

Factors associated with completeness of basic immunization for babies at Simpangkatis health center in 2023

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ABSTRACT

The Simpangkatis Health Center is located in Simpangkatis Village, Simpangkatis District, Central Bangka Regency, Bangka Belitung. Immunization is very important for children's development and can prevent various dangerous diseases and disabilities such as chicken pox, polio, tuberculosis, and others. Based on data obtained from 2019 to 2022 for completeness of basic immunization in Central Bangka Regency, it can be concluded that completeness of basic immunization is still low. Central Bangka regency, especially at the Simpangkatis Community health Center, the completeness of immunization is still low every year. The aim of this research is to find out what is related to the completeness of basic immunization for babies at the Simpangkatis Health Center, Central Bangka Regency in 2023 because the data obtained shows that the fulfillment of complete basic immunization is quite low. This research method was carried out using analytical methods with a cross sectional study design. The data collection method used a questionnaire sheet and was carried out in September 2023. The sample for this research was 91 people. The results obtained showed that the mother's education level ($p=0,025$), mother's level of knowledge ($p=0,024$), mother's employment status ($p=0,021$), and family support ($p=0,074$). The conclusion is that there is a significant relationship between the level of maternal education, the level of maternal knowledge, and the mother's employment status with the completeness of basic immunizations for babies, while for family support there is no relationship with the completeness of basic immunizations for babies at Simpangkatis Health Center in 2023.

Keywords: Babies; basic immunization; completeness

1. INTRODUCTION

The national health system (SKN) is a gathering order various efforts of the Indonesian Nation in an integrated and mutually supportive manner, in order to guarantee the highest degree of health as an embodiment and at the same time a method of implementing health development that combines various efforts of the Indonesian nation to ensure the achievement of health development goals [1][2].

The quality of human resources can be seen from the Human Development Index (HDI). Factors that influence HDI include education, decent living standards, and health. Apart from that, health factors will also influence improving the quality of human resource [3][4]. Before the immunization stage, a mother will experience the phases of conceiving, giving birth and caring for a newborn baby. When pregnant, mothers must eat nutritious food, get enough rest and do exercise or you can also take classes for pregnant women [5][6]. The hope is that the presence of classes for pregnant women can increase knowledge, change attitudes and behavior of mothers so that they understand about pregnancy care, childbirth, postpartum care, postpartum family planning, newborn care, myths/beliefs/customs local, infectious diseases and birth certificate. In this class for pregnant women, mothers will also be provided with knowledge and skills about caring for newborns (care for newborns, giving K1



injections, danger signs for newborns, observing the development of babies/children and giving immunization to newborns) [7][8]. From 2000 to 2015, the international development goals or *Millenium Development Goals* (MDGs), one of the contents of which is to reduce mortality and improve maternal and child health. Because the MDGs plan had ended, it was continued with the Sustainable Development Goals (SDGs), one of the contents of which was to improve the welfare of the world community. Health services are not only curative activities or treatment, but there are also preventive or disease prevention activities [9].

Disease prevention and control is an integral part of implementing national and regional development [10][11]. Operational policies diseases prevention and control is directed at solving problems maternal mortality, infant mortality and stunting in addition to infectious and non-communicable diseases contagious with a promotive and preventive approach at every level of implementation government [12]. Immunization is very important for children's development because it can prevent from various dangerous disease and disabilities such as chicken pox, polio, tuberculosis, liver cancer, diphteria, hepatitis B, pneumonia and meningitis (inflammation inner brain membrane) [13]. The national immunization program is part of the Ministry's program Health and strive to prevent disease, disability and death from disease that can be prevented by immunization (PD3I) [14]. According to the Directorate General of Public Health, Indonesian Ministry of Health, in 2021 there were cases of death children under five are caused by death due to congenital abnormalities, neonatal tetanus, pneumonia, meningitis and neurological diseases. That figure decreased due to conditions or children experiencing malnutrition and also due to the high prevalence of infectious diseases [15][16]. Overview of the last 3 years since 2019-2021 basic immunization coverage completeness in Indonesia in babies experiences fluctuations [17][18]. Where in 2020 complete basic immunization coverage was 93,7%, in 2020 complete basic immunization coverage decreased to 83,3% and in 2021 complete basic immunization coverage increased to 84,2%.

