



The Role of Citizens in Socializing the Effectiveness of Vaccines to Support National Health Development

Juliana Tirza

Social Science Education, Pelita Harapan University, Tangerang, Indonesia

Email: mj.tirza@gmail.com

Abstract

Basic Health Research data in 2018 shows that the coverage of Complete Basic Immunization (IDL) reaches 57.9%, incomplete immunization is 32.9%, and 9.2% is not immunized (Kemenkes RI, 2018). It is estimated that 1.7 million deaths that occur in children under five in Indonesia are the result of PD3I. This study aims to determine the factors that influence Indonesia's immunization rates and the role of citizens in it. This paper aims to determine what factors influence Indonesia's immunization rate and the part of citizens in it. Another objective is to assess citizens' role in immunization rates in Indonesia to determine the factors that influence the immunization rate of the people in Indonesia. This study used a descriptive qualitative method. The effectiveness of the immunization program in Indonesia itself has again been proven from year to year, also every citizen is strongly encouraged to complete the basic immunization program. Therefore, Health Law number 36 of 2009 states that every child has the right to receive necessary immunization to prevent diseases that can be avoided through vaccination. The government is obliged to provide complete immunization to every baby and child. Full primary immunization (IDL) can be influenced by several factors, such as the level of parental knowledge about vaccination, parental motivation, and socio-cultural factors and parental beliefs. Benefits of the immunization program must be supported by citizens through educate the society about the effectiveness of Vaccines especially for children.

Keywords: National health development, Public policies, Citizen's role

INTRODUCTION

At the end of December 2019, there was an outbreak of a virus in China which spread to Indonesia and became a pandemic. Because of this, the government began issuing a policy for the Indonesian people to stay at home, which was called Large-Scale Social Restrictions (PSBB). PSBB limits 5 things such as, School and workplace activities, Religious activities, Activities in public places or facilities, Social and cultural activities, Public transportation operations as written in the PP No. 21 of 2020

The World Health Organization (WHO) states that there have been 236,519 confirmed cases in Indonesia with a death toll of 9,336 people (19 Sept 2020). Seeing this, of course, PSBB is the best choice because there is no vaccine for COVID-19.

PSBB is carried out to suppress the increase in the number of confirmed cases of COVID-19 in the hope that a vaccine is found and resolved as soon as possible. Based on PP. 21 of 2020, the community's role in suppressing the spread of COVID-19 is the central core of making the PSBB.

Immunization is a process whereby individual volunteers are given a weakened or dead pathogenic organism which aims to prevent the individual from contracting a disease caused by the antigen. Immunization programs have a critical role in reducing transmission and morbidity, especially illnesses that can be prevented by immunization (PD3I). Immunization itself has a relationship with public health and can create a healthy nation for the country's development process.

Basic Health Research data in 2018 shows that the coverage of Complete Basic Immunization (IDL) reaches 57.9%, incomplete immunization is 32.9%, and 9.2% is not immunized (Kemenkes RI, 2018). The infant mortality rate in the world due to PD3I is around 1.5 million (WHO, 2014). In Indonesia alone, about 440 babies die every day (Kemenkes RI, 2014). It is estimated that 1.7 million deaths that occur in children under five in Indonesia are the result of PD3I. The child mortality rate during 2000-2013 due to not measles immunization reached 124,000 out of 481,000 people (WHO, 2014).

Febri (2012) states that older mothers (35-49 years) are more likely to provide complete primary immunization to their children compared to younger mothers (15-34 years). Mothers of infants with higher

education are also more likely to provide necessary comprehensive immunization than mothers with low education (Arifin and Prasasti, 2017). The region is even thought to influence the complete basic immunization coverage. In several studies, it was found that urban areas have a higher comprehensive basic immunization coverage compared to rural areas (Pratiwi, 2010) (Ardiyanto, 2010).

Based on this, it can be concluded that there are factors related to immunization coverage levels such as age, education level, and region. Therefore, the assessment was carried out to determine whether other factors influenced the immunization level of the people of Aceh province. The authors' team wrote this paper as the role of citizens in socializing the use of vaccines to support national development.

