

ORIGINAL ARTICLE

Determinants of the Final Decision to Take Children under 5 Years Old for Medical Treatment in Indonesia

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ABSTRACT

Introduction: The impact of final decision has a long-term impact and involves the potential risk if the decision is taken too late for the children to get medical treatment. This study aims to analyze the determinants of the final decision to take children under 5 years old for medical treatment in Indonesia. **Methods:** The cross-sectional study design was applied from the Demographic and Health Survey 2017. The two-stage stratified cluster sampling technique was used and obtained 16,433 respondents. The DHS Questionnaire Phase 7 was used. Chi-square and Multinomial Logistic Regression were used to analyze the data. **Results:** From the study it was evident that the father was the dominant decision-maker. The working fathers were more likely to make the final decision compared to the mother or both parents together. Health insurance made it less likely for the decision to be taken by the father and living in a rural residence had less impact on the decision being taken by the mother. For the respondents living with a partner, the final decision was more likely to be taken by the mother. **Conclusion:** It is important for the head of the family to take the decisions considering the view of the mother regarding the medical treatment of the children taking consent from both the parents. The results of this study are expected to provide information to the parents and help them to make the proper decisions related to the medical treatment of children.

Keywords: Decision-making, Medical decision-making, Medical treatment, Children, Demographic health survey

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INTRODUCTION

Children's health issues have come to the attention of policy makers in Indonesia. Attempts to minimize the risk of child death are centralized on several programs such as improvement of nutrition, neonatal services, and immunization. In addition to the national policy, children's health concerns are also determined in accordance with the decisions made by the parents (1). Parents legally have the absolute power to participate entirely in taking decisions regarding health care of their children. This kind of proper decision will ensure appropriate health care for the children which they aptly deserve (2). There are some common practices of inappropriate decisions made by the parents in the real life which potentially puts the children at risk, namely refusing to visit the public health service and not taking up the immunization program offered (3).

The children's health issues in Indonesia is also depicted by the indicator of Initial Neonatal Visit, which is still categorized as very low. The services offered in the Initial Neonatal Visit include exclusive counselling on newborn care and breast milk treatment. The indicator also covers basic immunization treatment, which has not yet comprehensively achieved the national target. Moreover, there is increase in the prevalence in the cases of stunting and wasting among children throughout Indonesia.

According to the data retrieved from the Indonesian Basic Health Research survey in 2018, conducted by the National Institute of Health Research and Development (NIHRD), the Ministry of Health of Republic of Indonesia came to the conclusion that the lowest scope of the Initial Neonatal Visit constituted 60.17% in East Nusa Tenggara and 72.12% in the Special Region of Yogyakarta and 74.35% in West Sulawesi, with the national standard of 2018 being 85%. The scope of complete basic immunization in Indonesian ever reached the desired target in 2018 of 92.5%. Furthermore, there were some provinces shown to have lower levels of achievement,

namely Papua (29.60%), East Nusa Tenggara (51.72%) and Aceh (55.26%). It is to be noted that, the increase in the number of stunting and wasting cases in Indonesia has remained significant high. In 2018, the percentages of very short and short toddlers aged 0 – 59 months old in Indonesia constituted 11.5% and 19.3% respectively. This condition is growing from year to year among the toddlers in the same age range, with 9.8% for the very short group and 19.8% for the short one. In addition, the data showed that in 2018, among the group of toddlers aged 0-59 months old in Indonesia, 3.5% fell into the very thin category while 6.7% fell into the thin one. Such a condition slightly improved in comparison to that of 2017, referring to the lower percentages of the very thin group (2.8%) and thin group (6.7%) respectively (4).

The above data denotes the importance of the decision-making by the parents in the interest of the child's health. The decision-making includes how, when, and where they can ask for help, selecting the most appropriate medications that are effective for their child, and approving the primary goal of the medication (5). Decision-making, in addition, is completely dependent on sociodemographic factors such as age, education level, occupation, and the pattern of communication practiced by the parents (6). The sociodemographic factors highly define the individual's health perceptions or beliefs when making decisions for the sake of health (7). Parents who have higher education level will be more impactful while consulting with the health services (8).

Referring to this condition, a study on parental involvement while making decisions in the interest of their child's health is of great necessity. Nonetheless, there are still very few studies related to this topic that have been conducted exclusively in Indonesia. This is a specific study that explores decision-making amidst Indonesia's households targeting the decisions made by the mothers regarding the use of the health services. Furthermore, the current research is focused on the use of the antenatal care service (9). Another study in Nepal had attempted to investigate the relationship between the decision-making committed by the mothers and the pattern of health service within the period of the first 1,000 days after the child's birth (10). Not many published studies have attempted to discern the factors affecting decision-making in the interest of the children's health. For this reason, the primary goal of the current research is to analyze the factors determining the final person in charge of decision-making in the interest of children's health in Indonesian households.

