



Factors Associated with the Completeness of Complete Basic Immunization for two-Year-Old Infants at Tiom Public Health Center, Lanny Jaya Regency

Semison Weya^a, Rosmin M. Tingginehe^{b*}, Marthapina Anggai^c

^aPostgraduate Master Program of Public Health, Faculty of Public Health, Cenderawasih University

^{b,c}Faculty of Public Health, Cenderawasih University, Jayapura Papua, Indonesia, 99351

^aEmail: weyasemison@gmail.com

^bEmail: rosminmtingginehe21@gmail.com

Abstract

Background: Immunization is a form of health intervention that is very effective in reducing infant and under-five mortality. The working area of the Tiom Health Center in Lanny Jaya Regency has the lowest basic immunization coverage of the 10 Public Health Center in the Lanny Jaya Regency area. **Research Objectives:** To determine the relationship between mother's education level, mother's occupation, affordability to immunization services, activeness of officers in immunization services, mother's knowledge, and family support with basic immunization completeness for children under two years old. **Methods:** This research is quantitative with a cross-sectional study approach. The population in this study were mothers who have children who have reached the age of 2 years in the working area of the Tiom Health Center, with a large research sample of 72 respondents by purposive sampling. The instrument used is a questionnaire. **Results:** From the results of the study, it was found that the variables that were not related to the completeness of basic immunization were the mother's level of education (p-value = 0.420), mother's occupation (p-value = 0.713), affordability of access to immunization services (p-value 0.494), activeness of officers immunization (p-value = 0.357), and support for family members (p-value = 0.110) with the completeness of basic immunization. Meanwhile, the variable related to the completeness of immunization for children under two years old is the mother's level of knowledge with a value (p-value = 0.007).

* Corresponding author.

Suggestion: Based on the results of the study, the researcher proposes to the head of the Public Health Center that every time they provide services inside the building and outside the building to always provide counseling to the general public and more specifically mothers who have infants under five about the importance of health services in this case basic immunization services and carry out basic immunization services, monitoring of the completeness of immunization, while for mothers who have babies should take the time to immunize their children.

Keywords: Complete Basic Immunization; two year old toddlers; Public Health Center.

1. Introduction

Immunization is a deliberate endeavor to raise a person's immunity against a disease so that if they are exposed to the disease one day, they will not become ill or will only have minor sickness. The role of parents in health promotion activities for toddlers aged 1-5 years is critical, particularly in fulfilling the completeness of basic vaccination, so that young toddlers are free of Diseases Preventable by Immunization (PD3I). Immunization is one approach that has been shown to be beneficial in lowering morbidity and death related to PD3I [1].

Development in the health sector, as part of national development, is oriented to attain optimal and productive health degrees as a manifestation of general welfare, as stated in the preamble to the 1945 constitution and legislation number 36, 2009 on health. Individual health services, family health services, and public health services must be comprehensive and coordinated in order to reach optimal health status for each community [2].

Toddlers aged 0 to 9 months receive one dose of Hepatitis B, one dosage of BCG, four doses of Polio, three doses of DPT, and one shot of Meales Rubella/Measles. The last vaccine given to children is measles and rubella. This might be viewed as Measles Rubella Immunization coverage as an indication that toddlers have received all fundamental vaccines [3]. It turns out that this initiative is still facing challenges, particularly parental opposition. The unwillingness of parents to provide vaccines is related to a misunderstanding of immunizations in the community, as well as a lack of information and awareness about immunizations. Every year, hundreds of women, children, and adults die from avoidable diseases throughout the world. There is a lack of knowledge regarding the necessity of immunization. Diphtheria, Tetanus, Hepatitis B, Influenza, Typhus, Inflammation of the lining of the brain, pneumonia, and many more diseases that can emerge at any time and be fatal are all at danger for newborn babies, school-aged children, and adults. Immunization is the finest and most important preventive measure for toddlers, young children, and adults. Immunization is one type of health intervention used in the National Health System that is particularly effective in lowering under-five and under-five death rates [4].