This study aims to discover the factors that influence Indonesia's immunization rates and citizens' role in it. Afiah Mistadiana conducted previous research in 2019, which resulted in data that there was a significant relationship between maternal knowledge about immunization and the motivation of mothers to take part in vaccination in Tarai Bangun Village, the working area of the Pambang Puskesmas. From the formulation of the problem in this research, the question arises, What are the factors that influence the immunization rate in Indonesia and the role of citizens in it? The other aims of this research are This is to determine the factors that influence immunization rates in Indonesia and the role of citizens in it. To determine the role of citizens in immunization rates in Indonesia. To determine the factors that influence immunization rates in Indonesia. To find out the immunization rate in Indonesia

METHOD

The method used in this research is to employ descriptive qualitative research to analyze the factors that influence Indonesia's immunization rates and the role of Indonesian citizens in it. The writing team collected data from various primary and supporting sources, ranging from textbooks, manuals, articles, research journals, newspapers, and magazines. Then, information data that can be managed quantitatively are compared from statistical figures, such as comparisons of immunization rates in various Indonesia regions.

Having drawn a gist of comparative quantitative data, the research team analyzed the rationale behind the phenomenon by re-examining various guidance sources. The discussion is carried out by connecting the research problems, bibliography, and state social development theory. From the argument that contains the reasons behind the low rate of immunization in some areas of Indonesia, its relationship with social development, and citizens' role in it, the authors will conclude.

RESULT AND DISCUSSION

Quality of Health is one of the factors of quality of life that reflects the fulfillment of society's fundamental rights. The health sector is closely related to the country's development, especially those that utilize human resources. High-quality human resources will be challenging to achieve without health conditions. The quality of health can be measured from several things such as hospital and puskesmas health services to each region's mortality rate. Child health is one measure of the health quality of a country. Low nutritional status and poor children's immune system can hurt early life throughout the human life cycle. This inadequate nutrition will have a long-term impact because a lack of quality health at an early age will hinder the development of essential organs and lack psychosocial problems. This phenomenon will result in impaired cognitive development and reduced economic productivity, which, of course, will be detrimental to the state.

In Indonesia, the quality of children's health is not yet profitable. Based on data from the United Nations (UN), Indonesia's infant mortality rate is 21.12 in 2019 after a decline from 21.86 in 2018 and 22.62 from 2017 (Harismi A, 2020). Despite the significant quality improvement, Indonesia's infant and under-five mortality rates are still high compared to other Southeast Asian countries. The child mortality rate is strongly influenced by several factors, such as providing health facilities in various areas and vaccination coverage for infants. (Fidyani AY, 2019).

A. The Importance of Vaccination and Immunization on the Quality of National Health Development

Immunization is a process to increase a person's immunity level against an antigen so that for future antigen attacks, the individual will not be exposed to disease from that antigen (Ranuh, 2008). The way immunization works is by deliberately inserting a weak antigen which will provoke the formation of antibodies for that antigen. These antibodies will be stored in the "memory system," which our immune system owns so that these antibodies will fight antigens if the individual is exposed to the same antigen in the future, and disease formation can be prevented (Atika, 2010).

Immunization is closely related to the health level of the state. Atika (2010) states that one of the benefits of immunization is to improve the level of health, creating a healthy and intelligent nation to continue the country's development. Immunization is also an essential program in preventing the formation of diseases, especially diseases that can be prevented by vaccination (PD3I). Through vaccination, 2-3 million deaths

per year from diphtheria, measles, pertussis, pneumonia, polio, diarrhea due to rotavirus, rubella, and tetanus infections are estimated to be successfully prevented. One of the efforts to develop state health is to prioritize promotive-preventive efforts, in which the immunization program is included. In this program, immunization is proven to effectively reduce morbidity, disability, and mortality due to PD3I.

Evidence of the effectiveness of the immunization program in Indonesia so far can be seen in the following achievements:

1. Achieving smallpox eradication in 1974.
2. The achievement of Universal Child Immunization (UCI) at the provincial level throughout Indonesia in 1990 and UCI at the district / city level in 1992.
3. Elimination of maternal and neonatal tetanus in the Java-Bali and Sumatra regions in 2010 as well as the Kalimantan, Sulawesi, NTT and NTB regions in 2011.
4. The mortality and morbidity rate due to diphtheria, pertussis, tetanus, and measles has decreased by 90% compared to 30 years ago.
5. Achievement of polio eradication in 2014.

