

Research article

The Relationship Between Family Support and the Role of Health Workers in Providing BCG Immunization in Sukabumi Regency, Indonesia

Irma Suryani*, RE Lestar, PR Wati, and D Isma

Politenik Kesehatan Yapkesbi Sukabumi, West Java, Indonesia

Abstract.

Immunization helps to increase immunity in the body and prevent serious life-threatening diseases. For several weeks after birth, the baby has a protective system against diseases that is inherited through the placenta from the mother before birth. However, this protection is only temporary and disappears within a few months. The aim of this study was to examine the relationship between family support and the role of health workers in providing BCG immunization in the Limbangan village public health center in Sukabumi regency. This was descriptive correlation research with a cross sectional design conducted in 2021. The sample consisted of 63 people recruited through random sampling, and data analysis used the Chi-square test. The findings showed that there was a relationship between family support and the role of health workers in providing BCG immunization (p-value = 0.001).

Keywords: family support, midwife role, BCG immunization

Corresponding Author: Irma
Suryani; email:
Suryaniirma2771@yahoo.com

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1. Introduction

Health is an important issue in a family, especially those related to children and infants. They are the most valuable treasures besides being the gift of God Almighty, also because of the condition of his body that is easily affected by disease. Therefore, infants and children are the first priority that must be maintained health. Immunization is an attempt to increase immunity in the body and prevent serious life-threatening diseases. For several weeks after birth, the baby has a system of protection against diseases that are inherited through the placenta from the mother before birth. However, this protection is only temporary and will disappear within a few months. For this reason, immunization is needed to provide immunity to disease in infants and toddlers. Immunization, according to the World Health Organization (WHO), is calling for new efforts to get back on track. In 2017 at least 22 million infants were not fully immunized with diphtheria, pertussis, tetanus (DPT 3) vaccines and most of them live in poor countries. World immunization creates a global platform that focuses on increasing vaccination for all children and

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preventing disease transmission (2019). Immunization is a way to actively increase a person's immunity to a disease [1,2]

The prevalence of immunization in Indonesia in general, according to the 2018 National Demographic and Health Survey (IDHS/SDKI), is 89% for BCG, 72% for DPT, 76% for Polio, 80% for complete basic immunization prevalence of 66%. Meanwhile, the prevalence of complete basic immunization in Central Java province according to the IDHS/SDKI 2018 is 63.2%. According to the Indonesian Ministry of Health, immunization is an effort to actively generate or increase a person's immunity to a disease, so that if one day he is exposed to a disease, he will not get sick or only experience mild illness. In West Java, there are still several cities/districts where the immunization rate is still low. Data from the Ministry of Health in 2018 states that the lowest immunization percentage is the City/Regency of Bandung with a percentage of 39.2%/ 50% and the highest immunization percentage is achieved by the city of Cirebon which reaches 69.9%/ 50%. This shows that the city of Bandung is included in the lowest immunization rate, while Sukabumi is in the second level after the city of Cirebon in West Java province. In an effort to further improve the complete basic immunization coverage in infants, since 2017, the Sukabumi City/Regency Health Office has launched a complete basic immunization certification activity in infants. In 2018 the number of infants who successfully completed their immunization status was 5023 infants or about 73.3% of the estimated 6852 infants. Immunization status includes Hepatitis Unijekt 0-7 days, BCG, DPT-HB-Hib, Polio and Measles. *Sukabumi City/district Health Profile in 2018* [3,4].

TB (Tuberculosis) meningitis is inflammation of the lining of the brain due to complications of primary TB. The incidence of TB meningitis varies depending on socio-economic level, public health, age and nutritional status. BCG immunization increases the body's resistance to infection virulent tuberculosis. The immunity that is formed does not absolutely guarantee the absence of TB infection in a person, but the infection that occurs is not progressive and does not cause serious complications such as TB meningitis. This study aims to determine the BCG immunization status of patients with TB meningitis and to see other factors that influence the occurrence of TB meningitis. The research was conducted in a case control study. The research subjects were patients who were treated with a diagnosis of TB meningitis since 2019, with controls being primary TB patients diagnosed at the same time. There were 12 out of 16 patients with TB meningitis who did not receive BCG immunization, on the contrary there were 6 out of 16 primary TB patients who did not receive BCG immunization, this was statistically significant with $p = 0.03$. The risk of TB meningitis in malnutrition was 2.33 (95% CI) with $p = 0.26$. In conclusion, most patients with TB meningitis did not receive BCG immunization. There are no other factors that influence the occurrence of tuberculosis meningitis [5].

