

## THE RELATIONSHIP BETWEEN THE ROLE OF POSYANDU CADRES AND THE COMPLETENESS OF BASIC IMMUNIZATION IN INFANTS AGED 12-24 MONTHS IN SAMARINDA CITY

Ega Ersya Urnia<sup>1</sup>, Rahmawati Wahyuni<sup>2</sup>, Siti Raihanah<sup>3</sup>, Afiatun Rahmah<sup>4</sup>,  
 Pratiwi Puji Lestari<sup>5</sup>

<sup>1,2,3</sup>Sarjana Terapan Kebidanan, Poltekkes Kemenkes Kalimantan Timur

<sup>4,5</sup>D-III Kebidanan, Universitas Muhammadiyah Banjarmasin

\* Corresponding author: [egaersya@poltekkes-kaltim.ac.id](mailto:egaersya@poltekkes-kaltim.ac.id)

### Abstract

**Background:** Immunization is a crucial component of primary health care and plays a significant role in reducing infant mortality. According to the WHO, Indonesia's coverage of 194 countries with complete basic immunization coverage is 86.6%, a low level compared to the global target of 90%. Based on data obtained at the Youth Health Center UPTD: 2024:HB0 50.70%, BCG 50.83%, DPT HiB3 29.06%, POLIO4 45.52%, PCV2 19.2%, IPV 49.59%, MR 47.7%, IDL 33.73%. **Objective:** To know The Relationship between the Role of Posyandu Cadres and the Completeness of Basic Immunization for Infants Aged 12-24 Months at the Youth Health Center UPTD, Sungai Pinang District. **Research methods:** This type of research is quantitative with a correlational analytical design with a Cross sectional approach. The sampling technique is Consecutive sampling. The population of this study were all mothers who had babies aged 12-24 months who were at the Tantina Posyandu, totaling 51 mothers. Bivariate analysis used was the chi square test. **Results of the study:** The results of the chi square test obtained a p value = 0.000 where the p value was smaller than 0.05. This shows that there is a relationship between the role of posyandu cadres and the completeness of basic immunization in infants aged 12-18 months at the Youth Health Center UPTD. Further analysis shows an OR value = 16.571, this means that the positive role of cadres has a 16-fold chance of implementing the completeness of basic immunization. **Conclusion:** The results of the study show that there is a relationship between the role of posyandu cadres and the completeness of basic immunization in infants aged 12-24 months at the Youth Health Center UPTD, Sungai Pinang District.

**Keywords:** Role of Cadres, Completeness of Immunization

### 1. INTRODUCTION

Immunization is an important component in Primary health care plays a significant role in reducing infant mortality. Immunization has been proven to be an efficient and effective health measure in preventing and reducing morbidity, disability, and mortality due to PD3I.

Data from the World Health Organization (WHO) in 2020 stated that Indonesia was ranked number 3 (three) in the world with babies who had not received immunization with a total of 1.7 million babies who had not received immunization, which made global immunization coverage remain at 86%, so it did not show any significant changes in the last few years. In 2021 there were approximately 20 million children who did not receive complete basic immunization, some even did not receive any immunization at all. According to the World Health Organization, from 194 countries, the achievement of complete basic immunization in Indonesia was 86.6%, meaning that Indonesia is a country with low achievement of complete basic immunization and below the target where the global immunization target coverage is 90% (IDAI, 2020) in (Soumokil, 2024). According to WHO, 4.5 million deaths out of 19.5 million per year occur due to infectious diseases that can be prevented by immunization. Based on data from Indonesia, the coverage of complete basic immunization in infants in 2020 was 86.54%, and the achievement in 2021 was 91.58%, while in 2022 it was 91.12%, which is an important component in primary health

services and plays a major role in reducing infant mortality. Immunization has been proven to be an efficient and effective health effort in preventing and reducing morbidity, disability, and death due to PD3I, Some of these diseases include tuberculosis (TB), polio, diphtheria, tetanus, hepatitis B, pertussis, measles, rubella, pneumonia and meningitis.