MATERIALS AND METHODS

Study Design

A cross-sectional research design was undertaken. Secondary data was collected from the Indonesian Demographic Health Survey (IDHS) 2017 collected in

December 2017. In this study, ethical clearance was provided by the Ministry of Health of the Republic of Indonesia and approval was obtained from the Inner-City Fund (ICF) International to use the data.

Sample

From the IDHS 2017 data, IDKR71FL (Indonesian Kids Recode Phase 7) data set was used which provided the information about the health status of children under 5 years of age. Data was collected from children under the age of 5 and mother-to-child data together. A two-stage stratified cluster sampling technique was used (11). The total population in the study was 17,848 respondents. Any missing data was dropped out and a total final sample of 16,433 was obtained.

Variables

The variables were provided by the IDHS 2017(11). The independent variables in this survey included mother's age, the levels of education, the wealth quintile, the place of residence, the number of live children, their marital status, whether they have been to health insurance in the last six months, the working status of mother and father (12). The dependent variable was the final decision taken for the child for medical treatment.

Instruments

The number of errors were minimized when obtaining the desired information. The DHS policies on using the questionnaires were translated and printed in all of the major local languages to maximize validity and reliability (12).

Based on the Indonesian age categories, the mother's age was categorized into 35-49 years of age, 25-34 years old, and 15-24 years old (13). Law No. 20 of 2003 concerning the National Education System in Indonesia divides the level of education into the category of no education, primary, secondary, and higher education (14). The wealth quintiles were categorized into poorest, poorer, middle, richer, and richest based on Principal Component Analysis (PCA) (15–17). The Indonesian Population Census divides the residences into urban and rural areas (BPS, 2010).

Data Analysis

The STATA 16.1 software was used analyze the data. Descriptive, Chi-square and Multinomial Logistic Regression were used in this study. The relative risk ratio (RRR) was applied to determine the level of risk in the independent and dependent variables with a 95% confident interval (CI) and 0.05 level of significance. In the study, we used the "both" category for the final decision to take a child for medical treatment as the base outcome.

Ethical Consideration

The secondary data of the Demographic Health Survey (DHS) Program (DHS-7) has complied with all the

requirements of 45 CFR 46 of Protection of Human Subjects from from ICF Intuitional Review Board (IRB) with number FWA00000845. For detail information please visit <https://dhsprogram.com/Methodology/Protecting-the-Privacy-of-DHS-Survey-Respondents.cfm>

RESULTS

The demographic data from the (n=16,433) respondents showed that more than half of the total respondents were of productive age with a secondary education level. The study revealed that almost one third of the respondents were in the poorest wealth quintile. The residence of the respondents was almost evenly distributed between the rural and urban areas. From the data, it is also known that most respondents have 1-4 children. Majority of the respondents were married and only a few lived with their partners. In addition, more than 50% had regularly visited the health facilities in the last 6 months and had health insurance to cover childcare costs. Most of the mothers did not work, while the fathers did work. The data shows that the final decision to take the child for medical treatment was made by both parents (see Table I).

The results of the bivariate analysis are presented in Table II. The mother's age, education level, wealth quintile, residence, marital status, health insurance, and the mother and father current working status have a very significant relationship with the final decision taken regarding the child for medical treatment.

The multinomial logistic regression at a 95% CI is shown in Table III. In this analysis, "both" category was used in relation to the final decision variable regarding taking the child for medical treatment as the base outcome. It was found that those aged 15-24 years old had 1.49 times higher probability of the decisions being made by the father. This group were also less likely to have the decisions taken by the mother or both compared to those aged 35-49 years of age [RRR: 1.49, 95%CI: 1.28, 1.73]. A respondent with no education had a 2.26 times higher likelihood of the decision being made by the father and it was less likely for the decision being made by the mother or both than those with a higher education level [RRR: 2.26, 95% CI: 1.53, 3.33]. The highest income group respondents had a 1.42 times higher likelihood of the decision being made by the father and it was less likely for the decision to be made by the mother or both compared to the lower income respondents [RRR: 1.42, 95%CI: 1.17, 1.71]. The respondents living in the rural area had a 0.77 times lesser likelihood of the decision being made by the mother and it was more likely for the decision to be taken by the father or both than those in an urban residence [RRR: 0.77, 95CI: 0.67, 0.84]. Regarding marital status, those with a partner had a 1.91 times higher likelihood of decision made by the mother and it was less likely for the decision to be taken by the father or both than those who were married

