



**THE RELATIONSHIP BETWEEN MATERNAL KNOWLEDGE AND ATTITUDE
AND COMPLIANCE WITH BASIC IMMUNIZATION IN INFANTS 0-12
MONTHS**

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ABSTRACT

Since 1956, the Indonesian public health program has carried out a health program, namely immunization. Immunization is a government health measure that has been proven effective in overcoming six diseases that can affect children, namely : tuberculosis, diphtheria, pertussis, measles, tetanus, and polio. The Indonesian Ministry of Health stated that in December 2023 and January 2024 there were cases of poliomyelitis or exposure to the VDPV TYPE 2 virus. The level of knowledge, attitude and compliance of mothers is very important for the provision of immunizations routinely to their children. Objective to observe the relationship between maternal knowledge and attitudes and compliance with basic immunization in infants 0-12 months at the Kartasura Health Center. This research is included in the quantitative type and the information is measured using a questionnaire measuring tool. This research is cross-sectional and data collection is obtained by purposive sampling. The community involved were as many as 93 mothers who had babies aged 0-12 months who came to the Kartasura Health Center. The level of knowledge, attitude and compliance of mothers is measured by the knowledge, attitude and practice questionnaire (KAP). In addition, the KAP instrument has been tested for reliability and validity, Cronbach's alpha coefficient was found to be 0.703. This questionnaire was made to assess the role of the following parameters to understand the knowledge, attitudes and practices (KAP) of mothers regarding basic immunization such as filling in maternal demographic data, age of the child, how many children to be to, name of the vaccine given, vaccine dose, continuing vaccination after immunization reaction, adhering to the immunization schedule. The findings showed that as many as 83 respondents (62.9%) had strong knowledge in basic immunization, 72 respondents (54.5%) had a good attitude towards basic immunization, while 75 respondents (51.8%) had good adherence to basic immunization. The results of the p value of 0.2373 were obtained, the results of the study stated that there was no relationship between the level of basic immunization knowledge and compliance with the administration of basic immunization in infants at the Kartasura Health Center. In addition, in the Kartasura Health Center, there was a correlation, related to the p value of 0.0005, between attitudes towards basic immunization and compliance with the administration of basic immunization to newborns.

Keywords: attitude; compliance; family health; immunization; infants; knowledge

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INTRODUCTION

From the age of toddlers is considered the most important period for the baby's life. Because, starting from this phase, there is the formation of the child's character and identity which will show the future knowledge of the child (Defama et al., 2023). The most effective health action in stopping infectious diseases that can cause death in children is immunization. Immunization originates from the word "immunity", which means resistance or strength against infectious diseases that can attack children. Immunization is important as a guide to effective strategies to reduce mortality in children. Immunization of children plays a major role in eradicating various health diseases from infancy to adulthood (Ministry of Health, 2023). Since 1956, Indonesia's public health program has been immunizing (Situmorang & Susilawati, 2022). One of the government's health measures that has proven effective is

immunization, which can prevent six diseases that can affect children: tuberculosis, diphtheria, pertussis, measles, tetanus, and polio (Sari & Ratnawati, 2020).

The government has stipulated that every infant or child must receive five types of complete basic immunizations that are appropriate for his or her age. Children under five need two types of immunization, namely basic and advanced immunization. Basic immunizations are required from children from birth to 9 months of age, and advanced immunizations are required for children aged 18 months to 24 months (Nanda Kharin et al., 2021). The immunization development program focuses on one dose of HB-0, one dose of polio and BCG, three doses of DPT-HB, four doses of polio, and one dose of measles, in accordance with the Decree of the Minister of Health of the Republic of Indonesia Number 1611/MENKES/SK/XI/2005 (Subroto & Warman, 2024). About 1.4 million children worldwide die from a disease that can be avoided using immunization. The infant and child immunization program has started in accordance with the Regulation of the Minister of Health Number 42 of 2013. The right to provide basic vaccination to all children against diseases that can be avoided using immunization is regulated by Health Law No. 36 of 2009 (Syukri & Appi, 2021).

