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## Mother-Related Factors Affecting Vaccine Refusal Towards Elementary School Student in Palembang

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### ABSTRACT

The low coverage of vaccination in Indonesia is partly due to vaccine refusal by mothers towards their children, especially in primary schools. Vaccinations that aim to provide immunity to children against certain diseases are considered unnecessary and have a negative impact. This research was conducted with the aim of exploring factors related to mothers against refusing vaccines in primary school children. Using a descriptive qualitative observational study design, data were collected through in-depth interviews, focus group discussions, and observations of 44 mothers who have elementary school children in Palembang. Data analysis was performed using an interactive model analysis consisting of three stages namely: data reduction, data presentation, and conclusions and verification. The triangulation method is then performed for data validation. Based on the results of data retrieval to 44 informantts, it was found that maternal factors that influence rejection of vaccines in primary school children are sources of knowledge about immunization, religious factors, trust in vaccination, vaccination safety, husband's role, and lack of socialisation of vaccination.

### 1. Introduction

Various programs are formed as an effort to actualize a national vision of health development. The programs that are formed are expected to contribute positively to producing a healthy environment and behavior. Immunization is a manifestation of the healthy development environment by reducing mortality and illness in the form of eradicating infectious diseases that can be prevented by giving vaccines. <sup>1,2</sup>

Data from Riskesdas shows that in 2007 the average complete basic immunization coverage in Indonesia was 41.6%. This immunization coverage rate then rose to 81.99% in 2018. This mark is still below the national target set at 90% .<sup>3,4</sup>

Each year the immunization program continues to run in hope that it can reduce child mortality by 2-3 million cases. Unfortunately in 2017 it was found that around 19.5 million babies and children did not participate in the immunization program.<sup>5</sup>

Indonesia has allocated approximately 1.4 trillion rupiahs for immunizations with the aim of increasing immunization coverage to 95% in 2017. Even so at the end of the 2018 immunization program, there are still around 10 million unvaccinated children in Indonesia.<sup>6</sup>

The decision of parents, especially mothers, to against vaccination for their children is influenced by various factors such as the lack of mother's



knowledge about immunization, wrong mindset, and fear about immunization, as well as the mother's disbelief of the benefits of immunization are strong factors associated with decreasing immunization coverage.<sup>3,7</sup>

Trust in vaccination is one of the factors why mothers refuse vaccination. Stigma that develops in the community considered immunization might cause disability, illness, and death in children. These assumptions lead to a higher rejection of vaccination.<sup>7</sup>

Religious factors also play an important role. One of the reasons for refusing vaccine is influenced by the view that the ingredients used to make the vaccine are forbidden and should not be given to children.

Side effects due to vaccination processes such as physical disability and autism that circulate in the community become another consideration of parents to choose to refuse vaccination to children. Vaccine administration is also considered unsafe because it causes undesirable side effects such as diarrhea, pain, nausea, vomiting, dermatitis, autism, to the death of a child.<sup>5,8,9,10</sup>

Knowledge plays an important role in influencing mothers' attitudes towards immunization, but information sources play an equally important role. Trust in information providers regarding immunization must be good so that the reception of the information will be better. Sources of information that can influence mothers' attitudes towards vaccination, for example are doctors, midwives,

health center programs, the internet, social media etc.<sup>11</sup>

## 2. Methods

This research is an observational descriptive study with a qualitative approach. Data were collected through the snowball method by means of focus group discussions (FGD), in-depth interviews, and observations of 44 mothers who have elementary school children in Palembang.

Retrieval of information through in-depth interviews was conducted with 21 informants. Retrieval of information using the focus group discussion (FGD) method was carried out to 3 groups of informants, each consisting of 8 informants, 7 informants, and 8 informants.

Data obtained from the results of in-depth interviews, FGDs, and observations were then analyzed using interactive model of analysis techniques which consisted of three stages: data reduction, data presentation, drawing conclusions and verification. The researchers then conducted a triangulation test to validate the data.

## 3. Results

The following is information obtained through in-depth interviews conducted with 21 mothers who have primary school children. The duration of the interview lasts from 4-8 minutes with the frequency of interviews once.

Informant characteristics include roles and gender. Characteristics of informants can be seen in the following table.



Table 1. Characteristics of Interview Informantts

No.	Informant	Role	Gender
01.	1	Mother	F
02.	2	Mother	F
03.	3	Mother	F
04.	4	Mother	F
05.	5	Mother	F
06.	6	Mother	F
07.	7	Mother	F
08.	8	Mother	F
09.	9	Mother	F
10.	10	Mother	F
11.	11	Mother	F
12.	12	Mother	F
13.	13	Mother	F
14.	14	Mother	F
15.	15	Mother	F
16.	16	Mother	F
17.	17	Mother	F
18.	18	Mother	F
19.	19	Mother	F
20.	20	Mother	F
21.	21	Mother	F



The following are the results of the interview regarding the mother's knowledge about vaccination

and immunization (Table 2):

