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# Factors Associated with Parental Compliance in Providing Basic Immunization to Children

Elina Agustini[1], Rezka Nurvinanda[1], Agustin[1]
[1]*Department of Nursing, Institut Citra Internasional, Bangka Belitung, Indonesia*

*Correspondence author: Elina Agustini*
*Email: elinaagustini30@gmail.com*
*Address: Perumahan cluster Serni Tanjung Bunga, Jl. Air itam no J53, bukit Intan. Kota Pangkal Pinang Bangka Belitung 085840527646*
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**ABSTRACT**

**Introduction**: Basic immunization is a series of vaccines given to infants and children from an early age (from birth to 0-24 Months), to stimulate the immune system to form antibodies against certain diseases. This basic immunization is mandatory as a primary preventive measure against infectious diseases such as tuberculosis (BCG), hepatitis B, polio, diphtheria, pertussis (whooping cough), tetanus and measles.
**Objective**: The general objective of this study is to determine the factors associated with parental compliance in providing basic immunizations to children in the Lubuk Besar Community Health Center work area in 2025.
**Method**: The type of research used is quantitative with the research design used being descriptive analytical through an approach Cross Sectionalnamely conducting a cross tab between the dependent variable and the independent variable. The sample in this study were parents who had children aged 0-24 Months as many as 74 people. Data analysis using the testwho squareswith a confidence level of 95%.
**Result**: The results of the study are to find out between the dependent variable, namely parental compliance in providing basic immunization to children and the independent variables consisting of maternal age, employment status, knowledge and family support. The results of the statistical test of the maternal age variable obtained a value of p = 0.009, the employment status variable obtained a value of p = 0.029, the knowledge variable obtained a value of p = 0.002 and the family support variable obtained a value of p = 0.005.
**Conclusion**: It is recommended to improve ongoing education through counseling, information media and direct counseling to parents about the importance of basic immunization for children, as well as facilitating access to immunization services with flexible schedules and easily accessible locations to improve parental compliance.

**Keywords:** basic immunization, children, parents

**Introduction**

Basic immunization is the initial immunization administered to achieve immunity levels above the protective threshold (Sari, 2018). Required basic immunizations for infants aged 0-24 months include BCG, measles, DPT, hepatitis B, and polio. Basic immunization serves to provide protection and reduce the risk of morbidity and mortality from vaccine-preventable diseases (Mulyanti, 2020). Immunization-Preventable Diseases (PD3I) include tuberculosis, diphtheria, pertussis, measles, polio, tetanus, and hepatitis B. Immunization coverage, especially basic immunization, must be maintained high and equitable. Failure to maintain high and equitable levels of protection can lead to outbreaks of PD3I outbreaks (Ministry of Health, 2015).

One preventive measure to improve public health is the provision of basic immunizations starting from birth (Demi, 2022). Basic immunization is a vaccination program for toddlers to prevent infectious diseases, or even prevent fatalities from contracting them, such as tetanus, whooping cough (pertussis), measles, polio, tuberculosis, and meningitis (Ministry of Health of the Republic of Indonesia, 2015). Basic immunization services for children in Indonesia are integrated across integrated health posts (Posyandu), community health centers (Puskesmas), and hospitals. However, overall basic immunization coverage remains below the government's target.

According to the World Health Organization (WHO) and the Indonesian Ministry of Health, the basic immunization coverage in the immunization development program includes hepatitis B, DPT (Diphtheria-Tetanus-Pertussis), BCG (Bacillus Celmette-Guerin), polio, and measles. According to the WHO, approximately 20 million children worldwide have not received complete basic immunizations in 2021 and 2022. To achieve herd immunity, a high basic immunization coverage of approximately 95% is required (WHO, 2022). Data shows that 65 countries have basic immunization coverage below the global target of 90%. This results in approximately 21.8 million children worldwide not receiving the basic immunizations they should (Abdulraheem et al., 2017).

According to data from the Indonesian Health Profile, the basic immunization rate in 2021 was 83.3%. This then increased slightly in 2022 to 84.2%. However, this data indicates that basic immunization coverage has not yet reached the strategic plan target of 93.6%. The provinces with the highest basic immunization coverage are South Sulawesi (100.0%), Bali (98.8%), West Nusa Tenggara (95.5%), and Yogyakarta Special Region (95.3%), while the province with the lowest coverage is Aceh (42.7%). (Indonesian Health Profile, 2022).

Based on the Bangka Belitung Islands Health Profile, the percentage of complete basic immunization coverage for infants in the Bangka Belitung Islands province in 2020 reached 91.4%, then in 2021 the percentage of complete basic immunization coverage decreased to 87.1%, in the following year, namely 2022, the percentage of complete basic immunization coverage increased to 89.56%, but in 2023 the percentage of complete basic immunization coverage decreased to 85.5%. (Bangka Belitung Province Health Office, 2020).