Table I: Characteristic demography (n=16,433)

Characteristics	n	%
Mother age		
35-49	5,006	30.46
25-34	8,626	52.49
15-24	2,801	17.04
Educational level		
High education	2,904	17.67
Secondary education	9,147	55.66
Primary education	4,134	25.16
No education	248	1.51
Wealth quintiles		
Poorest	4,543	27.65
Poorer	3,221	19.60
Middle	3,030	18.44
Richer	2,884	17.55
Richest	2,755	16.77
Residence		
Urban	8,045	48.96
Rural	8,388	51.04
Number of living children		
9-12	61	0.37
5-8	1,139	6.93
1-4	15,233	92.70
Marital status		
Married	16,185	98.49
Partner	248	1.51
Visited health facility in last 6 months		
No	5,758	35.04
Yes	10,675	64.96
Health insurance		
No	6,147	37.41
Yes	10,286	62.59
Mother currently working		
No	8,902	54.17
Yes	7,531	45.83
Father currently working		
No	128	0.78
Yes	16,305	99.22
Final decision to take child to medical treatment		
Mother	5,853	35.62
Father	1,963	11.95
Both	8,617	52.44

[RRR: 1.91, 95%CI: 1.45, 2.50]. The respondents with health insurance had a 0.85 times lesser likelihood of the decision being made by the father and it was more likely for the decision to be made by the mother or both than those with no health insurance [RRR: 0.85, 95%CI: 0.77, 0.94]. The fathers currently working had 1.49 times a higher likelihood of making the decision and there was less of likelihood of the decision being made by the mother or both if the father did not work [RRR: 1.49, 95%CI: 0.73, 3.03].

DISCUSSION

In this study, the role of the father was analyzed in relation to the sick child. In this case, the father, the mother or both must play equal role in making the right decision for their sick child. However, a lack of agreement and coordination between the two parents can cause conflicts that can have an impact on the health

Table II: Bivariate analysis (n=16,433)

Variables	Final Decision to Take Child to Medical Treatment			X ²
	Mother n (%)	Father n (%)	Both n (%)	
Mother age				
35-49	1,861 (11.32)	520 (3.16)	2,625 (15.97)	36.55***
25-34	3,065 (18.65)	1,031 (6.27)	4,530 (27.57)	
15-24	927 (5.64)	412 (2.51)	1,462 (8.90)	
Educational level				
High education	1,004 (6.11)	278 (1.69)	1,622 (9.87)	45.74***
Secondary education	3,340 (20.32)	1,097 (6.68)	4,710 (28.66)	
Primary education	1,448 (8.81)	548 (3.33)	2,138 (13.01)	
No education	61 (0.37)	40 (0.24)	147 (0.89)	
Wealth quintiles				
Poorest	1,459 (8.88)	510 (3.10)	2,574 (15.66)	54.05***
Poorer	1,145 (6.97)	394 (2.40)	1,682 (10.24)	
Middle	1,131 (6.88)	389 (2.37)	1,510 (9.19)	
Richer	1,056 (6.43)	342 (2.08)	1,486 (9.04)	
Richest	1,062 (6.46)	328 (2.00)	1,365 (8.31)	
Residence				
Urban	3,109 (18.92)	1,025 (6.24)	3,911 (23.80)	92.85***
Rural	2,744 (16.70)	938 (5.71)	4,706 (28.64)	
Number of living children				
9-12	19 (0.12)	7 (0.04)	35 (0.21)	1.23
5-8	399 (2.43)	131 (0.80)	609 (3.71)	
1-4	5,435 (33.07)	1,825 (11.11)	7,973 (48.52)	
Marital status				
Married	5,740 (34.93)	1,937 (11.79)	8,508 (51.77)	10.90***
Partner	113 (0.69)	26 (0.16)	109 (0.66)	
Visited health facility in last 6 months				
No	2,057 (12.52)	716 (4.36)	2,985 (18.16)	2.41
Yes	3,796 (23.10)	1,247 (7.59)	5,632 (34.27)	
Health insurance				
No	2,126 (12.94)	819 (4.98)	3,202 (19.49)	18.77***
Yes	3,727 (22.68)	1,144 (6.96)	5,415 (32.95)	
Mother currently working				
No	3,116 (18.96)	1,129 (6.87)	4,657 (28.34)	10.95***
Yes	2,737 (16.66)	834 (5.08)	3,960 (24.10)	
Father currently working				
No	60 (0.37)	9 (0.05)	59 (0.36)	8.19**
Yes	5,793 (35.25)	1,954 (11.89)	8,558 (52.08)	