In the middle of the Covid-19 epidemic, the worldwide concern is that basic vaccination services for babies under the age of two years (baduta) cannot be implemented adequately, resulting in an elevated risk of Immunization Preventable Diseases (PD3I) in the near future and in the short term. This condition will raise the strain on already overburdened health and social security services. Immunization failure increases the likelihood of an Extraordinary Event (KLB) and outbreaks of vaccine-preventable illnesses (PD3I). According to the

World Health Organization (WHO), the United Nations International Children's Emergency Fund (UNICEF), and the Global Alliance for Vaccines and Immunization (GAVI), rising morbidity and mortality are the most serious threats to mother and child health in low-income countries.

According to basic health research statistics from 2019, 32.9 percent of children under the age of five in Indonesia did not receive full basic vaccines, while 9.2 percent of children under the age of five did not receive basic immunizations. Some children did not obtain complete basic vaccines, resulting in dropouts or children with incomplete immunizations [5].

Basic immunization coverage data at the National level in 2020 are HB0 (89.0%) BCG (89.0%) Polio1 (89.1%) Polio2 (89.7%) Polio3 (87.9%) Polio 4 (85.7%) DPT1 (89.6%) DPT2 (87.9%) DPT3 (86.6%) Meales Rubella (85.9%), and complete basic immunization (IDL) (83.1%). National target 95% - 100%. However, the problem with the declining coverage of complete basic immunization at the national level is the emergence of the Covid-19 Pandemic, which was officially announced by the World Health Organization (WHO) on April 10, 2020, stating the number of confirmed cases reached 136,035,520 cases of Covid-19 with 2,939. 546 deaths worldwide and have spread to various parts of the world, the Indonesian government has implemented a lockdown, and large-scale social restrictions (PSBB) have affected various aspects of life. One service that needs more attention is the impact of Covid-19 on essential child health services, such as routine immunization.

Data in Papua Province decreased that the completeness of basic immunization was still low with a target number of children under five, 70,833 children under five, data for basic immunization coverage in 2020, per earrings were HB0 (62.9%) BCG (79.9%) Polio1 (88.1%) Polio2 (85.7%) Polio3(82.9%) Polio 4(85.7%) DPT1 (85.9%) DPT2 (78.5%) DPT3 (75.2%) Meales Rubella (73.4 %) and complete basic immunization (IDL) (51.2%) this indicates that the national target of 95% - 100% has not been achieved, because there are still toddlers who have not yet received complete basic immunizations and there are even toddlers who do not receive basic immunizations. complete, due to large-scale social restrictions, the reduction in public service activities including services in the health sector has caused mothers who have children under the age of five not to take their children to health services, there are also families of baduta who are afraid to take their children out for fear of getting Covid-19, this affects the age of the child after 12 months causing the coverage rate n Complete basic immunization did not reach the 95% target.

This is different from regional conditions in Lanny Jaya Regency with 1,892 children under five, the basic immunization coverage data for 2020 per earring is HB0 (6.1%) BCG (46.2%) Polio1 (48.5%) Polio2 (43.3%) Polio3 (39.9%) Polio4 (49.0%) DPT1 (51.1%) DPT2 (42.7%) DPT3 (47.7%) Meales Rubella (48.3%), and Complete Basic Immunization (IDL) (2.5%) [6].

From the data obtained, there are quite serious problems in which many children under the age of five do not receive their complete immunizations. This is based on preliminary survey data conducted by researchers at one of the health centers in Lanny Jaya Regency, it was found that in Tiom Health Center in 2020 of the 598 baduta who survived there were only 598 children under five, with immunization coverage per HB0 antigen (2, 9%) BCG (9.4%) Polio1(9.1%) Polio2 (9.7%) Polio3 (9.9%) Polio4 (9.9%) DPT1 (9.0%) DPT2 (7.8 %) DPT3

(9.5%) and Meales Rubella/Measles (7.2%). (Dinkes Kab. Lanny Jaya, 2021) the data shows that there are still many types of immunization including HB0, BCG, Polio 1, Polio 2, Polio 3, Polio 4, DPT-HB-Hib 1, DPT-HB-Hib 2, DPT -HB-Hib 3, until Measles/Meales Rubella has not reached the 95% target as expected, and the lowest coverage is on HB0 antigen immunization (2.9%) and Meales Rubella (7.2%) for all types of immunization [7].

