

FACTORS INFLUENCING MOTHERS IN GIVING MEASLES RUBELLA (MR) IMMUNIZATION TO INFANTS

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ABSTRACT

Introduction: MR immunization can increase children's immunity against measles and rubella and break the chain of transmission of the disease. Mothers play an important role in providing immunizations to their children and there are several factors that can influence the provision of immunizations. **Objectives:** This study aims to determine the factors associated with the provision of MR immunization to infants at the Teluk Pucung Health Center, Bekasi City in 2023. **Methods:** This study uses a quantitative research type with a Cross-Sectional design. Primary data collection used a questionnaire with a sample of mothers who had babies aged more than 9 to 12 months in the Teluk Pucung Health Center area totaling 63 respondents. The analysis was carried out using the Chi-Square test. **Results:** This study shows that the achievement of MR immunization was below the target (73%). Statistical tests showed that there was a relationship between education ($p=0.007$, $OR=5.936$), knowledge ($p=0.000$, $OR=21.667$), attitude ($p=0.000$, $OR=22.167$), and family support ($p=0.003$, $OR=7.429$) with the provision of MR immunization. **Conclusions:** The coverage of MR immunization at Teluk Pucung Health Center is still below the target. The level of education, knowledge, attitude and family support for mothers influences the provision of immunizations to infants.

Keywords: Immunization; Measles and Rubella; Knowledge; Attitude; Family Support

ABSTRAK

Latar Belakang: Imunisasi MR dapat meningkatkan kekebalan tubuh anak terhadap penyakit campak dan rubella serta memutus rantai penularan penyakit tersebut. Ibu memegang peranan penting dalam memberikan imunisasi kepada anak-anaknya dan terdapat beberapa faktor yang dapat mempengaruhi pemberian imunisasi. **Tujuan:** Penelitian ini bertujuan untuk mengetahui faktor-faktor yang berhubungan dengan pemberian imunisasi MR pada bayi di Puskesmas Teluk Pucung Kota Bekasi tahun 2023. **Metode:** Penelitian ini menggunakan jenis penelitian kuantitatif dengan desain Cross Sectional. Pengambilan data primer menggunakan kuesioner dengan sample ibu yang memiliki bayi usia lebih dari 9 sampai 12 bulan di wilayah Puskesmas Teluk Pucung berjumlah 63 responden. Analisis dilakukan menggunakan uji Chi-Square. **Hasil:** Penelitian ini menunjukkan bahwa capaian imunisasi berada di bawah target (73%). Uji statistik menunjukkan bahwa terdapat hubungan antara pendidikan ($p=0.007$, $OR=5.936$), pengetahuan ($p=0.000$, $OR=21.667$), sikap ($p=0.000$, $OR=22.167$), dan dukungan keluarga ($p=0.003$, $OR=7.429$) dengan pemberian imunisasi MR. **Kesimpulan:** Cakupan imunisasi MR di Puskesmas Teluk Pucung masih berada dibawah target. Tingkat pendidikan, pengetahuan, sikap dan dukungan keluarga pada ibu mempengaruhi pemberian imunisasi pada bayi.

Kata Kunci: Imunisasi; Campak dan Rubella; Pengetahuan; Sikap; Dukungan Keluarga

INTRODUCTION

Measles is an infectious disease with prodromal symptoms. These symptoms include fever, cough, runny nose and conjunctivitis followed by the appearance of a maculopapular rash all over the body. According to Nugraheni et al. (2012) measles is caused by the interaction between the host, agent and environment. Changes in one component disrupt the balance, causing measles. Meanwhile, according to IDAI (2017), measles is an infectious disease transmitted through the respiratory tract caused by the Measles and Rubella viruses. An effective way to prevent measles is by immunizing toddlers at the age of 9 months. According to the Indonesian Ministry of Health, measles immunization has succeeded in reducing 15.6 million (75%) deaths due to measles in Indonesia (Kemenkes RI, 2016).

The implementation of immunization is stated in the Regulation of the Minister of Health Number 12 of 2017, where the main benefit of immunization is to increase children's immunity and reduce morbidity and mortality rates caused by various dangerous infectious diseases. One of the immunizations that must be given to children is the MR (Measles Rubella) immunization (Permenkes RI, 2017). In 2018, it was reported that more than 140,000 people died from measles, especially children under the age of 5 years, even though the vaccine is available safely and effectively. The purpose of providing MR (Measles Rubella) immunization is to form immunity or resistance to measles and German measles (Hidayat, 2019).

