FACTORS RELATED WITH HB 0 VACCINE ADMINISTRATION TO INFANT AGE 0-7 DAYS AT THE SUKAWENING PUBLIC HEALTH CENTRE

Sukmawati, Lilis Mamuroh, Furkon Nurhakim
Faculty of Nursing, PSDKU Universitas Padjadjaran, Garut, Indonesia
Correspondence: ahmad.sukma@yahoo.co.id

Abstract

Hepatitis is a public health problem in the world including Indonesia. Hepatitis B virus infected 2 billion people in the world, about 240 million of them become chronic hepatitis B sufferer, as many as 1,5 million world's population died every year because of hepatitis. In 2013, immunization in Garut District accomplish (97,2%) HB 0 immunization, (106,7%) BCG, (97,8%) DPT/HB (3), (104,8%) Polio 4 and (102,9%) Measles. Although it exceeded above the determined target, HB 0 immunization still ranked the lowest compared to other immunization. This research aimed to analyzed factors related to HB 0 immunization including family income, attitudes, education level and knowledge on HB 0 immunization administration for infants aged 0-7 days at working area of Sukawening public health center. Number of sample in this research is 218 people. Data was obtained by interview using questionnaire, analyzed by multiple regression at $\alpha = 0,05$. Result shows that there is a significant relationship between the mother's behavior of HB 0 immunization with family income variable (p-value 0,0320) attitude variable, education level and knowledge on HB 0 immunization has p-value < 0,000 for each at working area of Sukawening public health center. Variable that has the least influence is family income variable. Those factors influence mothers' behavior on HB 0 immunization to their babies.

Keywords: HB 0, Immunization, Infant

INTRODUCTION

Hepatitis B is a liver inflammatory disease caused by the hepatitis B virus (VHB). VHB is a non-cytopathic virus, which is virus that do not cause direct damage to liver cells. In contrary, it is an invasive reaction by the immune system that usually causes inflammation and liver damage (Spiritia, 2005). VHB may lead to clinicopathologic conditions after infection, including chronic carrier conditions which is it will infect at birth or thereafter, acute hepatitis, chronic hepatitis, fulminant hepatitis, cirrhosis and hepatocellular carcinoma. (Rudolph, 2007).

Hepatitis is a public health problem in the world including in Indonesia. Hepatitis B virus infected 2 billion people in the world, about 240 million of them become chronic hepatitis B sufferer, as many as 1,5 million world's population died every year because of hepatitis (Pusdatin Kemenkes RI, 2014). Meanwhile in Indonesia, HBsAg prevalence is 7,2%, estimated about 18 million people have Hepatitis B and 3 million people suffer from Hepatitis C. About 50% of these people have potentially chronic liver disease and 10% are potentially leading to liver fibrosis that can lead to liver cancer. These figures show that 1,050,000 patients have the potential to have liver

cancer. Therefore, Hepatitis B and Hepatitis C surveillance have been conducted among high-risk populations. (Riskesdas, 2013).

Based on data from Depkes RI (2012), transmission of hepatitis B occurs during the perinatal period which is transmission from mother to newborn baby is called vertical transmission. If a pregnant woman positive has Hepatitis B and HBsAg carrier then the baby has 90% chance to be infected and be a carrier. Moreover, 25% of these will die of chronic hepatitis or liver cancer. In addition, this perinatal transmission is commonly occurred in Eastern countries as well as developing countries. Infection in children generally happened in the first year, 90% will be a chronic infection, 30% in children aged 1-4 years old and less than 5% have chronic infections during adulthood.

In order to control Hepatitis Virus in Indonesia, efforts that were made by the Ministry of Health are: 1) Raising awareness, partnership and resource mobilization; 2) Hepatitis Surveillance development to obtain data as a basis for the preparation of countermeasures response; 3) Strengthen laws and regulations; 4) Comprehensive prevention efforts; 5) Early detection, and follow-up which includes access to care, support and treatment. Meanwhile, to achieve Strategy to Eliminate Transmission of Hepatitis B from mother to child in 2020, efforts implemented by Ministry of Health are: 1) Increasing immunization coverage in newborns less than 24 hours from the birth time; 2) Early Detection of Hepatitis B in pregnant women and other high-risk groups, each with at least 90% coverage.

