

## Conference Paper

# Parents' Decision-making Experience in Choosing the MMR Vaccine in Banten, Indonesia

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## Abstract.

Research has extensively studied parental vaccination decision-making drivers and barriers. The most powerful predictors of vaccination actions include the understanding of the risks posed by the disease; and the side effects of vaccination; vaccine beliefs and attitudes; and their effectiveness and safety concerns. Thus, this study aimed to explore the parents decision-making experience in choosing MMR vaccine in Banten, Indonesia. In qualitative study, a purposeful sampling process was used to identify parents with a variety of expected MMR decisions: (1) accept MMR on time, (2) accept MMR late, (3) receive one or more individuals, (4) obtain no MMR or individuals. A qualitative quality analysis was used to interpret the transcribed text. A total of 25 participants from 5 different FGDs were included in this study. This qualitative interview resulted in 4 themes, namely: healthy life, own health perceptions, disease history, perceived severity, and susceptibility of vaccine-preventable illnesses. Research on the MMR vaccination should move a step forward and include studies looking at similarities and differences in the factors predicting parents' intention to follow MMR vaccination recommendations by comparing parents of very young children, being the primary target group of MMR vaccination campaigns and interventions, with parents of adolescent children.

**Keywords:** decision process, MMR vaccine, qualitative study

## 1. Introduction

Indonesia included in 10 countries of 60% of unprotected children, around one million children were under and un vaccinated children (1). Between 2017 and 2018, measles and rubella immunization were targeted at more than 68 million children aged 9 months to 15 years, with the country committed to eliminating measles and controlling rubella and congenital rubella syndrome (CRS) by 2020 (2). Indonesia's coverage with the first dose of measles increased to 75% (UNIVEF, 2018), and in the five years leading up to the initiative there were more than 12,000 confirmed measles cases per year. Earlier

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this year, an outbreak of 800 cases in one district resulted in 72 deaths in children. Indonesia has invested almost US\$ 100 million in the program to reach a coverage of 95 percent. The first step in 2017 was a major success with the vaccination of more than 35 million children on Java's main island. Despite coverage close to 100%, cases of measles fell sharply. The targeting of 32 million children across 28 provinces was marred by obstacles, the second phase of the initiative initiated in August 2018.

Research has extensively studied parental vaccination decision-making drivers and barriers. The most powerful predictors of vaccination actions include the understanding of the risks posed by the disease and the side effects of vaccination (3–5) disease and vaccine beliefs and attitudes (6) and their effectiveness (7) and safety concerns (8). The role of trust in medical professionals, health authorities and governments has also been recognized by extensive literature (5,9). The details of the pediatrician (10) and the manner of contact during the referral for vaccination (presumptive vs. participatory) (11,12) may also influence the decision. Mixed results for the position of demographic variables such as education are available (13–16), age, sex, marital status, and number of children (14,17,18). In fact, evidence suggests that immigrants are more likely than the local population to adhere to vaccine guidelines (19). Often recognized as an indirect driver has been established (3,12,13).

Within the comprehensive literature currently available on what influences parental decision on childhood vaccination, many studies have looked specifically at the context of MMR vaccination, especially after the MMR scare ignited by a 1998 Lancet article claiming a correlation between MMR and autism (17,20,21). A recent systematic review (22) offers an overview of the most common factors driving the decision-making process for parental MMR vaccination. Research has shown that any vaccine and related diseases are surrounded by a particular set of beliefs and specific positive and negative attitudes (9). Similar to other childhood vaccinations, MMR vaccine has a number of unique features—such as being at the forefront of the autism controversy (23). In fact, parents should consider the administration of this vaccine as the closest thing to a natural infection, as it is made up of live attenuated viruses of its three target diseases (24). Accordingly, vaccine decisions need to be better understood in specific contexts, considering cultural and regional differences, ensuring that measures that address reluctance or decision against MMR are well tailored and properly received. The most essential to classify the factors affecting the decision of parents towards childhood vaccination in general, and in particular their decision for or against the MMR

vaccination. Empirical research and strategies based on theory are beneficial if not necessary for an effective promotion of health behavior (25). Theories allow complex processes to be synthesized and generalized beyond a given context. They also allow for the formulation of action suggestions for measles vaccine interaction measures and campaigns in Indonesia for public health organizations involved. Thus, this study aimed to explore about experience of decision process to choose MMR vaccine among parent in Banten, Indonesia.