Based on the table above, it is known that the incidence of TB in children at the Limbangan Health Center in 2021 reached 162 babies while based on the Limbangan Health Center report in 2020 the TB incidence rate in children reached 170 babies. Based on this, it can be concluded that the incidence of TB in children in the working area of the Limbangan Health Center is still relatively high. Based on public health center data, it is known that the total number of infants given BCG immunization at the Limbangan Health Center in January-April 2021 was 173 babies. Based on data from the public health center with 63 mothers, it was found that the sixty-three (63) mothers had not given BCG immunization to their babies, even though the immunization had been provided free of charge by the government. The role of the mother in the immunization program is very important because the use of health facilities by children is closely related to maternal factors. But there are still many infants who have not received complete immunizations, it is due to various reasons such as the mother's lack of knowledge about immunization and low awareness of the mother taking her child to integrated healthcare center or public health center to get a complete immunization for fear of her child getting sick, after immunization the child becomes a snare and some feel that immunization is not necessary for the baby, Lack of information / explanation from health workers about the benefits of immunization and other obstacles including educational factors where higher education is closely related to immunization in children [6].

The results of research conducted by Nur Fadilah (2018) there is a relationship between family support and immunization in the working area of the Tabaringin Health Center Makassar City with ρ value of $0.042 < 0.05$. Based on the results of research conducted by Nyimas (2014) there is a significant relationship between family support and basic immunization in Sugih Waras Village, Rambang District, Muara Enim Regency with ρ value of $0.003 < 0.05$ [7]. Based on this, the author is interested in conducting research entitled "The Relationship Of Family Support And The Role Of Health Workers With BCG Immunization In Limbangan Village Work Area Limbangan Public Health Center Sukabumi Regency Year 2021" [8].

2. Method

2.1. Data Analysis

This type of research is descriptive correlation research with a cross sectional research design. The sample of 63 people with a sampling technique using random sampling and instrument used is a questionnaire in the form of closed questions (Closed Ended).

Data analysis using is Chi Square test. The location of this research is in Limbangan village, Limbangan health Center work area, Sukabumi regency in May-June 2021.

$$n = \frac{N}{1 + N(d)^2}$$

3. Result

TABLE 1: Frequency Distribution of Family Support in Limbangan Village, Limbangan Health Center Work Area, Sukabumi Regency in 2021.

Family Support	Frequency	Presentation
Good	14	22,2
Sufficient	30	47,6
Less	19	30,2

Based on table 1 it can be seen that from 63 respondents, respondents who have family support in the good category are 14 respondents (22.2%) while those who have sufficient category are 30 respondents (47.6%). And those who have less family support are 19 respondents (30.2%).

The Role Of The Midwife

TABLE 2: Frequency Distribution of Midwife's Role in Giving BCG Immunization in Limbangan Village, Limbangan Health Center Work Area, Sukabumi Regency in 2021.

Role of Midwife	Frequency	Presentation
Good	12	19,0
Sufficient	28	44,5
Less	23	36,5

Based on table 2, it can be seen that from 63 respondents, 12 respondents (19.0%) had the role of midwives in the good category, while 28 respondents (44.4%). And those who have less family support are 23 respondents (36.5%).

Giving Bcg Immunization

TABLE 3: Frequency Distribution of Giving BCG Immunization in Limbangan Village, Limbangan Health Center Work Area, Sukabumi Regency in 2021.

Worker role	Frequency	Presentation
Given	32	50,8
Not given	31	49,2

Based on table 3 it can be seen that 63 respondents, infants who have been given BCG Immunization as many as 32 respondents (50.8%) and who have not been immunized BCG 31 respondents or (49.2%).