Table 2. Knowledge

No.	Statement	Source	Perception
01.	<i>"it was said immunization can prevent disease, such like measles, polio, then if my children fall sick, it was not that severe"</i>	Informant 1	Based on interviews with these informantts, it appears that almost all informantts already knew what vaccination / immunization is and its function for children's health.
02.	<i>"from what I was told by Puskes, immunization can prevent some disease by injecting virus, thus children's immunity was formed"</i>	Informant 2	
03.	<i>" immunization was for children;s immunity"</i>	Informant 3	
04.	<i>"immunization was for children's health, for prevents diseases"</i>	Informant 4	
05.	<i>"for prevents disease, thus if my sons get sick, it will not be that serious"</i>	Informant 6	
06.	<i>"for children's health, for their immune from disease"</i>	Informant 8	
07.	<i>"to make children healthy by injecting virus/bacteria to child's body, thus children can not get sick easily"</i>	Informant 9	
08.	<i>"for children's immunity, so as an adult they do not get serotious disease"</i>	Informant 10	
09.	<i>"for his immunity. They must receive complete immunization. Hopefully in the future despite they're being infected, it is not very dangerous. The most important thing, it is for their own safety"</i>	Informant 11	
10.	<i>"for children's health. I was informed there were hepatitis, measles, polio vaccination. Vaccine is for their own immunity"</i>	Informant 12	
11.	<i>"to boost children's immunity, thus the don't get sick easily"</i>	Informant 13	
12.	<i>"immunization is something you inject to your body, example BCG, tetanus, etc. It's for boost my child's immunity towards diseases"</i>	Informant 14	
13.	<i>"immunization is done by injecting virus to one's body for create immunity. My child got immunization so he did not get sick easily"</i>	Informant 15	
14.	<i>"what I heard about immunization was to form my children's immunity towards the diseases by injecting virus, maybe some kind of drug to their body"</i>	Informant 17	
15.	<i>"for boost my children's immunity"</i>	Informantt 18	
16.	<i>"in my mind it is to maintain child's immunity, so if they get sick it their immune will work. If I vaccinate my child, it means they get the immunity"</i>	Informant 19	
17.	<i>"yes, vaccination is an affort I did for increase my child immunity. By injecting it to my child's body, thus my child got immunity towards the diseases, more or less"</i>	Informant 20	
18.	<i>"immunization is intended to give immunity to children, so if they get sick it is not that serious. I was informed from she was baby 'till elementary school she will get vaccinated"</i>	Informant 21	



The following is an overview of the sources of knowledge about immunization and the most trusted

source of information by mothers in the community (Table 3):

Table 3. Sources of knowledge

No.	Statement	Source	Perception
01.	<i>"I know from fellow citizens. From when I go to Puskesmas. I was controlling my pregnancy here from the start, so the nurse informed me about immunization early" "I believe it when my doctor say so"</i>	Informant 1	Through interviews conducted with various informants, it can be concluded that the informant knows information about vaccinations from various sources. These sources include; doctors, midwives, puskesmas activities, posyandu activities, social media, internet, and sharing information from one informant to another. Most of the informants claim to bring the most trusted source of information for them is those who come from health workers, but there are still some who are more trusted in social media and the internet that provides information that can be accessed anytime and from various sources.
02.	<i>"from "posyandu" or "puskesmas". I als searched in internet, google, story from more experienced friends" "I prefer the informations I get from google, because I get more relevant and more detailed info there. If I want to ask and come here (puskesmas), it take too long. I can find my answer through internet just by grab my phone, everytime, everywhere"</i>	Informant 2	
03.	<i>"from google, tv, facebook. Also from "posyandu" or "puskesmas" when I come, I got informed by nurse" "I believe internet articles, although the content is same as what I get from "puskes"</i>	Informant 3	
04.	<i>"from my early pregnancy I had already informed by reading KIA book. I also searched in google, or when I hang out together with my friends who is more experienced" "I believe in information from what I read on KIA book more"</i>	Informant 4	
05.	<i>"information from posyandu, puskes, or when I went to madhouse when I was pregnant" "usually when my child will get vaccination, the school will inform us"</i>	Informant 5	
06.	<i>"from puskes, posyandu, I rarely seek for information by phone"</i>	Informant 6	
07.	<i>"from puskesmas, also there is organization who talk about it actively here"</i>	Informant 7	
08.	<i>"I know from my neighbours here. Also from health promotion by health facilities"</i>	Informant 8	
09.	<i>"from information I get when I was checking my health on Puskesmas. They (the nurse or doctor" said, "if your child was born, do not forget to get him vaccinated". I also like to watch TV if there's an information about vaccination" "I strongly believe my doctor off course"</i>	Informasi 9	
10.	<i>"I like to read Kartu Menuju Sehat. Also pregnancy book given by medical facility"</i>	Informant 10	
11.	<i>"now I know from my child's school. If the will fet vaccinated, the will tell us, parents. I also got information from Puskesmas Pembina"</i>	Informant 11	
12.	<i>"from midwives.. also from school"</i>	Informant 12	
13.	<i>"from hospital, puskesmas, also from my neighbours if they talk about vaccinations. Also when the children get vaccinated we usually chat among each other about what our experiences"</i>	Informant 13	
14.	<i>"From the school. Usually when vaccination schedule arrived, the will informed the parents. "mums, the children gonna vaccinated tomorrow, there will be statement letter given to you". If I sign it, it means I agree my children get vaccinated"</i>	Informant 14	
15.	<i>"this far I get information from no one. Only in my old residence I was given information by school or midwives. I just moved here"</i>	Informant 15	
16.	<i>"usually I, together with other mums in this local went to puskesmas together to get our child vaccinated. There we get the informations"</i>	Informant 16	
17.	<i>"from the school. Maybe they give us information, but I rarely home in days"</i>	Informant 17	
18.	<i>"when I was controlling my pregnancy before I was informed by the midwives that I should get my children vaccinated. I always got reminded by them" "when I got reminded, the told me that vaccination was for my own children immunity, thus they did not get infected by disease easily. Also there was counseling about vaccination I oftenly went to" "the housewives diligently remind us, so we do what was we informed" "if doctor says its good, why not"</i>	Informant 18	
19.	<i>"from my parents because in my child time, I also gek complete vacinations. Because I know it's usefulness, I want my children feel it too. There are also counseling from doctor, puskesmas, school, and other health facility about vaccination"</i>	Informant 19	
20.	<i>"from when I was pregnant I had already informed by midwives about the pregnancy, also about vaccinations. The told me vaccination is important for child immunity. I like to watch TV when they talk about vaccination, from internet, or from school" "for information that I most believe, to tell you the truth we, mother, sometimes believe in unbiased information on internet. Fortunately I have health care relatives, so although I read some unbiased information I can ask her to confirm it" "like what my friend said, there is no detailed socialization about vaccination in elementary school, so we are confused about it"</i>	Informant 20	
21.	<i>"from puskesmas, sometimes also from books, internet, or social media platform. Example, in facebook there are so many rumours about vaccination and people can read it and comment in it freely. Most of them are hoax (laugh). The best information should be from health facilitator I think. When I go to puskesmas, I am very glad if I get information from doctor, or nurse directly. Bonus for me if they are friendly and easy to talk to"</i>	Informant 21	



