

The Analysis of Factors that Influencing Mother's Knowledge Level on Basic Immunization

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ABSTRACT

Introduction: One of the goals of WHO formulated at the Atlanta meeting in 1978 was to achieve health for all by 2000. The purpose of this study is to describe the factors that influence the level of mother's knowledge regarding basic immunization.

Methods: The research was conducted in January - February 2020 in the Dahlia Health Center in Makassar. The sample was 80 mothers whose babies were immunized at the Dahlia Health Center. A purposive sampling method was used. The data collection method used was a survey questionnaire that was distributed to respondents. The data analysis used was a univariate data analysis using the SPSS.

Results: The largest subjects were senior high school education and the smallest subjects were university education. Most of the subjects were housewives or unemployed (75%) and the least of the subjects were civil servants (3.75%). Most subjects in this study were aged 21-35 years old (53.75%) and the least subjects were under 20 years old (15%).

(Continued on next page)

Article history:

Received: 28 August 2020

Accepted: 21 December 2020

Published: 30 December 2020



GREEN MEDICAL
JOURNAL
E-ISSN 2686-6668

Published by :

Faculty of Medicine
Universitas Muslim Indonesia

Mobile number:

+62822 9333 0002

Address:

Jl. Urip Sumoharjo Km. 5, Makassar
South Sulawesi, Indonesia

Email:

greenmedicaljournal@umi.ac.id

(Continued from previous page)

All respondents were Muslim (100%). Most of the family environment factors that their family did not accompany them for immunization (53.75%) and community environmental factors that around people brought their children for immunization (100%).

Conclusion: All factors of this study affect the mother's knowledge but we can conclude that the most role influence of factors to knowledge mother was environment and religion.

Keywords: Vaccination; immunization; infant; child

Introduction

Immunization is among the methods to deal with certain diseases that can be prevented by immunization (PD3I) which may be given to not only children from infancy or adolescence but also adults¹. One of the goals that the World Health Organization (WHO) wanted to achieve was the reduction of child mortality by aiming to reduce the mortality rate for children under five years of age by two-thirds from 1990 until 2015, this means reducing the child mortality rate from 97 per 1,000 live births to 32 per 1,000 live births².

The Ministry of Health of the Republic of Indonesia in 2019 had explained that less than 12% of infants in Indonesia had an incomplete basic immunization in 2018 and this fact was found throughout Indonesia, but the highest area was in Eastern Indonesia³. Complete basic immunization coverage varied between provinces, the highest was in Bali (92.1%) and the lowest was in Aceh (19.5%). Nationally, there were 9.2% of children aged 12-23 months who have never been immunized with the highest percentage in Aceh (40.9%) and the lowest in DI Yogyakarta (0%)⁴.

Data from the Indonesian Ministry of Health 2019 showed that until January 29th, 2019, the coverage of children receiving complete basic immunization in South Sulawesi was 152,899 babies out of 169,207 live births. There were 7.33% of babies born alive (16,308), who did not get a complete basic immunization. Of 22 regencies or city in South Sulawesi, there are 20 regencies or city (90.91%) which have reached 80% complete basic immunization⁵. The number of babies who received complete basic immunization in Makassar City was 26,715 babies, which was higher than the number of babies born in Makassar City, which was 26,452⁶.

Factors that can affect the mother's knowledge of basic immunization for infants are education, occupation, age, religion, and the environment. Similarly, Yusniar (2012) proposed that the higher the level of the mother's education, the more information she would obtain⁷. It was also noted by Yusniar (2012) that working as a housewife will affect the level of knowledge of the mother about immunization⁷. Yusniar (2012) also pointed out that age may affect the level of maturity in thinking and taking action or decision⁷.

The next factor is religion which explains the main problem for those who live in Muslim-majority countries as they hold the perception that the vaccines used for immunization were prepared from pigs, which are the forbidden animal for Moslems⁸. This was explained by Sulistiyani et al (2017) in their research which noted that family and community environment had a very large influence on attitude formation⁸. Our study aimed to examine the description of factors that may affect the level of maternal knowledge on immunization.

