
Relationship Between Education, Knowledge And Maternal Parity To Completeness Basic Immunization In Children At The Kalidoni Health Center Palembang

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Abstract

Immunization is an effort to provide immunity to babies and children by injecting vaccines into the body in order to make antibodies to prevent certain diseases. Then, a vaccine is a material used to stimulate the formation of anti-substances that are entered into the body through injections (for example the vaccines of *Bacillus Calmette Guerin* (BCG), Diphtheria, Pertussis and Tetanus (DPT) and Measles and through the mouth (for example the polio vaccine). To determine the relationship among education, knowledge and maternal parity with the completeness of children basic immunization at the Kalidoni Palembang Health Center in 2023. This research is an analytic survey research with a cross sectional approach. The study population was children aged ≥ 9 -24 months who visited the immunization polyclinic at the Kalidoni Health Center in Palembang with a sample of 56 respondents who were taken using a purposive sampling technique. The research variables included the independent variables which are education, knowledge and maternal parity and the dependent variable, namely the completeness of basic immunization for babies. Univariate and Bivariate data analysis. Based on the results of bivariate analysis using the Chi Square statistical test, it was found that on the mother's education variable p value = 0.001 ($p \leq 0.05$), on the mother's knowledge variable p value = 0.001 ($p \leq 0.05$) and on the maternal parity variable p value = 0.001 ($p \leq 0.05$). From the results of the study there are three variables which are education, knowledge and maternal parity having a significant relationship with the completeness of children basic immunization. There are three variables which are education, knowledge and maternal parity having a significant relationship with the completeness of children basic immunization.

Keywords: Education, Knowledge, Parity And Completeness Of Basic Immunization

INTRODUCTION

Immunization is an effort to cause/increase a person's immunity to a disease so that if one day exposed to the disease they will not get sick or only experience mild illness. Some infectious diseases that are included in Diseases That Can Be Prevented by Immunization (PD3I) include Hepatitis B, Tuberculosis (TB), Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, and pneumonia (Ministry of Health of the Republic of Indonesia, 2017).

Immunization Program is immunization that is required for a person as part of society in order to protect the person concerned and the surrounding community from diseases that can be prevented by immunization. Some infectious diseases included in PD3I are Diphtheria, Pertussis, Hepatitis B, Polio, Measles, Inflammation of the Brain Membrane, and Pneumonia. As one of the groups targeted by the immunization program, every infant is required to receive Complete Basic Immunization (ID1) consisting of 1 dose of BCG, 3 doses of DPT, 4 doses of polio, 1 dose of IPV, 1 dose of hepatitis B, and 1 dose of Measles Rubella (Ministry of Health of the Republic of Indonesia, 2017).

Immunization is also a real effort by the government to achieve the Millennium Development Goals (MDGs), especially to reduce child mortality. The indicator of the success of immunization implementation is measured by the achievement of Universal Child Immunization (UCI), which is $> 80\%$ of the number of babies (0-11 months) in the village or sub-district have received complete immunization, consisting of *Bacillus Calmette Guerin* (BCG), Hepatitis B, DPT-HB, Polio, and Measles. The target of Universal Child Immunization (UCI) in the 2012 Strategic Plan is 95% (Ministry of Health of the Republic of Indonesia, 2021).

Data from the Palembang City Health Office shows that the complete basic immunization coverage in 2020 was 91.1%, in 2021 it was 90.1% and in 2022 it was 91.3%. Meanwhile, at the Kalidoni Health Center, the coverage of complete basic immunization in 2020 was 87.2%, in 2021 it

was 64.4% and in 2022 it was 97.5%. Kalidoni District has not yet reached the Universal Child Immunization (UCI) target, which is 100%.

Several studies related to knowledge and attitudes with complete immunization have been conducted by Razana Hijani (2013) entitled The relationship between maternal knowledge about immunization and the completeness of basic immunization in toddlers in the working area of the Dumai Kota health center, Dumai Kota village. This study is a quantitative research using a descriptive correlation research design and a cross sectional approach with a sample of 100 people. The results of the analysis of the relationship between maternal knowledge about immunization and the completeness of basic immunization in toddlers found that the majority of respondents had good knowledge with the completeness of basic immunization in complete toddlers as many as 60 respondents (78.8%). Based on the results of the chi-square test, p value = 0.000 < 0.05 was obtained, meaning that H_0 was rejected so that it can be concluded that there is a relationship between maternal knowledge of immunization and the completeness of basic immunization in toddlers.