According to Pusdatin Kemenkes RI (2014), HB 0 immunization coverage in Indonesia in 2012 is 85.6%, in the year 2013 the coverage is 86.8%. Although HB 0 immunization coverage exceeded the determined target of 80%, the coverage is not maximal yet in approaching Minimum Service Standards (SPM) because the coverage for Universal Child Immunization (UCI) is 100% (MOH, 2010).

There is no difference in coverage of each type of immunization by gender, but differences by region. The coverage for each type of immunization is always higher between 7.2%-13.7% in urban areas compared to rural areas. The higher the level of education, the higher the level of expenditure per capita per month, the higher the coverage of each type of immunization. Differences in child immunization coverage by education among heads of households who did not attend school and received college education is between 17.1% -25.4% (Riskesdas, 2007).

The result of Helmi's research (2008) found that there is a correlation between internal factors that consist of knowledge and education level with mother's behavior in giving Hepatitis B immunization whereas external factor which is statistically income there is no relationship found. Gunawan's research (2009) result stated that there was a significant correlation between knowledge with infant immunization where mothers with good knowledge had a 4.5 times higher chance of providing immunization to their children, and no significant relationship was found between service by officer and family support with Hepatitis child immunization.

According to Green quoted by Notoatmodjo (2007), a person's behavior is influenced by 2 main factors which are behavior causes and non-behavior causes. The person's or society's behavior on health is determined by the knowledge, beliefs, traditions and so on from the person or society concerned. In addition, the availability of facilities, the behavior of health workers on health will also support and strengthen the formation of behaviors, for example, a mother who does not want to immunize her child in integrated service post can be due to the mother does not know or have not been told the benefits of child immunization.

According to Riskesdas (2013), the percentage of completed primary immunization in urban areas was higher (64.5%) than rural (53.7%) and there was (11.7%) children aged 12-23 months in rural areas who were not given immunization at all. There is a tendency that the higher the education level of the household ownership index quintile, the higher the overall coverage of immunization. Based on the education of the head of household, the coverage of complete primary immunization of children aged 12-23 months was the highest in the college group (72.5%) and the lowest in the group that did not complete primary school (49.0%). According to the work, there is a tendency to increase the coverage of complete immunization of children aged 12-23 months on heads of families who work as employees and entrepreneurs

Based on the results of routine infant immunization reports in Garut District Health Office in 2013, HB 0 immunization accomplished 97.2%, BCG 106.7%, DPT / HB (3) 97.8%, Polio 4 104.8% and Measles 102.9%. This data shows an overall immunization accomplishment in Garut district, although it exceeded above the determined target, HB 0 immunization still ranked the lowest compared to other immunization. (health profile of Garut district, 2013).The purpose of this research is to

discover the factors related to administration of HB 0 to infants aged 0-7 days in the work area of Sukawening public health center.

METHODS

This research design was using quantitative method with cross sectional approach. This research was conducted in the working area of Sukawening public health center in May 2015. The number of sample in this study is 218 people. The level of family income is measured from the average family income every month, the categorization of the income level consists from low to high. Determination of the category is from UMK Garut 2014 which is Rp.1.085.000. The low category is if the family has average income below UMK whereas high category is if the family average income is above UMK.

Questionnaire was used to measure the mother's attitude towards administrating HB 0 immunization. This questionnaire was used to determine the attitude of the mother in administrating HB 0 immunization with the number of questions as many as 20 questions using median value. For positive statements were given a score of 1 and a score of 0 for no response/negative statements. With positive attitude category has score of ≥10 and negative attitude category has score of <10.

The data of respondent's education is used to measure the level of education. Low education is categorized if the last education is primary-junior high school, and high education is categorized if the last education is high school or college.