In Indonesia, every baby (under 12 months old) is required to receive complete basic immunization consisting of 1 dose of Hepatitis B, 1 dose of Bacillus Calmette-Guerin (BCG), 1 dose of diphtheria/pertussis/tetanus-hepatitis B- Haemophilus influenzae type B (DPT-HB-HiB), 1 dose of oral poliovirus vaccine (OPV), and 1 dose of measles/measles-rubella (MR). The coverage of complete basic immunization in Indonesia in 2018 was (90.61%), still slightly below the 2018 Renstra target of 92.5% (Felicia, 2020).

Based on data obtained at the UPTD Youth Health Center, Sungai Pinang District, it was found that immunization coverage in 2022 was quite low, namely as follows: HB0 60.2%, BCG 73.2%, DPT HiB3 73.2%, POLIO4 68%, PCV2 1.6%, IPV 56.4%, MR 66.9%, IDL 54.2%. Meanwhile, UCI villages are 8 villages out of 31 villages or 25.8%. Meanwhile, the immunization coverage in 2023 also did not reach the target as follows: HB0 70%, BCG 80.2%, DPT HiB3 40.5%, POLIO4 42.1%, PCV2 19.2%, IPV 40.0%, MR 44.6%, IDL 35.3%. and in 2024 as follows: HB0 50.70%, BCG 50.83%, DPT HiB3 29.06%, POLIO4 45.52%, PCV2 19.2%, IPV 49.59%, MR 47.7%, IDL 33.73%

Several factors related to the completeness of basic immunization include several things, namely knowledge, work, experience, motivation, family support, integrated health post facilities, environment, attitude, health workers, income, education and the role of cadres.(Adirinarso, 2023)If any of these factors are not addressed, children will not be fully immunized, which can increase child mortality. They also face a high risk of contracting several diseases that can be prevented by immunization, such as measles, DPT, BCG polio, and hepatitis. If children are not routinely given complete basic immunizations, this can not only slow their growth but also cause brain disorders (Soumokil, 2024).

The impact of a baby not receiving complete immunizations is the emergence of morbidity and mortality due to tuberculosis, poliomyelitis, measles, hepatitis B, diphtheria, pertussis, and neonatal tetanus, even though these diseases can be prevented by immunization. To address the problem of the lack of parents bringing their children for immunization and the impact on children, one step is to optimize the role of cadres (Didah, 2020).

Posyandu is a basic health activity organized from, by and for the community assisted by health workers in a Community Health Center work area, where this program can be implemented in hamlet halls, sub-district halls, or other places that are easily accessible to the community (Sasmita et al., 2023). The 2018 Basic Health Research results showed that 17.7% of infants under 5 years of age (toddlers) still experienced nutritional problems. This figure consisted of 3.9 percent of toddlers suffering from malnutrition and 13.8 percent suffering from undernutrition (Sasmita et al., 2023).

The role of cadres is crucial to the implementation of the integrated health service post (Posyandu) program. If cadres are inactive, the implementation of the Posyandu will also be hampered, resulting in unclear nutritional detection in children. Cadres also play a crucial role in child growth and development and maternal health, as they are the primary source of health information for the community. Cadres are responsible for implementing the programs established by the Posyandu, and they possess greater knowledge than other members of the community (Didah, 2020).

Infant health post (Posyandu) cadres are a key driver of development, particularly in the health sector. According to Mardiaty in (Oruh, 2019), they are independently involved by the community health center (Puskesmas) in village health service activities, one of which is immunization. Without them, village health service activities would be meaningless. Posyandu cadres should be able to manage the Posyandu, as they are the ones who best understand the community in their area. Cadres are tasked with providing outreach at the Posyandu, including providing information to infants and toddlers about the immunization schedule and its benefits (Oruh, 2021). In addition, the role of community cadres is to help identify community problems and needs, help develop community capacity, encourage and convince decision-makers to truly listen, consider, and be sensitive to community needs, and assist in gaining access to various necessary services. However, what community cadres currently do is only provide education regarding the immunization schedule (Oruh, 2021).