Family support also influences parental compliance with basic immunizations for children, with a p-value of 0.002, indicating a significant relationship between family support and parental compliance with basic immunizations. Good family support will foster compliance among family members who have children and are still receiving immunizations. The family support referred to in this study refers to support provided by family members (husband, parents, and siblings), so that individuals who receive support feel cared for, valued, and receive assistance from significant others, as well as strong family ties with other family members. The family serves as a conduit for information about the world, including

providing advice, guidance, suggestions, and feedback regarding compliance with basic immunizations for children.

One factor that must be considered in immunization is adherence to the immunization schedule. If parents fail to comply with their baby's immunizations, it will impact the baby's immunity and susceptibility to disease. Therefore, babies must receive timely immunizations to protect them from various dangerous diseases (Ranuh, 2019).

Based on the results of an initial survey conducted on January 4, 2025, of six parents in the Lubuk Besar Community Health Center (Puskesmas) area, data showed that five out of six parents reported irregular or insufficient visits to the Puskesmas for their child immunization program. Three out of six parents stated they did not understand the benefits and impacts of immunization. Five out of six parents were self-employed, teachers, and civil servants. Two out of six parents reported a lack of family support, such as reminders regarding scheduled immunizations. From the results of this initial survey, it can be concluded that high-risk maternal age, parental noncompliance, working parents, inadequate knowledge, and lack of family support can influence the provision of basic immunizations to children.

**Objective**

The general objective of this study is to determine the factors associated with parental compliance in providing basic immunizations to children in the Lubuk Besar Community Health Center work area in 2025.

**Method**

The type of research used is quantitative with a descriptive analytical research design through a Cross Sectional approach, namely conducting cross tabulation between the dependent variable and the independent variable. The sample in this study were parents who have children aged 0-24 months as many as 74 people. The sampling technique used in this study was purposive sampling. Purposive sampling. This study was conducted on May 14-15, 2025 at the Lubuk Besar Community Health Center, Lubuk Besar District, Central Bangka Regency. Data analysis used a quadratic test with a 95% confidence level.

**Result**

Table 1. The Relationship between Maternal Age and Parental Compliance in Providing Basic Immunizations to Children at the Lubuk Besar Community Health Center in 2025

| Maternal Age | Parental Compliance | | | | Total | | p | POR (95%CI) |
|---|---|---|---|---|---|---|---|---|
| | Non-Compliant | | Compliant | | | | | |
| | n | % | n | % | n | % | | |
| At Risk | 25 | 62.5 | 15 | 37.5 | 40 | 100 | 0.009 | 4.000 (1.506-1.623) |
| Not at Risk | 10 | 29.4 | 24 | 70.6 | 34 | 100 | | |

Based on the table above, the analysis of the relationship between maternal age and parental compliance in providing basic immunizations to children at the Lubuk Besar Community Health Center shows that parents who are non-compliant in providing basic immunizations to children are more likely to be at the age of There were 25 mothers at risk (62.5%) compared to mothers who were not at risk, while parents who were compliant in

providing basic immunizations to their children were more in the non-risk maternal age category, as many as 24 people (70.6%).

The results of the Chi-Square test obtained a p value = (0.009) < α (0.05), this indicates that there is a relationship between maternal age and compliance in providing basic immunizations to children at the Lubuk Besar Community Health Center in 2025. The results of further analysis obtained a POR value = 4,000 (95% CI = 1.506-10.623), thus it can be said that parents with an at-risk age have a 4,000 times greater risk of non-compliance in providing basic immunizations to children compared to parents with an age that is not at risk.

Table 2. The Relationship between Employment Status and Parental Compliance with Basic Immunizations for Children at the Lubuk Besar Community Health Center in 2025

| Employment Status | Parental Compliance | | | | Total | | P | POR (95%CI) |
|---|---|---|---|---|---|---|---|---|
| | Non-Compliant | | Compliant | | | | | |
| | n | % | n | % | n | % | | |
| Not Employed | 25 | 59.5 | 17 | 40.5 | 42 | 100 | 0.029 | 3.235 (1.228-8.523) |
| Employed | 10 | 31.2 | 22 | 68.8 | 32 | 100 | | |

Based on the table above, the analysis of the relationship between employment status and parental compliance with basic immunizations for children at the Lubuk Besar Community Health Center shows that parents who are non-compliant with basic immunizations for their children are more likely to be parents who do not 25 people (59.5%) were employed compared to working parents, while 22 people (68.8%) were more compliant with basic immunizations for their children. The Chi-Square test results obtained a p-value of (0.029) < α (0.05), indicating a relationship between employment status and compliance with basic immunizations for children at the Lubuk Besar Community Health Center in 2025. Further analysis yielded a POR value of 3.235 (95% CI = 1.228-8.523). Therefore, it can be concluded that unemployed parents are 3.235 times more likely to experience non-compliance with basic immunizations for their children than working parents.

