

The Relationship between Knowledge Level, Attitude, and Source of Information Maternal with Pentavalent Immunization Completeness

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Abstract

Background: Pentavalent immunization was developed by the Strategic Advisory Group of Experts on Immunization (SAGE) by adding Hib vaccine and combined it into one single preparation. The advantage of using the pentavalent vaccine is the protection of five diseases, easy to use and reducing drop out numbers. The aim of this study was to determine the relation of mother's knowledge, attitude, and information source with pentavalent immunization's completeness in Cipondoh Primary Health Care. **Method:** This was an analytical non-paired comparative study with cross-sectional design by consecutive sampling technique. There were 105 respondents. The samples were mothers who have minimal 6 months old baby in Cipondoh Primary Health Care work area. Data were collected using questionnaires. **Results:** The results of bivariate test using chi-square shows there was a relation between mother's knowledge and pentavalent immunization's completeness (p-value=0.001; OR=6.1; CI=2.1-17.2), mother's attitude and pentavalent immunization's completeness (p-value=0.027; OR=3.5; CI=1.1-11.3), mother's information source and pentavalent immunization's completeness (p-value=0.011; OR=4.4; CI=1.5-12.4). **Conclusion:** There was a relationship between maternal knowledge level, maternal attitude, information source and pentavalent immunization's completeness.

Keywords: attitude; information source; knowledge; pentavalent immunization

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1. Introduction

In The National Health System, immunization is one of the most effective forms of health intervention in the effort to reduce the mortality of infant and under-five children.⁽¹⁾ In 2010, Strategic Advisory Group of Experts on Immunization (SAGE) developed a pentavalent vaccine from a tetravalent vaccine (DPT-HB) by adding Haemophilus influenza type b (Hib) and combined it in a single preparation (DPT-HB-Hib).⁽²⁾

Based on the data from the World Health Organization (WHO) 2013, the under-five mortality rate caused by infectious diseases that could have been prevented with immunization is still fairly high. There are 1.4 million under-five deaths per year, which are caused by whooping cough 20%, tetanus 14%, 2.3% Pneumonia and meningitis.⁽³⁾ In order to accelerate the achievement of the 4th Millenium Development Goals (MDGs), the under-five mortality rate 24/1000 live births in 2015, Indonesia through its government issued a decree of Indonesian Republic Minister of Health Number 23/Menkes/SK/I/2013 on the administration of diphtheria, tetanus, pertussis/hepatitis B/haemophilus influenza type b vaccine.⁽⁴⁾

The Indonesian Republic Minister of Health Number 23/Menkes/SK/I/2013 stated that the implementation of DPT-HB-Hib administration in Indonesia will be done gradually. DKI Jakarta and the Province of Banten itself began implementing this pentavalent immunization in March 2014. This immunization was first performed on 2 months old infant, then repeated at 4 and 6 months of age. With the use of the pentavalent vaccine (DPT-HB-Hib), there is an addition of Hib antigen to prevent pneumonia and meningitis in children who are currently experiencing an increase in the incidence rates.⁽⁴⁾

One of the long-term goals of the pentavalent immunization program is the achievement in the widest range and as much as possible and also as one of the preventive efforts to avoid diseases through given immunity that are performed continuously, thoroughly and in accordance with standards so as to provide health protection and break the chain of transmission of tetanus, diphtheria, hepatitis B, pneumonia and meningitis. Although the government has targeted the highest range of coverage of immunization, in fact, immunization activities still get less attention from mothers of under-five children.⁽⁵⁾

This is evident from the Basic Health Research in 2013⁽⁶⁾ data that the coverage of basic immunization in Indonesia is still low at 59.2% although it has increased compared to 2007 by 41.6%. In the province of Banten, the coverage of complete immunization in 2013 of 45.8 is still below the coverage of national immunization in 2013.

Tangerang City is number three with complete immunization coverage in Banten province which is 69.7% which is still below the national target of 90%.⁽⁷⁾ Immunization coverage in Tangerang city in 2014 was 95.1% with the highest coverage in Pedurenan Primary Health Care (99.15%), Pasar Baru Primary Health Care (98.91%) and Jalan Baja Primary Health Care (98.68%) while coverage of basic immunization at Cipondoh Primary Health Care in 2014 reached 95.92% and DPT-1 measles immunization rate in Tangerang city was 0.86%.⁽⁸⁾