Based on data from the Bangka Belitung Islands Provincial Health Service total percentage of UCI (Universal Child Immunization) coverage in Bangka Belitung Village/Subdistrict coverage for the last 3 years, namely 2019, was 99,23%, year 2020 amounted to 89,51% and in 2021 amounted to 81,07% for 317 UCI Village/Subdistricts from 391 existing Village/Subdistrict. Central Bangka Regency/City itself ranks last of seven Regency/City in the Bangka Belitung Islands Province at 41,27%. Complete basic immunization requirements per regency/City in the Bangka Belitung Islands Province, especially in Central Bangka Regency, where in 2019 it was 92,7%, in 2020 it was 75,2%, and in 2021 it was 65,4%. So from the data above, from 3 consecutive years, Central Bangka Regency seems to have decreased in term of coverage. Complete basic immunization equipment area per Community Health Center in the Regency Central Bangka at the Simpangkatis Community Health Center where, in 2020 it was 57,2%, in 2021 it was 52,0%, and in 2022 it was 53,3%. From 3 consecutive years where in Simpangkatis Health Center seems to experience fluctuations or decreases and increases. Even though the numbers have increased, the comparative increase is also not that big. Immunization equipment at the Simpangkatis Community Health center has still not reached the SPM target of 80% for the Regency/City area.

2. METHOD

The method for carrying out this research was carried out using several activities and methods for collecting and collecting data, namely:

a. Research sites

The location of this research was carried out in the Simpangkatis health center working area Central Bangka Regency. Reasons for selection this research is due to the data obtained that the prevalence rate of complete basic immunization in infants has decreased significantly every day.

b. Research time

This research was conducted in September 2023.

c. Population and research sample

This study had a population of 436 babies aged 10-12 months who were registered at the Simpangkatis Community Health Center. The sample in this study was 91 mothers of the babies as respondents.

d. Data collection technique.

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Primary data on independent variables such as education, knowledge, employment and family support. This primary data collection uses observation interview techniques with questionnaire measuring instruments. Secondary data in this research includes data obtained from the Bangka Belitung Islands Provincial Health Service Central Bangka District Health Service Simpangkatis Health Center Profile and electronic media.

e. Questionnaire sheet, card to health, interview, documentation

The questionnaire sheet consists of a number of written questions used to obtain data or information about levels maternal education, maternal knowledge level, maternal employment status, and family support. You can find out the complete status of basic immunization for babies seen from the card towards health. Every baby should have one immunization documentation such as a health card held by the baby's parents or caregivers. In this research the interview method was carried out by asking respondents questions using the help of a questionnaire sheet. Documentation techniques are various data collection techniques written sources relating to the research object.

f. Research instrument.

The research instrument used in this thesis uses a questionnaire sheet. This questionnaire sheet consists of a number of written questions which are used to obtain data or information about the mother's education level, mother's level of knowledge, mother's employment status, and family support.

g. Data processing techniques.

Editing ensures the completeness and clarity of each aspect studied, namely by checking the questionnaire to ensure that the questionnaire is complete. This coding technique is used to facilitate the data analysis process using codes that have been determined or formulated previously to make it easier to tabulate and analyze data. Tabulation enter data into diagrams or tables according to criteria to make data entry easier. Data entry from the questionnaire using the help of a computer program to simplify the data analysis process.

3. RESULT AND DISCUSSION

The results of research on factors related to completeness of basic immunization for babies the Simpangkatis health center, central Bangka Regency, are as follow:

Based on [Table 1](#) below, the distribution of respondents based on age at the Simpangkatis Health Center, Central Bangka Regency in 2023 shows that respondents who the least aged < 20 years old were 3 people (3,3%), the most respondents aged 21-35 were 73 people (80,2%), and the respondents aged > 35 years were 15 people (16,5%).

Table 1. Distribution of respondents based of age of simpangkatis health center central Bangka Regency 2023.

| Variable Mother's Age | Amount | Percentage % |
|-----------------------|--------|--------------|
| < 20 | 3 | 3,3 |
| 21 – 35 | 73 | 80,2 |
| > 35 | 15 | 16,5 |
| Total | 91 | 100 |

Based on [Table 2](#) below, the distribution of respondents based on income at the Simpangkatis Health Center, Central Bangka Regency in 2023 shows that respondents who with income < Rp1.000.000 amounted to 15 people (16,5%), respondents with the highest income Rp1.000.000-3.000.000 were 72 people (79,1%), and respondents with an income of at least Rp3.000.000 were 4 people (4,4%).

