Basic Immunization in Infants

Distance to Health Services	Basic Immunization Completeness				total		*p*-value
	Complete		Incomplete				
	n	%	n	%	n	%	
Affordable	66	66,0	6	5,0	72	16,0	0,026
Not affordable	21	21,0	7	8,0	28	84,0	
Total	87	87,0	13	13,0	100	100,0	

Table 8 shows the results of the analysis of the relationship between distance to health services and completeness of immunization in infants. The results obtained were that most of the distance to affordable health services were 72 respondents, where 66 respondents (66%) had complete basic immunization status and 8 respondents (8%) had incomplete immunization status. The results of the statistical test obtained a P-value of 0.026 <0.05, meaning that there is a significant relationship between maternal occupation and completeness of basic immunization in infants.

9. Relationship between Support from Health Workers and Completeness of Basic Immunization in Infants

Table 9
Relationship between Support from Health Workers and Completeness of Basic Immunization in Infants

Health Worker Support	Basic Immunization Completeness				total		*p-value*
	Complete		Incomplete				
	n	%	n	%	n	%	
Support	84	84,0	6	6,0	90	90,0	0,000
Not support	3	3,0	7	7,0	10	10,0	
Total	87	87,0	13	13,0	100	100,0	

Table 9 shows a cross-tabulation between health worker support and completeness of immunization in infants. It is known that 90 respondents received support from

health workers, 84 respondents (84%) had complete immunization status and 6 respondents (6%) had incomplete immunization status. The results of the statistical test obtained a P-value of 0.000 <0.05, meaning that there is a significant relationship between health worker support and completeness of basic immunization in infants.

Discussion

1. Respondent Characteristics

The results of the study conducted on 100 respondents found that the majority of respondents were aged 26-35 years, as many as 63 people (63%). This age is in the early adulthood age range. Notoatmodjo (2018) stated that in the early adulthood age range, a person has emotional maturity so that it can influence the ability to think and make decisions, namely those related to health in providing complete basic immunizations to infants5. In line with the research conducted by Fahira, Julinar, & Amna (2023) drawing the age of mothers in the Darul Imarah Health Center area, the results showed that the majority of mothers were aged 20-35 years, as many as 74 people (77.9%) and mothers aged >35 years as many as 21 people (22.1%)[6].

The results of the study showed that most mothers with a high school education of 79 respondents (79%). Education is a very important thing in influencing knowledge. Education is needed to obtain information, for example, things that support health so that it can improve the quality of life. This is also in line with the research of Nisa & Nugraheni (2023) in the Merakurak Health Center Work Area, Tuban Regency, the results of the study showed that 57 mothers (45.6%) had secondary education (high school)[7].

The results of the study showed that the majority of mothers did not work, as many as 84 respondents (84%). Research conducted by Astrea & Arif (2022) also obtained data that out of 79 respondents, more than half of the mothers did not work, as many as 46 respondents (58.2%)[8].

2. Overview of Distance to Health Services

The results of the study conducted on 100 respondents showed that most of the distance to health services was affordable, as many as 72 respondents (72%). The distance to health facilities is a key factor in deciding how often people will visit health services. As the distance to be traveled increases, mothers and other individuals tend to be less active in utilizing available health services.

3. Overview of Health Worker Support

The results of the study conducted on 100 respondents showed that most mothers received support from health workers as many as 90 respondents (90%). Health workers have a role as educators, this role is carried out by helping the community in increasing the level of health knowledge, symptoms of the disease, actions taken so that behavioral changes occur. In addition, health workers are also a place for consultation on health problems or behaviors obtained (Agustina et al., 2022)[9].

4. Relationship between Mother's Age and Completeness of Basic Immunization in Infants

The results of the study obtained a P-value = 0.565> 0.05, meaning that there is no significant relationship between maternal age and the completeness of basic immunization in infants. Most respondents are in the age range of 26-35 years (early adulthood), namely 63 respondents, of which 56 respondents (56%) have complete immunization status and 7 respondents (7%) have incomplete immunization status. In line with research by Novianda & Qomarudin (2020) shows that maternal age does not affect maternal behavior in fulfilling children's basic immunization10. The older a person is, the more mature a person's level of maturity and strength will be in thinking and working (Jarsiah et al., 2023)[11].