The fact that this immunization coverage has not been achieved yet, can be caused by several things, Rahmawati and Wahjuni⁽⁹⁾ in their study stated that the factors related to the completeness of immunization among others are a maternal education level, maternal knowledge level family tradition, and family support. On the other hand, Ningrum and Sulastri⁽¹⁰⁾ stated that there is a correlation between a maternal education level, maternal knowledge, maternal motivation and house distance to Primary Healthcare with the completeness of basic immunization coverage

In relation to how big the influence and roles of parents especially mothers in optimizing the completeness of pentavalent immunization program in infants, researcher is interested to conduct a study on the relationship of Maternal knowledge level, attitude and source of information with the completeness of pentavalent immunization in Cipondoh Primary Health Care work area, Tangerang city. The collection of a sample in this place is based on the implementation of the pentavalent immunization that has just been carried out in may 2014 so further studies is needed to assess various factors that could affect the completeness of pentavalent immunization.

2. Method

The study design used in this study is descriptive analytic with a cross-sectional approach. The independent variables are the mother's knowledge and source of information while the dependent variable is the completeness of immunization.

The data were collected using a questionnaire that has been validated and tested for its reliability. The respondent who declared his availability to follow will be signed informed consent research that has been included, respondents in survivors to ask and discuss related research previous researchers explains the meaning and purpose of research.

The population in this study are all mothers who brought infants on February 1st 2015-February 18th 2015 in Cipondoh Primary Health Care work area. Total sample in this study is 105 respondents. The technique used in this study is consecutive sampling.⁽¹¹⁾ Inclusion criteria are mothers who have minimal of 6 months old infant and mothers that have notes on immunization/KMS/immunization card on pentavalent immunization data (DPT-HB-Hib) while the study is being held.

Exclusion criteria are mothers who passed for the inclusion criteria but does not consent to be included in the study and mothers that has been a subject but drop out from

the study. Assessment criteria in research using the scale indicator with a Linkert knowledge either if retrieved right >80%, 60-80 are knowledge, knowledgeless <60%. Whereas the attitude of good attitude if >23, attitude quite 16-23, and less attitude <16 with maximum value calculation is 26 point.

Data obtained was analyzed by univariate and bivariate analysis. Univariate analysis was used to obtain a graphic frequency distribution of knowledge level, attitude, and source of information on pentavalent immunization. Bivariate analysis was used to analyze the relationship between mother's knowledge level with the completeness of pentavalent immunization, mother's attitude with the completeness of pentavalent immunization and source of information with the completeness of pentavalent. Bivariate analysis using chi-square test with the significance of 95%

3. Results and Discussion

3.1. Results

Cipondoh Primary Health Care situated in Cipondoh district exactly in Jalan KH Hasyim Ashari, this Primary Health Care is one of the Primary Health Care that accepted ISO in 2008 with 10 other Primary Health Care in Tangerang City. This Primary Health Care is strategically situated in the central of Cipondoh District allowing easy access to its target area. The working area of Cipondoh Primary Health Care including Cipondoh Urban Village, Cipondoh Makmur Urban Village and Kenanga Urban Villages with 31 health worker. Immunization services can do in Cipondoh Primary Health Care or in Maternal and Child Health Center. Maternal and Child Health centre conducted in Cipondoh Primary Health Care target areas consists of 31 Madya Maternal and Child Health Center distributed in three urban villages.⁽¹²⁾

Respondents Characteristics

It can be seen from Table 1 that most respondents live in Cipondoh urban village as much as 42 respondents (40%) and least of the respondents live in Cipondoh Makmur urban village. The most respondents are 26-39 years old as much as 43 respondents (43%) and the least respondents are 31-40 years old as much as 25.7%. Almost half of the respondents are high school/profession school graduates as much as 43 respondents (43%) the least are from elementary school graduates as much as 3 respondents (2.9%). The most subjects are employed as much as 43 respondents (43%). Most respondents' child is ≥9 months old as much as 47 subjects (44.8%) and the least is 6-<7 months old as much as 15 respondents (14.3%). The most of the respondents' knowledge level on pentavalent immunization is in the good criteria as much as 62 respondents (59%) and the least respondents are in the poor criteria as much as 19 respondents (18.1%). Respondent's attitude on pentavalent immunization dominated by moderate as much as 65 respondents (61.9%). The most respondents obtained information on pentavalent immunization from health worker (consists of health cadres, general practitioner and or specialist and midwife) as much as 56 respondents (53.3%) and the least come from printed media and electronic media as much as 19 respondents (18.1%). The complete pentavalent immunization data for respondents' infants are mostly included in the complete criteria (79%).