## 2. Methods

### 2.1. Study design and setting

A descriptive method was used by the qualitative group. This study was conducted at public health center located in Serang Banten, Indonesia.

### 2.2. Sample

The target population of this study is parent at public health center located in Serang Banten, Indonesia. In qualitative study, A purposeful sampling process was used to identify parents with a variety of expected MMR decisions: (1) accept MMR on time, (2) accept MMR late, (3) receive one or more individuals, (4) obtain no MMR or individuals. At the recruiting, interview and encoding points, parents had not decided on their choices, so the planned MMR decision was used as a substitute for the selection of the actual MMR decision, but the actual MMR decision was used to group participants for review. Recruitment persisted until thematic saturation (the point where no new issues appeared in new interviews) (Creswell, 2013) within each decision group was reached. Any parents from the saturated decision group who replied after this point were informed that adequate data had been collected in their community for parents, and recruitment messages were updated to identify the groups still needed. Since these changes were made soon after saturation had been reached and recruitment was relatively slow with only 2 or 3 interviewees each month, only one possible interviewee (accepting MMR on time) was unable to participate in the study.

### 2.3. Procedure

The focus group was held at the Serang Banten, Indonesia, Public Health Center. The participants were polite and seemed to be familiar with each other. The room had sufficient space and lighting to be private. Chairs were designed to facilitate debate in a circular pattern around a table. The focus group was made up of five participants (n= 5) and was conducted for about 2 hours. The number of participants and the length of time allowed sufficient time for each participant to talk and exchange information. Participants presented their views and observed other points of view with respect. Comments were made to help and knowledge consensus was reached. The group accompanied a organized format in that the researcher used a set of prepared questions to guide the discussion (26), which fostered direct interaction and in-depth discussion among participants. The focus group made it possible to address a wide range of ideas that ultimately led to group consensus of ideas. The interview was audiotaped, transcribed, and prepared for review with the consent of the participants. Before, during and after the focus group, the researcher recorded notes by hand. All data was de-identified and stored in a file protected by password. At the conclusion of the focus group, participants received a reward of Rp 50,000 plus travel expenses.

### 2.4. Data analysis

Transcripts were written manually for the first time. NVivo 10<sup>®</sup> was then used as a forum for further interview organization, linkage and analysis of data. A qualitative quality analysis used to interpret the transcribed text (27). Qualitative content analysis provides explanations of the concrete content and perceptions of the abstract content when concentrating on the perspectives of subjects (28). To get continuity and to get a sense of the whole scenario, the transcripts will be read repeatedly. A skilled transcription company has provided Word-for-Word transcripts. The researcher checked the quality of each transcribed interview by using audiotaped playback. First, in search of relevant data, the researcher reviewed the transcripts line-by-line, highlighting excerpts and notable quotes. Experience-related text sections will be combined to form a content field into one file. This text is divided into units of meaning that are then condensed, abstracted and labelled with codes. The context as a whole will be taken into account during the process of condensing and coding. The codes will be compared and sorted according to differences and similarities. The first coding will be carried out by the

primary investigator. The other investigators autonomously coded each interview and then met and discussed the coding before consensus was reached. Throughout the analysis process, all investigators reflected and discussed the codes, categories and subcategories to increase the level of confidence (27).

### 3. Results

#### 3.1. Characteristics of studied participants

A total of 25 participants from 5 different FGDs were included in this study (Table 4.6). The majority of the participants were below 45 years, 12 had low education level, 13 had high education level (above secondary school) and 13 were male and 12 were female.

TABLE 1: Characteristics of participants in focused group discussions (n = 25).

	FGD 1	FGD 2	FGD 3	FGD 4	FGD 5
Age					
< 45 years	3	2	3	3	2
>45 years	2	3	2	2	3
Gender					
Male	3	3	2	3	2
Female	2	2	3	2	3
Education level					
Below secondary school	2	3	2	2	3
Above secondary school	3	2	3	3	2

### 4. Findings

This qualitative interviewed resulted in four theme, namely :

1. Healthy life
2. Own health perception
3. Disease history
4. Perceived severity and susceptibility of vaccine-preventable illnesses