Measurement of mother's knowledge about HB 0 immunization was measured by questionnaire which has 20 questions. To determine the high level of knowledge is if the result is >80%, enough is if the result is <60%.

RESULTS

1. Univariate Analysis

Table 1 Distribution of Respondents by Family Income

Family Income	Amount	Percentage
Low	97	44,49%
High	121	55,51%
Total	218	100%

Based on the table above, most of the respondents (55.52%) were high-income respondents.

Table 2 Distribution of Respondents by Attitude

Attitude Categories	Amount	Percentage
Negative	40	18,35%
Positive	178	81,65%
Total	218	100%

Based on the table above, most of the respondents (81,65%) had positive attitude.

Table 3 Distribution of Respondents by Education Level

Education Categories	Amount	Percentage
Low	106	48,62%
High	112	51,38%
Total	218	100%

Based on the table above, most of the respondents (51,38%) had high education level.

Table 4 Distribution of Respondents According to HB 0 Immunization Knowledge

Knowledge Categories	Amount	Percentage
Less	31	14,22%
Enough	121	55,50%
Good	66	30,28%
Total	218	100%

Based on the table above, most of the respondents (55,50%) had enough knowledge.

2. Bivariat Analysis

Table 5 The Relationship between Family Income and The Implementation of HB 0 Immunization to Infants Aged 0-7 Days

Family Income		Implementation of HB 0 Immunization		Total	X^2 Count	P Value	OR (CI 95%)	Spearman's Correlation Test
		Not Immunized	Immunized					
Low	Amt	46	51	97	4,604	0,0320	1,896	0,155
	%	47,4%	52,6%	100%				

High	Amt	39	82	121
	%	32,2%	67,8%	100%
Total	Amt	85	133	218
	%	39,0%	61,0%	100%

Based on the table above, most of the infants (67,8%) were immunized from high income families and there was a relationship between family income with the administration of HB 0 p-value 0,0320 (<0,05).

Table 6 The Relationship between The Attitude of Mothers of Infants Aged 0-7 Days to HB 0 Immunization with The Implementation of HB 0 Immunization to Infants Aged 0-7 Days

Attitude Categories		Implementation of HB 0 Immunization		Total	X^2 Count	P Value	OR (CI 95%)	Spearman's Correlation Test
		Not Immunized	Immunized					
Negative	Amt	35	5	40	45,995	0,000	17,920	0,471
	%	87,5%	12,5%	100%				
Positive	Amt	50	128	178				
	%	28,1%	71,9%	100%				
Total	Amt	85	133	218				
	%	39,0%	61,0%	100%				

Based on the table above, most of the infants (71,9%) were immunized from the family that has positive attitude and there was a relationship between mother's attitude with the administration of HB 0 p-value 0,000 (<0,05)

Table 7 The Relationship between The Education Level of Mothers of Infants Aged 0-7 Days with The Implementation of HB 0 Immunization to Infants Aged 0-7 Days

Education Categories		Implementation of HB 0 Immunization		Total	X^2 Count	P Value	OR (CI 95%)	Spearman's Correlation Test
		Not Immunized	Immunized					
Low	Amt	77	29	106	95,480	0,000	34,517	0,671
	%	72,6%	27,4%	100%				
High	Amt	8	104	112				
	%	7,1%	92,9%	100%				
Total	Amt	85	133	218				
	%	39,0%	61,0%	100%				

Based on the table above, most of the infants (92,9%) were immunized from high-educated families and there was a relationship between family income with the administration of HB 0 p-value 0,000 (<0.05)

Table 8 The Relationship between Knowledge of Mothers of Infants Aged 0-7 Days with The Implementation of HB 0 Immunization to Infants Aged 0-7 Days

Knowledge Categories		Implementation of HB 0 immunization		Total	X^2 Count	*P Value*	*Spearman's Correlation Test*
		Not Immunized	Immunized				
Low	Amt	26	5	31	36,625	0,000	0,376
	%	83,9%	16,1%	100%			
Enough	Amt	46	75	121			
	%	38,0%	62,0%	100%			
Good	Amt	13	53	66			
	%	19,7%	80,3%	100%			
Total	Amt	85	133	218			
	%	39,0%	61,0%	100%			

Based on the table above, most of the infants (83,9%) were not immunized from families who have less knowledge and there is a relationship between family income with the administration of HB 0 p-value 0,000 (<0.05).

