Journal of Advanced Nursing and Health Sciences
Vol. 5, No. 2, Agustus 2024, pp. 1~10
ISSN: 2774-5821.

Relationship between Mother's Knowledge and Status of Advanced Immunization Completeness in Children Under 2 Years in Karangpandan Community Health Center Working Area

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ABSTRACT

Mother's knowledge about immunization influences the provision of immunization to babies. If the mother's knowledge about immunization is lacking and the mother feels that she does not need immunization, this will affect the schedule, administration and completeness of immunizations for babies, which will have an impact on the emergence of disease in babies.

This research uses quantitative methods with a retrospective approach. The population of this research is all female orphans who are in the Karangpandan Health Center Working Area for the period March 2024, namely 44 toddler's mom with the sampling technique used Total Sampling. The instruments used were a maternal knowledge questionnaire about advanced immunizations and a KIA book to see the completeness of immunization status.

The statical test using Chi Square test results show the Asymp value. Sig. (2-sided) 0.001 < 0.05, meaning that Ha is accepted and Ho is rejected, so there is a relationship between the mother's level of knowledge about Advanced Immunization and the Completeness Status of Advanced Immunization for Children Under 2 Years in Karangpandan Community Health Center Working Area.

Keywords:

Knowledge, Advanced Immunization, Children Under 2 Years

1. INTRODUCTION

Immunization is a health service that aims to protect a person from diseases that can be prevented by immunization (PD3I). Immunization is one of the health interventions that has been proven to be the most cost-effective (cheap) for actively increasing a person's immunity against a particular disease. If one day they are exposed to the disease, they will not get sick or will only experience mild illness (Ntenda *et al.*, 2019)

Immunization not only protects a person but also society, by providing community protection or what is called herd immunity. Current health development focuses on promotive and preventive efforts without neglecting curative and rehabilitative aspects. Providing immunizations can prevent and reduce the incidence of morbidity, disability and death due to diseases that can be prevented by immunization or PD3I, which is estimated at 2 to 3 million deaths each year (Dinkes Jateng, 2023)

Immunization works by introducing weak antigens to stimulate antibodies so that the body can be resistant to certain diseases. Advanced immunization is a repeat immunization of basic immunization to maintain the level of immunity and to extend the protection period of children who have received basic immunization. Advanced or booster immunization means providing additional immunity after basic immunization (Proverawati, 2019)

Advanced immunization is very important to increase the immune response to vaccines which decreases with age. If a repeat is not carried out, the child is at risk of not being protected when exposed to a disease that could have been prevented. If there is an outbreak, re-immunization can be given directly (Nurazizah, 2018).

As recently there has been an Extraordinary Event (KLB) of polio. The Directorate General of Disease Prevention and Control (P2P) of the Indonesian Ministry of Health received reports that 3 acute flaccid paralysis (AFP) cases were found caused by the Type 2 Polio virus. Two cases were found in Central Java and East Java Province last December while one Another case was discovered in East Java on January 4 2024 (Kemenkes RI, 2024)

The government has determined that every child must receive advanced immunization for toddlers under two years old. If one of the follow-up immunizations is not given, then the child is included in the status of incomplete follow-up immunization (Ministry of Health, 2020). Follow-up immunization is included in the routine immunization program by giving 1 dose each of DPT-HB-Hib and measles rubella (MR) to children aged 18 to 24 months (Kemenkes RI, 2023)

Besides DPT-HB-Hib and MR, starting January 15 2024 the government is holding a Sub Polio Immunization Week (Sub PIN Polio) to tackle the Polio outbreak that emerged in December 2023. This Sub PIN Polio targets children aged 0-7 years, regardless of previous immunization status, even though the immunization status is complete, children still have to take part in the Sub PIN Polio program. (Kemenkes RI, 2023)

Nationally, the achievement indicator for the percentage of children aged 12-24 months who received advanced immunization in 2022 is 93.2%

(3,667,524 children) from the target of 90% (3,540,662 children), compared to 2021 this achievement has increased, in In 2021 the achievement of advanced immunization did not reach the target, namely achievement of 58.9% while the target was 81.0%, this is the same as in 2020 with a target of 76.4% while achievement was only 65.5% (Ministry of Health, RI, 2023). Follow-up immunization coverage for under-aged children in Central Java Province in 2022 will reach 109.0% and this has not yet reached the target of 113%. Meanwhile, Karanganyar Regency's achievements in 2022 have exceeded its target of 97.2% with a target of 94%. (Dinkes Jateng, 2023)

The achievement of advanced MR immunization and Advanced Penta at the Karangpandan Community Health Center in 2022 has reached the target, namely 105% for advanced MR immunization and 107.2% for Advanced Penta with a target of 90%, however in the period from January to November 2023 it has not yet reached the target, namely 90% with an achievement of 73.2% for Advanced MR and 69.1% for Advanced Penta.