#### 4.1. Healthy life

The parents expressed their belief that the way they lived may have a good impact on the health of their children. They worked hard to ensure that their children were as healthy as possible, so that their immune systems would be robust and able to cope with infectious illnesses as they grew older. *"You can ensure that your child is healthy and that he or she has a robust immune system,"* one parent stated. *"I believe that's something I want to achieve success in."* One in five parents (n = 5) stated that having a quiet environment was vital to them. *"Because we had a babysitter and did not send our children to day care, they grew up in a peaceful environment. Because of this, I was convinced that I would be able to postpone immunization."* *"They both went to childcare at a very young age, or we had a babysitter come to our house, so the care that our children receive is wonderful, and there was a resting environment around them that helped them,"* said another parent. Other parents (n = 6) stated that adequate nutrition, like as nursing, was a significant preventative measure against infectious diseases: *"Because I nursed for a long period, I assumed that my kid would receive a great deal of protection from breast milk."*

#### 4.2. Own health perceptions

In making their vaccination selections, the parents considered their own perceptions of their children's health: *"I look at how well she's developed,"* said one parent. *She is not a weak child; rather, she is a really powerful youngster in whom I have a great deal of faith. We haven't vaccinated her since she is in such good health, and I didn't want to interfere with it."* The majority of parents (n = 9) who refused immunizations expressed great faith in the health of their children, saying, *"I have great confidence in children's innate healing abilities."*

#### 4.3. Disease history

Parents (n=5) who believe that certain diseases, known as childhood diseases, are necessary for the development of a child stated: *"According to anthroposophy, some childhood diseases contribute to your personal development; diphtheria, tetanus, and polio are not part of that development, and so we accepted this vaccine."* *"I've noticed that the youngsters seem a little listless when they have a fever,"* another parent

observed. Their fever lasts for a few days, after which they make a dramatic jump forward or begin to develop teeth. I've personally experienced childhood illnesses. *I was terribly ill with measles, but after it's gone, you feel stronger because you've faced a challenge.*" All of the parents declined to have their children receive the MMR vaccination because they feel that the illnesses associated with these vaccinations are diseases that affect children. Some parents (n = 3) predicted that their child would contract the disease, but stated that if their children did not contract the disease by a certain age, they would reconsider vaccination: *"If they (children) have finished elementary school and they still haven't contracted MMR diseases, then we'll discuss the vaccination again."* Why? *"Because at some time, you cease to be a child,"* says the parent. In comparison to acceptors, refusers and partial acceptors took the time to consider the advantages and disadvantages of childhood vaccines. Refusers and partial acceptors debated the advantages and disadvantages of vaccine-preventable diseases (VPDs) vs the adverse effects of vaccinations. They also pondered carefully about the advantages and disadvantages of receiving or declining each specific immunization. They stated that it was a lengthy, time-consuming, and tough procedure to complete. According to them, it was difficult to obtain reputable sources of information, and they did not feel supported in their decision-making processes. In response to the question of how purposeful they saw their decision to be, refusers and partial acceptors stated that they had made a very careful decision. When asked how they had come to such a conscious decision, parents responded as follows (quote 7):

*You consider the advantages and disadvantages of each ailment, as well as... Statistics are something I enjoy. As a result, I examine the illnesses as well as the statistical hazards associated with each condition. You've read about vaccines in general, and you've taken into consideration the advantages and disadvantages of each. We looked at each illness individually to see what the narrative was behind the vaccination... and so on. After that, you must make a decision. (quote 7 courtesy of #51 refuser).*

#### **4.4. Perceived severity and susceptibility of vaccine-preventable illnesses**

Additionally, the perceived severity and susceptibility of vaccine-preventable illnesses are taken into consideration when deciding whether or not to vaccinate a child. When it comes to vaccine-preventable diseases in general, one parent stated, *"If you look*

*at the percentages, there's a very tiny amount of children that have serious instances of it" (vaccine-preventable diseases). There were eight parents who stated that they feel youngsters are particularly susceptible to tetanus and that they had consequently vaccinated their kid against it: "Tetanus is the most crucial for me because I believe it can be acquired quite simply". However, the perceived severity of the sickness was highlighted by the majority of parents (n = 13) as being important: As a result of having mumps, measles, and rubella as children and surviving, we have decided not to vaccinate against MMR. According to another parent, "I believe diphtheria and polio are really serious diseases, despite the fact that the likelihood of contracting them is quite low, thus I can foresee that we will opt to vaccinate our daughter against them." "We also vaccinated our sons against it," says the father. No one, whether they were refusers or partial acceptors, regarded all VPDs as a danger. These parents stated that their child's growth would be aided if he or she were to suffer from an illness (quote 1). The severity and susceptibility of each VPD were discussed individually among refusers and partial acceptors, and the results were divided (quote 11).*