The following is an illustration of the influence of religion on mothers in making decisions on immunization (Table 4):

Table 4. Religion

No.	Statement	Source	Perception
01.	<i>"it does not matter to me. It's just an issue so it does not concern me that much"</i>	Informant 1	Through interviews with informants, it can be concluded that religion is one of the factors being considered in making decisions to refuse vaccination. Even so, most informants still allow their children to be vaccinated.
02.	<i>"yes, stated it is forbidden" "maybe it's because their parents belief. There are some groups who prohibit vaccination"</i>	Informant 2	
03.	<i>"the religion rule does not effect my decision about my child vaccination"</i>	Informant 3	
04.	<i>"it was not in accordance with religious teachings. There is no such thing as advocating in Islam for immunization. " "According to his belief and there is no hadith, or the Qur'anic verse which explains or makes it possible to require such immunization"</i>	Informant 4	
05.	<i>"stated that it was formed by pig. That reason make me hesitate more"</i>	Informant 5	
06.	<i>"it was said haram (forbidden by religion)"</i>	Informant 6	
07.	<i>"it has no effect on me.. it depends on each of our beliefs. we respond accordingly, if you believe it, do it. If in doubt don't"</i>	Informant 8	
08.	<i>"there is no such a thing. It's just an issue. Vaccine is an effort to boost our children immunity. I don't think it is a problem"</i>	Informant 9	
09.	<i>"stated it is haram. Bit I don't think so"</i>	Informant 10	
10.	<i>"it is said to be made from pork oil. I just hope it's good for my children. If the government has allowed it, it means if there is a mistake they bear the consequences. If it's good for health why not"</i>	Informant 11	
11.	<i>"I'm not sure either. but yesterday there was the issue of illegitimate immunization. I just hope that my child is okay. As long as for their health I agree."</i>	Informant 12	
12.	<i>"those who refuse are fanatical about religion. I don't really care about myself. As long as my child is healthy."</i>	Informant 13	
13.	<i>"indeed for those who are fanatical about religion it is troubling."</i>	Informant 14	
14.	<i>"oh the unclean issue yesterday huh? I don't really know either. But I did not allow my child to be vaccinated with MR yesterday, because the ingredients are unclean. than I doubt, I'd better not allow it. But only that type, I allow the others vaccination"</i>	Informant 15	
15.	<i>"I think I just let the God judge"</i>	Informant 16	
16.	<i>"indeed many people say it is haram, not according to religious teachings. but I don't believe it. Vaccination is for boosting the child immunity. So he doesn't get sick easily"</i>	Informant 17	
17.	<i>"it is said that the vaccine is haram. but if the government has allowed it, it means the effect is good for health." "the one who rejects it is usually a strongly religious person" "many fear the vaccine is haram, so they do not vaccine their child"</i>	Informant 18	
18.	<i>depending on their beliefs. Which one sure do we do, if in doubt do not. Personally I still allow my child get vaccination"</i>	Informant 19	
19.	<i>"although her grandmother had doubted the vaccine, especially MR, but for the sake of my child's health I allowed it. The MUI has also approved it" "religious issues are easy to make people believe and doubt about vaccines"</i>	Informant 20	
20.	<i>yesterday there was a lot of news about illicit vaccines. actually in my opinion it depends on the person. This religious issue often makes people doubt. Fear of harming the child if given the vaccination so it is not given. it's just that my god said if in doubt leave. My friends believe in vaccination, except for MR"</i>	Informant 21	



The following is an illustration of the influence of belief in the benefits and effects of vaccination on the

attitude of mother's rejection of immunization summarized in the following table 5.

Table 5. Trust

No.	Statement	Source	Perception
01.	<i>"so far I feel the effects of the vaccine both on my child. he doesn't get sick easily"</i>	Informant 1	Based on interviews with informants, it was found that one of the reasons for refusing vaccines was because they doubted the function and usefulness of vaccines for the health of their children.
02.	<i>"so far I feel my child is safe-safe after immunization. he's only ever had a fever once" "I'm afraid of the MR vaccine, but not others. afraid because of many bad issues."</i>	Informant 2	
03.	<i>"my child is rarely sick when compared to those who don't vaccinate. Children are not easily sick if they have complete immunization." "some assume that immunization is not useful"</i>	Informant 3	
04.	<i>"I feel my child is healthy"</i>	Informant 4	
05.	<i>"there was no immunization back then and it was still healthy. So I did not immunize my child"</i>	Informant 5	
06.	<i>"I just believe in immunization, because all my children are immunized. basically if our child is fully immunized if sick is not too dangerous. Another case if the child is not immunized" "already have experience if the child is immunized, they're healthy"</i>	Informant 6	
07.	<i>"immunization makes children healthy. Children become more active than those who are not immunized. I feel more relieved"</i>	Informant 7	
08.	<i>"praise my God, my child doesn't get sick easily, if the weather is not good, he stays healthy. In the past nobody was immunized but everyone was healthy"</i>	Informant 8	
09.	<i>"because I think complete immunization or not, it has no differences. In the past nobody was immunized but everyone was healthy"</i>	Informant 9	
10.	<i>"I feel more relieved when my child got vaccination"</i>	Informant 10	
11.	<i>"We cannot see the immunization effect immediately, the effect is for the long term. for now I feel he doesn't get sick easily. most only mild fever, cough, flu."</i>	Informant 11	
12.	<i>"after rubella I feel my child is getting healthier. he is healthy because he has been immunizing since childhood"</i>	Informant 12	
13.	<i>"I agree with immunization. I was afraid that if he was not immunized, he would become infected easily. Even children who have been vaccinated are often sick, moreover those who are not." "my child after being immunized doesn't get sick easily" "their mindset is like the ancients. In the past, children did not need to be immunized but remained healthy. They do not think about future risks"</i>	Informant 13	
14.	<i>"children who are immunized have better immunity than those who are not. Especially if it has been fully immunized since childhood." "those are the people who think in the past, children did not need to be immunized but remained healthy."</i>	Informant 14	
15.	<i>"after being immunized my child becomes more invulnerable and doesn't get sick easily"</i>	Informant 15	
16.	<i>"my children growth is good, even though he is naughty but his brain is smart. he also rarely gets sick. I think children who are not immunized have a big belly, their growth is not good. Their body is small, and often get sick" "I regret why my child was not fully immunized when he was baby"</i>	Informant 16	
17.	<i>"if given immunizations are not easily attacked by diseases. stronger than the others"</i>	Informant 17	
18.	<i>"felt the direct impact on the child. If he has a fever, I'm not too worried. He was also fully immunized from a small such as like BCG, DPT, and etc."</i>	Informant 18	
19.	<i>"there's a talk "your child is healthy already, why bothers make him sick?" "I was vaccinated from my childhood. Because I already feel the benefits so I want my child to feel it too"</i>	Informant 19	
20.	<i>"fortunately so far my child is fine. If he is sick, it's only coughing, flu, mild fever, it's never serious problem."</i>	Informant 20	
21.	<i>"I think immunization is very important as an effort to make children healthy" "my child is getting healthier. Mostly he suffers cough, cold, or fever s. When he buy indiscriminate snacking he got diarrhea, but thank God so far nothing serious"</i>	Informant 21	