Based on information from Tiom Health Center officers, it was stated that most of the mothers gave birth to their children at home without the support of health workers, there was also an impact on the Covid-19 pandemic from April 2020, and the district government had issued a letter restricting community mobility and activity restrictions. public services, so that the target does not come to health services to get vaccination services due to the high transmission of Covid-19 that is currently happening, and with the circulation of the Covid-19 vaccine, people assume that health workers will give the Covid-19 vaccine to their babies, there are still people who refuse to vaccinate their babies or toddlers because of the side effects of immunization such as fever, the existence of cultural customs and beliefs that refuse immunization and the lack of knowledge about immunization in some communities, usually people who have less knowledge about this immunization represent some of the people who did not attend the counseling when the Posyandu was held [7].

Several studies have found that maternal health beliefs and behaviors have a very large role in the basic immunization program. The health behavior is a response shown by the mother to stimuli that come from outside and from within the mother herself and can be influenced by several factors. Health behavior can be influenced by one of the factors, namely predisposing factors which include knowledge, education, attitudes, public beliefs [8].

Another factor that affects the completeness of basic immunization for toddlers is family support. The results of Dwi Astuti's research (2013) found that there was a significant relationship between husband/family support for BCG immunization with a p value of 0.000 with an OR value which stated that mothers who did not receive support from their husbands/family had a tendency not to give BCG immunization to their toddlers. 29.6 times compared to mothers who received support from their husbands/families [9].

Based on the background that has been stated, it shows that there are several important things that are the cause of the low completeness of basic immunization at the age of under two, so researchers are interested in conducting research on "Factors Related to the Completeness of Complete Basic Immunization in Tiom Public Health Center, Lanny Jaya Regency".

2. Methods

This research is a quantitative research with a cross sectional study approach method where researchers want to know the influence between the independent and dependent variables in this case the factors that affect basic immunization through measurements at the same time or for a moment. This research was carried out at the Tiom Health Center, Lanny Jaya Regency in December 2021 - January 2022. The population in this study were mothers or families who had children under two years old (baduta) who lived and settled in the working area of

the Tiom Health Center, Lanny Jaya Regency. The sample of this study was children under the age of 12 months - 24 months who lived and settled in the Tiom Health Center, Lanny Jaya Regency. Respondents in this study were a population of 92 mothers or close relatives who looked after and took care of the baduta. The number of samples will be taken using the Slovin sample size formula as many as 72 mothers. Sampling in this study will use the technique of "purposive sampling", meaning that the sampling will be adjusted to the wishes of the researcher based on the following criteria: 1. Criteria for baduta: a). Samples were children aged 12 months – 24 months who lived and settled in the research location; b) have a KMS card, 2. Criteria for respondents: a) Mother or a relative of a toddler who has a child under the age of 12 months–24 months, b) Sign a letter of approval to become a respondent.

3. Results

3.1. Relationship of Mother's Education Level with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Table 1: Relationship of Mother's Education Level with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Level of Education	Complete Basic Immunization				Total	%
	Complete		Not complete			
	n	%	n	%		
High	24	47.1	27	52.9	51	100
Low	7	33.3	14	66.7	21	100
TOTAL	31	43.1	41	56.9	72	100

P-value = 0.420; RP=1.1412; CI 95% (0.722-2.762)

Source: Primary data, 2021

Based on table 1. it was found that out of 51 mothers with higher education, 24 mothers (47.1%) carried out complete basic immunizations. Meanwhile, of the 21 mothers with low education, only 7 mothers (33.3%) had complete basic immunizations. The results of the chi-square statistical test obtained a p-value of $0.420 > 0.05$. This shows that there is no significant relationship between the mother's education level and the completeness of basic immunization for children at the Tiom Health Center, Lanny Jaya Regency.