The trend of clinical measles suspect discovery in 2019 tends to decrease until 2021 and increase again in 2023. The highest peak of detection is expected to occur in January 2023 with extraordinary events (KLB) covering the areas of Brebes Regency, Klaten Regency and Boyolali Regency (Profil Kesehatan Kab. Klaten, 2022). In 2023, the detection of suspected cases of clinical measles in some districts or cities has exceeded the annual target. Sukoharjo Regency has the most clinical measles cases with 429 cases and the Klaten Regency area with 136 cases (Dinas Kesehatan Provinsi Jawa Tengah, 2021). The Indonesian Ministry of Health stated that in December 2023 and January 2024 there were cases of poliomyelitis or exposure to the VDPV TYPE 2 virus. In December 2023, there were 2 boys aged 1 year and 3 years from East Java, precisely on Madura Island and a 6-year-old girl from Klaten, Central Java, was also exposed to polio, which caused them to be paralyzed (Dinas Kesehatan Provinsi Jawa Tengah, 2023). In order to prevent the spread of the PD31 KLB in Indonesia, the implementation of the National Child Immunization Month (BIAN) in 2022 was issued by the Decree of the Minister of Health Number HK.01.07/MENKES/1113/2022. (Supriatin et al., 2023).

Mother's knowledge, attitude, and compliance in immunization are the most important aspects that can control parents' decision to immunize. Knowledge itself is the result of human knowledge or their desire to understand something through their senses (Nurmayasari, 2024). A person's attitude is the result of an emotional or thought process that occurs in them, it is not an action, but a desire to perform a behavior (Nurdiana et al., 2022). Compliance with this will ensure complete vaccination for children, which can prevent PD3I (Gebre Eyesus et al., 2021). The level of knowledge, attitude and compliance of mothers with immunization is very effective in immunizing their children. The Kartasura Health Center is located on Jl. Jend. Sudirman, Pucangan Village, Kartasura District, Sukoharjo Regency, Central Java Province with the telephone number (0271) 784809. During the COVID-19 pandemic, the immunization program at this health center also decreased. There needs to be a continuous discussion about the importance of child immunization and the importance of education from parents and the community, especially mothers in the area. The purpose of this study is to identify and analyze the relationship between maternal knowledge and attitudes with adherence to basic immunization in infants 0-12 months at the Kartasura Health Center. Therefore, the researcher will conduct a study on the Relationship between Mother's

Knowledge and Attitude with Basic Immunization Compliance in Infants 0-12 Months at the Kartasura Health Center.

METHOD

In this analysis, a quantitative scale with a correlative design is used to answer the phenomenon of interconnection between variables, namely variable a and variable b. This study uses numerical figures from valid and reliable measuring tools (questionnaires) to make conclusions about phenomena or their relationship with each other. Then the data was analyzed using SPSS version 20. Knowledge and attitude are independent variables of the research, and compliance is a dependent variable. A total of 30 question items using the Guttman Scale are included for each variable. This research was carried out from September to October 2024 at the Kartasura Health Center, Sukoharjo Regency. Mothers who have children at the Kartasura Health Center with the age of 0 to 12 months are the criteria for respondents. The level of knowledge, attitude and compliance of mothers is measured by the knowledge, attitude and practice questionnaire (KAP). This questionnaire was made to assess the role of the following parameters to understand the knowledge, attitudes and practices (KAP) of mothers regarding basic immunization such as filling in maternal demographic data, age of the child, how many children to be to, name of the vaccine given, vaccine dose, continuing vaccination after immunization reaction, adhering to the immunization schedule. In addition, the KAP instrument has been tested for reliability and validity, Cronbach's alpha coefficient was found to be 0.703. The required sample collection method uses consequential sampling techniques so that 93 respondents who have met the inclusion criteria were obtained. Each respondent was given an approval sheet to participate. The ethics permit for this research has been obtained from dr. Moewardi Hospital, Surakarta City with letter number: 2.299/IX/HREC/2024.