Based on the results of a preliminary survey conducted by researchers at the Youth Health Center UPTD in Sungai Pinang District, it was found that Posyandu cadres were appointed and appointed by the Village Head and given incentives from the village government through the Village Revenue and Expenditure Budget, the amount of which varies depending on each village. The role of cadres who were expected to help complete immunizations, in fact, had a less than optimal role. This was caused by several factors including a lack of knowledge and the assumption that providing immunization counseling was the duty and authority of the village midwife. Another factor that caused the less than optimal role of cadres was due to low motivation and support from village officials and health center officers.

Based on the description above, the researcher is interested in conducting a study entitled The Relationship between the Role of Posyandu Cadres and the Completeness of Basic Immunization for Infants Aged 12-24 Months at the Youth Health Center UPTD, Sungai Pinang District.

## 2. METHODOLOGY

This type of research uses a quantitative type with a correlational analytical design, namely a research method carried out with the aim of researchers to find the relationship between dependent variables and independent variables. Variable measurements are carried out simultaneously (once) during the study using a questionnaire. The approach used is cross-sectional, namely research that studies the correlation between risk factors and effects through an approach, observation or data collection simultaneously at a certain time Notoatmodjo (2018) in Indah (2023).

The independent variable of this study is the Role of Posyandu Cadres and the dependent variable is the Completeness of Basic Immunization.

The population is the totality of each element being studied, which has the same characteristics, can be individuals from a group, events or something to be studied (Sugiyono, 2018). The population in this study was all mothers who have babies aged 12-24 months who are in the area of the Youth Health Center UPTD, specifically at the Tantina Integrated Health Post.

A sample is a portion of the number and characteristics of a population (Sugiyono, 2018). In this study, the sample used was a total sample of 51 mothers with babies aged 12-24 months.

The sampling technique used in this study was consecutive sampling. Consecutive sampling is a sampling method that involves selecting samples that meet the research criteria over a certain period of time to achieve the required sample size (Nasution, 2023).

## 3. RESULTS

### 3.1 Results

The results of the study on the Relationship between the Role of Posyandu Cadres and the Completeness of Basic Immunization in Infants Aged 12-24 Months at the Youth Health Center UPTD, Sungai Pinang District. This study was conducted by researchers in April 2026 with a total of 51 respondents, all of whom met and were in accordance with the inclusion criteria. The data is presented in a table, a description of the results of the study regarding The Relationship between the Role of Posyandu Cadres and the Completeness of Basic Immunization in Infants Aged 12-24 Months at the Youth Health Center UPTD, Sungai Pinang District. Respondent Characteristics

**Table 1.** Distribution of Respondents based on Respondent Age, Education Level and Occupation (n=51)

Variable	F	%
<b>Respondent's age</b>		
Less than 20 Years	2	3.9
20 – 30 years	30	58.8
31 – 40 years old	19	37.3
More than 40 years	0	0
<b>Education Level</b>		
Junior High School	13	25.5
Senior High School	31	60.8
College	7	13.7

Variable	F	%
<b>Work</b>		
housewife	44	86.3
Private	1	2.0
Civil Servants/State Civil Apparatus	3	5.9
Etc	3	5.9

Based on Table 1. above, it can be explained that the characteristics of the respondents are as follows:

The ages of the respondents in this study are as follows: 2 people aged less than 20 years (3.9%), 30 people aged 20-30 years (58.8%), 19 people aged 31-40 years (37.3%), while there were no respondents aged more than 40 years.

The level of education is as follows: No school with code 1 as many as 0 mothers (none), Elementary school with code 2 as many as 0 mothers (none), Junior high school with code 3 as many as 13 mothers (25.5%), High school with code 4 as many as 31 mothers (60.8%), College or abbreviated PT with code 5 as many as 7 mothers (13.7%), so the majority have a high school education level (60.8%).

Occupation as a housewife is as follows: Housewife with code 1 as many as 44 mothers (86.3%), Private sector with code 2 as many as 1 mother (2.0%), Civil servant/ASN with code 4 as many as 3 mothers (5.9%), others with code 7 as many as 3 mothers (5.9%), so it can be concluded that the majority of respondents are housewives).