DISCUSSION

Respondent's Characteristics

Based on research conducted in the working area of Sukawening public health center, there were 218 people who were willing to be respondents during the study in July 2015. The result of the research showed that the characteristics of respondents according to family income based on table 4.1 most respondents have high income which is 121 people (55,51%) and low income 97 people (44,49%). The results of this study discovered that there are still some families that has income under the UMK Garut district.

Based on the research's results in table 4.2, distribution of attitude categories obtained number of respondents who had negative attitudes were 40 people (18.35%), and the number of respondents who had positive attitude were 178 people (81.65%). The results of this research identified that most mother has positive attitude towards administration of HB 0 immunization.

Based on the research's results in table 4.3, distribution of level of education categories obtained number of respondents who had high education level were 112 people (51,38%) and low education level were 106 people (48,62%).

Based on the research's results in table 4.4, distribution of knowledge categories obtained the highest number of respondents had enough knowledge which were 121 people (55,50%), less knowledge were 31 people (14,22%), and good knowledge were 66 people (30,28%).

Bivariate Analysis

The relationship between family income with HB 0 immunization implementation to infants aged 0-7 days

Based on the research analysis of the relationship between family income with the behavior of the mother giving HB 0 immunization can be explained that out of 218 women with low incomes who did not implement immunization were 46 mothers (47.4%) with who did implement immunization were 51 mothers (52.6 %). Statistical test results obtained P value = 0.0320 with 95% confidence level therefore it can be concluded that Ho is rejected. This means that there is a meaningful relationship between family income and mother's behavior in giving HB 0 immunization at Sukaweing public health center working area and the correlation test value is 0.155 indicating a low correlation between income with the behavior of implementing HB 0 immunization, OR value=1.896, which means that mothers with low incomes are 2 times more likely to not immunized their infants than high income mothers. This is different from the result of Helmi's (2008) research. Helmi's research found no relationship between family income with HB 0 immunization implementation, whereas in this research there is relationship between income with HB 0 immunization implementation despite its weak relationship. Economic status of a person affects one's ability to pay for health services. Often there is a person or a family member when got sick, they were not taken to a health care because they could not afford the bill. Similarly, to the implementation of immunization, it could be that a mother is willing to carry out immunization for her child but due to financial factors, immunization could not be carried out (Mahfoedz, 2006).

Relationship between attitudes with mother's behavior towards basic immunization implementation.

Based on the research analysis of the relationship between attitude with the behavior of the mother implementing HB 0 immunization can be explained that out of 218 women with negative attitude who did not implement immunization were 35 mothers (87,5%) with who did implement immunization were 3 mothers (12,5 %). Statistical test results obtained P value=0.000 with 95% confidence level therefore it can be concluded that Ho is rejected. This means that there is a meaningful relationship between attitude with the behavior of the mother implementing HB 0 immunization at Sukaweing public health center working area and the correlation test value is 0.471 indicating a moderate correlation between attitude with the behavior of the mother implementing HB 0 immunization, OR value=17.920, which means that mothers with negative attitude towards HB 0 immunization are 18 times more likely to not immunized their infants than mothers with positive attitude toward implementing immunization. Attitude is a person's closed response to a particular stimulus or object. Robert Kwick in Notoatmojo (2012), stated that attitude is a tendency to act towards an object, in a way that states the presence of signs to like or dislike a particular object. Researchers analyzed that attitudes can influence the behavior in immunizing their infants, because mothers with positive attitudes usually have high levels of education and knowledge about immunization gained through mass media/electronics and health workers. Moreover, mothers with positive attitude will implement immunization to her infants so they reach optimal growth.