Table 2. Distribution of respondents based on income of simpangkatis health center central Bangka Regency 2023.

| Variable Income | Amount | Percentage % |
|-----------------------|--------|--------------|
| < 1.000.000 | 15 | 16,5 |
| 1.000.000 - 3.000.000 | 72 | 79,1 |
| > 3.000.000 | 4 | 4,4 |

| | | |
|-------|----|-----|
| Total | 91 | 100 |
|-------|----|-----|

Based on Table 3 below, the distribution of respondents based on gender at the Simpangkatis Health Center, Central Bangka Regency in 2023 shows that there were 44 male babies (48,4%), less than 47 female babies (51,6%).

Table 3. Distribution of babies based on gender of simpangkatis health center central Bangka Regency 2023.

| Variable Gender | Amount | Percentage % |
|-----------------|--------|--------------|
| Man | 44 | 48,4 |
| Woman | 47 | 51,6 |
| Total | 91 | 100 |

Based on Table 4 below, the distribution of respondents based on the completeness of basic immunization for babies at the Simpangkatis Health Center, Central Bangka Regency in 2023 shows that there are 54 babies who have complete basic immunization (59,3%) more than babies who have complete basic immunization, incomplete basic amounted to 37 people (40,7%).

Table 4. Distribution based on completeness of basic immunization for babies of Simpangkatis health center central Bangka Regency 2023.

| Variable Completeness of Basic Immunization for Babies | Amount | Percentage % |
|--|--------|--------------|
| Complete | 54 | 59,3 |
| Incomplete | 37 | 40,7 |
| Total | 91 | 100 |

Based on Table 5 below, the distribution of complete basic immunization for babies based on mother's education at the Simpangkatis health center, Central Bangka Regency in 2023 shows that 16 respondents (17,6%) had higher education, compared to respondents who had low education amounting to 74 people (81,3%).

Table 5. Distribution of basic immunization completeness for babies based on mothers's education of Simpangkatis health center central Bangka Regency 2023.

| Variable Education | Amount | Percentage % |
|--------------------|--------|--------------|
| Height | 16 | 17,6 |
| Low | 74 | 81,3 |
| Total | 91 | 100 |

Based on Table 6 below, the distribution of completeness of basic immunization for babies based on mother's knowledge at the Simpangkatis Health Center, Central Bangka Regency in 2023 shows that 40 respondents (44,0%) had good knowledge about basic immunization for babies less than the number of respondents, those who had poor good knowledge were 51 people (56,0%).

Table 6. Distribution of basic immunization completeness for babies based on mother's knowledge of Simpangkatis health center central Bangka Regency 2023.

| Variable Knowledge | Amount | Percentage % |
|--------------------|--------|--------------|
| Good | 40 | 44,0 |
| Not Good | 51 | 56,0 |
| Total | 91 | 100 |

Based on Table 7 below, the distribution of complete basic immunization for babies based on the mother's occupation at the Simpangkatis Health Center, Central Bangka Regency in 2023 shows that 35 respondents (38,5%) are employed, lees than respondents who did not work were 56 people (61,5%).

Table 7. Distribution of basic immunization completeness for babies based on mother's occupation of Simpangkatis health center central Bangka Regency 2023.

| Variable Job Status | Amount | Percentage % |
|---------------------|--------|--------------|
|---------------------|--------|--------------|

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| | | |
|-------------|----|------|
| Work | 35 | 38,5 |
| Not Working | 56 | 61,5 |
| Total | 91 | 100 |

Based on Table 8 below, the distribution of complete basic immunization for babies based on family support at the Simpangkatis Health Center, Central Bangka Regency in 2023 shows that the number of respondents who were supported by their families was 41 people (45,1%), less than with respondents who were not supported by their families amounting to 50 people (54,9%).