Thus, it is clear that the immunization program is very influential on the health level of a country, and every citizen is strongly encouraged to complete their basic immunization program. This is regulated in Health Law Number 36 of 2009 which stipulates that every child has the right to receive immunizations to prevent diseases that can be prevented by immunization, and the government has an obligation to provide complete immunization to every child.

B. Relationship between Health Quality and National Development

Because the health sector is closely related to development, especially in the field of human resources, improving the health sector is very important to note. The quality of human resources will find it difficult to reach high numbers without healthy conditions. Efforts to improve the health of the Indonesian population are mostly focused on health services, which are the treatment of the sick, or more accurately described as treatment. State health development is carried out by improving the quality of health services in various health fields such as health centers, hospitals and other health service institutions (Depkes RI, 1997).

Every citizen has the right to receive health services, this is regulated in the 1945 Constitution of the Republic of Indonesia, so that an increase in the number of public health needs to be realized. The hospital is a health service institution for the community which with an increase in the quality of higher quality and affordable services can increase the health status of the community (Depkes RI, 2009).

C. Vaccination and Immunization Rates in Indonesia

Indonesia is still facing efforts to expand the coverage of primary immunization. As reported by the World Health Organization (WHO) data in 2018, around 20 million children have received complete necessary vaccination. Similar conditions also occur in Indonesia, in 2018 from the data reported by the Ministry of Health, the entire basic immunization coverage in Indonesia has reached 87.8%. This means there are still around 12% of Indonesia's child population who have not been given complete necessary immunization or approximately 400,000 children. There are about 1% of the people of children in Indonesia have not received immunization at all from the age of 0 months - 12 months. This 1% amount is evenly distributed throughout Indonesia. (Hartono, 2019)

In Indonesia alone, complete necessary immunization for a toddler includes diphtheria, tetanus, polio, measles, tuberculosis, BCG, pneumonia, hepatitis B, and meningitis. Universal Child Immunization (UCI) coverage in 2002 - 2014, the average was still below 80%. Ideally, the UCI number is 100%, but it needs to be considered regarding facilities, availability, quality, area, and others. There has been an increase in the UCI in the field from 2015 - 2018, reaching 90%. Therefore, health protection through immunization is considered universal. This can be mentioned in its entirety, but several provinces in Indonesia have not completed complete primary vaccination. (Hartono, 2019)

Let us see the rates of vaccination in NAD. Aceh Province is one of the regions with the lowest immunization attainment in Indonesia. In the data taken by the Aceh Provincial Health Office in 2019, 51 percent of the total 113 thousand children in Aceh province have not received complete basic immunization (IDL). (Amirullah, 2019)

However, the biggest polemic of low vaccination rates in Aceh Province occurred due to news that the measles-rubella vaccine or what is commonly known as MR contains pork. The Indonesian Ulema Council (MUI) has actually issued a fatwa that the MR vaccine can be used but the public is still reluctant to vaccinate because the Aceh Ulama Consultative Council (MPU) has not issued a fatwa. (Novelino, 2018)

Therefore, the achievement of MR immunization in Aceh Province is the lowest in Indonesia. There are approximately 1.5 million children under five in Aceh and only 100,000 of these children are already vaccinated, making MR vaccination coverage only 7%. (Setyadi, 2018)

The low rate of MR vaccination in Aceh has become a major problem because measles and rubella are increasing in Aceh. Especially in cases of rubella, which is the birth of children with congenital rubella syndrome which causes these children to experience hearing loss, cataracts and leaky hearts. This can occur because the mother suffered from measles during pregnancy with symptoms of fever and a red rash all over the body. Measles can also cause miscarriage or birth with congenital abnormalities if the mother gets measles in the first trimester of pregnancy. (Setyadi, 2018)