The following is an illustration of the effect of vaccination safety on the mother's resistance to immunization, summarized in table 6 below.

Table 6. Safety

No.	Statement	Source	Perception
01.	<i>"there are certain immunizations that make him got fever"</i>	Informant 2	Through interviews of informants it can be concluded that the safety of vaccination is a factor in rejection of vaccines. Many informants are worried about vaccinating their children for fear that their children will have a fever or swelling after the injection. There are also concerns because of adverse events due to vaccinations whose information has spread in the community.
02.	<i>"when he was a baby he had been immunized, then had a fever. but not for long"</i>	Informant 3	
03.	<i>most people are afraid of vaccinating their children because later it will become a fever, illness, etc"</i> <i>"many are afraid of seeing children vaccinated, afraid of their children being sick"</i>	Informant 6	
04.	<i>"because I've heard that after vaccination is paralyzed"</i>	Informant 8	
05.	<i>"after immunization they have a fever. For example DPT"</i> <i>"many mothers cant bear to look their children get fever after injection. So they are deterrent and afraid"</i> <i>"make healthy people sick. good if it's only 2 days, this can take up to 2 weeks. Such an horrible experience"</i>	Informant 9	
06.	<i>"I'm afraid that a healthy child will have a fever, right? If a child is immunized, he is not sick, but after that he becomes feverish"</i> <i>"especially the rubella vaccine, many refused because it was said that someone died after being vaccinated"</i>	Informant 10	
07.	<i>"previously heard of a bad incident in SD 7 ulu, someone died after being injected with the vaccine. Even though we don't know what the problem really is, but it's quite disturbing for us"</i>	Informant 11	
08.	<i>there is a story that says died after being vaccinated. it's scary to hear"</i>	Informant 12	
09.	<i>"after vaccinated, children get fever oftenly"</i>	Informant 13	
10.	<i>"worried that his child might have health problems. For example, fever, cough, paralysis, and even heard someone died"</i>	Informant 15	
11.	<i>"child has a fever the day after. But then they get healthy again"</i> <i>"I get information after vaccination the child becomes ill, then there is swelling, etc"</i>	Informant 16	
12.	<i>"Child get sick after vaccination"</i> <i>"many mothers are afraid their children will get sick after being immunized"</i>	Informant 17	
13.	<i>"Some had the location of the injection swollen, so they're afraid"</i>	Informant 18	
14.	<i>"people say it can make health conditions go down. After the injection can become paralyzed, even dead. Maybe because the child is sick, but still forced "</i> <i>"it 's heard somebody get paralyzed"</i>	Informant 19	
15.	<i>"not to mention yesterday there was news of a child dying after being injected with immunizations. Parents are becoming more panicked"</i>	Informant 20	
16.	<i>"Heard rumour stated children become severely ill, even death after get vaccinated"</i>	Informant 21	





In addition to the factors above, the following are other factors that can influence the mother's resistance to immunization (Table 7)

Table 7. Others

No.	Statement	Source	Perception
01.	<i>"his father was angry because our child got sick after being immunized. After that I did not immunize my child anymore" "my husband is angry because our child is not getting healthier but becoming sick" "my child doesn't want to be vaccinated. I allow but he doesn't want to do it"</i>	Informant 9	Based on interviews with informants, another factor that can influence vaccination refusal is family support, especially husband. Another factor that can be concluded is the lack of socialization and education regarding vaccination of elementary school age children. Some informants thought it would be nice if a thorough and detailed socialization was carried out to parents regarding vaccination in elementary school children.
02.	<i>"I asked my husband for permission first"</i>	Informant 12	
03.	<i>"my family all support vaccination. Sometimes their grandmothers who don't support vaccine make some protest, so it's always noisy when i want to give the vaccine"</i>	Informant 13	
04.	<i>"I see the condition of my child, if he's sick, I don't allow it" "thank God my family supports vaccination. Yes, I had an argument with his father because of his doubt about the MR vaccine" "Some are not permitted by her husband to allow vaccination"</i>	Informant 14	
05.	<i>"I got supportive family. My husband also supports immunization as long as our child is in good health condition" "no one gave me any clarity on the MR vaccination yesterday. As a public we sometimes want to ask but don't know who. Asking a fellow citizen doesn't solve the problem. So I don't allow my child to be vaccinated"</i>	Informant 15	
06.	<i>"all families support immunization"</i>	Informant 16	
07.	<i>"initially his father did not allow vaccination, because everytime our child immunized, the got a fever " "because it was forbidden by her husband, many children were not immunized"</i>	Informant 17	
08.	<i>"afraid of children becoming feverish. At night you can not fall asleep, you must guard it"</i>	Informant 18	
09.	<i>"many of my family disagree with vaccination"</i>	Informant 19	
10.	<i>"So my husband told me not to have our children immunized, for fear that he would get sick after get vaccinated" "Yes we were given a letter from school. If you agree the child is vaccinated, the letter is signed. If not, there is no need to sign. Maybe that's also what makes parents afraid. There is no socialization regarding what children will be injected with, or when, or what are the benefits we can have. Off course you must confused if you suddenly infomed without consent before"</i>	Informant 20	
11.	<i>"her grandmother did not allow immunizations in elementary schools, last year she was vaccinated very often. The important thing is that initial immunization had been done when she was a baby" "provide information with only paper, without detailed explanation, makes parents worried"</i>	Informant 21	