Table 8. Distribution of basic immunization completeness for babies based on family support of Simpangkatis health center central Bangka Regency 2023.

| Variable Family Support | Amount | Percentage % |
|-------------------------|--------|--------------|
| Supported | 41 | 45,1 |
| Not Supported | 50 | 54,9 |
| Total | 91 | 100 |

Based on Table 9 below, the relationship between completeness of basic immunization in babies based on mother's education shows that there are fewer babies with complete basic immunization in mother with higher education as many as 14 respondents (87,5%) when compared with mothers who with low education, while there were 2 respondents (12,5%) fewer babies with incomplete basic immunization compared to mothers with low education. From the statistical test results, the p value is obtained (0,025), which is $< \alpha$ (0,05), which means that H_0 is rejected so it can be concluded that there is a significant relationship between the completeness of basic immunization for babies and maternal education. Education is the addition of one's abilities through technique learning practice or instruction, tiwh the aim of remembering real facts or conditions, by encouraging self-direction, actively providing new information or ideas. This education is carried out to help individuals independently by influencing, enable and strengthen decisions or actions in accordance with planned values and goals.

This research is in line with the results conducted at the Pangkalan Balai Community Health Center, Banyuasin Regency, where the results of the reserach stated that there was a significant relationship between significant between the level of maternal education and the completeness of basic immunization for babies with a p value of (0,008). This research is also in line with the results of the Situ Gintung Ciputat Community Health Center. The research results stated that there was a significant relationship between the level of education and completeness of immunization with a p value (0,000).

Table 9. Bivariate analysis of the relationship between completeness of basic immunization for babies based on mother's education.

| Variable | Completeness | | Total | | P Value |
|-----------|--------------|------------|-------|------|---------|
| | Complete | Incomplete | N | % | |
| | N | % | N | % | |
| Education | | | | | 0,025 |
| Height | 14 | 87,5 | 2 | 12,5 | 16 |
| Low | 40 | 53,3 | 35 | 46,7 | 75 |

Based on Table 10 below, the relationship between complete basic immunization in babies based on mother's knowledge shows that there are fewer babies with complete basic immunization completeness than mothers who 18 respondents (45,0%) meanwhile, there were more babies with incomplete basic immunization in mothers with good knowledge, as many as 22 respondents (55,0%) compared to mothers with less good knowledge. From the results of statistical tests, the p value was obtained (0,024), which is $< \alpha$ (0,05), which means that H_0 is rejected so it can be concluded that there is a significant relationship between the completeness of basic immunization for babies and mother's knowledge. Analyzed human behavior from level health is based on the predisposing factors of a person who not knowing the benefits of the importance of immunization for their children will cause a person not to participate in immunizing their child at the posyandu, in enabling factors, someone who wants to immunize their child may be because the distance of the posyandu or health center from their

home is quite far, in reinforcing factors or maybe there is a reason that the environment or surrounding areas never immunize their children, such as community leaders and health workers.

Technically, cadres duties are related to development public health includes, among other things, collection data on toddlers, weighing them and recording them in the Health Way Card (KMS), providing additional food, distributing vitamin A, providing nutritional education and home visits to breastfeeding mothers and mothers with toddlers, and providing services to the elderly [19]. Cadres are expected to play an active role and be able to become drivers, motivators and community counselors. Cadres are expected to do so bridge between health officers or experts and the community and help people identify and deal with or respond to their own health needs [20]. This research is in line with the results of the Sindang Belitir Ilir Rejang Lebong Public Health Center, research stating that there is a significant relationship between the level of maternal knowledge and the completeness of basic immunization for babies with a p value of (0,001). This research is also in line with the results carried out by the Community Health Center Lubuk Buaya, Padang City, where the results of the research stated that there was a significant relationship between the level of maternal knowledge and the provision of complete basic immunization to babies with a p value of (0,000).

Table 10. Bivariate analysis of the relationship between completeness of basic immunizations for babies based on mother's knowledge.

| Variable | Completeness | | | | Total | | P Value |
|-----------|--------------|------|------------|------|-------|-----|---------|
| | Complete | | Incomplete | | N | % | |
| | N | % | N | % | | | |
| Knowledge | | | | | | | 0,024 |
| Good | 18 | 45,0 | 22 | 55,0 | 40 | 100 | |
| Not Good | 36 | 70,6 | 15 | 29,4 | 51 | 100 | |

Based on [Table 11](#) below, the relationship between completeness of basic immunization for babies based on the mother's employment status shows that babies with complete basic immunization is less in mothers with status work as many as 15 respondents (42,9%) when compared with mothers whose employment status is not working, while babies are complete incomplete basic immunization is more common in mothers with working status 20 respondents (57,1%) worked compared to mothers whose employment status was not working. From the results of the statistical tests, the p value was obtained (0,021), which is $< \alpha$ (0,05), which means that H0 is rejected so it can be concluded that there is a significant relationship between the completeness of basic immunization for babies and the mother's employment status.