RESULT

Table 1.
Respondent characteristics (n= 93)

Respondent characteristics	f	%
Age Mom		
<20-30 years	65	69,9
31-40 years	25	26,9
41-50 years	3	3,2
Age Child		
0-3 month	30	32,3
4-8 month	33	35,5
9-12 month	30	32,3
Education		
Elementary school	0	0
Junior high school	6	6,5
Senior high school	37	40,9
Bachelor	50	52,7
Work		
Work	44	47,4
Doesn't work	49	52,7

The physical condition of the work area of the Kartasura Health Center, which is surrounded by a residential environment in the densely populated Kartasura District. Currently, the Kartasura Health Center is included in the tropical climate area. A total of 2 villages and 10 villages have formed in the service area of the Kartasura Health Center. Immunization for children is one of 21 services provided to the community by the Kartasura Health Center. "The realization of excellent health services makes the Kartasura Health Center the choice of the community" is the vision of the Kartasura Health Center. This mission also includes 1) Providing high-quality health services, 2) Encouraging community involvement in achieving

healthy living independence, and 3) Increasing stakeholder participation. After filling out the demographic questionnaire, information about the characteristics of the respondents was collected. Data on knowledge, attitudes and compliance were collected using KAP, which had been tested for reliability and validity with an alpha Cronbach coefficient value of 0.703. The data was then processed using the SPSS version 20 program.

According to the analysis of respondent characteristics, as many as 65 respondents or (69.9%) of the total results, are included in the category of under 20 to 30 years old. According to age-based studies, the majority of children are 33 children or (35.5%) between 4 and 8 months old. According to an analysis based on educational achievement, the majority of 50 respondents or (52.7%) have a bachelor's degree. The majority of 49 respondents or (52.7%) are not working, according to research based on employment status.

Table 2.
Distribution of Mother's Knowledge Frequency

Knowledge	f	%
Good (80-100)	83	62,9
Enough (40-79)	7	5,3
Less (0-39)	3	2,3

A study of the respondents' knowledge level revealed that as many as 83 respondents or (62.9%), had a strong understanding of basic immunization.

Table 3.
Frequency Distribution of Mother's Attitude

Attitude	f	%
Good (80-100)	72	54,5
Enough (40-79)	17	12,9
Less (0-39)	4	3,0

The analysis of the level of respondents' attitudes showed that the attitude of mothers regarding basic immunization was good, namely 72 respondents (54.5%).

Table 4.
Distribution of Mother Compliance Frequency

Compliance	f	%
Good (80-100)	75	56,8
Enough (40-79)	16	12,1
Less (0-39)	2	1,5

A study on the level of respondent adherence revealed that as many as 75 respondents or (56.8%), had good maternal adherence in relation to providing basic immunizations.

Table 5.
Relationship between Knowledge Level and Maternal Compliance with Basic Immunization

Knowledge	Compliance			Total	P-Value
	Good	Enough	Less		
	f	f	f	f	0.2373
Good (80-100)	68	13	2	83	
Enough (40-79)	6	1	0	7	
Less (0-39)	1	2	0	3	

The analysis of the Chi-Square test created a P value of $0.2373 > 0.05$. This states that the P value statistically, shows that the variables being studied are not significantly related to each other. The findings of this study resulted in maternal compliance with basic immunization at the Kartasura Health Center did not correlate significantly with the level of knowledge.

Table 6.
Relationship between Attitude Level and Maternal Compliance Regarding Basic Immunization

Attitude	Compliance			Total	P-Value
	Good	Enough	Less		
Good (80-100)	63	9	0	72	0.0005
Enough (40-79)	11	5	1	17	
Less (0-39)	1	2	1	4	

Analyzing the Chi-Square test, the P value is $0.0005 < 0.05$. According to statistics, this P value indicates that the variable under investigation has a significant relationship. The findings of this study show that maternal compliance with basic immunization at the Kartasura Health Center is significantly correlated with the level of knowledge.

DISCUSSION

Age

The study showed that the majority of mothers were < 20 -30 years old, namely 65 respondents. The study showed that the majority of mothers were < 20 -30 years old, namely 65 respondents (69.9%). Meanwhile, the majority of children aged 4-8 months are 33 children (35.5%). Based on the survey results, many mothers are enthusiastic about participating in their children's immunization activities which are actively organized by the Kartasura Health Center. In 1 week, immunization activities were carried out 3 times at the Kartasura Health Center. According to parents, they are very happy if their children are routinely immunized. This basic immunization activity is a health program from the health government that has been implemented for a long time in Indonesia. According to the mothers, immunization is very important to prevent various dangerous diseases from an early age. According to (Zulfikar & Muslimah, 2021), everyone should know about immunization, including its importance, benefits, place of action, time, type, and frequency. The main goal of infant vaccination is to boost the baby's immune system. Improving health promotion is a way to increase maternal knowledge. This is because if the mother's health knowledge is good, then their behavior will also be good (Rukmono et al., 2023). As part of the vaccination program, a special area has been provided for vaccination services. Such as Integrated Health Service Post, Health Center, Hospitals, Midwives, Private Centers, and other health facilities can provide vaccinations (Hafni et al., 2023).

