International Journal of Health, Economics, and Social Sciences (IJHESS)
Vol. 7, No. 3, July 2025, pp. 1115~1121
DOI: 10.56338/ijhess.v7i3.8163
Website: https://jurnal.unismuhpalu.ac.id/index.php/IJHESS

The Influence of Behavioral Factors on the Use of the Polio Pin Program in Toddlers in the work Area of the West City Health Center

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Article Info

Article history:

Received 25 May, 2024
Revised 17 Jun, 2024
Accepted 25 Jul, 2025

Keywords:

Behavioral Factors, PIN Program, Polio

ABSTRACT

Polio is an infectious disease that causes permanent paralysis, especially in children of toddler age. The Indonesian government has implemented National Polio Immunization Week (PIN) to prevent the spread of this disease. However, the coverage of the program at the West City Health Center has not met the national target, which is only 75.1% of 95%. This study aims to analyze the influence of behavioral factors on the use of the Polio PIN program. Analytical survey research method with cross-sectional design. The sample amounted to 297 mothers who had toddlers aged 0–59 months, taken by purposive sampling technique. Data were collected using questionnaires and analyzed by binary logistic regression test. The results showed that knowledge, attitudes, access to health services, family support, and health worker support had a significant influence on the use of Polio PIN ($p < 0.05$). Meanwhile, income showed no significant influence ($p = 0.119$). Behavioral factors are an important factor in the success of immunization programs. Intensive education and counseling efforts need to be carried out to increase community participation.

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INTRODUCTION

According to World Health Organization (WHO), in 2018 there were around 20 million children around the world who did not get complete immunization, some even did not get immunized at all. Despite high and even immunization coverage (95%), in gaining immunity, there are still many Indonesian children who have not received complete immunization, and some have even never gained immunity at all (Babo et al., 2024).

Every year, 4.7 million Indonesian children need immunization against deadly diseases such as measles, polio, hepatitis and diptheria. Worse, Indonesia is now ranked fourth in the number of children who are not immunized because one in two children does not receive immunization (Husna Dhirah et al., 2023). Infectious diseases that are included in the diseases that can be prevented by Immunization (PD3I), one of which is polio. Polio immunization is a vaccine that protects children against Polio. (Tampubolon et al., 2023).

Polio is a disease caused by the polio virus, which is a serious threat, especially for children under 5 years old, because at that age they are very susceptible to this disease, so it can cause permanent paralysis and one of the symptoms is paralysis. Success against polio is highly dependent on the administration of polio vaccine (Yuni et al., 2024).

Based on the results of research conducted (Susanti & Kurnia Pratama, 2020) at the Talang Banjar Health Center, it shows that there is a relationship between maternal knowledge and maternal attitudes with polio immunization. This research is also supported by research (Erwani, 2021) on the Analysis of Maternal Compliance in Providing Polio Immunization for Toddlers at the Tanjung Baru Health Center, OKU Regency in 2021 with the results of a meaningful relationship for the variables of Knowledge and Attitude.

The Ministry of Health (Kemenkes) has inaugurated the implementation of the national polio immunization week (PIN) on July 23, 2024. In the preparation of the polio PIN, the Ministry of Home Affairs (Kemendagri) has issued a circular to invite local governments to make optimal efforts in the implementation of the PIN (WHO, 2024). Gorontalo Province has achieved 95.67% immunization coverage in the 2024 National Polio Immunization Week (PIN) by targeting 162,752 children. Gorontalo City itself has reached 86.86% which includes 24,039 children (Gorontalo Provincial Health Office, 2024).

The West City Health Center targets 1,196 toddlers aged 0-59 months. However, only 898 toddlers were immunized, of which only 75.1% reached 95%. According to field observations, many mothers are reluctant to allow their children to get polio immunization for fear of side effects, especially prolonged fever and lack of knowledge of the mother. From observations in the work area of the West City Health Center, the support of health workers for the implementation of the National Polio Immunization Week (PIN) program in toddlers is quite high. Health workers actively provide information, education, and friendly and professional services to make it easier for people to access immunizations. However, support from families still varies, there are some families that lack full support, such as lack of awareness or assistance to toddlers during immunization. The success of the Polio PIN Program is strongly influenced by maternal behavior, which is influenced by three main factors: predisposition, support, and encouragement.

