

Determinant analysis of infant's basic immunization visits during the covid-19 pandemic

Rionitara Wikarya¹, Roza Sriyanti², Rinang Mariko³

¹Midwifery Postgraduate, Faculty of Medicine, Andalas University, Padang, Indonesia

²Maternal-Fetal Medicine Divison, Obstetrics and Gynecology Department, Faculty of Medicine, Andalas University, General Hospital of Dr M. Djamil, Padang, Indonesia

³Pediatrics Department, Faculty of Medicine, Andalas University, General Hospital of Dr M. Djamil, Padang, Indonesia

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ABSTRACT

The COVID-19 pandemic had an impact on the implementation of health programs, especially immunization services. This is certainly a risk for the occurrence of PD3I Extraordinary Events. The coverage of basic immunization in Padang City was so far from the national basic immunization target that has been set were 95%, coverage of BCG immunization (74.6%), DPT-HB-HIB immunization (55.5%), polio immunization (49%) and MR immunization (46%). Health behavior, especially basic immunization, can be influenced by several determinants. This study aims to determine the determinants of basic immunization visits for infants during the COVID-19 pandemic in the West Rawang Health Center, Padang City working area. This research was a quantitative approach with a cross-sectional design. This research was conducted from January to November 2022. The total sample was 206 mothers with children aged 12-28 months in the Rawang Barat Health Center working area. The sampling technique used proportional random sampling. Data were collected through questionnaires and univariate, bivariate, and multivariate analyses were performed. The results of the study on the determinants of the infant's basic immunization visits during the COVID-19 pandemic in the Rawang Barat Health Center working area, namely mother's knowledge (p-value<0.001), socioeconomic (p-value 0.444), family support (p-value<0.001), healthcare professionals support (p-value<0.001). The dominant factor related was the mother's knowledge (OR 24,301). The conclusion of this study that there was a significant correlation between maternal knowledge, family support, and health worker support but socioeconomic factors had no significant correlation with basic immunization visits for infants during the COVID-19 pandemic, and the most dominant factor related was the mother's knowledge.

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Corresponding Author:

Rionitara Wikarya,
Midwifery postgraduate, Faculty of Medicine
Andalas University,
Jl. Perintis Kemerdekaan No.94, Padang, 25127, Indonesia,
Email: 1920332025_rionitara@student.unand.ac.id

INTRODUCTION

The Covid-19 pandemic situation had an impacted on the implementation of immunization services and PD3I surveillance. Immunization services were disrupted in 90% of the Integrated Healthcare Centers and 65% of the Public health centers. Disruptions to immunization services are caused by various reasons, such as a lack of understanding of the Ministry of Health's guidelines, the high risk of transmission of COVID-19 in the puskesmas area, lack of funds due to the transfer of support to the pandemic response plan, the limited number of experienced vaccinators who have been assigned to handle the COVID-19 pandemic, disruptions transportation due to travel restrictions, and school closures (UNICEF, 2020).

The Ministry of Health stated that every year, an estimated 2 to 3 million deaths are caused by Immunization Preventable Diseases (PD3I) (Kementerian Kesehatan RI, 2021). Around 800,000 children across Indonesia are at greater risk of contracting vaccine-preventable diseases such as diphtheria, tetanus, measles, rubella, and polio. Based on the latest routine data from the Indonesian Ministry of Health, coverage of complete basic immunization has decreased significantly since the start of the COVID-19 pandemic, from 84.2% in 2020 to 79.6% in 2021. During the Covid-19 pandemic, the coverage of basic immunization in West Sumatra also has significantly decreased and occupied the 2nd lowest position compared to other provinces in Indonesia. Complete basic immunization coverage in Padang City also decreased from 89.2% to 60.9%. This decrease in basic immunization visits has made the coverage rate of basic immunization visits further away from the national basic immunization target that has been set at 95% (Dinas Kesehatan Kota Padang, 2021; UNICEF, 2022).

After the assessment, there were puskesmas whose basic immunization visit coverage rate had decreased and the coverage of all types of immunization was included in the 4 highest declines in Padang City, namely the West Rawang Health Center. BCG immunization coverage decreased from 97.8% to 74.6%, DPT-HB-HIB immunization coverage decreased from 93.8 to 55.5%, polio immunization coverage decreased from 81.7% to 49%, and immunization coverage MR decreased from 87.2% to 46%. During the Covid-19 pandemic, there was no stoppage of basic immunization services in the West Rawang Health Center working area and basic immunization services were still carried out as usual. Although basic immunization services are still being carried out, the coverage rate of basic immunization visits at the Rawang Barat Health Center has decreased significantly (Dinas Kesehatan Kota Padang, 2021).