3.2. Relationship of Mother's Occupation with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Based on table 2, it was found that from 47 mothers who did not work, 19 mothers (40.4%) carried out complete basic immunizations. Meanwhile, of the 25 working mothers, only 12 mothers (48.0%) had complete basic immunizations. The results of the chi-square statistical test obtained a p-value of $0.713 > 0.05$. This shows that there is no significant relationship between the mother's occupation and the completeness of basic immunization for children at the Tiom Health Center, Lanny Jaya Regency.

Table 2: Relationship of Mother's Occupation with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Occupation	Complete Basic Immunization				Total	%
	Complete		Not complete			
	n	%	n	%		
Doesn't work	19	40.4	28	59.6	47	100
Work	12	48.0	13	52.0	25	100
TOTAL	31	43.1	41	56.9	72	100

P-value = 0.713; RP=0.842; CI 95% (0.493-1.439)

Source: Primary data, 2021

3.3. Relationship of Affordability of Access to Immunization Services with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Table3: Relationship of Affordability of Access to Immunization Services with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Affordability of Access to Immunization Services	of to	Complete Basic Immunization				Total	%
		Complete		Not complete			
		n	%	n	%		
Close		20	47.4	22	52.6	42	100
Far		11	36.7	19	63.3	30	100
TOTAL		31	43.1	41	56.9	72	100

P-value = 0.494; RP=1.299; CI 95% (0.736-2.290)

Source: Primary data, 2021

Based on table 3, it was found that from 42 mothers who had close access to health services, 20 mothers (47.4%) carried out complete basic immunizations. Meanwhile, of the 30 mothers who had far access to health services, only 11 mothers (36.7%) had complete basic immunizations. The results of the chi-square statistical test obtained a p-value of $0.494 > 0.05$. This shows that there is no significant relationship between the affordability of access to health services and the completeness of basic immunization for children under two at the Tiom Health Center, Lanny Jaya Regency.

3.4. Relationship of Activity of Immunization Officer with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Based on table 4, it was found that from 45 mothers whose immunization officers were active, 17 mothers (37.8%) carried out complete basic immunizations. Meanwhile, of the 27 mothers whose immunization officers were not active, 14 mothers (51.9%) had complete basic immunizations. The results of the chi-square statistical test obtained a p-value of $0.357 > 0.05$. This shows that there is no significant relationship between the activeness of immunization officers and the completeness of basic immunization for children under two at the Tiom Health Center, Lanny Jaya Regency.

Table 4: Relationship of Activity of Immunization Officer with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Activity of Immunization Officer	Complete Basic Immunization				Total	%
	Complete		Not complete			
	n	%	n	%		
Active	17	37.8	28	62.2	45	100
Not active	14	51.9	13	49.1	27	100
TOTAL	31	43.1	41	56.9	72	100

P-value = 0.357; RP=0.729; CI 95% (0.432-1.228)

Source: Primary data, 2021

3.5. Relationship of Mother's Knowledge with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Table 5: Relationship of Mother's Knowledge with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Mother's Knowledge	Complete Basic Immunization				Total	%
	Complete		Not complete			
	n	%	n	%		
Good	19	63.3	11	36.7	30	100
Less	12	28.6	30	71.4	42	100
TOTAL	31	43.1	41	56.9	72	100

P-value = 0.007; RP=2.217; CI 95% (1.279-3.843)

Source: Primary data, 2021

Based on table 5, it was found that from 30 mothers with good knowledge, 19 mothers (63.3%) carried out complete basic immunizations. Meanwhile, from 42 mothers with less knowledge, only 12 mothers (28.6%) did complete basic immunization. The results of the chi-square statistical test obtained a p-value of 0.007 <0.05. This shows that there is a significant relationship between mother's knowledge and completeness of basic immunization for children under two at the Tiom Health Center, Lanny Jaya Regency. With ratio prevalence (RP) = 2.217, it shows that mothers with good knowledge will have a tendency to carry out complete basic immunizations for their children compared to mothers with less knowledge.