For this reason, the author is interested in researching related to the research title "The Influence of Behavioral Factors on the Utilization of the Polio PIN Program in Toddlers in the Working Area of the West City Health Center".

METHOD

This type of research is quantitative research, using an analytical survey method with a cross-sectional design. The population in this study is all toddlers in the West City Health Center area in 2024 which totals 1,162 toddlers. The sample in this study is toddlers who use the Polio PIN program and those who do not use the Polio PIN in the West City Health Center area, and mothers as respondents with a sample size of 297 toddlers. In this study, the sampling technique used is purposive sampling.

RESULT

Univariate Analysis

Table 1 Distribution of respondents by Knowledge

	Frequency	
Knowledge	**n**	**%**
Less	35	11,8
Enough	9	3,0
Good	253	85,2
Total	**297**	**100,0**

Source: Primary Data, 2025

Table 1 shows the distribution of respondents based on knowledge, it can be seen that respondents who have good knowledge as many as 253 people (85.2%), and respondents who have sufficient knowledge as many as 9 people (3%). and those who have less knowledge as many as 35 people (11.8%). Thus, the mother's knowledge of the Polio PIN program in the West City Health Center area is the most knowledgeable.

Table 2 Distribution of respondents by Attitude

	Frequency	
Attitude	**n**	**%**
Positive	253	85,2
Negative	44	14,8
Total	**297**	**100,0**

Source: Primary data, 2025

Table 2 shows that the most respondents were respondents who had a positive attitude as many as 253 people (85.2%), and respondents who had a negative attitude as many as 44 people (14.8%). Thus, the attitude of mothers towards the Polio PIN program in the West City Health Center area is the most positive.

Table 3 Distribution of respondents by access to health services

Access to health services	Frequency	
	n	%
Near	252	84,8
Far	45	15,2
Total	**297**	**100,0**

Source: Primary data, 2025

Table 3 shows that all 252 respondents (84.8%) had access to close health services. And those who have remote access are 45 people (15.2%).

Table 4 Distribution of respondents by Income

Income	Frequency	
	n	%
Tall	69	23,2
Low	228	76,8
Total	**297**	**100,0**

Source: Primary data, 2025

Table 4 states that the distribution of respondents based on the income obtained by the respondents is with income below the Gorontalo UMP which is 228 people (76.8%) and the least income above the Gorontalo UMP which is 69 people (23.2%).

Table 5 Distribution of respondents by family support

Family Support	Frequency	
	n	%
Support	283	95,3
Less Supportive	14	4,7
Total	**297**	**100,0**

Source: Primary data, 2025

Table 5 shows the distribution of respondents based on family support, it is known that the most is supportive as many as 283 people (95.3%), and the least supportive is 14 people (4.%). Thus, it is said that the respondents received family support to do a Polio PIN on toddlers.

Table 6 Distribution of respondents by health worker support

Healthcare Worker Support	Frequency	
	n	%
Support	254	85,5
Less Supportive	43	14,5
Total	**297**	**100,0**

Source: Primary data, 2025

Table 6 shows the distribution of respondents based on the support of health workers, it is known that the most is supported by 254 people (85.5%), and the least supported by 43 people (14.5%). Thus, it is said that the respondents received support from health workers to carry out Polio PIN on toddlers.

Table 7 Distribution of respondents based on the use of the Polio PIN program

Utilization of the Polio PIN program	Frequency	
	n	%
Utilize	254	85,5
Not taking advantage of	43	14,5
Total	**297**	**100,0**

Source: Primary Data, 2025

Table 7 shows the distribution of respondents based on the use of the Polio PIN program, it is known that the most are using 254 people (85.5%), and those who do not use are 43 people (14.5%).