5. Relationship between Mother's Education and Completeness of Basic Immunization in Infants

The results of the study obtained a P-value = 0.057, meaning that there is no significant relationship between the mother's education level and the completeness of basic immunization in infants. The results obtained were that most respondents

had a secondary education level of 79 respondents, of which 69 respondents (69%) had complete basic immunization status and 10 respondents (10%) were incomplete. This study is in line with Fitria & Saleha (2021) who found that there was no relationship between the mother's education and the completeness of basic immunization in children[12, 13]. Ningsih (2020) said that mothers who have a higher level of education have a better understanding of providing basic immunization to children. In addition, mothers with higher education will find it easier to accept new knowledge[13, 14].

According to the researcher's assumption, the process of forming behavior is not only influenced by education alone. So education cannot always be a benchmark for someone's behavior. Most respondents who immunized their children completely in this study had secondary education. There were also mothers with low education who still immunized their babies and the baby's immunization status was complete.

6. Relationship between Mother's Occupation and Completeness of Basic Immunization in Infants

The results of the study obtained a P-value of 0.018 <0.05, meaning that there is a significant relationship between maternal employment and the completeness of basic immunization in infants. The results showed that most mothers did not work as many as 84 respondents, where 76 respondents (76%) had complete basic immunization status and 8 respondents (8%) were incomplete. This study is in line with Julinar & Isfanda (2023) showing a relationship between employment status and infant immunization status with a P-value of 0.003. The relationship between maternal employment status and the completeness of basic immunization in infants is that if the mother works to earn a living, there will be less opportunity or time to come to the immunization service center, so that the child will not get complete basic immunization[15, 16].

7. Relationship between Distance to Health Services and Completeness of Basic Immunization in Infants

The results of the study obtained a P-value of 0.026 <0.05, meaning that there is a significant relationship between the distance to health services and the completeness of basic infant immunization. The results obtained were that most of the distance to affordable health services were 72 respondents, where 66 respondents (66%) had complete basic immunization status and 8 respondents (8%) had incomplete immunization status. This study is also in line with Widyowati et al. (2023) that there is a relationship between distance and the completeness of basic immunization in infants in the Embong Ijuk Health Center Work Area, Kepahiang Regency[17, 18].

The researcher's assumption is that parents who have houses closer to immunization service locations tend to have children with complete immunizations. Another factor that plays a role is the availability of transportation that facilitates access to immunization service locations. Although the distance between the residence and the immunization facility is far, if transportation to the facility is easy to reach, the immunization process can still be carried out to maintain the health of children to avoid dangerous diseases.

8. Relationship between Support from Health Workers and Completeness of Basic Immunization in Infants

The results of the study obtained a P-value of 0.000 <0.05, meaning that there is a significant relationship between the support of health workers and the completeness of basic immunization in infants. Research by Hidayah et al. (2023) showed that there was a significant relationship between the support of health workers and the completeness of basic immunization in infants in the Nanti Agung Health Center Work Area[19, 20]. According to the researcher's assumption, support from health workers is one of the factors that influence mothers in providing complete basic immunizations for babies. The support provided by health workers is in the form of informative support, material support, emotional support and instrumental support.

Conclusion

Based on the results of the study conducted on factors related to the completeness of basic immunization in infants conducted on 100 respondents in the work area of the Rejosari Health Center, Pekanbaru City, it shows that the characteristics of the majority of respondents are aged 26-35 years as many as 63 respondents (63.0%), the mother's last education level is high school (SMA) as many as 79 respondents (79.0%) and mothers do not work as many as 84 respondents (84.0%), the distance to affordable health services as many as 72 respondents (72.0%), received support from health workers as many as 90 respondents (90%) and the status of completeness of basic immunization in infants is complete as many as 87 respondents (87%). The results of the study showed factors related to the completeness of basic immunization in infants in the work area of the Rejosari Health Center, Pekanbaru City, it was found that the mother's occupation, distance to health services, and support from health workers were related to the completeness of basic immunization in infants.

The main limitation of this study is in filling out the questionnaire. Some respondents could not fill out the questionnaire independently because they had to take care of their children so the researcher had to read and write down the answers from the respondents. This slowed down the researcher in conducting the research.

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