Aceh Province is in the fourth lowest rank of all Indonesian provinces in the complete necessary immunization coverage data in Indonesia in 2016, 69.11% (Ministry of Health, 2016). In 2017, Indonesia's IDL had decreased to 90.8%, and Aceh Province was in the third lowest rank (70%) (Ministry of Health, 2017). The immunization rate for a region is directly related to the number of children who receive complete primary immunization in that region. Various factors namely influence the whole primary immunization itself. First, Parents' Level of Knowledge Regarding Immunization. Knowledge about a disease can affect a person's perception, which can influence a person's behavior to prevent the disease from occurring. In a study conducted by Putri, who took samples at the Jaya Baru Puskesmas Banda Aceh, it was found that the prevalence of incomplete children's prior immunization status was 2.034 times greater in mothers with insufficient to sufficient knowledge compared to mothers with good experience. A review conducted on 202 articles regarding the reasons for low immunization coverage found that out of 838 explanations, 58 (7%) of them were limited information about immunization (Rainey, 2010). This information is closely related to the knowledge and attitudes of parents. Complete vaccination tends to be owned by children with parents who have positive news about immunization (Triana, 2016). Parents with low knowledge of vaccination do not know what to do with their babies, especially on immunization problems. Therefore, actions that can be taken to increase parents' knowledge are to carry out routine outreach to the community at the Puskesmas and Posyandu.

Second, Parents' Motivation. Motivation is why underlies an action done by someone, which becomes an impulse that causes someone to do a specific action. The reason is classified into two groups, namely intrinsic and extrinsic motivation. Intrinsic motivation is a desire from oneself to do something without any external stimulation. In contrast, extrinsic motivation is the motivation that comes from outside the individual, such as values, gifts, and/or rewards that are used to stimulate one's cause. Triana's research found a relationship between parents' motivation and giving complete primary immunization to infants. According to Triana's study in 2016, the risk of children not having full vaccination was 2.88 times greater in children with parents with low motivation to immunize.

This can be influenced by extrinsic motivation, which encourages parents not to immunize their children, where examples of extrinsic motivation here are rumors or myths about immunization that continue to circulate in society today, for example, the tale about the combination of diphtheria, tetanus, pertussis vaccines, and polio causes sudden infant death syndrome (SIDS), immunization is haram, and so on.

The last, socio-cultural factors also significantly influence a person's knowledge, so that socio-culture also has a relationship with providing complete necessary immunization to infants. Research conducted by Afiah found a significant association between socio-culture and maternal motivation to participate in MR immunization. Mothers with socio-cultural backgrounds that support immunization have a 4,113 times greater chance of having a strong incentive to give complete immunizations to their children compared to mothers with unsupportive socio-cultural environments (Afiah, 2019)

The MR immunization rate (measles and rubella) in Aceh is shallow, reaching an average of only 4.94%. Socio-culture and diversity play an essential role where rejection does not come from the parents concerned and by religious leaders and regional heads, as well as people who are predominantly Muslim. The issue raised was regarding the halal and safety of using vaccines. Islam believes that its followers must use prophetic medicine (*tibbun-nabawy*), a natural herbal substance, because it is considered a concoction from Allah SWT himself. Meanwhile, vaccinations using chemical substances are regarded as human-made and should not be used.

Most Muslim groups also believe in the illegality and insecurity of vaccines to use because they use germs that are injected into the body, so they are considered dangerous. This mindset shows that Indonesian society, especially in the Aceh region, is still narrow-minded and not based on knowledge. As stated, something that has not been fully understood due to limited reliable sources can form a wrong perspective and thinking. This should not be a barrier for the community to refuse vaccination, especially with Islamic advice and traditions that emphasize aspects of honesty and scientific objectivity. Most Muslims believe

that the vaccine contains the enzyme trypsin from the pig. The actual process is that the pork trypsin enzyme is used as a catalyst that breaks down proteins into smaller substrates, namely peptides and amino acids, which are used as food germs. These germs will be cultured and undergo a fermentation process so that their polysaccharides can be used as ingredients for the vaccine. The purification process was also carried out, followed by an ultrafiltration dilution of 1 / 67.5 billion times. Education like this is still limited to the community, so theories appear not to follow the truth. (IDAI, 2017)

Another belief is how hospitals, medical personnel, and modern medicine are an extension of the Zionists (Jews) who use vaccines as a tool to paralyze Muslim societies. This, of course is invalid because it is not based on medical facts and syar'iyah hujjah. Medically, it has been proven that vaccines work by training the human body's immune system to recognize and eradicate viral and bacterial pathogens. To achieve these specific molecules that have been weakened and extracted from the pathogen, the body needs to be admitted to aid in the immunization process.