Bivariate Analysis

The test used is Binary Logistic Regression, Binary logistic regression test is a statistical analysis method used to determine the influence of one or more independent (free) variables on one dependent (bound) variable that is dichotomous (has two categories, for example "yes" or "no", "utilize" or "not utilize").

Table 8 Distribution of the Influence of Knowledge on the Utilization of the Polio PIN Program

Knowledge	Utilization of the Polio PIN Program				*p-value*
	Utilize		Not Utilizing		
	n	%	n	%	0,000
Less	0	0,0	35	100	
Enough	1	11,1	8	88,9	
Good	253	100	0	0,0	
Total	**254**	**85,5**	**43**	**14,5**	

Primary data sources, 2025

The results of the analysis of the influence of knowledge on the use of the Polio PIN program show that p-value = 0,000, which is less than the significance level α= 0,05. Therefore, Knowledge has a significant effect on the use of the Polio PIN program for toddlers in the work area of the West City Health Center.

Table 9 Distribution of the influence of attitudes on the utilization of the Polio PIN program

Attitude	Utilization of the Polio PIN Program				*p-value*
	Utilize		Not Utilizing		
	n	%	n	%	0,000
Positive	253	100	0	0,0	
Negative	1	2,3	43	97,7	
Total	**254**	**85,5**	**43**	**14,5**	

The results of the analysis on the influence of attitudes on the use of the Polio PIN program show that p-value = 0.000 that is less than the significance value α=0,05. Therefore, the mother's attitude has a significant effect on the use of the Polio PIN program in toddlers in the work area of the West City Health Center.

Table 10 Distribution of the Effect of Access to Health Services on the Utilization of the Polio PIN Program

Access to Health Services	Utilization of the Polio PIN Program				*p-value*
	Utilize		Not Utilizing		
	n	%	n	%	0,000
Near	252	100	0	0,0	
Far	2	4,4	43	100,0	
Total	**254**	**85,5**	**43**	**14,5**	

Primary data sources, 2025

The results of the analysis on the effect of access to health services on the use of the Polio PIN program in toddlers in the work area of the West City Health Center showed that p-value = 0.000, which is smaller than the significance level of α=0.05. Therefore, access to health services has a significant effect on the use of the Polio PIN program for toddlers in the work area of the West City Health Center.

Table 11 Distribution of the Influence of Income on the Utilization of the Polio PIN Program

Income	Utilization of the Polio PIN Program				*p-value*
	Benefit Right		Not Utilizing		
	N	%	n	%	0,119

Low	191	83,8	37	16,2
Tall	63	91,3	6	8,7
Total	**254**	**85,5**	**43**	**14,5**

Primary data sources, 2025

The results of the analysis on the influence of income on the use of the Polio PIN program show that p-value = 0.119 greater than the level of significance α=0,05. Therefore, income does not have a significant effect on the utilization of the Polio PIN program for toddlers in the work area of the West City Health Center.

Table 12 Distribution of Family Support for the Utilization of the Polio PIN Program

Family Support	**Utilization of the Polio PIN Program**				***p-value***
	Benefit Right		**Not Beneficial Right**		
	N	**%**	**n**	**%**	**0,000**
Support	254	89,8	29	10,2	
Less Supportive	0	0,0	14	100	
Total	**254**	**85,5**	**43**	**14,5**	

Primary data sources, 2025

The results of the analysis on the influence of family support on the use of the Polio PIN program show that p-value = 0.000, that is less than the level of significance α=0,05. Therefore, family support has a significant effect on the use of the Polio PIN program for toddlers in the work area of the West City Health Center.