3.6. Relationship of Family support with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regenc

Table 6: Relationship of Family support with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Family support	Complete Basic Immunization				Total	%
	Complete		Not complete			
	n	%	n	%		
Support	14	58.3	10	41.7	24	100
Less support	17	35.4	31	64.6	48	100
TOTAL	31	43.1	41	56.9	72	100

P-value = 0.110; RP=1.647; CI 95% (0.989-2.743)

Source: Primary data, 2021

Based on table 6, it was found that out of 24 mothers with supportive families, 14 mothers (58.3%) carried out complete basic immunizations. Meanwhile, out of 48 mothers with unsupportive families, only 17 mothers (35.4%) had complete basic immunizations. The results of the chi-square statistical test obtained a p-value of $0.110 > 0.05$. This shows that there is no significant relationship between family support and the completeness of basic immunization for children at the Tiom Health Center, Lanny Jaya Regency.

4. Discussion

4.1. Relationship of Mother's Education Level with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

A p-value of $0.420 > 0.05$ was obtained based on the findings of the chi-square statistical test. This demonstrates that there is no significant association between a mother's degree of education and the completion of basic vaccination for children at the Tiom Health Center in Lanny Jaya Regency.

Based on the results of observations of the KMS book and interview researchers with respondents who have education, it shows that during 2020 they did not go to immunization services or Posyandu due to the increase in cases of covid-19 causing health services to not work optimally so that children under two did not get complete basic immunizations, while The answer from the respondent with the lowest completeness of basic immunization conveyed the same thing. Another respondent also said that sometimes we don't know the benefits of vaccination services, so we go once a month to weigh the child, we don't want to go again, that's what makes the basic immunization incomplete. In addition to that, there are also issues that will develop in the community in 2021 related to the Covid-19 Vaccine service, this makes sometimes respondents don't want to bring their children to the service place or Posyandu due to the concern of the respondent's mother. For their children, this causes basic immunizations to be incomplete, so the level of education also affects the completeness of basic immunizations for children under two.

This is because mothers who have advanced levels of education are estimated to be easier to receive and

understand immunization messages conveyed by health workers, both through counseling and mass media, so that they are expected to be able to apply the information they receive, namely providing complete immunizations to their children. This study supports the opinion of Ki Hajar Dewantara which states that a person's education is a process of behavior change, the higher a person's education, the more taken into account in choosing health care places.

4.2. Relationship of Mother's Occupation with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Based on the results of the chi-square statistical test, a p-value of $0.713 > 0.05$ was obtained. This shows that there is no significant relationship between the mother's occupation and the completeness of basic immunization for children at the Tiom Health Center, Lanny Jaya Regency.

This result is not significant, but the researcher concludes that mothers of respondents who do not work tend to give complete basic immunizations to their children, whereas working mothers give incomplete basic immunizations to their children.

The results of this study are in accordance with the theory put forward by Pandji Anoraga (2005) which states that the wider employment opportunities, the more women work, especially in the private sector [10]. On the one hand, it has a positive impact on income growth, but on the other hand it has a negative impact on the development and maintenance of children. The results of interviews with respondents in table 4.10 show that the mothers of respondents who work have complete immunization status in infants (16.7%). A working mother will have the opportunity to immunize her child compared to a mother who does not work. At the study site, researchers found that there were still mothers who worked but had incomplete basic immunization status for their children (18.1%.) This was because mothers were too busy with work outside the home, so that the needs of their children could not be met, especially in paying attention. However, the results of the study based on table 4.10 the researchers found that people who did not work had complete immunization status for children under two years of age (35.9%) and incomplete (64,1%). Because mothers who do not work pay more attention to household matters and do not want to know about outside the home, even more with the capacity for gardening and other businesses. There are also things obtained by researchers from respondents, where mothers who do not work more complain about the distance and do not have a vehicle, this will also affect the completeness of basic immunizations for children under two years old.