Apart from the above factors, according to Neil Niven, individual non-compliance can also be caused by the following characteristics;

1. Complexity of treatment procedures
2. The degree of lifestyle change required
3. The amount of program time the patient must adhere to
4. Thinking whether the disease is excruciating
5. Thinking about whether the treatment has the potential to save lives
6. The patient's perception of the severity of the disease and not the perception of the health worker

D. The Role of Citizens on Immunization Coverage

By looking at the many functions and benefits of the immunization program and its significant impact on the country's health level, we need to examine the role of each citizen in implementing this immunization program so that it is carried out correctly. Based on their position and duties in encouraging the implementation of the immunization program, the role of citizens can be classified into the following three groups, first Role of Community and Religious Leaders. Community and religious leaders are chosen and appointed by the community to become community leaders and leaders. Therefore, they have a significant role in influencing the perspective or perception of the people they lead. So that community and religious leaders have a substantial role in implementing the complete basic immunization program properly. The parts that community and religious leaders have in this regard are;

- Motivate mothers under five to attend Posyandu and be active in its activities.
- Help change the stigma held by the community regarding immunization. This role is significant because community perceptions and acceptance of the community's immunization program are strongly influenced by opinions and appeals from the local community and religious leaders. Therefore, the knowledge of these figures about immunization is essential to be improved in implementing the immunization program.

The support of community leaders strongly influences the level of attendance of mothers under five in posyandu because community leaders' support is very influential on changes in community behavior. Also, community and religious leaders' role dramatically determines the success of a health program because it depends on community acceptance, greatly influenced by community leaders (Sihombing, 2015). Second, The Role of Society (Parents and Family). In the implementation of the immunization program, and to achieve a perfect state immunization rate, the community's role is a crucial factor. The part of the community, in this case, is community participation in implementing this immunization program, where participation is the participation of a person or group of people in the implementation, as well as taking responsibility according to the level of maturity and level of obligation of the person or group. What needs to be emphasized is that every citizen also must develop the country, including state health. As described above, one of the efforts to improve state health is promotive-preventive efforts, namely a basic immunization program that is recommended for every citizen to complete primary immunization.

Father or mother as parents, has an important role in the family, one of which is decision-making. Parents who know about diphtheria, tetanus, and other diseases will have more preventive behavior in preventing this disease from being experienced by family members. This will cause them to think and try so that various diseases do not attack their child, and this awareness in itself plays a role in bringing their children to be given complete necessary immunizations. (Notoatmodjo, 2010). Third, The Role of Health Workers. Health workers have an essential role in increasing the awareness, ability, and willingness of the community to live healthy to achieve an adequate level of health as an investment for the development of socially and economically productive human resources. Based on the description of the factors that affect immunization coverage above, health workers play a role in increasing maternal participation in infant immunization by becoming motivators, dynamists, innovators, and facilitators. (Maulana, 2018)

1. As a Motivator

The role of health workers as motivators is to develop the trust of mothers under five in dealing with children's health problems and increase the enthusiasm of mothers under five in maintaining their children's health.

2. As a dynamist

As a dynamist, health workers must have the ability to communicate and convey messages to certain right parties so that they can produce cooperation in achieving a goal. Collaboration, in this case, is with other parties such as community and religious leaders. Health workers can be able to straighten and explain the stigma and harmful views about immunization to community and religious leaders, hoping that this can change their perceptions and the public's perception.

3. As an Innovator

Health workers, as innovators or as agents of reform, must assist, make awareness of, and encourage groups to recognize the problems at hand, in this case, explaining to mothers under five about the dangers of incomplete immunization for their children. They can help develop the potential to solve problems.