Table 3. The Relationship between Knowledge and Parental Compliance in Providing Basic Immunizations to Children at the Lubuk Besar Community Health Center in 2025

| Knowledge | Parental Compliance | | | | | | P | POR (95%CI) |
|---|---|---|---|---|---|---|---|---|
| | Non-Compliant | | Compliant | | Total | | | |
| | n | % | n | % | n | % | | |
| Good | 25 | 62.8 | 13 | 34.2 | 38 | 100 | 0.005 | 5.000 (1.857-13.463) |
| Poor | 10 | 27.8 | 26 | 72.2 | 36 | 100 | | |

Based on the table above, the analysis of the relationship between knowledge and parental compliance in providing basic immunizations to children at the Lubuk Besar Community Health Center shows that parents who are non-compliant in providing basic immunizations to their children are more likely to have poor knowledge. 25 people (62.8%) compared to those with good knowledge, while parents who were more compliant in

providing basic immunizations to their children were in the category of less knowledge, as many as 26 people (72.2%).

The results of the Chi-Square test obtained a p-value = (0.002) < α (0.05), this indicates that there is a relationship between knowledge and compliance in providing basic immunizations to children at the Lubuk Besar Community Health Center in 2025. The results of further analysis obtained a POR value = 5,000 (95% CI = 1.857-13.463), thus it can be said that parents with less knowledge are 5,000 times more likely to experience non-compliance in providing basic immunizations to children than parents with good knowledge.

Table 4. The Relationship between Family Support and Parental Compliance in Providing Basic Immunizations to Children at the Lubuk Besar Community Health Center in 2025

| Knowledge | Parental Compliance | | | | | | P | POR (95%CI) |
|---|---|---|---|---|---|---|---|---|
| | Non-Compliant | | Compliant | | Total | | | |
| | n | % | n | % | n | % | | |
| Good | 25 | 64.1 | 14 | 35.9 | 39 | 100 | 0.005 | 4.464 (1.671-11.928) |
| Poor | 10 | 47.3 | 25 | 71.4 | 35 | 100 | | |

Based on the table above, the analysis of the relationship between family support and parental compliance in providing basic immunizations to children at the Lubuk Besar Community Health Center shows that parents who are non-compliant in providing basic immunizations to their children are more likely to have poor family support. 25 people (64.1%) compared to those with good family support, while parents who were more compliant in providing basic immunizations to their children were in the category of good family support, as many as 25 people (71.4%).

The results of the Chi-Square test obtained a p-value = (0.005) < α (0.05), this indicates that there is a relationship between family support and compliance in providing basic immunizations to children at the Lubuk Besar Community Health Center in 2025. The results of further analysis obtained a POR value = 4.464 (95% CI = 1.671-11.928), thus it can be said that parents with less family support are 4.464 times more likely to experience non-compliance in providing basic immunizations to their children than parents with good family support.

**Discussion**

Researchers believe that maternal age is related to parental compliance with basic immunizations for children. Because the higher the risk of pregnancy, the greater the non-compliance with basic immunizations for children. This is evidenced by the fact that 70.6% of children in the high-risk age group are non-compliant with basic immunizations, indicating that maternal age influences parental compliance with basic immunizations for children. Older or more mature mothers tend to be more compliant and consistent in following their children's immunization schedules than younger mothers. This may be due to greater experience, knowledge, and awareness of the importance of immunizations for children's health, as supported by research.

Based on the explanation above, researchers assume that employment status is related to parental compliance with basic immunizations for children. Parents with working status

are more likely to comply with basic immunizations for their children, while parents who are unemployed or lack knowledge about the benefits of immunization are less likely to comply with basic immunizations for their children. This is because non-compliance with basic immunizations is found in the unemployed (59.4%) group. This indicates that parents with more flexible jobs, good access to information, and a supportive work environment are more likely to comply with basic immunizations for their children. However, other factors such as knowledge and family support also play a role in determining this level of compliance.

Based on the explanation above, researchers argue that knowledge is related to parental compliance with basic immunizations for children. Because the higher the parents' knowledge about immunizations, the more likely they are to comply with basic immunizations for their children. This is evidenced by the fact that non-compliance with basic immunizations for children (72.2%) is due to lack of knowledge, indicating that increasing maternal knowledge through health education is crucial for improving compliance with immunizations for children. Education programs, counseling, and the provision of accurate information can help mothers understand the importance of immunization and encourage them to adhere to the established immunization schedule.

Based on the explanation above, researchers assume that family support is related to parental compliance in providing basic immunizations to children. With strong family support, it is hoped that parental compliance in providing basic immunizations to children will increase. This is based on the fact that parents' non-compliance with basic immunizations is often due to a lack of family support (59.4%). This indicates that family support, whether in the form of information, emotional support, or instrumental support, can increase parental motivation and understanding of the importance of immunization. The greater the family support received, the greater the level of parental compliance in bringing their children to receive immunizations according to the established schedule.

## Conclusion

The findings at the Lubuk Besar Community Health Center in 2025 revealed a significant relationship between maternal age, employment status, knowledge, and family support with parental compliance in providing basic immunizations to children. These results indicate that older maternal age, more stable employment conditions, adequate knowledge, and strong family support contribute to higher compliance with immunization practices. Among these factors, knowledge was identified as the most influential variable, with a POR value of 5.000, emphasizing the crucial role of health education in ensuring the success of childhood immunization programs.

## Conflict of Interest

No declare.


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