Rehing et al. (2021) in their research result states that visits of mothers with toddlers to posyandu are influenced by several factors, namely work, education, knowledge, attitude, motivation, distance, the role of cadres, healthcare professionals, and family support. (Irawati, 2020) in her research result also states that there are many things that can lead to minimal coverage of child immunization in Indonesia, such as knowledge, attitudes, motivation, information about immunization, attitudes of healthcare professionals and family support, and with the Covid-19 pandemic, factors that cause coverage targets Immunizations that are difficult to achieve are increasing, including parental concerns, misinformation about immunization, rumors around Covid-19, PSBB, and economic difficulties.

Health behavior is influenced by predisposing factors, enabling factors, and reinforcing factors. Predisposing factors manifest in knowledge, attitudes, traditions, age, gender, education, socio-economics, and occupation. Enabling factors are the availability of health facilities and infrastructure, and accessibility of health services. And the reinforcing factors manifest in the attitudes and behavior of families, healthcare professionals, and community leaders.

Based on the results of the description above, the researcher is interested in knowing the determinants of basic immunization visits for infants during the Covid-19 pandemic in the West Rawang health center working area and also the researcher is interested in seeing which factor is the most dominant significant among the several factors described.

RESEARCH METHOD

This research was a quantitative approach with a cross-sectional design (Hardisman, 2021). The research was conducted in the West Rawang health center working area in August 2022. The population in this study were all mothers who have children aged 12-28 months in the West Rawang Health Center working area. The research sample comprised 206 respondents and used a proportional random sampling technique and the results for each village district were Rawang Village 74 samples, Mata Air Village 112 samples, and Teluk Bayur Villages 20 samples. This research has passed an ethical review from the Faculty of Medicine Ethics Committee at Andalas University.

Data were collected for one month through a knowledge questionnaire, socioeconomic questionnaire, family support questionnaire, and healthcare professionals support questionnaire. The data were computerized using SPSS for univariate analysis, bivariate analysis using the chi-square test to determine the relationship between variables, and multivariate analysis using logistic regression analysis to determine the most dominant factor.

RESULTS AND DISCUSSIONS

RESULT

Univariate Analysis

Table 1. Frequency Distribution of Infant's Basic Immunization Visits

Infant's basic immunization visit	f	%
Complete	111	53,9
Incomplete	95	46,1
Total	206	100

Based on table 1, mothers who did complete infant's basic immunization visits were 111 respondents (53.9%), and mothers who did not complete immunization visits were 95 respondents (46.1%).

Table 2. Frequency Distribution of Research Variable

Variable	f	%
Mother knowledge		
Good	148	71,8
Less	58	28,2
Socioeconomic		
High	85	41,3
Low	121	58,7
Family support		
Supported	150	72,8
Unsupported	56	27,2
Health worker support		
Supported	190	92,2
Unsupported	16	7,8
Total	206	100

Based on table 2, respondents with good knowledge were 71.8%, respondents with low socioeconomic status were 58.7%, respondents with supportive families were 72.8%, and respondents with supportive healthcare professionals were 92, 2%.

Bivariate Analysis

Table 3. The correlation between mother's knowledge, socioeconomic, family support, and health worker support with infant's basic immunization visits during the Covid-19 pandemic

Variable	Infant's basic immunization visit				Total		p-value
	Complete		Incomplete		n	%	
	n	%	n	%			
Mother knowledge							
Good	107	72,3	41	27,7	148	100	<0,001
Less	4	6,9	54	93,1	58	100	
Socioeconomic							
High	49	57,6	36	42,4	85	100	0,444
Low	61	51,2	59	48,8	121	100	
Family support							
Supported	106	70,7	44	29,3	150	100	<0,001
Unsupported	5	8,9	51	91,1	56	100	
Health worker support							
Supported	110	57,9	80	42,1	190	100	<0,001
Unsupported	1	6,2	15	93,8	16	100	
Total	111	53,9	95	46,1	206	100	

Based on table 3, most mothers who had less knowledge (93.1%) did not complete basic immunization visits to their babies compared to mothers who had good knowledge (27.7%). The results of the statistical test obtained a p-value <0.001, which means that there was a significant correlation between the mother's knowledge and the infant's basic immunization visits. Most respondents with high socioeconomic (57.6%) did complete basic immunization visits to their babies compared to respondents with low socioeconomic (51.2%). The results of the statistical test obtained a value of $p = 0.444$ which means that there was no significant correlation between socioeconomic and the infant's basic immunization visits.