## 1. The Role of Posyandu Cadres

**Table 2.** Distribution of the Roles of Posyandu Cadres (n=51)

Variable	F	%
<b>The Role of Posyandu Cadres</b>		
Playing a role	32	62.7
Doesn't Play a Role	19	37.3
Total	51	100

Based on Table 2 above, it can be explained that Posyandu cadres are said to play a role if the answer is Yes with a score of  $\geq 28-36$ , whereas if the answer is no with a score of 18-27, the category does not play a role. In this study, the number of scores obtained was in

the range of 18-27 is 19 people (37.3%) and those in the range  $\geq 28-38$  are 32 people (62.7) so it can be said that the majority of Posyandu cadres play a role, namely 62.7%.

## 2. Basic Immunization Coverage

**Table 3.** Distribution of Respondents Based on Complete Basic Immunization (IDL) (n=51)

Variable	F	%
<b>Basic Immunization Completeness</b>		
Complete	36	70.6
Incomplete	15	29.4
Total	51	100

Based on Table 3. above, the results show that immunization is said to be complete if all criteria are met or all types of basic immunization have been received by toddlers with code 2, there are 36

toddlers (70.6%), incomplete if there is one type of immunization that has not been/not received by toddlers with code 1, there are 15 toddlers (29.4%). So it can be concluded that most respondents have complete basic immunization, namely 70.6%.

### 3. Data analysis

**Table 4.** *Bivariate Analysis of Cadre Participation and Completeness of Basic Immunization*

Variable	Basic Immunization Completeness				Total		P value	OR
	Complete		Incomplete		n	%		
	n	%	N	%				
The role of Posyandu cadres	29	56.9	3	5.9	32	62.7	0.000	16,571 (3,659- 75,058)
Playing a role	7	13.7	12	23.5	19	37.3		
Does not play a role	36	70.6	15	29.4	51	100		
Total								

Based on Table 4. above, the results show that the majority of respondents who received a role from Posyandu cadres had complete basic immunization coverage, which was 70.6%. The chi-square test results obtained a p-value = 0.000, which is less than 0.05. This means that the alternative hypothesis is accepted, namely there is a relationship between the role of Posyandu cadres and the completeness of basic immunization in infants aged 12-24 months at the Youth Health Center UPTD, Sungai Pinang District. Further analysis shows an OR value = 16.571, this means that cadres have a role 16 times the opportunity to implement the completeness of basic immunization.

### 3.2 Discussion

This discussion will explain the interpretation of the results and discussion of the research results by comparing the research results to theories or previous research results, research limitations and implications for services, education and research. The results obtained are described in more detail regarding the Relationship between the Role of Posyandu Cadres and the Completeness of Basic Immunization in Infants 12-24 months at the Youth Health Center UPTD, Sungai Pinang District.

#### 3.2.1 Interpretation and Discussion of Results

Respondent characteristics based on education level, occupation and age are as follows:

##### a. Age

The results of this study also explain that the age range of mothers is mostly between 20-35 years old so that mothers are more concerned about the immunization status of their toddlers, this is related to a person's behavior with the physical and mental development of the person so that their behavior will become more mature with age supported by increasing experience. A study by Novitasari (2023) also explains that most of the respondents involved in this study are aged 20-35 years. In line with research by Azril (2022) which states that between the mother's age and the completeness of basic immunization in toddlers, namely age will be related to a person's behavior with the physical and mental development of the person so that their behavior will become more mature with age supported by increasing experience, According to Researchers Maternal age is one of the factors that influence the completeness of immunization in infants.

##### b. Education

The results of this study explain that the majority of respondents in the UPTD Youth Health Center area as the research location have a high school education level, namely from 51 respondents consisting of 13 people (25.5%) mothers with junior high school education, 31 people (60.8%) mothers with high school education and 7 people (13%) mothers with bachelor's degree education, so it is concluded that the majority of respondents have a high school education, so that there are no more mothers who have no school status and an average of high school education so that mothers more easily understand the importance of immunization for their toddlers. The results of this study are in line with research by Novitasari & Sutarno (2023), explaining that most respondents in this study have a high school education level. According to the National Education System Law (UU SPN), No. 20 of 2003, education is a conscious and planned effort to prepare students to actively develop their potential to have spiritual religious strength, self-control,

personality, intelligence, noble character, and the skills needed by themselves for society, nation and state.