Many factors are related to a child's immunization status, such as age, education, mother's occupation, KIA/KMS ownership and mother's knowledge. Mothers have an important role in the basic immunization program for babies because most of the childcare is the responsibility of parents, especially mothers. Maternal knowledge about immunization influences the provision of immunizations to babies. If the mother's knowledge about immunization is lacking and the mother feels that she does not need immunization, this will affect the schedule, administration and completeness of immunizations for babies, which will have an impact on the emergence of disease in babies. If the mother's knowledge about immunization is good, it is hoped that immunization can be given according to the predetermined administration schedule so that it will be able to reduce IMR and improve public health status (Setyaningsih, 2019).

This is in accordance with research conducted by Restu, et al (2023) with the title "The Relationship between Knowledge and Attitudes of Mothers towards Advanced Immunization Completeness in Children Aged 18-24 Months in the Working Area of the Rajabasa Indah Health Center in 2022" showing the results of the Chi-square statistical test in Table 4.6 obtained a p value = 0.010 ($p < 0.05$) which means there is a significant relationship between maternal knowledge and the completeness of follow-up immunization in children aged 18-24 months in the working area of the Rajabasa Indah Health Center in 2022. This data gives the meaning that Knowledge is closely related to the completeness of follow-up immunization.

Based on a preliminary study conducted at the Karangpandan Community Health Center in December 2023, the number of mothers who brought their children for immunization was 12 people. There were 2 mothers who brought their children for Advanced Penta immunization, 3 people brought their children for Advanced MR, and 7 people brought their children for basic immunization. Interviews were conducted regarding follow-up immunization on the 12 mothers, the results showed that 5 mothers were able to say what is meant by follow-up immunization, what follow-up immunization is, and the benefits of follow-up immunization, 4 mothers could not explain what is included in follow-

up immunization for younger children. two years or under, and 3 mothers do not know what advanced immunization is and its types.

Therefore, from this description, researchers are interested in conducting research with the title The Relationship between Mother's Knowledge about Advanced Immunization and the Completeness Status of Advanced Immunization in Children Under 2 Years in the Karangpandan Community Health Center Working Area.

2. METHOD

The type of research is quantitative with a retrospective approach. The population of this research is all mothers who have children under 2 years in Karangpandan Community Health Center Work Area for the period March 2024, namely 44 mothers with children under 2 years of age using a sampling technique, namely total sampling so that all the population of young mothers are sampled for research. The instrument used was a maternal knowledge questionnaire about advanced immunization. Data analysis used univariate analysis with percentages of respondent characteristics and bivariate analysis used the Chi Square test. This research has been registred ethical clearance in Comite of Research Ethic Kusuma Husada University by certificate number is No. 2128/UKH.L.02/EC/IV/2024.

3. RESULTS

The population in this study were all mothers who had children under 2 years of age who were in the Karangpandan Health Center Working Area for the period March 2024, namely 44 mothers of young children. The sampling technique used was total sampling, so the entire population was taken as a sample, namely 44 respondents.

3.1 Characteristics of Respondents

Tabel 1. Characteristics of Respondents

Variabel	N	%
Mother's Age		
<20 year	3	6,8
20-35 year	39	88,6
>45 year	2	4,5
Education		
SD	7	15,9
SMP	11	25,0
SMA	21	47,7
PT	5	11,4
Work		
Worker	25	56,8
Not Workers	19	43,2
Total	44	100

Based on table 1 it is known that the majority of respondents were aged 20-35 years, 39 respondents (88.6%) and there were respondents aged >45

years, 2 respondents (4.5%). Most respondents had a high school education, 21 respondents (47.7%) and the least had a tertiary education, 5 respondents (11.4%). Most of the respondents in this study were employed, 25 respondents (56.8%) and those who did not work were 19 respondents (43.2%).