Another sources of information used in this qualitative research are through focus group discussions (FGDs). The FGD was conducted on 3 groups with each group consisting of mothers with

primary school children. Each FGD lasted approximately 10 minutes. The following are the characteristics of FGD informants:

Table 8. Characteristics of FGD informants

No.	Informant	Role	Gender
01.	FGD1	Mother	F
02.	FGD1	Mother	F
03.	FGD1	Mother	F
04.	FGD1	Mother	F
05.	FGD1	Mother	F
06.	FGD1	Mother	F
07.	FGD1	Mother	F
08.	FGD1	Mother	F
09.	FGD2	Mother	F
10.	FGD2	Mother	F
11.	FGD2	Mother	F
12.	FGD2	Mother	F
13.	FGD2	Mother	F
14.	FGD2	Mother	F
15.	FGD2	Mother	F
16.	FGD3	Mother	F
17.	FGD3	Mother	F
18.	FGD3	Mother	F
19.	FGD3	Mother	F
20.	FGD3	Mother	F
21.	FGD3	Mother	F
22.	FGD3	Mother	F
23.	FGD3	Mother	F



The following is an illustration of the mother's knowledge about vaccinations obtained from the

FGD. Summary summarized in tabular form (table 9)

Table 9. Knowledge FGD

No.	Statement	Source	Perception
01.	<i>“true, I immunized my child so that the immune system is good. So he doesn't get sick easily”</i>	FGD 1	Based on the information collected, it can be concluded that the community already knows the purpose and function of immunization in general, but information about advanced immunization in elementary schools is still minimal in the community.
03.	<i>“actually I know that immunization gives children immunity to disease” “giving immunizations when he was a baby was no problem. The problem is about immunization when he was in elementary school. Nobody gave an explanation” “just try to explain something about immunization in elementary school. Is the process safe? If it's clear, it's impossible for parents to forbid it”</i>	FGD 3	

Through the following table 10 can be seen various sources of knowledge about immunizations that reach the community based on the results of the FGD

to the informants. Also described how information should be given about immunizations / vaccinations.

Table 10. Knowledge sources FGD

No.	Statement	Source	Perception
01.	<i>“it was explained by the doctor, that one of the side effects is fever. My child was 9 months old when he was fully immunized. After he is 2 years old I did not give it again. Midwife said it's finished” “At the time of giving the child a vaccination, the midwife examined him and found that he had a fever. She suggested delaying immunization until my child is healthy again. After that my child can come back to the health center to get his vaccine”</i>	FGD 1	Based on information from these informants, information from doctors, midwives, health center counseling, posyandu counseling, social media, internet, and news that is spread in the community about immunization has an effect on attitudes towards rejection or receiving vaccinations.
02.	<i>“I was told by a midwife since I was pregnant, I was also told at the posyandu, so I followed it”</i>	FGD 2	
03.	<i>“because a lot of news on facebook that stated the vaccine is haram, the issue is made from pork oil. so children should not be given the vaccine” “Nowadays a little problem can become viral on Facebook, so everyone knows the information. It's spread pretty quick” “if a lot of negative things are popularized, then citizens become hesitant to allow their children to get vaccinated”</i>	FGD 3	



The following is an overview of the impact of religion on vaccination decisions. These descriptions are

summarized in table 11 below.

Table 11. Religion FGD

No.	Statement	Source	Perception
01.	<i>"Very bad news circulated that vaccinations at this school had pig oil. Haram said that"</i>	FGD 1	Based on information from informants it can be said that religion is one of the factors that influence people's attitudes towards vaccination.
02.	<i>"there are so many rumours said vaccine is haram"</i>	FGD 2	
03.	<i>"I refused because I was doubtful about immunization. Moreover, statements circulating that the vaccine is forbidden." "no other complaints. Just about the statement that the vaccine is haram and contains pork oil make us doubtful" "yes, because some say vaccination is haram. The ingredients are made from pork oil. That makes many people refuse their children to be vaccinated. Although it's just return to each other's opinions."</i>	FGD 3	

The following is a description of the belief in the benefits and effects of vaccination on children

according to informants through the FGD (table 12)

Table 12. Trust FGD

No.	Statement	Source	Perception
01.	<i>"my son is still vaccinated. It is true that he has a fever after that, but it doesn't matter"</i>	FGD 1	Based on interviews with informants, it was found that one of the reasons for refusing vaccines was that some people doubted the function and usefulness of vaccines for their children's health.
02.	<i>"I see the difference between a child who is given a vaccine and not. Children who are not given vaccine become easily sick, and often seek treatment from a doctor." "if a child is immunized the he has a cold, its okay. I don't feel pannic that much" "thank God my child were immunized, three of them. It is very apparent that they are not easily sick"</i>	FGD 2	
03.	<i>"his father often comments why healthy children should we give vaccination, instead of becoming healthy they will get sick" "it is said that the vaccine company came from Israelj. Many people are upset about vaccinations in elementary school"</i>	FGD 3	



The following is an overview of vaccination safety factors that affect the acceptance and rejection of

vaccination among the community (table 13)