A mother's education influences her child's immunization completeness. Research by Nanda Kharin (2021) explains that individuals with higher levels of education tend to be more receptive to information, including information about immunizations provided by health workers. Conversely, mothers with lower levels of education struggle to receive the information provided, resulting in a lower understanding of immunization completeness. (Nanda Kharin et al., 2021)

A person with a higher education will certainly consciously take their baby to the local integrated health post (Posyandu) for complete immunizations. Someone with a lower education will oppose this action. Education aims to enable humans to acquire knowledge and maintain or even improve the quality of their existence for the betterment of the environment and their surroundings. Knowledge gained through formal, non-formal, and mass media education is a very important domain for the formation of a person's actions (overt behavior). Knowledge itself can be obtained through personal experience and that of others (Notoatmodjo in Heraris 2015). Therefore, according to researchers, maternal education is very important in making decisions about immunizing children.

### c. **Work**

The results of this study also explain that some of the respondents are housewives, 44 mothers (86.3%), 1 mother in the private sector (2.0%), 3 mothers (5.9%) and 3 mothers (5.9%) in civil servants/ASN, so it can be concluded that the majority of respondents are housewives, with the majority of mothers being housewives so they have time to take their children to the integrated health post for immunization.

The results of this study align with research by Novitasari & Sutarno (2023), which explains that the majority of respondents were housewives. Research by Kuntari Pujiasih (2017) found that unemployed mothers were more punctual with their children's immunizations than employed mothers because they had time to take their children. (Pujiasih, 2017)

Employment status can be a factor influencing the completeness of immunizations in children, as working mothers generally have less time to spend with their children. This is because they work to meet daily living needs, so sometimes the child's health is not taken into account. According to researchers, employment can be a factor influencing the completeness of immunizations in children, as working mothers generally have less time to spend with their children.

### 3.2.2 **The Role of Posyandu Cadres**

The results of the study showed that the posyandu cadres in the working area of the Youth Health Center UPTD which was the research site, namely the number of scores in the range of 18-27 was 19 people (37.3%) and those in the range of  $\geq 28-38$  were 32 people (62.7) so that it can be said that the majority of posyandu cadres played a role, namely 62.7%. so it can be concluded that posyandu cadres have an active role in efforts to achieve completeness of basic immunization. The results of this study also showed that of the 18 question items there was an answer with the highest score, namely question no. 11 Do cadres carry out health and nutrition counseling and counseling activities in accordance with the results of weighing and providing PMT? with a score of 102, this shows that the role of cadres in providing counseling, health and nutrition counseling and providing PMT during posyandu is very meaningful in increasing the enthusiasm of mothers which ultimately has an impact on the number of posyandu visits which ultimately has an effect on increasing immunization achievement.

Integrated health post (Posyandu) cadres are a crucial factor in implementing basic immunizations for children. These cadres are volunteers from the local community who are considered to have significant influence on the local community and are responsible for implementing Posyandu programs, including immunizations. (Septianingtyas, 2018).

The selected cadres are then trained to help address public or individual health issues and work in close contact with health service delivery locations (Ministry of Health of the Republic of Indonesia 2019). The role of Posyandu cadres is very important and necessary for the sustainability of the immunization program to run according to the target. Posyandu cadres as the spearhead in the implementation of Posyandu activities are tasked with preparing and managing Posyandu activities before the day of Posyandu implementation, during Posyandu implementation, until after Posyandu implementation every month, According to Researchers The role of cadres greatly influences the Completeness of immunization.

### 3.2.3 **The Relationship Between the Role of Posyandu Cadres and the Completeness of Basic**

### Immunization in Infants Aged 12-24 Months

The results of this study indicate a relationship between the role of Posyandu cadres and the completeness of basic immunizations in infants aged 12-24 months at the Youth Health Center UPTD, Sungai Pinang District. These results align with previous research by Agustin & Anggraini (2020) which explains the relationship between the role of Posyandu cadres and the level of immunization compliance.