4. As a Facilitator

As facilitators, the role of health workers is to carry out counseling programs related to immunization so that the level of understanding of mothers under five about immunization can increase. It is not only counseling, but a facilitator must also provide time and space for parents who want to ask more in-depth and closed-door questions.

Cadres, as leaders of posyandu services, also have a significant role in encouraging the community to provide complete primary immunization to their children. As a leader, posyandu cadres are required to work voluntarily to be willing and able to carry out posyandu activities and mobilize the community to participate in posyandu programs. (Rice, 2014)

Each group of citizens' roles is carried out to help implement a better basic immunization program in Indonesia, hoping that this can improve the country's health, especially in increasing children's immunity to P3DI and reducing morbidity, disability, and death due to P3DI. Due to low nutritional status and a child's immune system, it will hurt early life and even the individual's entire life. In this case, the long-term impact is due to a lack of quality health at an early age to hinder all essential processes of growth and development. This phenomenon will also have an effect on the cognitive development of the individual. With the lower immunization coverage rate in Indonesia and the increasing number of individuals experiencing this problem and reducing the country's quality of health, this will also indirectly impact the country's economic productivity, which will also harm the state.

CONCLUSION

The health sector is closely related to developing a country that utilizes human resources where quality human resources will be challenging to achieve without health. Child health is a measure of the quality of health in a country because it is the beginning of social growth that can have a long-term effect on a person's quality of life. This can affect a person's cognitive development and also reduce the economic productivity of a country. In Indonesia, children's health is not exactly good compared to other Southeast Asian countries. This can be caused by several factors, such as a lack of provision of health facilities and a lack of vaccination coverage for infants.

Immunization itself is a process to increase a person's immune level against an antigen, to avoid infection against the same antigen in the future. The way it works is by inserting a weak antigen, which will provoke antibodies for that antigen. The antibodies will be stored in the "memory system" of the immune system to fight the antigen if the individual is exposed to the same antigen in the future and prevent the disease from forming.

Immunization is closely related to the health level of the country and also the country's development. The effectiveness of the immunization program in Indonesia itself has again been proven from year to year, and every citizen is strongly encouraged to complete the basic immunization program. Therefore, the Health Law number 36 of 2009 stipulates that every child has the right to receive immunizations to prevent diseases that can be prevented by vaccination. The government must provide complete immunization to every child.

Complete necessary immunization in Indonesia includes diphtheria, tetanus, polio, measles, tuberculosis, BCG, pneumonia, hepatitis B, and meningitis. Health protection through immunization in Indonesia is considered universal; however, several provinces have not completed complete necessary vaccination. Aceh Province is the region with the lowest immunization attainment in Indonesia. The number of children who have not received full basic immunization in Aceh province in 2019 reached 51% of 113,000 children. This is due to the news that the MR vaccine contains pork even though the Indonesian Ulema Council has issued a fatwa that the MR vaccine can be used. The low vaccination rate in Aceh has become a significant problem as measles and rubella are on the rise.

Complete primary immunization (IDL) can be influenced by several factors, such as the level of parental knowledge about vaccination, parental motivation, and socio-cultural factors and parental beliefs. Besides,

according to Neil Niven, individual non-compliance in implementing IDL can be caused by the complexity of treatment procedures, the degree of lifestyle changes required, the length of time the patient has to adhere to the IDL program, the patient's perception of disease severity, and misconceptions about disease and treatment.

The many benefits of the immunization program must be supported by citizens to improve the quality of health in society. Therefore, three groups have an active role in the immunization program:

1. Community and religious leaders can help motivate and change the stigma of society regarding immunization.
2. Parents and families can play a role in participation and make decisions in participating in the immunization program.
3. Health workers play an essential role in increasing awareness, ability, and community willingness to participate in the immunization program.

Besides that, health workers also have a role as facilitators in implementing the immunization program.