TABLE 4

Result	Frequency	Presentation
Good Family Support	14	22,2
Sufficient Family Support	30	47,6
Less Family Support	19	30,2
Good Role of Midwife	12	19,0
Sufficient Role of Midwife	28	44,5
Less Role of Midwife	23	36,5
Given Worker role	32	50,8
Not Given Worker role	31	49,2

Relationship between Family Support And The Role Of Health Workers With BCG Immunization

TABLE 5: Frequency Distribution of Family Support and Giving BCG Immunization in Limbangan Village, Limbangan Health Center Work Area, Sukabumi Regency in 2021.

Family Support	Giving BCG Immunization				Σ	%	P-value
	Done	%	Not Yet	%			
Good	11	78,6	3	21,4	14	100	0,034
Sufficient	11	36,7	19	63,3	30	100	
Less	10	52,6	9	47,4	19	100	

Based on table 4 from a total of 63 respondents there are 14 respondents who have good family support including 11 respondents (78.6%) who have been given BCG immunization and 3 respondents (21.4%) have not been given BCG immunization. Respondents who have sufficient family support there are 30 respondents of whom 11 respondents (36.7%) have been given BCG assistance and 19 respondents (63.3%) have not used BCG optimally. And respondents who have less family support there are 19 respondents of whom 10 respondents (52.6%) have been given BCG assistance and 9 respondents (47.4%) have not used BCG immunization. Bivariate analysis statistical test results obtained p-value = 0.034 means **p-value < 0.05 then H₀ is rejected and H_a is accepted**. This shows that there is a relationship between family support and the provision of BCG immunization.

4. Discussion

This shows that most of the family support has not been good for the provision of BCG immunization and from the results of research conducted in the field obtained several reasons, namely the ignorance of family support for the importance of BCG immunization due to lack of knowledge and family support in giving BCG immunization.

Support is an effort given to other people, both morally and materially, to motivate that person in carrying out activities. Support is an effort to support something or an effort to bring something [1] the family is two or more individuals who are joined because of blood relations, marriage or adoption. They live in one household, interact with each other according to their respective roles, and create and maintain a culture. Stating that each family member has a formal and informal role structure, for example, the father has a formal role as the head of the family and the breadwinner. Family structure includes communication skills, family sharing skills, support system capabilities among family members, self-care abilities and problem-solving abilities. In maintaining the health of family members as individuals (patients), the family still plays a role as a decision maker in maintaining the health of its members. Conducting counseling for families about the importance of child immunization and in collaboration with village officials and health workers, he is expected to be able to increase family awareness of the importance of immunization for children so as to increase family support for mother visits to immunize their children [9].

According to the theory, the family is the smallest unit of society consisting of the head of the family and several people who gather and live in one place under a roof in a state of interdependence [10]. The family also plays a role or functions to carry out health care practices, namely to prevent health problems and or care for sick family members. The ability of the family to provide health care affects the health status of the family. The family's ability to carry out health care can be seen from the family health tasks carried out [11]. Understanding this, family support for BCG immunization should be more motivated, families will provide sufficient support in BCG immunization in order to obtain various benefits from BCG immunization.

The results of research conducted in the field showed that the role of midwife greatly influenced the provision of BCG immunization for several reasons, namely the role of midwife was needed in the community to provide counseling about BCG immunization due to family ignorance in giving BCG immunization. Health worker is any person who devotes himself to the health sector and has knowledge and/or skills through education in the health sector which for certain types requires the authority to carry out health efforts, either in the form of education for D3, S1, S2 and S3-; non-degree education [7]. The implementation of immunization cannot be separated from the role of health workers who are in direct contact with the community and infrastructure. The role of health workers in the immunization program includes planning, immunization implementation, vaccine chain management, waste management, personnel standards and technical training, recording and reporting, technical supervision and guidance, and monitoring and evaluation [12].