According to the results of research by Sarimin, et al (2014) in North Lawongan showed a p value (0.004) which means that there is a relationship between education and maternal behavior in providing basic immunization to toddlers at the Walantakan Health Center, Taraitak Satu Village, North Lawongan District. The increasing number of children, especially mothers who still have babies, are the third or more children, will need a lot of time to take care of their children. So that there is less time available for mothers to visit immunization service sites (Reza, 2006).

RESEARCH METHODS

This study is an analytical study to determine the relationship between education, knowledge and maternal parity to the completeness of basic immunization in children at the Kalidoni Palembang Health Center. This study uses a cross sectional study approach.

The research was conducted at the Kalidoni Palembang Health Center immunization polyclinic which was held in May 2023.

The sample in this study is some children aged 9-24 months who were brought to the Kalidoni Palembang Health Center to be immunized in May 2023. Sampling was carried out by *purposive sampling* with inclusion criteria and execution criteria determined. The instruments used in the form of questionnaires were in accordance with the independent variables studied, namely Education, Knowledge and Maternal Parity. As for the dependent variable, namely the completeness of basic immunization in children, an observation sheet in the form of a checklist is used. The Statistical Test in this study uses *the Chi-Square Test*.

RESULTS AND DISCUSSION

Maternal education on the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023

Based on the results of the analysis of the frequency distribution of maternal education on the completeness of basic immunization in children at the Kalidoni Health Center in Palembang City in 2023, it is known that some mothers with basic education are 29 (51.8%), secondary education 11 (19.6%) and mothers are educated at 16 (28.6%).

Education is every effort, influence, protection, and assistance that is made to change thinking for the better (Maulana, HDJ, 2009). Education in general is all efforts that are planned and made to influence others so that they do what is expected of the education actor (Notoatmodjo, 2012; Pakpahan M et al., 2021). From some of these opinions, it can be concluded that education is all efforts that are made in a planned manner so that it is able to change the mindset for the better.

The results of the research conducted (Liliandriani, 2020) Of the 50 mothers who were respondents, 70% had a good level of education and 30% had a poor level of education and 70% had

good knowledge about basic immunization, and 30% had a lack of knowledge. Similar research conducted by (Rizal & Jalpi, 2020) information was obtained that among the complete immunizations, there were 51.9% with high school education, 47.6% junior high school, 8.0% diploma/bachelor's degree and 27.3% elementary school.

From the results of this study, I assume that the level of education can be used as a basis in increasing the success of immunization coverage and completeness because it is proven that the percentage of immunization completeness is carried out by mothers with secondary and higher education. The level of maternal education is very influential with the high knowledge of mothers, both formally and informally obtained as a source of information.

Mother's knowledge of the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023

Based on the results of an analysis of the distribution of the frequency of maternal knowledge on the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023, it is known that some of the mother's knowledge is in the category of good 36 (64.3%) and poor maternal knowledge 20 (35.7%).

Knowledge is what a person knows about how to maintain health, including how to maintain health, knowing conditions related to the causes that affect and health services (Andriani R, 2019). Knowledge is information that has been combined with understanding and the potential to follow up on the results obtained and is attached to a person's memory (Sari, P et al, 2022).

Knowledge is often an important factor but not sufficient to shape one's behavior, because if one only knows, one will not necessarily behave and carry out what is already known. (Sholikah SM, 2023). Sources of knowledge can be obtained in various ways, including through mass media, electronic media, health workers and health counseling (Podungge, Y & Mile, SYW, 2021).

Knowledge is a very important domain to shape one's behavior because increasing one's knowledge can increase one's perception and form one's belief in something so that actions based on knowledge will be more consistent or persistent compared to actions without being based on knowledge. From this definition, it can be concluded that the knowledge that the mother has will influence and motivate the mother in providing complete immunization to the child (Yoselina P et al., 2023). MIncrease public knowledge, especially pregnant women, about the importance of preventive promotive behavior through the provision of complete routine immunizations to children (Ministry of Health of the Republic of Indonesia, 2023).

The effectiveness of the implementation of counseling has been proven to increase maternal knowledge related to immunization, as evidenced by research conducted (Aswan & Harahap, 2020) that the average level of knowledge of mothers is 58.96% and after being given counseling it is 80.68%. Similar to the research conducted (Rakhmawati et al., 2020) that the majority of respondents' knowledge is good knowledge, namely as many as 13 respondents (52.0%). The results of other studies have found that Maternal knowledge is lacking 73.6%, family support is 64.5% lacking, the role of health workers is lacking 72.5% (Carolin et al., 2021).