Table 13 Distribution of Health Worker Support for the Utilization of the Polio PIN Program

Healthcare Worker Support	**Utilization of the Polio PIN Program**				***p-value***
	Benefit Right		**Not Beneficial Right**		
	N	**%**	**n**	**%**	**0,000**
Support	254	100,0	0	0,0	
Less Supportive	0	0,0	43	100,0	
Total	**254**	**85,5**	**43**	**14,5**	

Primary data sources, 2025

The results of the analysis on the influence of health worker support on the use of the Polio PIN program show that p-value = 0.000, that is less than the level of significance α=0,05. Therefore, the support of health workers has a significant effect on the use of the Polio PIN program for toddlers in the work area of the West City Health Center.

DISCUSSION

The Influence of Knowledge on the Utilization of the Polio PIN Program

The results of the statistical test showed a p-value of 0.000 (< 0.05), which means that there is a significant relationship between maternal knowledge and the use of the Polio PIN program. All mothers with good knowledge (100%) take advantage of the program, while mothers with sufficient knowledge and lack are less likely not to take advantage of it. This suggests that the higher the mother's knowledge, the more likely she is to avail of immunizations. These findings are in line with the theory of Notoatmodjo (2012) and the research of Husna Dhirah et al. (2023)

The Influence of Attitude on the Utilization of the Polio PIN Program

There was a significant relationship between maternal attitudes and program utilization (p-value 0.000). Mothers with a positive attitude all (100%) take advantage of the program, while the majority of mothers with a negative attitude do not take advantage of it. A positive attitude reflects readiness and awareness of the importance of immunization. This is strengthened by the theory of Notoatmodjo (2012) and supported by the research of Husna Dhirah et al. (2023).

The Effect of Access to Health Services on the Utilization of the Polio PIN Program

Access to health facilities also had a significant effect (p-value 0.000). All toddlers with close access use the program (100%), while most with remote access do not use it (95.6%). Ease of access increases immunization participation. This is in accordance with Andersen's theory and the research of Lisca & Winarya (2023). Where the better access to health services, the higher the level of mothers' participation in the polio immunization program for their children

The Effect of Income on the Utilization of the Polio PIN Program

The study showed that family income did not have a significant effect on the use of the Polio PIN program (p-value = 0.119 > 0.05). Although most respondents earn below the UMP, they still benefit from immunization services. This is due to the government's policy of providing free immunizations, so economic factors are not the main obstacle. This finding is in line with the research of Ludyaningrum (2019), which states that immunization remains accessible to all levels of the economy because it is provided free of charge through health centers and posyandu.

The Effect of Family Support on the Utilization of the Polio PIN Program

The results of the analysis showed a significant influence between family support and the use of the Polio PIN program (p-value = 0.000). Mothers who receive support from their families, such as encouragement, delivery assistance, or reminders of immunization schedules, are more likely to participate in immunization programs. This support strengthens maternal motivation and facilitates the immunization implementation process. This is reinforced by the theory of social support in health behavior as well as the research of Ummah (2019), which states that family involvement is very important in the success of child immunization programs.

The Effect of Health Worker Support on the Utilization of the Polio PIN Program

The study also found a very significant influence between health worker support and program utilization (p-value = 0.000). Mothers who receive education, motivation, and good service from health workers are more likely to bring their children for immunization. The role of the officer is very important in building trust and addressing the mother's concerns. These findings are in line with the theory of health behavior according to Notoatmodjo, and are reinforced by the study of Nufra & Misrina (2023), which shows that the support of health workers actively improves immunization adherence in 1-year-old children.

CONCLUSION

Based on the results of the study, it can be concluded: 1) Maternal knowledge has a significant effect on the use of the Polio PIN program (p = 0.000). 2) Maternal attitudes have a significant effect on the utilization of the Polio PIN program (p = 0.000). 3) Access to health services has a significant effect on the utilization of the Polio PIN program (p = 0.000). 4) Income had no significant effect on the utilization of the Polio PIN program (p = 0.119). 5) Family support had a significant effect on the utilization of the Polio PIN program (p = 0.000). 6) Health worker support has a significant effect on the utilization of the Polio PIN program (p = 0.000).

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