Methods

This research is a descriptive study. This type of research was chosen because the researcher wanted to find the description of the factors that most influenced the level of mother's knowledge of basic immunization for infants. This research was conducted in January - February 2020 in Puskesmas (Public Health Center) Dahlia in Makassar, South Sulawesi. The target population in this study were all maternal subjects who had babies in the jurisdiction of Puskemas Dahlia in Makassar, which were 410 mothers during the January - September 2019 period.

The sample in this study 80 mothers whose infants were immunized or had been immunized in the jurisdiction of Puskesmas Dahlia in Makassar. The purposive sampling method was used in collecting primary and secondary data. The survey questionnaire was distributed to respondents to collect data. The data obtained from the data collection process was converted into tables and was processed with a computer statistical program. The instrument used in the research was a questionnaire containing several questions asked to respondents. The data analysis used in this research is univariate data analysis using the SPSS data processing application.

Result

Table 1 Frequency distribution of mother's education and occupation in the jurisdiction of public health center dahlia Makassar in 2020

Education	N	Percentage (%)
Primary School	13	16.25
Junior high school	19	23.75
Senior high school	43	53.75
University	5	6.25
Total	80	100
Profession	N	Percentage (%)
Housewife/Unemployed	60	75
Entrepreneur	13	16.25
Civil servants	3	3.75
Etc	4	5
Total	80	100

In table 1, it was showed that most of the respondents were senior high school graduates, namely 43 respondents (53.75%) and the least respondents were university graduates, which are 5 respondents (6.25%). Thus, it can be seen that the largest number of samples is the last high school education or senior high school. It was also showed in table 1 that the occupations of the most amount of respondents are housewives or unemployed, as many as 60 respondents (75%), and the least number are civil servants, namely 3 respondents (3.75%).

Table 2 Frequency distribution of mother's age and religion in the jurisdiction of the public health center dahlia Makassar in 2020

Age	<i>n</i>	Percentage (%)
<20 years	12	15
21-35 years	43	53.75
>35 years	25	31.25
Total	80	100
Religion	<i>n</i>	Percentage (%)
Islam	80	100
Non-Muslim	0	0
Total	80	100

It was showed in Table 2 that the ages of most of the respondents were between 21 - 35 years, as many as 43 respondents (53.75%) and the least number of respondents were under 20 years, namely as many as 12 respondents (15%). Thus, it can be seen that the largest number of samples, namely respondents aged between 21 - 35 years. It was also showed that the respondents who were Moslem were 80 respondents (100%) and those who were non-Muslim were 0 respondents.

Table 3. Frequency distribution of mother's family environment and community environment in the jurisdiction of public health center dahlia Makassar in 2020

Family Environment	<i>n</i>	Percentage (%)
Yes	37	46.25
No	43	53.75
Total	80	100
Community Environment	<i>n</i>	Percentage (%)
Yes	80	100
No	0	0
Total	80	100

Table 3, showed that the family environment factor which most of the respondents answered "No" (53.75%), means that they were not accompanied by their families to come for immunization. Community environment factors around people brought their children for immunization (100%).

Table 4. Frequency Distribution of Mother's Knowledge Level and Completeness of Immunizations in the Jurisdiction of Health Center Dahlia Makassar 2020

Mother's Knowledge Level	n	Percentage (%)
Less	12	15
Enough	64	80
Well	4	5
Total	80	100
Completeness of Immunization	n	Percentage (%)
Complete	72	90
Incomplete	8	10
Total	80	100

Table 4, showed that 4 respondents were well-informed (5%) with correct answers to 23 and above, 64 respondents had moderate or sufficient knowledge (80%) with correct answer scores between 17-22, and those with less knowledge were as many as 12 respondents (15%) with the correct answer score is 16 and under. It was also showed in table 4 that most respondents fall into the complete category in giving basic immunization to their babies, namely 72 respondents (90%) and incomplete as many as 8 respondents (10%).

Discussion

Health Center Dahlia is one of the Public health centers in Mariso District, Makassar, where in part of the population the average level of education is only up to the senior high school level. One of the reasons why knowledge related to immunization is lacking in the area; as education is among the keys to gain knowledge, where the higher a person's education, the easier the person to study and digest the knowledge in concern⁹.