Relationship between maternal mother's employment status and completeness of basic immunization, if a mother does not fulfill her child's basic immunization requirements because the mother is earning a living, the opportunity to go to an immunization service will decrease, which is a factor the risk of a mother whose employment status is a working is time sharing there will be fewer mothers with children [21]. However, there are also some mothers who take your child for immunizations to the hospital where they must be administered other additional costs. The research is in line with the results that have been carried out in which the completeness of immunization in babies aged 9-12 months is related to the mother's employment status with a p value of (0,004). This research is also in line with the results carried out at Community Health Center where the results of the research state that there is a significant relationship between employment status with complete immunization with p value (0,026).

Table 11. Bivariate analysis of the relationship between completeness of basic immunizations for babies based on mother's employment status.

| Variable | Completeness | | | | Total | | P Value |
|-------------|--------------|------|------------|------|-------|-----|---------|
| | Complete | | Incomplete | | N | % | |
| | N | % | N | % | | | |
| Job Status | | | | | | | 0,021 |
| Work | 15 | 42,9 | 20 | 57,1 | 35 | 100 | |
| Not Working | 39 | 69,6 | 17 | 30,4 | 56 | 100 | |

Based on [Table 12](#) below, the relationship between complete basic immunization in babies based on family support shows that there are more babies with complete basic immunization in mothers

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whose family support is supported by 29 respondents (70,7%) when compared with mothers whose family support is not supported, while there are fewer babies with incomplete basic immunizations among mothers whose family support is supported by 12 respondents (29,3%) if compared to mothers whose family support was not supported. From the statistical test results, the p value was obtained (0,074), which is $> \alpha$ (0,05), which means that H_0 is accepted so it can be concluded that there is no significant relationship between completeness of basic immunization in babies and family support. When an attitude has been realized, it will be formed in something action (overt behavior). To turn an attitudes into actions it is clear that supporting factors or enabling conditions are needed, including facilities. A mother's positive attitude towards immunization must first be confirmed by her husband, and there are even immunization facilities that are easy to reach or obtain so that the mother can immunize her child.

Apart from facility factor, supporting factors or support from other parties are also needed, for example from husband, parents or in-laws as well as siblings. From the results of the statistical tests, where this value is this research is in line with the results that have been carried out in Wolio District, Baubau City, the results of research where there was no significant relationship between support families with complete basic immunization status for babies with a p value of (0,124). This research is not in accordance with the results that have been carried out, where the results of the research that there is a significant relationship between family support and complete basic immunization in babies with a p value of (0,000), this is because if a mother gets support from her family, especially her husband, regarding complete basic immunization then the mother's chances of completely immunizing her baby are high, and vice versa.

Table 12. Bivariate analysis of the relationship between completeness of basic immunizations for babies based on family support.

| Variable | Completeness | | | | Total | | P Value |
|----------------|--------------|------|------------|------|-------|-----|---------|
| | Complete | | Incomplete | | N | % | |
| | N | % | N | % | | | |
| Family Support | | | | | | | 0,074 |
| Supported | 29 | 70,7 | 12 | 29,3 | 41 | 100 | |
| Not Supported | 25 | 50,0 | 25 | 50,0 | 50 | 100 | |

4. CONCLUSION

There is a significant relationship between maternal education level, level maternal knowledge, and maternal employment status with complete basic immunizations for babies of Simpangkatis Health Center in 2023. Meanwhile family support does not have a significant relationship with the completeness of basic immunization for babies of Simpangkatis Health Center in 2023. The most dominant factor is related to the completeness of basic immunization for babies at the Simpangkatis Community Health Center in 2023 is education. Future researchers can conduct further research on the support of husbands or families who do not support mothers in carrying out basic immunizations for babies.

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