Relationship between level of education with mother's behavior towards basic immunization implementation

According to research's result from 218 respondents at Sukawening public health center working area, of all 210 respondents, mothers with low level of education that did not implement immunization were 77 mothers (72,6%) with who did implement immunization were 29 mothers (27,4%). Statistical test results obtained P value=0.000 with 95% confidence level therefore it can be concluded that Ho is rejected. This means that there is a meaningful relationship between level of education with the behavior of the mother implementing HB 0 immunization at Sukaweing public health center working

area and the correlation test value is 0.671 indicating a strong correlation between level of education with the behavior of the mother implementing HB 0 immunization, OR value=34.517, which means that mothers with low level of education are 35 times more likely to not immunized their infants than mothers with high education. This is supported by a theory by Wati (2013), education is defined as an institutional stage of activity that is used to improve the development of individuals in mastering knowledge, habits, attitudes and so on. This means that the higher the level of education of a person, the easier they receive information therefore the more the knowledge they have. In contrary, the less the level of education, the slower the development of one's attitude toward healthy living. So researchers assumed that there are still a lot of people did not implement HB 0 immunization due to influence of knowledge, attitude and mother's behavior that is determined by level of education background from each mother.

Relationship between knowledge with mother's behavior towards basic immunization implementation

According to research's result from 218 respondents, mothers with less knowledge that did not implement immunization were 26 mothers (83,9%) with who did implement immunization were 29 mothers (27,4%). Statistical test results obtained P value=0.000 with 95% confidence level therefore it can be concluded that Ho is rejected. This means that there is a meaningful relationship between knowledge with the behavior of the mother implementing HB 0 immunization at Sukaweing public health center working area and the correlation test value is 0.376 indicating a low correlation between knowledge with the behavior of the mother implementing HB 0 immunization. From this research's result showed that mothers who are well-knowledge but does not have the encouragement and motivation from within the mother herself or family to bring children to implement immunization will negatively influence the behavior of the mother in infants immunization. Knowledge is the result of knowing, and this occurred after people perform sensing to a particular object. Knowledge can be obtained through formal and non-formal education and mass media. Knowledge or cognitive domain is a very important domain for the formation of one's actions (over behavior). Knowledge itself can be obtained through the experience of self and of others (Notoatmodjo, 2012).

CONCLUSION

Based on the results of this research on factors that influenced with implementation of HB 0 immunization at Sukawening public health center can be concluded that:

1. There is a relationship between family income level and mother's behavior in implementing HB 0 immunization for baby aged 0-7 day old.
2. There is a relationship between mother's attitude on HB 0 immunization with mother's behavior in implementing HB 0 immunization for baby aged 0-7 day old.
3. There is a relationship between mother's education level and mother's behavior in implementing HB 0 immunization for baby aged 0-7 days old.
4. there is a relationship between mother's knowledge level about immunization with mother's behavior in implementing HB 0 immunization for baby aged 0-7 day old at Sukawening public health center work area.

REFERENCES

A.Aziz Alimul Hidayat. 2008. Imunisasi. In: *Pengantar Ilmu Kesehatan Anak Untuk Pendidikan Kebidanan*. Jakarta: Salemba Medika.

Arikunto, S. 2010.*Prosedur Penelitian : Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.

Azwar, A. 2003. *Metode Penelitian Kedokteran dan Kesehatan Masyarakat*, Binarupa Aksara, Jakarta.

Departemen Kesehatan RI. 2004. *Kebijakan Program Imunisasi.* Jakarta: Departemen Kesehatan RI.

Departemen Kesehatan dan Kesejahteraan Sosial RI. 2004. *Sensus Kesehatan Rumah Tangga (SKRT).*

Departmen Kesehatan Republik Indonesia. 2012. *Pedoman Pengendalian Hepatitis Virus*. Direktorat Jenderal PP & PL.