Most respondents with unsupportive families (91.1%) did not complete basic immunization visits to their babies compared to respondents with supportive families (29.3%). The statistical test results obtained a p-value <0.001, which means that there was a significant correlation between family support and the infant's basic immunization visits.

Most respondents with unsupportive healthcare professionals, more (93.8%) did not complete basic immunization visits to their babies compared to respondents with supportive healthcare professionals (42.1%). The results of the statistical test obtained a p-value <0.001, which means that there was a significant correlation between the support of healthcare professionals and the infant's basic immunization visits.

Multivariate Analysis

Based on the results of the multivariate final modeling, it is known that the mother's knowledge variable is the most dominant factor related to the infant's basic immunization visits during the Covid-19 pandemic in the West Rawang Health Center Padang City working area, with a p-value <0.001 and Exp(B) 24.301.

Discussion

The correlation between the mother's knowledge and the infant's basic immunization visits

Based on table 3, most mothers who had less knowledge (93.1%) did not complete basic immunization visits to their babies compared to mothers who had good knowledge (27.7%). The results of the statistical test obtained a p-value <0.001, which means that there was a significant correlation between the mother's knowledge and the infant's basic immunization visits.

The results of this study are in line with research by Rakhmanindra & Puspitasari (2019) which states that there was a correlation between immunization knowledge possessed by mothers and the completeness of basic immunizations. Septiani & Mita (2020) in his research results also

states that there is a significant correlation between the mother's knowledge and the coverage of basic immunization.

Knowledge is the result of knowing, and this occurs after someone senses a certain object. Knowledge about health is everything that is known by someone about how to maintain health. The knowledge possessed by individuals is one of the determining factors in seeking and requesting health service efforts. Without knowledge, a person has no basis for making decisions and taking action on the problems at hand. Knowledge has an important role in determining a complete attitude. Knowledge will make mothers think and try so that their children do not get sick. In thinking, the emotional and belief components come into play so the mother intends to immunize her child to prevent her child from getting sick. Providing information is one way to increase knowledge, then with that knowledge, it will raise awareness and ultimately cause a person to behave in accordance with the knowledge he has (Pakpahan et al., 2021).

Isnayni (2016) states that a person's level of knowledge greatly influences the actions they take, the level of knowledge about a mother's basic immunization will have an impact on her infant's basic immunization status. Mothers who have good knowledge will have babies with complete basic immunization status, while mothers who have less knowledge will have babies with incomplete basic immunization status.

According to the result of this study, the mother will make the decision to give basic immunization to her baby based on her knowledge. The better the mother's knowledge about the infant's basic immunization, the willingness or motivation of the mother to do basic immunization for her baby also increases, so that later the mother will complete basic immunization for her baby.

The correlation between socioeconomic and the infant's basic immunization visits

Most respondents with high socioeconomic (57.6%) did complete basic immunization visits to their babies compared to respondents with low socioeconomic (51.2%). The results of the statistical test obtained a value of $p = 0.444$ which means that there was no significant correlation between socioeconomic and the infant's basic immunization visits.

The results of this study are in line with Kristiningtyas & Purwandari (2020), which stated that there was no significant correlation between the family economy and the timeliness of basic immunization. Isnayni (2016) in her research results also stated that there was no correlation between family income and the basic immunization status of infants in the working area of the Pucuk Health Center, Lamongan Regency.

Irawati (2020) stated that economic difficulties were one of the factors affecting the coverage of immunization visits in Indonesia during the Covid-19 pandemic. However, in this study, socioeconomic factors were not one of the factors that caused a mother to take her baby for complete basic immunization because in terms of costs, getting the mother's immunization did not require a lot of money because the mother could take her baby for basic immunization at the nearest integrated healthcare center from home or to the health center and basic immunization can be obtained free of charge. In the West Rawang Health Center working area, there are 28 integrated healthcare centers, in the Rawang Village there are 10 integrated healthcare centers, in the Mata Air Village there are 14 integrated healthcare centers and in the Teluk Bayur Village, there are 4 integrated healthcare centers. This can make it easier for the public to get basic immunization for their children and the distance to the integrated healthcare center can be done on foot so that there is no need to pay for travel to get basic immunization for babies.

In terms of costs, the government also provides a solution to financing health problems by having a health insurance program that is given to underprivileged people so that the economy is no longer an obstacle for the community to use health services and basic immunization services, mothers do not need to pay for the immunization program. The basic costs are already borne by the government and can be obtained at the nearest integrated healthcare center or public health center.