Education

Of the 87 mothers or (93.6%) who visited the Kartasura Health Center to provide basic immunizations for their children, the majority have completed higher education. Education is a way of thinking and reacting that motivates a person to take steps to maintain and improve their health (Safitri, 2021). Overall, the coverage of basic childhood immunization is significantly affected by the level of education. More educated mothers are more likely to immunize their children than less educated mothers (Puspitasari & Darmayanti, 2023). Maternal educational attainment is a factor that can master their understanding of basic immunization. A person's education level influences their decision-making. Therefore, highly educated women are more open to new concepts than those with less knowledge. This makes it easier for them to absorb and apply information (Simanullang et al., 2022). A person's health knowledge increases with his or her level of education (Asniwiyah et al., 2023). Parents' education levels also influence changes in parents' health behaviors, ultimately contributing to the achievement of vaccination programs (Intan Azkia Paramitha & Ahyar Rosidi, 2022). This study supports previous research that found a direct correlation between education and knowledge (Redho et al., 2024), which shows that a person's knowledge tends

to increase along with higher education.

Relationship between Knowledge Level and Maternal Compliance with Basic Immunization

Table 5 shows that as many as 83 respondents or (62.9%) have good information, with a P value of 0.2373, explaining that women's compliance with basic immunization at the Kartasura Health Center has no relationship with knowledge. This implies that knowledge and adherence do not show a visible pattern or systematic relationship that would indicate a lack of dependence between the two variables. Improving health promotion is a way to increase maternal knowledge. This is because if the mother's health knowledge is good, then their behavior will also be good (Syukri & Appi, 2021). The investigation in this case is in contrast to the investigation of the (Hayatun et al., 2021) which found a significant correlation (p-value = 0.00) between maternal knowledge and immunization adherence. Against a p value of 0.000, another study also found a relationship between the level of basic immunization knowledge and compliance to provide basic immunization to infants in the work area of the Rakit Kulim Health Center (Redho et al., 2024).

Relationship between Attitude Level and Maternal Compliance Regarding Basic Immunization

Table 6 shows that attitudes are associated with maternal compliance with basic immunization at the Kartasura Health Center. A total of 72 respondents or (54.5%) had good information, with a p value of 0.0005. This shows that maternal attitudes and adherence to basic immunization are significantly correlated. A person's attitude is the result of the emotional, thinking, and cognitive processes that occur in them, it is not an action, but a desire to perform a behavior (Nurdiana et al., 2022). This study supports the findings (Wulandari & Silaban, 2023), which found that the p-value found (0.000) was obtained by the chi-square statistical test at the critical level $\alpha = 0.05$. This describes that there is a complete relationship between attitude and basic immunization, proving the hypothesis that there is a relationship between attitude and basic immunization.

CONCLUSION

The findings of the study regarding the relationship between maternal knowledge and attitudes and compliance with basic immunization for infants aged 0-12 months at the Kartasura Health Center led to the conclusions, namely: 1) There was no correlation between maternal knowledge and basic immunization compliance for infants aged 0-12 months at the Kartasura Health Center, as indicated by the sig. (2-tailed) $0.592 > 0.05$. The correlation coefficient of 0.47 shows that there is a slight or weak correlation between basic immunization knowledge and compliance in infants aged 0-12 months at the Kartasura Health Center. 2) There was no correlation between maternal attitudes towards compliance with basic immunization for infants 0-12 months at the Kartasura Health Center, as indicated by the sig. (2-tailed) $0.013 > 0.05$. In the Kartasura Health Center, the relationship with basic immunization knowledge and compliance in infants aged 0-12 months was weak, as indicated by the value (0.213). In addition to serving as a reference for future researchers, the findings of this study should improve theories or concepts that aid the advancement of expert science and contribute to the development and modification of the latest understanding of the relationship between maternal attitudes and knowledge and adherence to basic vaccinations given to infants aged 0 to 12 months at the Kartasura Health Center.

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