Table 1. Respondent Distribution

Variables	N	%
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Address		
Cipondoh Urban village	42	40.0
Cipondoh Makmur Urban village	26	24.8
Kenanga Urban Village	37	35.2
Total	105	100
Age		
<20-25 years old	35	33.3
26-39 years old	43	41.0
31-40 years old	27	25.7
Total	105	100
Level of Education		
Elementary School Graduate	3	2.9
Junior High School Graduate	21	20.0
Senior High/Profession School Graduate	37	35.2
Diploma degree	28	26.7
Bachelor degree	16	15.2
Total	105	100
Occupation		
Employed	53	50.5
Unemployed	52	49.5
Total	105	100
Child's Age		
6-< 7 months	15	14.3
7-< 8 months	16	15.2
8-< 9 months	27	25.7
≥9 months	47	44.8
Total	105	100
Knowledge Level		
Good	62	59.0
Moderate	24	22.9
Poor	19	18.1
Total	105	100
Attitude		
Good	39	37.1
Moderate	65	61.9
Poor	1	1.0
Total	105	100
Source of Information		
Health Worker	56	53.3
Printed Media and Electronic Media	19	18.1
Community and Family	30	28.6
Total	105	100
Completeness of Pentavalent Immunization		
Complete	83	79.0
Incomplete	22	21.0
Total	105	100

The Relationship between Maternal Knowledge Level with Completeness of Pentavalent Immunization

From the Table 2, it can be seen that respondents who have a good, moderate and poor knowledge level about pentavalent immunization are more likely to have complete pentavalent immunization than incomplete. However, the percentage comparison between complete immunization and incomplete immunization of pentavalent immunization at a good knowledge level is greater than a moderate knowledge

Bivariate analysis based on chi-square test shown in Table 2 on the relationship between knowledge level on pentavalent immunization with the completeness of pentavalent immunization shows p-value as much as 0.001 where $p < 0.005$ so, in conclusion, there was a relationship between knowledge level on pentavalent immunization with the completeness of pentavalent immunization.

Table 2. Relationship Between Maternal Knowledge Level with Completeness of Pentavalent Immunization

Knowledge Level	Completeness of Immunization	Total
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	Complete	Incomplete	n(%)
	n (%)	n (%)	
Good	56 (90.3)	6 (9.7)	62 (100)
Moderate	15 (62.5)	9 (37.5)	24 (100)
Poor	11(57.9)	8(42.1)	19 (100)

(p-value=0.001; OR=6.1; CI=2.1-17.2)

The Relationship between Maternal Attitude with Completeness of Pentavalent Immunization

From the Table 3, it can be seen that respondents who have a good and combination moderate and poor attitude about pentavalent immunization are more likely to have complete pentavalent immunization than incomplete. However, the percentage comparison between complete immunization and incomplete immunization of pentavalent immunization at a good maternal attitude is greater than combination moderate and a poor knowledge

Bivariate analysis based on chi-square test as shown in Table 3 on the relationship between maternal attitude on pentavalent immunization with the completeness of pentavalent immunization shows p-value as much as 0.027 where $p < 0.05$ so that it can be concluded that there was a relationship between maternal attitude on pentavalent immunization with the completeness of pentavalent immunization.

Table 3. Relationship Between Maternal Attitude with Completeness of Pentavalent Immunization

Attitude	Completeness of Immunization		Total
	Complete	Incomplete	
	n (%)	n(%)	n(%)
Good	35 (89.7)	4(10.3)	39(100)
Moderate + poor	47 (71.2)	19(28.8)	66 (100)

(p-value=0.027; OR=3.5; CI=1.1-11.3)

The Relationship between Source of Information with Completeness of Pentavalent Immunization

From Table 4 it can be seen that the respondents that obtained information from health worker, printed media and electronic media, as well as public and family, have more likely to have complete immunization than incomplete, however the percentage comparison between complete immunization and incomplete immunization from respondents that obtained information from health worker are bigger than others.

Bivariate analysis based on chi-square test as shown in Table 4 on the relationship between source of information on pentavalent immunization with the completeness of pentavalent immunization shows p-value as much as 0.011 where $p < 0.05$ so that it can be concluded that there was a relationship between the source of information on pentavalent immunization with the completeness of pentavalent immunization.