Our research found that the mother's knowledge was sufficient due to the mother's education which only reached high school. It is in accordance with the research conducted by Mulyani (2018), it was stated that the higher the mother's education, the higher the tendency for more complete immunization, and the level of education will have a positive effect on completeness of basic immunization¹⁰. Regarding the educational factor, a well-educated mother will have a broad perspective that makes her think rationally and this, in turn, will bring the best for her child in terms of using the health facilities, for example, by bringing her child for immunization¹¹.

Thus, it is safe to state that the research is in line with our current research that also found that a low level of education could affect immunization for infants. Notoatmodjo (2012) states that education is an effort to develop personality and abilities inside and outside school (both formal and informal), which lasts a lifetime. Education is the process of changing the attitudes and behavior of a person or group as well as the efforts of adult humans through teaching and training efforts¹².

The second factor, the work factor, tells that when a mother is working, the opportunity and time will be used more towards the work and, in turn, the opportunity and time will not be used to bring her child to health services for immunization as they think that work is more important to satisfy the family needs¹¹. Work is an activity or activity for someone to make money so that his/her needs in daily life are met. Work is also a factor that can affect the knowledge of the mother because when a mother is working, she will interact with many people whose knowledge may exceed hers. Compared to mothers who do not work, those who do not may have very low interaction with other people.

The mothers in the Health Center Dahlia area, Mariso, on average, were unemployed or called housewives, and, thus, working as a housewife may affect the level of knowledge of the mother regarding the immunization. This is in accordance with the research conducted by Yusniar (2012) in the jurisdiction of Health Center Bara-Baraya that found that mothers who only work as housewives showed sufficient knowledge⁷. Hidayah (2018) explained that work is a task or work that generates money for someone. Working mothers may have less free time, so the opportunity to be able to bring their children to immunization services is smaller than those who do not work. In addition, the mother's work often too mind absorbing that made her miss the child's immunization schedule and, then, the child does not receive an immunization, the incomplete immunization. However, working mothers have sufficient sources of information so that they may be more active in bringing their children for immunization¹³. This research is in line with our current research, where it was found that the mother who works as a housewife or unemployed have sufficient knowledge, and mothers who work will have less time to take their children to get immunizations

Age, as the third factor, will affect the mother's experience and attitudes towards immunization. Older mothers will have more experience and better attitudes than younger mothers. as in the case a sick child after being immunized or a child who is fussy when going to be immunized causes the child not to be brought in for the second immunization¹¹.

The results showed that 43 respondents (53.75%) had an age range between 21-35 years, which was classified into early adulthood. Thus, it can be concluded that age affects the level of maturity in thinking and taking action or decisions of a person who has at the age of 21-35 years, cognitive abilities in terms of thinking rationally may make her bring the baby to be immunized in the working area of the Health Center Dahlia of Makassar.

The research conducted by the authors has obtained sufficient knowledge of mothers at the age of 21-35 years. However, this factor may not be the factor that played the most influence on the mother's knowledge regarding the immunization as we also found that those who were in the same age range also had poor knowledge on immunization. This is in line with the research conducted by Yusniar (2012) which has similarities with this study, namely the age of the mother who has the highest level of knowledge was at the age of 20-35 years⁷. And also in line with our research that a mother's age will affect the level of maturity in thinking.

The same thing was also conveyed by Notoatmodjo (2012) and Mariana (2018), that age will affect one's mindset and comprehension, as well as one's knowledge, the older the person is, the catching power, mindset, and knowledge will increase or improve^{12,14}. However, mothers who are younger and had just given birth tend to give the best for their children, so they pay more attention to their children's health, including immunization¹⁵. Younger mothers can generally digest information better than their older age mother. Mothers who are younger and have recently had children usually tend to pay more attention to their children's health, including immunization¹⁶.

Mothers who live in the jurisdiction of the Health Center Dahlia were predominantly Muslim, as from the results of this study it was found that all respondents involved in this study were Muslim with a percentage of 100%. Thus, we decided to include religion as a risk factor as there is still a lacks research related to descriptions of religion with immunization of infants, in addition to the lack of public knowledge regarding the law of immunization. Over time, with various technological developments, religion is also easy to learn through the media, not only through assemblies held in mosques. As for this study, the authors took religion as a variable to see the level of mother's knowledge of immunization and as pointed out by research conducted by Sulistiyani et al (2017), that religion does not have a major influence on immunization, along with knowledge⁸. Because immunization behavior must be based on good knowledge about immunization.