*It is extremely dependent on the sort of illness [VPD] that is present. I'm really thinking about it... how probable is it that he or she will have polio? My choice to deny this vaccination was made easier by the fact that the danger was so little. (Quote 11 – #13 partial acceptor – partial acceptor) As a final point, acceptors and partial acceptors indicated their expected regret as a factor in their choice to get their children vaccinated against VPDs as follows (quote 12):*

*You would just never forgive yourself if your child were ill, which is why you vaccinate your child against illness. The danger is simply too big. (quote 12 – partial acceptor #39 – acceptor)*

## 5. Discussion

Our study looked at whether or not parents made an informed decision about the MMR vaccine and whether or not there were any factors associated with making an informed decision about whether to accept, refuse, or partially accept children vaccination. Using the notion of informed decision-making (29) as a starting point, we conducted qualitative research that investigated variables associated with the continuous evaluation phase of parents' informed decision-making (30). Parents' levels of knowledge, attitudes, and



deliberation were all different. The majority of acceptors believed that childhood vaccinations were self-evident; the majority of refusers, on the other hand, relied primarily on anecdotal information rather than scientific evidence to weigh up the pros and cons of side-effects of vaccines and VPDs; and the majority of partial acceptors described an elaborate, time-consuming, and difficult deliberation process to weigh up the pros and cons of each vaccine and VPD individually.

A number of factors, such as knowledge, attitudes, and deliberation, have been identified in previous research (29–38) that are related to informed decision-making. These factors include (39) knowledge, attitudes, and deliberation, among others. For example, all participating parents expressed a need for more knowledge about childhood vaccination in general and about vaccine safety in particular, as well as a desire for a supportive social environment and a strong societal expectation that their children be vaccinated against disease. While acceptors had confidence in the information supplied, refusers and partial acceptors felt that there was a lack of open conversation with CVPs, a lack of balanced information concerning the NIP, and a lack of trust in the CWC. While acceptors cited the severity and susceptibility of VPDs, as well as their anticipated regret if their child became ill as a result of a VPD while not vaccinating, refusers and partial acceptors cited the severity and susceptibility of vaccine side-effects as factors influencing their decision to refuse or partially accept a vaccine. People who accepted the NIP were able to retain more evidence-based information about it than those who refused or who accepted only a portion of it; they were negative about avoiding childhood immunizations while being favorable about the NIP.

We discovered that acceptors were able to offer more evidence-based information than other parent groups, despite the fact that past research shows that acceptors tend to be misinformed (32), and acceptors in our study reported feeling uninformed. Acknowledgers strongly believed that childhood vaccination is a preventative measure that benefits not only their child (individual benefit), but also the entire population (societal benefit), and they described a positive and strong social norm in place regarding this belief, which was confirmed by Brunson. It was also observed that refusers and partial acceptors were aware of this strong societal norm, although they saw it as judgemental (30). Overall, acceptors did not regard children vaccines as a decision that required much thinking since they believed them to be self-evident, which is consistent with prior study (37,40) findings. All of the parents who took part in the

study expressed dissatisfaction with the lack of information they received, claiming that the simple statement of "vaccines are safe" is not sufficient.

Similarly, to refusers and partial acceptors, acceptors regarded dissemination of this sort of material as being condescending. It's possible that this is also why acceptors didn't feel well informed. (30,31,34,41,42) suggest that encouraging an open communication between parents and CVPs can improve parents' perceptions of being informed. Parents may be vulnerable to anti-vaccination messages about alleged risks and side-effects of childhood vaccination because of a lack of discussion with CVPs, the perception that childhood vaccination is self-evident, and the patronizing tone of voice used by CVPs. In accordance with the findings of Benin et al. (41) opinions about childhood immunization are constantly changing and evolving.

To this end (43), it is critical to maintain and reinforce current favorable views toward childhood vaccination while also building resistance to future anti-vaccination propaganda. It is also vital to analyze the arguments and anecdotal evidence that are used on anti-vaccine websites. Opponents of vaccination may base their arguments against it mostly on anecdotal evidence, and they may be generally skeptical about pediatric immunizations in general. They stated that they had carefully considered the advantages, but mostly the disadvantages, of participating in the NIP, and several stated that they were unaware of alternate vaccination regimens at the time of their decision. If refusers compare themselves to acceptors, they may assume that the dangers of vaccine side-effects are greater than the risks of VPDs, and they may not trust the information provided by CVPs regarding the NIP (National Immunization Program).