Table 4. Relationship between Source of Information with Completeness of Pentavalent Immunization

Source of Information	Completeness of Immunization		Total
	Complete	Incomplete	
	n (%)	n (%)	n (%)
Health Worker	50 (89,3)	6 (10,7)	56 (100)
Printed Media and Electronic Media	13(68,4)	6 (31,6)	19 (100)
Community and Family	19(63,3)	11(36,7)	30(100)

(p-value=0.011; OR=4.4; CI=1.5-12.4)

3.2. Discussion

The Relationship between Materna Knowledge Level with Completeness of Pentavalent Immunization

The result of this study showed that the better the knowledge level, the more completeness of pentavalent immunization in the complete category. It also shows that there is a relationship between knowledge level with the completeness of pentavalent immunization. This is in accordance with the study conducted by Bolly, et al⁽¹³⁾ in Pangkep

district, Wijaya, et al⁽¹⁴⁾ in Jakarta, Kadir, et al⁽¹⁵⁾ in Makassar, Mijwad Muh and Sugihartiningsih⁽¹⁶⁾ in Boyolali, Albertina, et al⁽¹⁷⁾ in Jakarta, and Latifah⁽¹⁸⁾ in Tegal that stated that there was a relationship between knowledge level with the completeness of immunization

This study inconsistent with the study conducted by Astrianzah⁽⁵⁾ stated that there was no relationship between maternal knowledge level with the completeness of basic immunization status.⁽⁵⁾ This is also inconsistent with the study conducted by Prayogo⁽¹⁹⁾ in East Jakarta that stated there was not a relationship between knowledge level with the completeness of immunization. According to Green cit Notoatmodjo⁽¹⁾, it was predicted that knowledge is not the only factors that could affect the completeness of immunization so that even though according to a maternal knowledge level she understood how important immunization is, if there were no other factors to support it, for example, accessibility of health care services factor and support of health worker then the administration of immunization to an infant will not be fully completed

According to Notoatmodjo⁽¹⁾ knowledge consists of human's logic, explanation and understanding on everything, including technical or practical ability in solving problems in life that have not been proved systematically. Knowledge is a dominant and very important factor to shape a person's actions. Actions based on knowledge will be more longlasting than the one that does not.⁽¹⁾ This is evident from the results of the study, that respondents that have good knowledge will have complete immunization, then it can be concluded that respondents have reached a cognitive dimension to the level of applying Krathwohl.⁽²⁰⁾

The Relationship between Maternal Attitude with Completeness of Pentavalent Immunization

The results of the study showed that the better the maternal attitude the more completeness of pentavalent immunization is incomplete category. The results also showed that there was a relationship between maternal attitude with the completeness of pentavalent immunization. This is consistent with a study conducted by Wijaya et al⁽¹⁴⁾ in Jakarta which showed there was a relationship between maternal attitude with the completeness of basic immunization. Hartatik et al⁽²¹⁾ and Emilya et al⁽²²⁾ also stated that there was a relationship between maternal attitude with the completeness of basic immunization. In other studies, there was a relationship between maternal attitude and the completeness of basic immunization.⁽²³⁾ According to Notoatmodjo, attitude is an individual closed response to a certain stimulus or object. So that it can be concluded attitude is a tendency to take action against an object in a way that denotes signs to like or dislike a particular object.⁽¹⁾

The Relationship between Source of Information about Pentavalent Immunisation with Completeness of Pentavalent Immunization

The results of the study showed that the source of information derived from health worker increases the completeness of pentavalent immunization in the complete category. This result also showed there was a relationship between information source with the completeness of pentavalent immunization. This is inconsistent with a study conducted by Kamau in Nairobi⁽²⁴⁾ which showed there was not a relationship between the source of information with the completeness of pentavalent immunization.

According to Mubarak et al⁽²⁵⁾ the target program in the selection of information media used, should be clear so that it can be customized, because on a certain age and in a particular condition an individual also have a certain ability in both thinking power, imagination, needs and endurance in learning, on the other hand, the quality of techniques used, have to meet certain standards so that it can give clarity on information and effectiveness of a certain source of information regarding the target of achievement results, while the efficiency is associated with achievement results.

4. Conclusion

This study showed that the most knowledge level of respondents regarding pentavalent immunization are included in the good criteria, most respondents attitudes about

pentavalent immunization are included in moderate criteria and most of the source of information on pentavalent immunization is obtained from the health worker and most of the pentavalent immunization completeness status in respondents infants are included in the complete criteria. This study also showed that there was a relationship between maternal knowledge on pentavalent immunization with the completeness of pentavalent immunization, there was a relationship between maternal attitude with the completeness of pentavalent immunization and there was a statistically significant relationship between the source of information on pentavalent immunization with the completeness of pentavalent immunization

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