There are 10 countries with the largest number of measles cases in the world and Indonesia is one of them (WHO, 2017). Measles (Measles Rubella) cases have increased in the last 5 years. The number of cases reported was 57,056 cases (8,964 positive for measles and 5,737 positive for Rubella). Approximately 89% of measles cases and 77% of Rubella cases were children under 15 years of age (Kemenkes RI, 2018). In 2020, Indonesia is committed to reducing and controlling measles and rubella due to the increasing problems of measles and rubella. In an effort to achieve the target of eliminating Measles and Rubella in 2020, the Indonesian government held an MR immunization campaign as an additional immunization before being included in routine immunization (Direktorat Jenderal Pencegahan dan Pengendalian Penyakit, 2017).

The 2020 West Java Provincial Health Profile reported that there were 320 cases of measles in West Java (Dinkes Jawa Barat, 2020). In Bekasi City, measles cases experienced a significant decline from 2017 to 2020. However, in 2020 measles immunization in Bekasi City decreased to 85.4 percent and previously in 2019 it was 94.5 percent. This coverage is also still below the target of 95 percent. The coverage of complete basic immunization (IDL) in Bekasi City in 2020

was 82.45 percent or 44,150 babies who were late in receiving IDL out of 53,550 existing babies. This coverage has decreased significantly compared to 2019 which was 93.62 percent (49,765 babies who had received IDL out of 53,159 existing babies) (Dinkes Kota Bekasi, 2020).

Maternal behavior is one of the factors that influences the incidence of decreased immunization coverage (Aulia et al., 2022). Decreased immunization coverage can lead to increased morbidity and mortality in infants and toddlers (Triana, 2015). The attitudes of parents, especially mothers, influence the achievement of immunization for children (Surury et al., 2021). Mothers play an important role in providing immunization to their children (Aswara, 2019). Problems that include mothers not knowing the importance of immunization, mothers not knowing when to get the right immunization and fear of side effects that arise because immunization causes children to get PD3I (Immunization-Preventable Diseases) (Lafau, 2018). According to research by Azizah et al. (2012), mothers with good knowledge will be obedient in giving immunizations to their babies and supported by the baby's healthy condition, the baby will receive immunization according to age and time of immunization. The description above makes researchers interested in knowing the factors that influence mothers in giving MR immunization to babies at the Teluk Pucung Health Center, Bekasi City, West Java in 2023.

METHOD

This study adopted a quantitative approach with a cross-sectional analytical design, aiming to assess the factors that influence the provision of Measles-Rubella (MR) immunization to infants aged 9 to 12 months at Teluk Pucung Health Center, Bekasi City. The population studied included 168 mothers who had infants within that age range. From this population, 63 respondents were selected as samples using the accidental sampling technique. The inclusion criteria for sample selection included mothers who were willing to fill out the questionnaire, had children within the specified age, and were domiciled at Teluk Pucung Health Center. The independent variables in this study consisted of age, education, knowledge, distance traveled, and family support, while the dependent variable was the status of MR immunization to infants. The variables of knowledge, attitude, and family support are grouped into two categories, namely good and not good. The good category is determined if the total question score \geq mean, while the not good category is applied if the total score is less than the mean.

The instrument used was a questionnaire that had been tested for validity and reliability. The results of the validity test show that all questions on the knowledge, attitude, and family support variables are valid. The questionnaire was also reliable with Cronbach's alpha values of 0.754,

0.835, and 0.777 (> 0.70). In this study, the researcher used quantitative data from primary sources. Data analysis was carried out using IBM SPSS Statistics for Windows, Version 25.0. Univariate and bivariate analysis were conducted using the Chi-Square test to determine the relationship between independent and dependent variables. This research has also obtained ethical approval from the Research Ethics Commission of Respati Indonesia University with letter number 170/SK.KEPK/UNR/III/2023.

RESULTS AND DISCUSSION

The characteristics of respondents in this study consisted of variables of education, occupation, duration to health facilities, knowledge, attitude, and family support with a total of 63 mothers. Table 1 shows the characteristics of respondents in this study.