3.2 Mother's Knowledge Level about Advanced Immunization

Tabel 2. Mother's Knowledge Level about Advanced Immunization

Knowledge	N	%
Low	8	18,2
Moderate	16	36,4
High	20	45,5
Total	44	100

Based on table 4.2, the results show that the highest level of knowledge of mothers about advanced immunization is high, there are 20 respondents (45.5%) and for moderate level of knowledge there are 16 respondents (36.4%). Meanwhile, there were 8 respondents (18.2%) who low knowledge about advanced immunization.

3.3 Status of Advanced Immunization Completeness in Children Under 2 Years

Tabel 3. Status of Advanced Immunization Completeness in Children Under 2 Years

Immunization Status	N	%
Complete	35	79,5
Incomplete	9	20,5
Total	44	100

The most advanced immunization status was complete with 35 respondents (79.5%), while only 9 respondents (20.5%) were incomplete.

3.4 Relationship between Mother's Knowledge about Advanced Immunization and Status of Advanced Immunization Completeness in Children Under 2 Years

Tabel 4. Hubungan Pengetahuan Ibu tentang Imunisasi Lanjutan dengan Status Kelengkapan Imunisasi Lanjutan pada Anak Bawah 2 Tahun

Knowledge	Immunization Status				Total	%	*P*
	Complete		Incomplete				
	N	%	N	%			
Low	3	6,8	5	11,4	8	18,2	0,001
Moderate	12	27,3	4	9,1	16	36,4	
High	20	45,5	0	0	20	45,5	
Total	35	79,5	9	20,5	44	100	

The hypothesis test used in this research was the Chi Square statistical test using SPSS version 26. Based on table 4, it can be seen that the level of low knowledge mayority had incomplete immunization was 5 respondents (11.4%). The level of maternal knowledge that was moderate had the most complete immunization status, 12 respondents (27.3%) while 4 respondents (9.1%) had incomplete immunization status, while the level of maternal knowledge about advanced immunization was high, the most frequently had complete advanced immunization status, 20 respondents (45.5%) and none were incomplete. Based

on table 4, the results show that the value of Asymp. Sig. (2-sided) 0.001 < 0.05, meaning that Ha is accepted and Ho is rejected, so there is a relationship between the mother's level of knowledge about Advanced Immunization and the Completeness Status of Advanced Immunization for Children Under 2 Years in the Karangpandan Community Health Center Working Area.

4. DISCUSSION

4.1 Characteristic of Respondents

Based on table 1, it is known that the majority of respondents aged 20-35 years were 39 respondents (88.6%) and there were respondents aged >45 years, 2 respondents (4.5%). The older you get, the more your understanding and thinking patterns will develop so that the knowledge you gain will also improve and increase. Meanwhile, according to Notoatmodjo, 2015the older one is, the more mature a person's level of maturity and strength will be in thinking and working. Mother's age is a factor related to her child's immunization status. The research results of Lubis, 2020found that incomplete basic immunization in children is more risk for mothers aged >30 years compared to younger mothers <30 years, this is due to a lack of awareness about the importance of immunization for babies. Age is an important factor, because age can influence a person's experience in dealing with health problems/illnesses and decision making.

Most respondents had a high school education, 21 respondents (47.7%) and the least had a tertiary education with 5 respondents (11.4%). Education is very important in influencing knowledge. Individuals who have a high level of education tend to find it easier to receive information as well as information about immunization provided by health workers, whereas mothers with a low level of education will have difficulty receiving the existing information so that they have less understanding about the completeness of immunization. A person's different education will also influence a person's decision making, mothers with higher education are more likely to accept new ideas than mothers with low education so that information can be accepted and implemented more easily (Rahmawati and Umbul, 2013)

Most respondents in this study were employed with 25 respondents (56.8%) and 19 respondents (43.2%) who did not work. Working mothers are 0.739 times more likely to complete basic infant immunizations compared to non-working mothers due to the lack of information received by housewives compared to working mothers (Rakhmawati, Utami and Mustikarani, 2020)

4.2 Mother's Knowledge Level about Advanced Immunization

Based on table 2, the results show that the most mothers' level of knowledge about advanced immunization is high, 20 respondents (45.5%) and for a moderate level of knowledge there are 16 respondents (36.4%). Meanwhile, there were 8 respondents (18.2%) who low knowledge about advanced immunization. Knowledge is the result of human perception, or the result of someone knowing about an object with their five senses. The

five human senses are used to perceive objects such as sight, hearing, smell, taste and touch. Perception time in knowledge production is influenced by the intensity of attention and object perception. Humans mostly acquire knowledge through hearing and sight (Notoatmodjo, 2018).According to Lawrence Green's theory in Notoatmodjo (2018),knowledge is an important supporting factor in influencing human health behavior. The increasing level of mother's knowledge will be followed by the perfection of immunization for her child. The more information a mother provides about immunization, the more likely she is to immunize her child on time.