The results of this study stated that most of the health workers still played a bad role, this could be seen from the health workers who were still less active in providing health education about complete basic immunization and the health workers also never made home visits to look for toddlers who had not yet received health education. The role of health workers (midwives, nurses, doctors) plays a role in improving the health status of babies, as well as changing unhealthy people's behavior towards healthy behavior. In carrying out their role, health workers must be able to make the community aware, especially mothers who have babies about the importance of complete basic immunization, therefore health workers are expected to carry out preventive activities that include: Provide education on the importance of basic immunization, teach mothers who have infants about immunization schedules, mobilize the role of cadres at the village Integrated Healthcare Center level, carry out immunizations for infants, document every immunization given to infants. Therefore, there is a relationship between the role of health workers and the completeness of immunization in families who have infants. The roles of health workers are very influential on the provision of BCG immunization. Therefore, midwife conduct counseling for families about the importance of immunization for infants to increase family awareness of the importance of immunization for infants so as to increase mother visits to immunize their children.

The results of research conducted in the field show positive things, namely most babies have received BCG immunization, while the side effects of BCG immunization do not worry the family and there are no serious symptoms of it. *Bacille Calmette-Guérin* (BCG) is a live vaccine made from mycobacterium bovis cultured for 1-3 years, so that the results are not virulent, but still have immunogenicity. BCG immunization is an immunization that is given to cause active immunity against tuberculosis (TB), which is a highly contagious lung disease [1]. BCG immunization is an immunization used to prevent primary or mild tuberculosis but there is still the possibility of it occurring even after being immunized, and can also prevent disease severe tuberculosis. BCG immunization, side effects are generally rare. Indeed, sometimes localized swelling of the lymph nodes is limited, but usually heals on its own, although slowly. When the BCG injection is given in the upper arm, swollen glands occur in the armpit or lower neck. Injections in the thigh can cause swelling in the groin glands, the reaction to BCG immunization that occurs is not the same as other immunizations. BCG immunization does not cause fever. After 1-2 weeks there will be redness at the injection site which turns into a pustule (nodule), then breaks into a wound. This wound does not need special treatment because this wound will heal spontaneously [3].

This means that the respondent has been given BCG immunization. BCG immunization is part of the immunization factor analyzed to predict the incidence of pulmonary TB in children. BCG immunization can protect children from TB meningitis and Milier TB

with a degree of protection of about 86%. This led to the hypothesis that BCG protects against hematogenous spread of bacteria, but is unable to limit the growth of localized focus as in pulmonary TB.

This is supported by research conducted by [13] entitled Parental Relations and the Role of Health Workers with the Provision of BCG Immunization, which said that family support is a set of actions expected of a father and mother in helping and guiding children so that they have the spirit in study [13]. The forms and functions of family support within the family are as follows: Motivator, parents must always encourage children to do good and leave God's prohibition, including seeking knowledge, Facilitator, parents must provide facilities, including educational needs for children. Mediator, parents should act as mediation (intermediary), intermediary) in family, community, especially school relationships Results of $P_{value} 0.001$. The researcher assumes that the role of the health worker in giving BCG immunization is important, besides that the results of the study also find that there is a relationship between the role of the midwife on the provision of BCG immunization.

5. Conclusion

Based on table 1 it can be seen that from 63 respondents, respondents who have family support in the good category are 14 respondents (22.2%) while those who have sufficient category are 30 respondents (47.6%) and those who have less family support are 19 respondents. (30.2%). On table 2, it can be seen that of the 63 respondents, respondents who have a midwife role in the good category are 12 respondents (19.0%) while those who have sufficient category are 28 respondents (44.4%) and 23 respondents who have less family support. respondents (36.5%). On table 3 it can be seen that of the 63 infant respondents who have been given BCG immunization as many as 32 respondents (50.8%) and who have not been immunized BCG 31 respondents or (49.2%). The results of the bivariate analysis statistical test obtained the value $p\text{-value} = 0.034$ means $p\text{-value} < 0.05$ then **H_0 is rejected and H_a is accepted**. This shows that there is a relationship between family support and BCG immunization and The results of the statistical test of bivariate analysis obtained $p\text{-value} = 0.005$ means $p\text{-value} < 0.05$ then **H_0 is rejected and H_a is accepted**. This shows that there is a relationship between the role of the midwife and the provision of BCG Immunization

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