Depkes RI. 2010. *Perjalanan Menuju Indonesia Sehat 2010*. P Jakarta: Penerbit Departemen Kesehatan RI.

Dinas Kesehatan Kabupaten Garut. 2013. Profil Dinas Kesehatan Kabupaten Garut.

Gunawan. 2009. *Pengaruh Karakteristik Ibu dan Sosial Budaya Terhadap Pemberian Imunisasi Hepatitis B pada Bayi 0-7 Hari Di Kabupaten Langkat.* Fakultas Kesehatan Masyarakat Universitas Sumatera Utara, Medan.

Hassan, R. & Alatas, H. 2007. *Ilmu Kesehatan Anak*. 11th ed. Jakarta: Infomedika Jakarta.

Helmi, A. 2008. *Pengaruh Faktor Internal dan Eksternal Terhadap Perilaku Ibu dalam Pemberian Imunisasi Hepatitis B pada Bayi di Kabupaten Aceh Utara*.Tesis. Universitas Sumatera Utara. Medan

Hidayat, A. A. A. 2005. *Pengantar Ilmu Keperawatan Anak 1*, Jakarta : Salemba Medika.

Horn, T. & Learned, J. 2005. *Viral Hepatitis and HIV*.AIDS Community Research.

I.G.N. Ranuh, dkk. 2005. *Pedoman Imunisasi di Indonesia*, Satgas Imunisasi Ikatan Dokter Anak Indonesia, Jakarta.

Ikatan Dokter Anak Indonesia, 2014. *Informasi Vaksin Untuk Orang Tua*. Satgas .

Kementerian Kesehatan Republik Indonesia, 2014.Laporan Pusat Data dan Informasi Hepatitis.

Kementrian Kesehatan RI. 2010. *Rencana Strategis Kementrian Kesehatan tahun 2010 – 2014*. Jakarta: Kementrian Kesehatan RI. http://www.depkes.go.id.

Machfoedz, Ircham dan Eko Sunaryani. 2006. *Pendidikan Kesehatan Bagian dari Promosi Kesehatan*. Yogyakarta : Penerbit F. Tramaya.

Notoatmodjo, S. 2007. *Kesehatan Masyarakat Ilmu dan Seni*.Jakarta : Rineka Cipta.

Notoatmodjo, S. 2010. *Metode Penelitian Kesehatan*. Jakarta : Rineka Cipta.

Notoatmodjo, S. 2012. *Promosi Kesehatan, Teori dan Aplikasi*, Edisi I, Cetakan I, PT, Rineke Cipta Jakarta

Potter dan Perry. 2007. Fundamental *Keperawatan, Konsep, Proses dan Praktik*, Edisi ke 4. EGC. Jakarta.

Pusat Data dan Informasi Kementerian Kesehatan RI. 2014. *Situasi dan Analisis Hepatitis*. Kementerian Kesehatan RI.

Riset Kesehatan Dasar (RISKESDAS). 2007. *Kesehatan Ibu dan Anak*.Badan Penelitian dan Pengembangan KesehatanDepartemen Kesehatan Republik Indonesia.

Riskesdas, 2013. *Riset Kesehatan Dasar*. Jakarta : Badan Penelitian dan Pengembangan Kesehatan Departemen Kesehatan R.I.

Rudolph, M.A., 2007. *Rudolph's Pediatrics.*20th ed. Jakarta : EGC. Spiritia, 2005. *Hepatitis Virus dan HIV*. Yayasan Spiritia.

Syamsu Yusuf 2007. *Psikologi Perkembangan Anak & Remaja*. Bandung. Remaja Rosdakarya.

UNICEF. 2012. Laporan Tahunan 2012. Indonesia.

Wati, L. 2013. *Hubungan Pengetahuan, Pendidikan dan Informasi ibu dengan Kelengkapan Imunisasi Dasar pada anak 1-5 tahun di Puskesmas Titue Kabupaten Pidie.* http://simtakp.stmikubudiyah.ac.id.