Table 13. Safety FGD

No.	Statement	Source	Perception
01.	<p><i>“after getting vaccine why should they become feverish? It make me feel sad”</i></p> <p><i>“Rubella vaccine make me a little bit worry, I’m okay with another. Actually I have no issue about complete basic vaccination”</i></p> <p><i>“you better don’t give ] rubella vaccine to your children. It causes long period fever, and it takes time for them to recover”</i></p> <p><i>“Some children got their injection spot swollen after they got vaccinated at school”</i></p> <p><i>“I stop give my child vaccination after some false vaccine issue”</i></p> <p><i>“what concern me the most is rubella vaccine. There are report that someone die after got injected with rubella vaccine. After that many mothers refuse risking their child safety”</i></p>	FGD 1	Based on information from informants, it shows that most informants think that side effects and unwanted events due to vaccination are one of the causes of high vaccination rejection among elementary school students.
02.	<p><i>“children of friends of mine become severely ill and then die after got vaccine. It traumatizes me”</i></p> <p><i>“first, second, and third immunizations was running well. But on the next session my child got a really swollen thigh. It infuriated my husband. He said stop giving our child vaccination, and I stop it from that moment”</i></p> <p><i>“I did immunize my children, but I became hesitated after some issue about false vaccine. Up until now, I still hesitated”</i></p>	FGD 2	
03.	<p><i>“so, initially when he got injection from the school he was okay, no fever at all. But after two days fever kicks in. So i get anxious after that whenever he has vaccination”</i></p> <p><i>“the notification letter from the school came and it stated they did not guarantee the safety of vaccine and we, parents, must take responsibility should something happens”</i></p> <p><i>“there is also incident in 7 Ulu if I’m nor mistaken, someone die after get the vaccine”</i></p> <p><i>“the notification letter said, if something happened, school has no responsibility about that. If the statement said so, how do you think parents can aasily let their children get vaccinated”</i></p> <p><i>“They (my children) just went back home, gave us the notification letter which contains no explanation. Stated they did not take responsibility if something bad happened”</i></p> <p><i>“after get injected, there were reddish flame like spot in her skin”</i></p> <p><i>“if that’s just fever, I can bear with it. But if they get seizures afterthat. God knows how worry I am”</i></p>	FGD 3	



In addition to the factors above, the following are other factors that can influence the mother's

resistance to immunization (table 14).

Table 14. Other factors FGD

No.	Statement	Source	Perception
01.	<p><i>“their dad said, why our children get fever. Can't they just not given immunization anymore? So I had a little argument with him”</i></p> <p><i>“I am afraid that my child get fever, who will guard her if it is not me. After that I will not go to work easily due to lack of sleep. I know vaccination works for boost her immunity, but because I worry it will make her sick and I can't work peacefully then I neglect it”</i></p>	FGD 1	Based on information from informants, another factor affecting the refusal of vaccination is the role of the husband, the mother factor must work, and because of the lack of socialization regarding continued vaccination at the elementary school level.
02.	<p><i>“it's traumatic for me. Even my husband said we better stopped the immunization. We hardly have children befor, we must waited for 1.5 years until I pregnant. With my husband concerns, I stop the vaccination”</i></p> <p><i>“when actually immunization should be given? Sometimes I feel that's too much for them to get injected within a year”</i></p> <p><i>“I pity them, they got injected oftenly”</i></p> <p><i>“there's no explanation about immunization. Whether we can catch up the immunization we neglected when they were babies or not? They are already in elementary school now”</i></p>	FGD 2	
03.	<p><i>“we were told if our child was getting MR vaccine in school, we better reject it”</i></p> <p><i>“actually we won't worry that much if there is explanation about MR vaccine from school. The letter just about agreement to let our children getting vaccination. I told his dad, but he said there are a lot of rumours in facebook said vaccine was fomed by pig oil. So i did not give permission”</i></p> <p><i>“up until now, there is no one giving me explanation about vaccine safety. So we are still hesitate until now”</i></p>	FGD 3	



Furthermore, observations were made to observe the vaccination process and factors that can influence the attitude and behavior of the mother

towards giving vaccines to her child. The results are obtained as follows (Table 15)

No.	Observed object	Implemented	Not yet implemented
01.	Enough mother's information about the importance of immunization for children health.	√	
02	Puskesmas, Posyandu, health provider, dan health cadre give counseling about vaccination importance.	√	
03.	Mother received good and detailed explanation about vaccination before allowing her child got vaccinated.		√
04.	Mothers whose children have experienced side effects from vaccination still allow their children to be vaccinated.	√	

#### 4. Discussion

The collection of information conducted by researchers through in-depth interviews and focus group discussions (FGD) regarding knowledge of vaccinations aims to find out whether mothers already know what vaccination or immunization is. All informants answered questions that had been determined by researchers. Full details of the results of in-depth interviews and focus group discussions (FGD) can be read in full in the appendix. Researchers have summarized a few excerpts from the results of in-depth interviews and focus group discussions (FGD):

*"from what I was told by Puskes, immunization can prevent some disease by injecting virus, thus children's immunity was formed"*(2)

*" what I heard about immunization was to form my children's immunity towards the diseases by injecting virus, maybe some kind of drug to their body"* (17)

*" immunization is intended to give immunity to children, so if they get sick it is not that serious. I was informed from she was baby 'till elementary school she will get vaccinated"*(21)

*" true, I immunized my child so that the immune system is good. So he doesn't get sick easily "* (FGD 1)

Based on statements made by in-depth interview and FGDs informants regarding vaccination or immunization, it can be concluded as follows: immunization is a step that aims to prevent disease by forming immunity against the disease, it can be assessed that the public already knows what vaccination is and its purpose.