4.3. Relationship of Affordability of Access to Immunization Services with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Based on the results of the study, it showed that there was no relationship between affordability to immunization services and completeness of basic immunization for children under the age of five in the working area of the Tiom Health Center. This is based on the results of the chi-square statistical test analysis, which obtained a p-value of $0.494 > 0.05$. This shows that there is no significant relationship between the affordability of access to health services and the completeness of basic immunization for children under two at the Tiom Health Center,

Lanny Jaya Regency. This is due to the relatively affordable distance of the Public Health Center from home on average less than 1 hour (the travel time is less than 60 minutes) and the influence of public transportation such as motorcycle taxis, public transportation, and others which are easily available so as to reduce time constraints. The location of the immunization service is in a place that is easily accessible to the community, so it does not make it difficult for the community to immunize their children. Based on the results of the study, it shows that access to services that are easily accessible have complete basic immunizations (47.4%) and incomplete (52.6%) while those that are far are complete (36.7%) while incomplete (63.3%) . The results of observations and interviews found that respondents who were easy to reach but had incomplete immunization status due to the problem of increasing cases of Covid-19 which caused all access to services not to work optimally so that children should receive complete basic immunization services but this can lead to not being able to receive basic immunizations. complete basic immunization services, there are other respondents who also said that with the distance of service, this makes sometimes they go to the Posyandu sometimes they don't go because of transportation costs, there are also respondents who say their children are sick so the immunization schedule is missed, this makes completeness basic immunization in infants is incomplete.

4.4. Relationship of Activity of Immunization Officer with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Based on the results of the study, it was shown that there was no significant relationship between the activeness of officers at the immunization service center and the completeness of basic immunization for children under the age of five in the working area of the Tiom Health Center. This is based on the results of the chi-square statistical test analysis, the p-value is $0.357 > 0.05$. Respondents whose officers were always present received complete (37.8%) and incomplete (62.2%). The results of observations and interviews with respondents showed that the officers were always active but infants who did not receive basic immunizations were caused by running out of vaccines at the public health center, sometimes respondents were late in bringing children under two years old to the service. This causes the low completeness of basic immunizations for children under five, only weighing, not carrying out immunization services and more importantly providing information about the importance of completeness of basic immunizations for infants to toddlers, so that the respondent's family assumes that immunization services are normal for children, this child is very important for the future of children, so there is a need for promotion of posters so that the public is able to understand about immunization services.

4.5. Relationship of Mother's Knowledge with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Based on the results of the study, it showed that there was a relationship between the mother's level of knowledge and the completeness of basic immunization for children under the age of five in the working area of the Tiom Public Health Center, Lanny Jaya Regency. This is based on the results of the chi-square statistical test analysis, the p-value is $0.007 < 0.05$. With ratio prevalence $RP = 2.217$, it shows that mothers with good knowledge will have a tendency to carry out complete basic immunizations for their children compared to mothers with less knowledge.

The results of this study are in accordance with previous research conducted by Dewi Setyani (2008) which stated that there was a relationship between mother's knowledge and completeness of infant immunization in Nyatnyono Village, Ungaran Barat District, Semarang Regency, with $p = 0.001$ ($p < 0.05$) [11]. There is a relationship between the mother's level of knowledge and the completeness of infant immunization according to the theory which states that a person takes action based on knowledge. This is because knowledge is a very important domain for the formation of one's actions [12]. Mother's knowledge is one of the predisposing factors for behavior change, especially immunizing children. This is in accordance with the income of L. Green in Notoatmodjo (2003) which states that one of the determinants of behavior change is the presence of a predisposing factor which includes the level of knowledge [12]. Based on the description of the research results and theoretically accompanied by the results of previous studies, the researchers concluded that the higher the level of knowledge possessed by the mother, the better the infant's immunization status. However, mothers who have less knowledge will have an impact on the infant's immunization status at risk of being incomplete.