Another study by Septianingtyas & Soesetijo (2018) in Jember on 100 mothers with children aged 12-23 months showed that cadre support had an influence on complete basic immunization status.

The results of this study are in line with Hasyifuddin's (2023) research, which explains that health workers and integrated health post (posyandu) cadres also have a very important role in ensuring the completeness of immunization status in infants.

The results of the same study were also explained by Huvaid (2020) showing that there is a significant relationship between the role of cadres and the provision of measles immunization to toddlers. (Huvaid et al., 2020).

The results of the same study also explained that of the 56 respondents who said the role of active cadres, 42 respondents (75.0%) had complete immunization and 14 people whose immunization was incomplete. Meanwhile, of the 31 respondents who said the role of inactive cadres, 16 people (51.6%), had complete immunization and 15 people whose immunization was incomplete. With the results of the analysis  $p$  value = 0.048 so that researchers can conclude that  $H_0$  is accepted which means that there is a Relationship Between the Role of Cadres and the Completeness of Basic Immunization in infants aged 9-12 months at the Posyandu in Wakasih Village. (Soumokil, 2024).

The results of Oktarina's 2018 research stated that the results of the analysis of the relationship between the role of cadres and the completeness of basic immunization in infants showed that immunization was incomplete with the role of cadres lacking as many as 34 (66.7%), while with the role of cadres that were good, 17 (33.3%) mothers had incomplete basic immunization in infants. The results of the statistical test obtained a  $p$  value = 0.024 ( $p < \alpha$ ), so it can be concluded that there is a relationship between the role of cadres and the completeness of immunization. (Oktarina, 2018)

Furthermore, according to Budiman (2016), the role of cadres in providing information about the importance of immunization and the friendliness of cadres are related to the status of complete basic immunization. The level of immunization achievement in children is highly dependent on the role of health cadres in the Posyandu area. Posyandu cadres are required to be able to understand management, implementation, identify health problems at Posyandu in the cadre's target area, mobilize the community in the surrounding area, and at a minimum be able to conduct health education (Ministry of Health of the Republic of Indonesia 2019).

Cadres have a role in supporting the success of immunization coverage in a region by helping to record data on immunization program targets, mobilizing parents and targets to attend immunization services, helping to prepare immunization service locations and waiting rooms before and after injections at Posyandu or immunization service posts, managing the flow of immunization services, helping to record targets who have been immunized, recording data on babies or children who have not received immunization and visiting the parents/families of the babies or children and visiting parents/families who have never brought their children to immunization service locations, and reporting to officers if Post-Immunization Adverse Events (KIPI) are found (Ministry of Health of the Republic of Indonesia 2017).

The positive role of cadres cannot be separated from their internal motivation, namely concern for health in the community so that cadres remain faithful in carrying out their duties. Cadres also motivate parents of children who will undergo immunization to comply and visit the integrated health post (posyandu) on the child immunization schedule that has been determined, the motivation of posyandu cadres is everything both from within and from outside the cadre that can encourage cadres to work carrying out their duties and functions as posyandu cadres with full awareness and responsibility. (Kusumayanti, 2022).

According to researchers, the role of cadres is very important and influential in supporting the success of immunization coverage in an area by helping to record data on immunization program targets, mobilizing parents and targets to attend immunization services, helping to prepare immunization service locations and waiting rooms before and after activities at Posyandu, helping to record targets who have been immunized, recording data on babies or children who have not received immunization and visiting parents/home visits to toddlers who do not attend Posyandu, all of these roles greatly influence the completeness of immunization in toddlers.

## CONCLUSIONS

Most respondents have a high school education and most of them are housewives with an average age of 28 years. The role of Posyandu cadres at the Health Center, Sungai Pinang District, is mostly positive/instrumental. The completeness of basic immunization for infants aged 12-24 months at the Health Center, Sungai Pinang District, is mostly complete. The results of the study showed that there was a relationship between the role of Posyandu cadres and the completeness of basic immunization in infants aged 12-24 months at the Health Center, Sungai Pinang District.

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