Through the Immunization Textbook, the Indonesian Ministry of Health, Hadianti, *et al* (2014) states that immunization or vaccination is a step taken to increase immunity to a particular disease with the aim of reducing mortality, morbidity and disability.<sup>12</sup>

#### Sources of Knowledge

Researchers conducted in-depth interviews and focus group discussions (FGD) about who and where sources of information about vaccinations in the community, which sources of information are the most reliable, and are there suggestion on how information should be given about vaccinations to the public. All informants answered questions that had been determined by researchers. Full details of the results of in-depth interviews and focus group



discussions (FGD) can be read in full in the appendix. The following are excerpts from the results of in-depth interviews and focus group discussions (FGD) with the topic of knowledge sources:

*"I prefer the informations I get from google, because I get more relevant and more detailed info there. If I want to ask and come here (puskesmas), it take too long. I can find my answer through internet just by grab my phone, everytime, everywhere"(2)*

*" from google, tv, facebook. Also from "posyandu" or "puskesmas" when I come, I got informed by nurse"(3)*

*" I was told by a midwife since I was pregnant, I was also told at the posyandu, so I followed it " (FGD 2)*

*" because a lot of news on facebook that stated the vaccine is haram, the issue is made from pork oil. so children should not be given the vaccine " (FGD 3)*

Based on the answers from the informants, some sources of information about immunization are doctors, midwives, or counseling through Puskesmas, Posyandu, etc. Other sources of information include the internet, social media, and stories and experiences of fellow mothers who have already has more experiences about immunization.

Health institutions such as Puskesmas and Posyandu, together with health workers, have a role in realizing and improving national welfare through immunization as one of the five main Puskesmas and Posyandu programs.<sup>1</sup>

Reviewing the answers given by the informantts in this study, through both in-depth interviews and FGDs, it can be said that the most trusted source of information by the community varies, ranging from health workers, the internet, to social media. The same thing was stated in previous research that is, health workers are the most important source of information in counseling the community so that

people who initially refused or doubted about vaccination became confident and positive about vaccination.<sup>13</sup>

The internet and social media have a strong impact on society in determining attitudes towards vaccination. According to the answers given by the informantts in this study, the answer most often arises that bad news about vaccinations that are spread on social media and the internet makes people doubtful and reject vaccinations.

In their 2013 research, Xia and Liu stated that the influence of social media in determining attitudes toward something depends on the interaction of fellow communities on social media itself. If someone interacts with a character who has a tendency to behave in a negative direction, then the likelihood to react negatively becomes greater.<sup>14</sup>

The media and the internet also have a significant role in influencing people's attitudes towards vaccination, affecting both positive and negative attitudes. Unfortunately, most of the information disseminated on the internet contains rumors, myths, and negative things about vaccinations so that more and more people are rejecting vaccinations.<sup>14</sup>

## **Religion**

Researchers conducted in-depth interviews and focus group discussions (FGD) about the role of religion in rejection of vaccination. All informants answered questions that had been determined by researchers. Full details of the results of in-depth interviews and focus group discussions (FGD) can be read in full in the appendix. The following are excerpts from the results of in-depth interviews and focus group discussions (FGD):

*" it was not in accordance with religious teachings. There is no such thing as immunization in Islam"(4)*

*" stated that it was formed by pig. That reason*





*make me hesitate more."* (5)

*" indeed for those who are fanatical about religion it is troubling "* (14)

*" yes, because some say vaccination is haram. The ingredients are made from pork oil. That makes many people refuse their children to be vaccinated. Although it's just return to each other's opinions "*(FGD 3)

Based on the results of in-depth interviews and FGDs, almost all informants thought that one of the factors that caused people to refuse vaccination was because it was rumored that in the vaccine there were materials which were classified as haram according to Islam which constituted the majority of religions in Indonesia.

Part of the rejection of vaccination from the community is based on religious reasons or certain beliefs without scientific reasons. This is understandable considering that religion and beliefs have a strong influence due to the values that have been adopted early on by certain individuals. For example, Muslim communities think that because the vaccine is made from pigs, it should not be consumed and given to children.<sup>15</sup>

### **Trust**

Researchers conducted in-depth interviews and focus group discussions (FGDs) about the belief in their function and use for children's health against vaccination rejection. All informants answered questions that had been determined by researchers. Full details of the results of in-depth interviews and focus group discussions (FGD) can be read in full in the appendix. The following are excerpts from the results of in-depth interviews and focus group discussions (FGD):

*" some assume that immunization is not useful"*(3)

*" there was no immunization back then and it was still healthy. So I did not immunize my child "*(5)

*" I just believe in immunization, because all my children are immunized. basically if our child is fully immunized if sick is not too dangerous. Another case if the child is not immunized "*(6)

*" because I think complete immunization or not, it has no differences. In the past nobody was immunized but everyone was healthy "*(9)

*" it is said that the vaccine company came from Israelj. Many people are upset about vaccinations in elementary school "*(FGD 3)

Parental confidence in the benefits of vaccination for the health of children in the world is generally in the medium level. Through a survey conducted by Alstyne, *et al.* in 2017 that only 81.4% believed that vaccination affected the health of their children in the future. Though trust is one of the three keys that influence the success of the immunization program according to the National Vaccine Advisory Committee (NVAC). Good parental trust in immunization must be maintained and built as well as possible.<sup>16</sup>

Trust in vaccination will not only be limited to trusting in the benefits of vaccination against children, but also trust in vaccine safety, trust in the government, responsible institutions, and medical personnel who provide vaccination services themselves.

Based on the results of in-depth interviews and FGDs, some informants revealed that the administration of vaccines was considered not to have a significant impact as evidenced by the previous generation not undergoing vaccination but still staying healthy and free from disease. Some informants also stated that there was not much difference between vaccinated and not children. For these reasons, there are still many mothers who do not vaccinate their children.