REFERENCES

- Afiah M. 2019. *Hubungan Pengetahuan dan Sosial Budaya Terhadap Ibu Mengikuti Imunisasi Measles Rubella di Desa Tarai Bangun Wilayah Kerja Puskesmas Tambang*. Jurnal Kesehatan Masyarakat;3(2):93-101.
- Atika. 2010. *Imunisasi dan Vaksinasi*. Yogyakarta: Nuha Medika
- BAPPENAS. *Tujuan 4: Menurunkan Angka Kematian Anak*.
https://www.bappenas.go.id/files/2113/6082/9893/indonesiamdgbigoal4__20081122001221__518.pdf (accessed 17 September 2020)
- Fidyani AY. *Kesehatan Anak-anak Indonesia di Hari Kesehatan Nasional dan Hari Anak Sedunia*.
<https://manado.tribunnews.com/2019/11/11/kesehatan-anak-anak-indonesia-di-hari-kesehatan-nasional-dan-hari-anak-sedunia>. (accessed 18 September 2020).
- Harismi A. *Meski Terus Membaik, Angka Kematian Bayi di Indonesia Masih Tertinggal*.
<https://www.sehatq.com/artikel/angka-kematian-bayi-di-indonesia-masih-tertinggal>. (accessed 18 September 2020)
- Hartono SH. *Imunisasi untuk Masa Depan Lebih Sehat*. <https://health.grid.id/read/351705362/hari-imunisasi-dunia-12-anak-indonesia-belum-imunisasi-lengkap?page=all>.
- IDAI. 2017. *Apakah Vaksin Mengandung Babi*. <https://www.idai.or.id/artikel/klinik/imunisasi/apakah-vaksin-mengandung-babi>. (accessed 19 September 2020)
- Kemkes RI. 2016. *Riset Kesehatan Dasar*. Jakarta : Badan Penelitian dan pengembangan Kesehatan Kementerian kesehatan RI
- Niven N. 2002. *Psikologi Kesehatan Keperawatan Pengantar untuk Perawat dan Profesional Kesehatan lain*. Jakarta: EGC.
- Notoatmodjo S. 2010. *Ilmu perilaku kesehatan*. Jakarta: Rineka Cipta
- Putri AS. 2014. *Hubungan Antara Tingkat Pendidikan, Pengetahuan Ibu dan Jumlah Anak dengan Status Imunisasi Dasar di Puskesmas*. Banda Aceh : Universitas Syiah Kuala
- Raine HG . 2010. *Understanding and Managing Public Organizations*, 4ed. California: Josey-Bass A Wiley Imprint
- Ranuh IGN. 2008. *Pedoman Imunisasi di Indonesia*, 3ed. Jakarta: Badan Penerbit Ikatan Dokter Anak Indonesia
- Triana V. 2016. *Faktor Yang Berhubungan Dengan Pemberian Imunisasi Dasar Lengkap Pada Bayi Tahun 2015*. Jurnal Kesehatan Masyarakat Andalas, Volume 10 No. 2.
- Antara. *51 Persen Anak di Aceh Belum Mendapat Imunisasi Dasar*.
<https://nasional.tempo.co/read/1299593/51-persen-anak-di-aceh-belum-mendapat-imunisasi-dasar>. (accessed 17 September 2020)
- Novelino A. *Vaksin Rubella Masih Jadi Polemik di Aceh*.
<https://www.cnnindonesia.com/nasional/20180913125259-20-329898/vaksin-rubella-masih-jadi-polemik-di-aceh>. (accessed 16 September 2020)
- Rokom. *Imunisasi untuk Masa Depan Lebih Sehat*. <http://sehatnegeriku.kemkes.go.id/baca/rilis-media/20140509/4710244/imunisasi-untuk-masa-depan-lebih-sehat/>. (accessed 17 September 2020)
- Setyadi A. *Terendah Se-Indonesia, Imunisasi di Aceh Baru 7 persen*. <https://news.detik.com/berita/d-4206924/terendah-se-indonesia-imunisasi-di-aceh-baru-7-persen>. (accessed 16 September 2020)
- VivaHealth. *Imunisasi*. <https://vivahealth.co.id/article/detail/6067/imunisasi>. (accessed 16 September 2020)
- Yanuarso BP. *Pandangan Islam Terhadap Vaksinasi*. <https://rumahvaksinasi.id/pandangan-islam-terhadap-vaksinasi/>. (accessed 16 September 2020)