The correlation between family support and the infant's basic immunization visits

Most respondents with unsupportive families (91.1%) did not complete basic immunization visits to their babies compared to respondents with supportive families (29.3%). The statistical test results obtained a p-value <0.001 , which means that there was a significant correlation between family support and the infant's basic immunization visits.

The results of this study are in line with Kristin & Mona (2019), which stated that there was a correlation between family support and the completeness of basic immunization for infants in the Botania Health Center working area. Fitriana et al. (2020) in her research also stated that there was a correlation between family support and the completeness of immunization in infants aged 9-11 months at the Amanah Amin Clinic. Igiary (2020) in his research results also states that there was a significant correlation between family support and completeness of basic immunization. Sari (2021) in his research results also states that there is a statistically significant correlation between family support and toddler visits to integrated healthcare centers. Family support will make mothers more willing to visit posyandu every month.

Family support is attitude and action as a family response to family members in the form of informational, appraisal, instrumental and emotional support. Support provided by family members can be in the form of verbal information, advice, real assistance, behavior, and emotional support to recipients so that family members feel happy and satisfied (Yulianto, 2020).

Harahap & Heni (2016) states that the role of the family has a very large influence on maternal health behavior, especially giving measles immunization to infants. The role of the family can take the form of giving encouragement, advice, and behavior to mothers to immunize their babies. Retnanengsih (2021) states that family support has the function of increasing health status and being able to adapt in life. Individuals who have families who provide support tend to make better conditions compared to those who do not receive support, because family support will generate enthusiasm to improve mental health, individuals and families, and can reduce stress.

According to the result of this study, family support has a major influence on a mother's decision to do basic immunization visits for her baby during the covid-19 pandemic. The absence of family support will cause the mother do not complete basic immunization for her baby.

The correlation between healthcare professionals support and the infant's basic immunization visits

Most respondents with unsupportive healthcare professionals, more (93.8%) did not complete basic immunization visits to their babies compared to respondents with supportive healthcare professionals (42.1%). The results of the statistical test obtained a p-value <0.001 , which means that there was a significant correlation between the support of healthcare professionals and the infant's basic immunization visits.

The results of this study are in line with Juwita (2018) which stated that there was a significant correlation between the support of healthcare professionals and the status of infant's basic immunization in Sungai Air Putih Village, Sungai Lala District, Indragiri Hulu Regency. Pendit et al (2019) in his research results also stated that there was a significant correlation between nurse support for MR immunization at the Moumunu Health Center, Buol District, Central Sulawesi. Dinengsih & Hendriyani (2018) in his research results also states that there is a significant correlation between the role of healthcare professionals and maternal compliance in carrying out basic immunizations.

Healthcare professionals have an important role to improve the maximum quality of health services to the community so that the community is able to increase awareness, willingness, and ability to live healthily so it's able to realize the highest degree of health as an investment for the development of productive human resources (Maulana, 2017).

Healthcare professionals support is a support obtained from other people but has a very important role in change individual health behavior quickly. Healthcare professionals support can be in the form of emotional, instrumental, and informational support. A person's behavior can be

influenced by people who are considered important and trusted by him, such as healthcare professionals. If someone can be trusted, then what they do or say will tend to be followed (Alamsyah et al., 2020; Pakpahan et al., 2021).

According to the result of this study, healthcare professionals support is one of the factors that strengthens mothers to do infant's basic immunization visits. Healthcare professionals support is very important to support better health, especially infant's basic immunization because it can help mothers and families to believe that infant's basic immunization is important for their babies and can motivate mothers to do infant's basic immunization visits during the covid-19 pandemic.

CONCLUSION

There was a relationship between the mother's knowledge, family support, and healthcare professionals support with the infant's basic immunization visits during the Covid-19 pandemic but there was no significant correlation between socioeconomic factors with the infant's basic immunization visits during the Covid-19 pandemic and the most dominant determine the immunization visits is mother's knowledge.

The mother will make the decision to give basic immunization to her baby based on her knowledge, and family support and healthcare professional support is one of the factors that strengthen mothers to do infant basic immunization visits during the covid-19 pandemic. In this study, socioeconomic was not one of the factors that caused a mother to take her baby for complete basic immunization because in terms of costs, getting the mother's immunization did not require a lot of money because the mother could take her baby at the nearest integrated healthcare center from home or to the health center and basic immunization can be obtained free of charge.

This study suggests that healthcare professionals can provide health education and motivation for basic immunization, especially during the Covid-19 pandemic, not only to mothers but also to families completely. Future researchers can use the results of this study as a reference and research basic immunization in infants with the development of other variables or use different research methods.

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