## Safety

Researchers conducted in-depth interviews and focus group discussions (FGD) regarding vaccination safety according to informants and their relationship to vaccine refusal. All informants answered questions that had been determined previously. Full details of the results of in-depth interviews and focus group discussions (FGD) can be read in full in the appendix. The following are excerpts from the results of in-depth interviews and focus group discussions (FGD):

" *most people are afraid of vaccinating their children because later it will become a fever, illness, etc* " (6)

" *previously heard of a bad incident in SD 7 ulu, someone died after being injected with the vaccine. Even though we don't know what the problem really is, but it's quite disturbing for us* "(11)

" *worried that his child might have health problems. For example, fever, cough, paralysis, and even heard someone died*"(15)

" *Some had the location of the injection swollen, so they're afraid*"(18)

" *Some children got their injection spot swollen after they got vaccinated at school* " (FGD 1)

" *I did immunize my children, but I became hesitated after some issue about false vaccine. Up until now, I still hesitated*"(FGD 2)

Based on the results of in-depth interviews and FGD conducted with the informants, almost all of them answered that the safety of vaccination was one of the factors that made the community reject vaccination. Safety of vaccination is intended is the side effects and adverse events that occur in children after vaccination such as fever, injection areas that swell and redden, there is a story that vaccination is endangering the lives of children, etc.

Security comes from the word safe which, according to the *Kamus Besar Bahasa Indonesia*

(KBBI) is a sense of being free from danger so that there is no need to feel fear or worry (KBBI, 2019). When people experience bad experiences with vaccine safety, it will certainly raise doubts and refusal of vaccinations.

Based on research conducted by Peterson, Chantler, and Larson in 2017 it was found that 10 of parents are worried about the side effects of vaccination against their children. Through an interview they did to one mother, it was found that one of her children had a high fever after being vaccinated. This then made him no longer willing to give vaccinations to his children. <sup>18</sup>

It is different case with the administration of drugs that aim to treat someone who is sick, vaccines are given to healthy people so their safety must be guaranteed. In the process doctors, nurses, medical personnel, and related institutions must provide reassurement and education to the public that although vaccination cannot be said to be 100% safe, the side effects it usually causes are not too severe. These effects include mild fever, pain, redness or slight swelling at the injection site. Based on a systematic review of vaccination safety, it can be concluded that some vaccines can indeed have quite serious effects, but the possibility is very low.<sup>15</sup>

Concerns about vaccine safety do not stop there. Concerns about the number and timing of vaccines are also a concern. The number of new vaccinations recommended makes parents think there will be "accumulation of immunity" in the body of their children due to the many frequencies of vaccinations carried out in close time. Some parents also worry about the discomfort that their child may experience due to too much vaccination.<sup>13</sup>

## Other factors

Researchers conducted in-depth interviews and focus group discussions (FGD) regarding maternal-related factors in rejection of vaccination. Other



factors not included in the compiled questionnaire are then collected. Full details of the results of in-depth interviews and focus group discussions (FGD) can be read in full in the appendix. The following are excerpts from the results of in-depth interviews and focus group discussions (FGD):

" my husband is angry because our child is not getting healthier but becoming sick " (9)

"no one gave me any clarity on the MR vaccination yesterday. As a public we sometimes want to ask but don't know who. Asking a fellow citizen doesn't solve the problem. So I don't allow my child to be vaccinated"(15)

"Yes we were given a letter from school. If you agree the child is vaccinated, the letter is signed. If not, there is no need to sign. Maybe that's also what makes parents afraid. There is no socialization regarding what children will be injected with, or when, or what are the benefits we can have. Off course you must confused if you suddenly infomed without consent before"(20)

"I am afraid that my child get fever, who will guard her if it is not me. After that I will not go to work easily due to lack of sleep. I know vaccination works for boost her immunity, but because I worry it will make her sick and I can't work peacefully then I neglect it "(FGD 1)

Through in-depth interviews and FGDs conducted with informants, it was found that another factor influencing rejection of vaccination was the role of the husband. Almost all informants at the in-depth interview stated that they asked permission from their husbands before vaccinating their children. Another cause is fear of not being able to work if the child is sick because they have to take care of the child. Another reason is the absence of clear socialization and clarification to the public about vaccinations conducted in primary schools. Most parents do not know when and what vaccinations are given to their children in primary school.

One cultural pattern that is generally adopted in Indonesia is patriarchal culture. Patriarchal culture is a culture with the concept that men have a more superior role than women. This culture is reflected in the practice of daily life in family, community, decision making, and division of labor. Therefore, the mother's decision regarding vaccination is partly due to the husband's role as head of the family. <sup>19</sup>

Lack of socialization regarding vaccinations in primary schools indicates there is no effective communication in the implementation process. Effective communication must be proactive and provide detailed information and use specific strategies depending on who is faced. In the process of communication, other problems can arise if too much information is given about the side effects of vaccination, which makes people who are already hesitant become more skeptical about vaccination.

In facing the challenges of vaccination refusal, of course collaboration intersectoral must be carried out. Collaboration between health workers and institutions, academia, community leaders, religious leaders and the government can add positive and reliable opinions that can reach all levels of society for vaccination.<sup>20</sup>

### **Vaccination observation**

Through observation in this study the researchers found that the mother's knowledge of vaccination, information provided to mothers regarding vaccination, and procedures that are in accordance with the standards at the time of vaccination are very closely related to the mother's attitude towards vaccination.

Mother's knowledge of the importance of vaccination and the efforts of health workers and health cadres to provide information about immunization are not enough to convince mothers if it is not accompanied by explanations and delivery of clear and detailed information about vaccinations to



be given to their children. Researchers found several mothers with excellent knowledge about vaccinations, including knowing the side effects that might result from vaccination did not allow their children to be vaccinated at school. This is caused by the notification that vaccination will be given the day before the implementation and only in the form of a statement if the parent allows or does not allow it without any additional explanation.

### Research limitations

This research was conducted not at the same time as the Immunization Month for Elementary School so that there was a tendency to have a recall bias in the collection of data obtained from the informants.

### 5. Conclusion

Based on the research conducted it can be concluded the following points:

Sources of knowledge about vaccination, religion, belief in vaccination, safety of vaccination, the role of husband, and the lack of socialization received for vaccination in primary schools are factors that are associated with mothers towards refusing vaccines in primary school children

There is a relationship between the source of knowledge about vaccination, religion, belief in vaccination, safety of vaccination, the role of the husband, and the lack of socialization received by mothers with the refusal of giving vaccines in primary schools

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