4.3 Status of Advanced Immunization Completeness in Children Under 2 Years

The most advanced immunization status was complete with 35 respondents (79.5%), while only 9 respondents (20.5%) were incomplete. Mothers have an important role in the basic immunization program for babies because most of the childcare is the responsibility of parents, especially mothers. Maternal knowledge about immunization influences the provision of immunizations to babies. If the mother's knowledge about immunization is lacking and the mother feels that she does not need immunization, this will affect the schedule, administration and completeness of immunizations for babies, which will have an impact on the emergence of disease in babies. If the mother's knowledge about immunization is good, it is hoped that immunization can be given according to the predetermined administration schedule so that it will be able to reduce IMR and improve public health status (Setyaningsih, 2019).

4.4 Relationship between Mother's Knowledge about Advanced Immunization and Status of Advanced Immunization Completeness in Children Under 2 Years

Based on table 4, it can be seen that the level of low knowledge mayority had incomplete immunization was 5 respondents (11.4%). The level of maternal knowledge that was moderate had the most complete immunization status, 12 respondents (27.3%) while those that were incomplete were 4 respondents (9.1%), while the level of knowledge of mothers regarding advanced immunization was high, the most frequently had advanced immunization status complete, 20 respondents (45.5%) and none had incomplete follow-up immunization status. High knowledge becomes a reference for someone to be able to change their attitudes and actions from negative to positive. So if the lower the mother's knowledge about advanced immunization for toddlers, then this will be a driving factor for the mother not bringing her toddler to be given further immunization, and vice versa, the higher the mother's knowledge about advanced immunization, the mother will bring her child to receive further immunization. complete (Subakti dkk, 2022).

Based on table 4, the results show that the value of Asymp. Sig. (2-sided) 0.001 < 0.05, meaning that Ha is accepted and Ho is rejected, so there is a relationship between the mother's level of knowledge about Advanced Immunization and the Completeness Status of Advanced Immunization for

Children Under 2 Years in the Karangpandan Community Health Center Working Area. This is in accordance with research from (Putu Nindia Ayuni Restu et al., 2023) with the title "The Relationship between Knowledge and Attitudes of Mothers towards Advanced Immunization Completeness in Children Aged 18-24 Months in the Working Area of the Rajabasa Indah Health Center in 2022" showing that the research results were obtained from a total of 38 respondents who had There were 28 mothers with good knowledge with a percentage (62.2%) of complete follow-up immunization completeness and 10 mothers with a percentage (22.2%) of incomplete follow-up immunization completeness. For sufficient knowledge, of the total of 6 respondents, there was 1 mother with a percentage (2.2%) of complete follow-up immunization completeness and 5 mothers with a percentage (11.2%) of incomplete follow-up immunization completeness. Then the total knowledge was less than 1 respondent, there were 0 mothers with a percentage (0.0%) of complete follow-up immunization completeness and only 1 mother with a percentage (2.2%) of incomplete follow-up immunization completeness. The results of statistical tests using Chi Square obtained p value = 0.010 ($p<0.05$), which means there is a significant relationship between maternal knowledge and the completeness of follow-up immunization in children aged 18-24 months.

Other research that supports this is research from Ida Fahriani et al. (2023)with the title "The Relationship between Mother's Education, Knowledge and Attitudes with Follow-up Immunization Completeness Behavior at the Bubulan Community Health Center, Bojonegoro Regency" showing the results that respondents had less knowledge with incomplete follow-up immunization behavior as many as 16 respondents (80.0%). Based on the results of the Chi Square test, there is a relationship between the mother's level of knowledge and the behavior of completing further immunization among Baduta at the Bubulan Health Center ρ value = 0.000 < 0.05, so there is a relationship between the mother's level of knowledge and the behavior of completing further immunization among Baduta at the Bubulan Community Health Center, Bojonegoro Regency.

5. CONCLUSION

The statistical test results show that the p value is <0.05, so there is a relationship between the mother's level of knowledge about Advanced Immunization and the Completeness Status of Advanced Immunization in Children Under 2 Years in the Karangpandan Community Health Center Working Area.

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