4.6. Relationship of Family support with Basic Immunization Completeness Status for two-year-olds at Tiom Health Center, Lanny Jaya Regency

Based on the results of the chi-square statistical test, the p-value was $0.110 > 0.05$. This shows that there is no significant relationship between family support and completeness of basic immunization for children under two at Tiom Health Center, Lanny Jaya Regency. The results of this study are in accordance with the theory put forward by Notoatmodjo (2003) which states that to realize an attitude into a real action, a supporting factor or an enabling condition is needed, including facilities. The mother's positive attitude towards immunization must receive confirmation from her husband and there are immunization facilities that are easily accessible, so that the mother immunizes her child [12]. In addition to the facilities factor, support from other parties is also needed, such as husbands, parents, in-laws, and relatives. The results of this study are in accordance with previous research conducted by Handayani (2007) which stated that there was a relationship between family support and incomplete basic immunization, p value = 0.001 ($p < 0.05$) [13].

5. Conclusion

1. There is no significant relationship between maternal education level and completeness of basic immunization, namely maternal education level (p-value = 0.420);
2. There is no significant relationship between the mother's occupation and completeness of basic immunization is the mother's education level (p-value = 0.713);
3. There is no significant relationship between the affordability of access to immunization services and the completeness of basic immunization, namely the mother's education level (p-value = 0.494);
4. There is no significant relationship between the activeness of immunization officers with the completeness of basic immunization is the level of education of the mother (p-value = 0.357);
5. There is a significant relationship between mother's knowledge and completeness of basic immunization is the mother's education level (p-value = 0.007);
6. There is no significant relationship between family support and completeness of basic immunization is the level of education of the mother (p-value = 0.357).

References

- [1] Ministry of Health of the Republic of Indonesia. Regulation of the Minister of Health of the Republic of Indonesia, Number 12, Year 2017 about Immunization Organization. Jakarta: 2017.
- [2] Rahmawati, A. I., & Umbul, C. Factors that affect the completeness of basic immunization in infants in the working area of the Bajeng Health Center, North District. *Epidemiology Periodic Journal*, 2, 59–70. 2014.
- [3] Dewi. Relationship between Mother's Knowledge Level and Provision of Complete Basic Immunization for Infants in Parupuk Tabing Village, Lubuk Buaya Health Center, Padang City, 2013. Padang, 2013.
- [4] Karina. Mother's Knowledge About Basic Toddler Immunization. *Journal of Nursing Studies*, Volume 1, Number 1 of 2012, pp. 30-35, 2012.
- [5] Indonesian Ministry of Health. Health Research Results, Indonesian Ministry of Health Research and Development Agency. Jakarta. Mediakom. 2019.
- [6] Lanny Jaya Health Department. Lanny Jaya Annual Report 2020. Tiom, 2020.
- [7] Tiom Public Health Center. Tiom Public Health Center Profile 2020. Tiom, 2020.
- [8] Notoatmodjo, S. Health Research Methodology. Jakarta: Rineka Cipta. 2010.
- [9] Dwi Astuti. Factors Associated with the Provision of BCG Immunization in the Health Center Area of UPT Cimanggis, Depok City in 2012. *Scientific Journal of Health*, 5(1); Januari 2013.
- [10] Anoraga, Panji. Occupational Psychology. Rineka Cipta: Jakarta, 2005.
- [11] Dewi S. Relationship Between Knowledge and Attitude of Mothers with Completeness of Immunization for Toddlers in Nyatnyono Village, Ungaran Barat District, Semarang Regency, 2008.
- [12] Notoatmodjo, S. Human Resource Development, Jakarta: PT. Rineka Cipta. 2003.
- [13] Handayani N. Maternal Characteristics and Affordability of Immunization Services as Risk Factors for Incomplete Basic Immunization (Case Study in Cebongan Health Center, Salatiga City). Salatiga, 2007.