Table 1. Characteristics of Respondents at Teluk Pucung Health Center (n = 63)

Variable	n	%
Education		
Low (Kindergarten, Elementary School, and Middle School)	14	22.2
High (High School/equivalent and Diploma/Bachelor/Master)	49	77.8
Occupation		
Employed	53	84.1
Unemployed	10	15.9
Duration to Health Facility		
Long Duration (> 8 minutes)	18	28.6
Short Duration (≤ 8 minutes)	45	71.4
Knowledge		
Not Good	19	30.2
Good	44	69.8
Attitude		
Not Good	22	34.9
Good	41	65.1
Family Support		
Not Good	27	42.9
Good	36	57.1
MR Immunization		
Not Giving	17	27
Giving	46	73

The results of the analysis show that the majority of respondents have a high level of education (high school and college), namely 58 people with a percentage of 77.8%. Most respondents are unemployed, namely 53 people (84.1%). Most mothers have a short duration (≤ 8 minutes) to the health facility, namely 71.4%. The dominant respondents have good knowledge, namely 44 people (69.8%). Most respondents had an attitude in the good category, namely 41 people (65.1%). The majority of respondents have good family support, namely 36 people with a percentage of 57.1%. Respondents who provide MR immunization to their babies are more dominant, namely 46 people (73%).

The achievement of MR immunization at the Teluk Pucung Health Center in 2023 in this study was still below the target (73%). According to the West Java Provincial Public Relations, the target for post-pandemic MR immunization coverage is 95% (Humas Jabar, 2022). The MR immunization achievement in this study was different and lower compared to the MR immunization coverage in Bekasi City in 2019, which was 94.52% (Dinkes Kota Bekasi, 2020). This may be because the number of samples used in this study was only 63 respondents. Immunization achievement that does not reach the target can be influenced by several things, namely there are assumptions or wrong information in the community regarding immunization, such as immunization can cause children to be sick, autistic, disabled and even die, resulting in parents being reluctant to immunize their children. Parents' lack of understanding of immunization and low motivation to immunize children also affect immunization coverage in an area (Triana, 2016).

Table 2. Relationship of Factors Influencing Mothers in Providing Measles Rubella (MR) Immunization to Infants at Teluk Pucung Health Center (n = 63)

Variable	MR Immunization		p-value	OR (CI 95%)
	Not Giving	Giving		
	n (%)	n (%)		
Education				
Low (Kindergarten, Elementary School, and Middle School)	8 (57.1)	6 (42.9)	0.007	5.936
High (High School/equivalent and Diploma/Bachelor/Master)	9 (18.4)	40 (81.6)		
Occupation				
Employed	15 (28.3)	38 (71.7)	0.715	-
Unemployed	2 (20)	8 (80)		

Duration to Health Facility				
Long Duration (> 8 minutes)	4 (22.2)	14 (77.8)	0.757	-
Short Duration (\leq 8 minutes)	13 (28.9)	32 (71.7)		
Knowledge				
Not Good	13 (68.4)	6 (31.6)	0.000	21.667
Good	6 (9.1)	40 (90.9)		
Attitude				
Not Good	14 (63.6)	8 (36.4)	0.000	22.167
Good	3 (7.3)	38 (92.7)		
Family Support				
Not Good	13 (48.1)	14 (51.9)	0.003	7.429
Good	4 (11.1)	32 (88.9)		

This study shows that there is a significant relationship between education level and MR immunization in infants at Teluk Pucung Health Center in 2023 ($p = 0.007$). The Odds Ratio (OR) value of 5.926 was also obtained, indicating that mothers with a high level of education have the potential to provide MR immunization to their children 5.926 times. This result is in line with research by Pendit et al. (2019) which states that there is a significant relationship between education level and MR immunization with a p-value of 0.004.

Education basically aims to change the behavior, knowledge, attitudes, and actions of education targets. According to Yuliani (2019), a person's level of education determines the ease of accepting each update. Mothers with a high level of education will have better knowledge or insight that will contribute to their behavior in obtaining MR immunization for their babies (Triana, 2016). The higher the level of education, the easier it will be for someone to receive information (Sari, 2019). The more information that comes in, the more knowledge will be obtained. Mothers with higher education will find it easier to understand and accept the information provided. Meanwhile, mothers with lower education will generally find it more difficult to understand and accept the information provided. This can be caused by the mother's insight and knowledge which are still lacking so it is more difficult to understand the information provided (Tanuwidjaja et al., 2019).

This study found that there was no significant relationship between employment and the provision of MR immunization to infants ($p = 0.715$). This is because both respondents who worked and did not work mostly gave MR immunization to their infants. Based on the data obtained, most working mothers had a good understanding of measles, rubella, and MR immunization. Advice from family also influenced working mothers to continue to provide MR

immunization to their children (Triana, 2015). The results of this study are in line with research conducted by Prabandari et al. (2018) which stated that there was no significant relationship between employment status and receipt of MR immunization with a p-value of 0.702. However, the results of this study are not in line with research conducted by Naibaho and Ernawati (2021) which stated that there was a significant relationship between employment and compliance in providing MR immunization ($p = 0.016$). The differences in the research results can be caused by differences in the research location and the respondents used. Each respondent certainly has different insights, attitudes, opinions, and conditions so many factors influence respondents in determining the best decision for their children.