Research conducted by Ahmed S., et al (2014) noted that the discussion by several Islamic groups about the Islamic law regarding immunization had finally brought the views of religious intellectuals to support immunization by making "legality of decisions" in Islam. But there are still many who doubts, mixed with fear, about immunization as of the impact of immunization on the health of their children¹⁷. In this research. it was found that the description of all respondents was Muslim, so this factor does not have a major influence on a mother's knowledge about immunization.

The last factor is the environment which, in this case, is divided into two areas, namely the family and community environment. In the family environment, when a family member is less responsive or even ignores immunizations, other family members may join in, and the same case is true for the community area. When there is social interaction between communities, it tends to change the attitude of certain individuals so that the behavior in bringing their babies to health services may change as well¹¹.

An environment is a place for mothers to get information, both from the family environment and from the community. Especially mothers who usually have more interaction with their surroundings, especially when they are shopping in the market, and other public places. In this study, we found that mothers in their family environment did not get enough support so that their knowledge regarding immunization is insufficient and, this is in line with the research conducted by Sulistiyani et al (2017), which stated that the family has a very large influence on attitude formation as the family has the closest person, especially the husband.

Whenever the mother gets less support from their husbands, there will be more who are not obedient to immunization, while those who receive support will be more obedient to giving immunizations to their children, thus, this has an impact on their knowledge⁸. The second mother's environment is the community environment. In this environment, of the 80 research subjects all received support from their environment, either directly or indirectly. As in the study conducted by Sugiarti (2015), the environment that comes from friends, neighbors, and health professionals greatly influences the mother's obedience behavior in providing basic immunization for infants, which in turn will affect her knowledge¹⁸.

Within the family member, one member with health problems may affect other members. Therefore, a family is the focus of strategic health services as it has a major role in maintaining the health of all its members and family problems are interrelated, the family can also be a place of decision making regarding health care. Further, a family is one of the most important institutions of society. Through positive family support, it will have an impact on the positive relationship patterns of all family members. Health workers realize that family support plays a very important role in maternal activity in the immunization program so that the target of counseling about immunization is other than mothers who have children, their families are also included, even for all levels of society¹⁹.

Research data showed that mothers who live in the working area of Health Center Dahlia of Makassar had a sufficient level of knowledge about immunization, namely as many as 64 respondents (80%). Knowledge of these respondents was influenced by different characteristics of mothers, starting from work, education, age, religion, and mother's environment. Respondent's knowledge was considered good as they were actively involved in the immunization activities and participated in the counseling conducted by health workers.

In addition, mother's knowledge can be obtained from the experience of mothers or themselves or other people who have immunized their babies and can also be obtained from health workers who give immunizations to their babies. This is in line with research conducted by Yusniar (2012), which stated that the level of maternal knowledge regarding immunization is in a sufficient category which is influenced by the activeness of respondents in fulfilling basic immunization for their babies, which is when the mother is active in giving immunization to her baby. This affects their knowledge because they will have experience related to immunization⁷.

This is also in line with the opinion of Notoatmodjo (2012), namely that knowledge is the result after someone knows something through the process of sensing a certain object. Behavior or actions carried out on the basis of knowledge will be better than behavior or actions that are not based on knowledge at all, but this knowledge is obtained through experience and research¹².

The results of the study found that most of the respondents immunized their children completely, namely 72 respondents (90%) and as many as 8 respondents (10%) who gave incomplete basic immunizations for their children. Most of the respondents in this study immunized their infants completely and quite well. This is probably due to some possession of knowledge about basic immunization and the activeness of Integrated Healthcare Center cadres in the working area of Health Center Dahlia of Makassar in promoting health in the community in their working area and, thus, people are willing to bring their children for complete basic immunization at the Integrated Healthcare Center. This is in line with research on the completeness of basic immunizations by Yundri (2017), which showed that immunization completeness is influenced by several factors, including knowledge related to immunization, cadre activity in health promotion, the existence of the KIA book²⁰.

Conclusion

The most dominant risk factors affecting the mother's level of knowledge are social and religious environmental factors. Suggestions are expected that health workers continue to improve motivation, skills, and knowledge related to complete basic immunization. Puskesmas (Primary Health Care) provides education to the community to increase public knowledge about the importance of complete basic immunization.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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