From the results of this study, I assume that good knowledge in supporting the success of complete immunization in children must of course be possessed by health workers first because if the informant does not understand what will be conveyed, then the success in conveying information tends to be not optimal. In addition, maternal education, maternal experience, husband support, environmental factors are also factors that support the development of mother's knowledge to provide complete immunization to her child.

Maternal parity on the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023

Based on the results of the analysis of the parity frequency distribution of basic immunization completeness in children at the Kalidoni Health Center, Palembang City in 2023, it is known that part

of the maternal parity is in the multipara category 36 (64.3%), while the parity of primipara 13 (23.2%) and grandemultipara 7 (12.5%).

Parity is the state of giving birth to a child, both alive and dead, but not abortion without looking at the number of children born which can be classified into 4, namely nullipara, primipara, multipara and grandemultipara (Irfana, 2021). In mothers with repeated pregnancy conditions, it tends to cause damage to various physiological organs such as blood vessels in the uterine wall so that it can affect the supply and circulation of nutrients from mother to fetus. In addition, psychological conditions such as knowledge, anxiety and attitudes are also affected because the experiences of women who have been and have been pregnant tend to be different (Nurhayati et al., 2022).

It is known that there are 5 (48.6%) mothers with a lot of parity who provide complete basic immunization, while there are 10 (38.6%) mothers with little parity who provide complete basic immunizations (Mely et al., 2022). Complete basic immunization status is performed by mothers with multipara parity (Lubis et al., 2020). Other research conducted by (Maiyanisa & Putri, 2023) Of the 50 respondents who received incomplete immunization, 3 respondents (6%) were primipara and 10 respondents (14%) were multipara. In the state of complete immunization, there were 33 respondents (66%) with the first birth and 9 respondents (18%) with the double birth (Maiyanisa & Putri, 2023).

From the results of this study, I assume that the completeness of immunization is dominated or more complete by mothers with primipara. This can be analyzed because the mother has gone through the first pregnancy process so that she has increased knowledge, experience to be able to provide the best for her child to avoid the risk of disease.

Complete immunization in children at the Kalidoni Health Center, Palembang City in 2023

Based on the results of an analysis of the distribution of the frequency of complete immunization in children at the Kalidoni Health Center, Palembang City in 2023, it is known that some mothers with complete immunization are 27 (48.2%) and immunization completeness in the incomplete category is 29 (51.8%).

Immunization is an effort to actively increase immunity to a disease not only to protect a person but also society, and the community or what is called herd immunity (Ministry of Health of the Republic of Indonesia, 2022).

The administration of immunization is adjusted to the age of the child. For complete basic immunization, infants less than 24 hours old are given Hepatitis B immunization (HB-0), 1 month age is given (BCG and Polio 1), 2 months old is given (DPT-HB-Hib 1 and Polio 2), 3 months old is given (DPT-HB-Hib 2 and Polio 3), 4 months old is given (DPT-HB-Hib 3, Polio 4 and IPV or injectable Polio), and 9 months old is given (Measles or MR). For follow-up immunization, babies under two years old (Baduta) aged 18 months are given immunizations (DPT-HB-Hib and Measles/MR), grade 1 elementary/madrasah/equivalent is given (DT and Measles/MR), grades 2 and 5 elementary/madrasah/equivalent are given (Ministry of Health of the Republic of Indonesia, 2018).

In order to achieve high and equitable immunization coverage in each region, the Minister of Health appealed to all Regional Heads to (1) carefully overcome the main obstacles in each region in the implementation of the immunization program; (2) mobilize the resources of all related sectors including the private sector; and (3) increase public awareness of the importance of complete routine immunization so that they are willing and able to visit immunization service sites (Ministry of Health of the Republic of Indonesia, 2018). The coverage of complete routine immunization nationally is slowly increasing again after the COVID-19 pandemic. Now about 94.9% of Indonesian children have been immunized, but there are still about 5% or 240,000 Indonesian children who have not received additional protection from complete basic immunization. This means that they are still at high risk of developing diseases that can be prevented by immunization (PD3I). (Ministry of Health of the Republic of Indonesia, 2023).