Refusers opted to gather anecdotal data from vaccine-critical blogs and social media platforms, such as Facebook, rather than from scientific studies. According to their reports (31,44), they conducted research and gathered facts to support anti-vaccination views. Furthermore, when utilizing search engines to acquire information regarding childhood vaccination, there is a risk of selection bias owing to previously used search phrases and the ranking of websites by the search engines (45). As a result, partial acceptors may spend considerable time deliberating the advantages and disadvantages of each vaccine and VPD individually, causing them to feel an internalized decisional conflict about the perceived benefits and risks of receiving vaccines versus the perceived benefits and risks of having a VPD. Some parents lost confidence in the ability of CVPs when their inquiries were disregarded or when the CVPs were unable to provide satisfactory answers to their questions. They experienced heightened decisional conflict

as a result of the unresolved questions. Because of this sense of decisional conflict, parents may seek out anti-vaccination ideas, which may in turn reduce their positive attitudes toward kid vaccination. A lack of social support from friends, family, and CVPs, as well as a lack of understanding of their decision to partially accept childhood immunizations, were also reported by partial acceptors. Parental information seeking behavior on anti-vaccination websites has been shown to be influenced by decisional conflict and a lack of conversation between parents and CVPs, according to research (46,47). It has been shown that inoculation messages on children vaccination can improve existing positive attitudes about vaccination while simultaneously building resistance to anti-vaccination messaging (43).

Given the similarity between these communications and a vaccine, parents might be taught to withstand attacks on their positive ideas about children vaccination by rehearsing their reaction to anti-vaccination messaging (43). At the end of the discussion, many participants voiced a desire for greater information concerning childhood vaccination (e.g., pages 30–31, 32–33, 34–35). The CVPs were unable to meet this information need. Refusers and partial acceptors have stated that they have consulted vaccine-critical websites because their queries are not being addressed by clinical vaccination practitioners. Furthermore, they believe that the existing information supplied is insufficient, and they have mistrust in the information provided regarding the NIP, according to the survey. The tone of speech used by is condescending, according to all groups present. It has been shown in previous study (41) that poor information providing and a condescending tone of voice do not fulfill the information demands of parents, and our findings corroborate these findings, which indicate that parents have a lack of trust in CVPs.

Our findings suggest that just providing evidence-based knowledge does not result in a trusting relationship between parents and the CVP, as previously thought. According to the findings of two studies, some CVPs find it challenging to discuss alternative vaccination options with their patients' parents (48,49). CVPs must be knowledgeable with the National Immunization Program (NIP), as well as have the time and ability to discuss pediatric immunizations with all parents. Furthermore, it is critical not to exclude parents who refuse or just partially accept children immunization from the program. The sharing of evidence-based information will allow for the dispelling of erroneous beliefs and doubts, the strengthening of positive attitudes and the answering of questions, as well as the discussion of the many pediatric vaccination alternatives.

The government need to develop an e-learning tool to increase factual knowledge about childhood vaccination and facilitate discussion skills among CVPs in order to build trusting relationships with parents (50).

This study has a number of limitations that should be considered. It is possible that selection bias occurred. A two-hour conversation was required of all participants, which may have drawn individuals who were more motivated to talk about childhood vaccination than the rest of the group. We picked a random sample from each town, but the majority of the parents who replied to our invitation were those with a higher level of education. We propose that future study deliberately encompasses other sectors of the population, and that disparities between parents with low and high levels of education should be examined further.

## 6. Conclusion

In qualitative study found four theme, namely healthy life, own health perceptions, disease history, perceived severity and susceptibility of vaccine-preventable illnesses. Furthermore, research on the MMR vaccination should move a step forward and include studies looking at similarities and differences in the factors that predict parents' intention to follow MMR vaccination recommendations by comparing parents of very young children, being the primary target group of MMR vaccination campaigns and interventions, with parents of adolescent children. If differences in the predictive factors exists, these should be addressed in targeted campaigns and interventions to improve MMR vaccination status in all age groups.

## 7. Conflict of interest

All author declares no conflict of interest

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