The results of this study indicate that there is no significant relationship between duration to health facilities and the provision of MR immunization to infants at the Teluk Pucung Health Center in 2023 ($p = 0.757$). This is because respondents with long and fast travel times to health facilities, both mostly provide MR immunization to their babies. The results of this study are not in line with the study conducted by Wulandari (2021) which states that there is a significant relationship between travel time to health service facilities and the provision of MR immunization ($p = 0.000$). The results of this study are also not in line with the study conducted by Yunalia et al. (2023) which stated that there was a significant relationship between the distance traveled by the mother and receipt of MR immunization ($p = 0.030$). Based on the data obtained from this research, respondents with long travel times to health facilities mostly have good knowledge so even though the travel time to health facilities is long, respondents still provide MR immunization to their children.

This study found there is a significant relationship between maternal knowledge and the provision of MR immunization ($p = 0.000$). The results of this study are in line with the study by Rahmawati and Wahjuni (2014) which stated that there was a significant relationship between knowledge and acceptance of basic immunization ($p = 0.008$) (Rahmawati 2014). Similar results were also found in the study of Prabandari et al. (2018) ($p = 0.006$). The results of the statistical test showed that mothers with good knowledge mostly gave MR immunization to their babies. While mothers with poor knowledge mostly did not give MR immunization to their babies. Knowledge can be the cause of someone to behave in a certain way (Notoatmodjo, 2016). Good knowledge of a person can change their behavior, including in providing immunizations. Mothers with good knowledge about the importance of MR immunization tend to immunize their babies (Sari, 2019). This knowledge can be obtained through information and counseling provided by health workers (Pendit et al., 2019).

This study also found that maternal attitudes had a significant relationship with the provision of MR immunization to infants at the Teluk Pucung Health Center in 2023 ($p = 0.000$). This result is in line with the study conducted by Keswara et al. (2020) which stated that there was a significant relationship between attitudes and acceptance of MR immunization ($p = 0.025$). Similar results were also found in the study of Pramitasari and Puteri (2017) which stated that there was a relationship between Immunization coverage and attitudes toward obtaining immunization for their children, where the higher the attitudes of parents, the higher the immunization coverage rate. A person's health attitude is in line with the health knowledge that a person has (Notoatmodjo, 2010). Attitude provides a pattern of a person's behavior which causes attitudes to differ in each individual. A person's attitude influences their actions towards a problem or situation (Putri & Zuiatna, 2018). Personal experience, information possessed, cultural influences, and the influence of others such as suggestions from husbands and families to provide MR immunization are factors that influence a person's attitude (Wawan & Dewi, 2015).

The results of this study indicate that there is a significant relationship between family support and the provision of MR immunization to infants at the Teluk Pucung Health Center in 2023 ($p = 0.003$). This is in line with research conducted by Pendit et al. (2019) which states that there is a significant relationship between family support and acceptance of MR immunization ($p = 0.000$). Similar results were also found in Alfiah's study (2021) which stated that there was a significant relationship between family support and compliance in participating in MR immunization ($p = 0.042$). Family support plays a role in parents' decision-making for their children. The existence of motivation, advice and assistance from the family to provide MR immunization to children is one of the factors that causes mothers to be willing to provide MR immunization to their children. The family is the smallest unit of society consisting of the head of the family and family members who live in one house because of blood relations or marriage ties. In the family, there is interaction between one family member and another. If one family member has a health problem, then the problem can affect other family members. The family also functions as a place for decision-making in health care so that the family becomes one of the factors that influences a person's health behavior (Mubarak, 2012).

CONCLUSION

This study found that the coverage of MR immunization at Teluk Pucung Health Center in 2023 was still below the target, reaching 73%. The characteristics of the respondents indicated that

most had a high level of education, unemployed employment status, and a relatively fast travel time to health facilities, which was less than 8 minutes. Respondents also showed good knowledge, positive attitudes toward immunization, and significant family support. These findings confirm that the variables of education level, knowledge, maternal attitude, and family support have a significant relationship with the provision of MR immunization to infants at Teluk Pucung Health Center, Bekasi City, West Java. This shows that these factors influence the coverage of immunization in the area.

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