The majority of respondents' immunization completeness was complete immunization, which was as many as 17 respondents (68.0%) (Rakhmawati et al., 2020). Other research conducted (Mely et al., 2022) that *Mothers who gave complete basic immunization to their babies were lower by 41.3%*,

while mothers who gave incomplete immunizations were 58.7%. Other research results conducted (Astrea et al., 2023) that Of the 79 respondents who had incomplete basic immunization, 43 people (54.4%).

Various ways can be done to increase the success of immunization completeness, including providing information by increasing knowledge using direct delivery, using social media, utilizing cadres to be more active and several other activities and methods so that immunization coverage and completeness are more optimal. Although according to the national report, the achievement of immunization completeness is considered successful, there is still a need to maintain and see what factors affect and risk being the cause of the unsuccessful immunization achievement.

The relationship between maternal education and the completeness of immunization at the Kalidoni Health Center, Palembang City in 2023

Based on the results of an analysis of the relationship between maternal education and the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023, it is known that there are 1 (3.4%) mothers with complete basic education who are immunized, 11 (100%) mothers with complete secondary education who are fully immunized, and there are 15 (93.8%) mothers with higher education who are fully immunized. The results of the statistical test using *chi square* obtained a *p-value* = 0.000 smaller than $\alpha = 0.05$ which means h_0 = rejected so that it is stated that there is a meaningful relationship between education and immunization completeness at the Kalidoni Health Center, Palembang City in 2023.

Education in general is all efforts that are planned and made to influence others so that they do what is expected of the education actor (Notoatmodjo, 2012; Pakpahan M et al., 2021). Education is every effort, influence, protection, and assistance that is made to change thinking for the better (Maulana, HDJ, 2009). From some of these opinions, it can be concluded that education is all efforts that are made in a planned manner so that it is able to change the mindset for the better.

There is a relationship between education, income, income, family support, the role of health workers and immunization completeness at RSIA Family Pluit in 2021 (Carolin et al., 2021). Mothers who do not provide complete basic immunization are due to a lack of knowledge, education level and attitude towards the importance of complete basic immunization (Kharin et al., 2021). Mothers with higher education are 0.670 times more likely to carry out complete basic immunization of infants compared to mothers with low education (Rakhmawati et al., 2020)

The results of the research obtained by the researcher are that complete immunization is carried out by mothers with secondary education, so it can be concluded that the level of education cannot be used as a basic benchmark in increasing the success of immunization coverage and completeness because it is proven that the percentage of complete immunization is carried out by mothers with primary and secondary education. Education cannot be based on a formal definition because current education and knowledge can be obtained from various sources of information supported by attitudes, family support and the role of health workers to invite and convince mothers about the importance of immunization in children.

The relationship between maternal knowledge and immunization completeness at the Kalidoni Health Center, Palembang City in 2023

Based on the results of the analysis of the relationship between maternal knowledge and the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023, it is known that 26 (72.2%) mothers with good knowledge are fully immunized, while among the knowledge, there are 1 (5.0%) mothers with poor knowledge who are fully immunized. The results of the statistical test using *chi square* obtained *p-value* = 0.000 smaller than $\alpha = 0.05$ which means h_0 = rejected so that it is stated that there is a meaningful relationship between knowledge and immunization completeness at the Kalidoni Health Center in Palembang City in 2023. The results of the analysis also obtained an OR value = 49,400, meaning that mothers with poor knowledge had a 49.4 times chance of not being fully immunized compared to mothers with good knowledge.

Knowledge is often an important factor but not sufficient to shape one's behavior, because if one only knows, one will not necessarily behave and carry out what is already known. (Sholikhah SM, 2023). Sources of knowledge can be obtained in various ways, including through mass media, electronic media, health workers and health counseling (Podungge, Y & Mile, SYW, 2021).

Knowledge is what a person knows about how to maintain health, including how to maintain health, knowing conditions related to the causes that affect and health services (Andriani R, 2019). Knowledge is information that has been combined with understanding and the potential to follow up on the results obtained and is attached to a person's memory (Sari, P et al, 2022).

Knowledge is a very important domain to shape one's behavior because increasing one's knowledge can increase one's perception and form one's belief in something so that actions based on knowledge will be more consistent or persistent compared to actions without being based on knowledge. From this definition, it can be concluded that the knowledge that the mother has will influence and motivate the mother in providing complete immunization to the child (Yoselina P et al., 2023). MIncrease public knowledge, especially pregnant women, about the importance of preventive promotive behavior through the provision of complete routine immunizations to children (Ministry of Health of the Republic of Indonesia, 2023).

There are differences in knowledge before and after basic immunization education (Rosdiana & Khoiriah, 2020). Presence The Relationship Between Knowledge and Attitude and Immunization Completeness in Infants (Mely et al., 2022; Rizal & Jalpi, 2020). There is an influence of knowledge with the completeness of basic immunization of babies (Rakhmawati et al., 2020). Mothers who do not provide complete basic immunization are due to a lack of knowledge, education level and attitude towards the importance of complete basic immunization (Kharin et al., 2021). There is an influence of knowledge with the completeness of basic infant immunization at the Kalingga Toddler Posyandu, Banyuanyar, Surakarta, mothers who do not have good knowledge have a 5.607 greater chance of carrying out complete basic immunization of infants compared to mothers who have less knowledge (Rakhmawati et al., 2020)

The results of the research obtained by the researcher showed that mothers with poor knowledge had a 49.4 times chance of not doing complete immunization compared to mothers with good knowledge. Current sources of knowledge can be obtained in various ways, including through mass media, electronic media, health workers and health counseling Knowledge is often an important factor but not sufficient to shape a person's behavior, because if they only know, they will not necessarily behave and carry out what they already know.

The relationship between parity and immunization completeness at the Kalidoni Health Center, Palembang City in 2023

Based on the results of the analysis of the relationship between maternal parity and the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023, it is known that there are 12 (92.3%) mothers with complete primipara parity who are fully immunized, 15 (41.7%) mothers with complete multipara parity are immunized, and there are no 0 (0%) mothers with multipara parity who are fully immunized. The results of the statistical test using *chi square* obtained *p-value* = 0.000 which is smaller than $\alpha = 0.05$ which means H_0 = rejected so that it is stated that there is a meaningful relationship between parity and immunization completeness at the Kalidoni Health Center, Palembang City in 2023.

Parity is the state of giving birth to a child, both alive and dead, but not abortion without looking at the number of children born which can be classified into 4, namely nullipara, primipara, multipara and grandemultipara (Irfana, 2021). In mothers with repeated pregnancy conditions, it tends to cause damage to various physiological organs such as blood vessels in the uterine wall so that it can affect the supply and circulation of nutrients from mother to fetus. In addition, psychological conditions such as knowledge, anxiety and attitudes are also affected because the experiences of women who have been and have been pregnant tend to be different (Nurhayati et al., 2022).

There is a parity relationship with the completeness of basic immunization in children (Astrea et al., 2023). The results of this study are supported by the research conducted (Dewi, 2023) that The most dominant factor affecting the completeness of immunization in children is parity. However in contrast to the results of the research conducted (Lubis et al., 2020; Mely et al., 2022) that there was no relationship between maternal characteristics (education, age, occupation, income and parity) and baseline immunization status in infants.

The results of the research obtained by the researcher and previous research obtained results that mothers with complete primipara parity carried out immunizations in dominance or more complete were carried out by mothers with multipara. Psychological conditions such as knowledge, anxiety and attitudes are also influenced by women's experiences of pregnancy and childbirth, because mothers who have gone through the process of pregnancy and childbirth will indirectly increase their knowledge and experience to be able to provide the best for their children to avoid the risk of disease.

CONCLUSIONS

1. The variable frequency of distribution of Maternal Education for the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023 is known that the majority of mothers have basic education 51.8%, out of 56 respondents.
2. The variable frequency of distribution of Maternal Knowledge about the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023 is known that the majority of maternal knowledge is in the good category of 36 (64.3%) out of 56 respondents
3. The distribution of the frequency of parity variables to the completeness of basic immunization in children at the Kalidoni Health Center, Palembang City in 2023 is known to be the majority of maternal parity in the multipara category of 36 (64.3%), out of 56 respondents.
4. The variable frequency of distribution of immunization completeness to children at the Kalidoni Health Center, Palembang City in 2023 is known to the majority of mothers with an incomplete category of 29 (51.8%).
5. There is a meaningful relationship between maternal education and complete immunization in children at the Kalidoni Health Center, Palembang City with a p-value = 0.001.
6. There was a meaningful relationship between maternal knowledge and complete immunization in children at the Kalidoni Health Center, Palembang City with a value of $p = 0.001$ and an OR value = 49,400.
7. There was a significant relationship between maternal parity and complete immunization in children at the Kalidoni Health Center, Palembang City with a value of $p = 0.001$.

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