X²: Chi-square; * p<0.1; ** p<0.05; *** p<0.01

of the child. The study revealed that almost always, the final decision for medical treatment for children under 5 years old were taken by the father. Several of the previous studies stated that the father has a dominant role in the family (20–23). In addition, the fathers play an important role in relation to the growth, development and health of any children (24–27). The role of the father in the family is that of a leader protecting his children and wife and the father provide health insurance for the family (28). The culture of decision-making in Indonesia as revealed from the study is authoritarian and is mostly taken on by the fathers (29).

In this study, where the mothers were aged 15-24 years old and/or had no education, the father made the decision. This is because the mother's young age means that she is unable to take the right decision in a crisis. Previous research also stated that mothers of a young age, in terms of their cognitive and affective abilities, have consistently proven to be being unable to make the right and fast decision (30). Furthermore, if the father has a high paying job then the decision-maker for the

treatment of the child is the father, exerting his control over his wife and make health decisions (31,32).

Furthermore, in this study, it was also found that the mother made decisions on childcare in the hospital. Mothers who live with their partner have more power to make decisions than those who are married (9,33). In Indonesia, as regulated by law, the husband manages the family and this includes taking decisions regarding childcare in the hospital (34). However, in case of living with a partner, there are no laws regulated by the government. As the child remains with the mother more, so the mother can make the decisions herself (35,36). In addition, the mothers in rural areas engage in the decision-making less. This is because the rural areas have a stronger patriarchal culture and the husband is the main decision-maker in the family (37).

Campaigns such as maternal and child health's handbook help mothers to increase the understanding regarding the illness of children under the age of five and their care at home (38). In this manner the mother's

Table III: Multinomial logistic regression (n=16,433)

Variables	Mother		Father	
	RRR	95% CI	RRR	95% CI
Mother age				
35-49	Ref.		Ref.	
25-34	0.97	(0.90, 1.05)	1.21***	(1.08, 1.36)
15-24	0.91*	(0.82, 1.01)	1.49***	(1.28, 1.73)
Educational level				
High education	Ref.		Ref.	
Secondary education	1.28***	(1.15, 1.41)	1.37***	(1.17, 1.61)
Primary education	1.35***	(1.20, 1.52)	1.81***	(1.51, 2.17)
No education	0.87	(0.63, 1.20)	2.26***	(1.53, 3.33)
Wealth quintiles				
Poorest	Ref.		Ref.	
Poorer	1.17***	(1.06, 1.30)	1.19**	(1.02, 1.39)
Middle	1.24***	(1.11, 1.39)	1.30***	(1.11, 1.53)
Richer	1.17***	(1.04, 1.31)	1.21**	(1.02, 1.44)
Richest	1.30***	(1.15, 1.48)	1.42***	(1.17, 1.71)
Residence				
Urban	Ref.		Ref.	
Rural	0.77***	(0.71, 0.83)	0.75***	(0.67, 0.84)
Marital status				
Married	Ref.		Ref.	
Partner	1.91***	(1.45, 2.50)	1.12	(0.72, 1.73)
Health insurance				
No	Ref.		Ref.	
Yes	1.03	(0.96, 1.10)	0.85***	(0.77, 0.94)
Mother currently working				
No	Ref.		Ref.	
Yes	1.05	(0.98, 1.13)	0.95	(0.86, 1.06)
Father currently working				
No	Ref.		Ref.	
Yes	0.66**	(0.46, 0.95)	1.49***	(0.73, 3.03)

RRR: Relative Risk Ratio; 95%CI: Confident Interval; * p<0.1; ** p<0.05; *** p<0.01

role as primary caregiver will help to overcome health-related issues of the child (39). However, decision-making that is authoritarian, which is carried out by only one member of the family can create problems. When making a good decision, there should be a discussion between the father and mother. Decision-making in relation to childcare at the hospital is a sensitive matter and the mother also needs to be involved. The father as the head of the family can ask for advice from the mother regarding the health condition of the child. Making decisions peacefully and collectively will have a positive impact on the health of both the children and their families.

In this study, the decision-makers were mostly limited to the father, mother and/or both. Based on the characteristics of the population in Indonesia, the father and mother, their family and other close members along with health workers can be a part of the decisions regarding medical treatment. The present study can help to develop other variables that may contribute to the final decision-making associated with the children in relation to medical treatment.

CONCLUSION

The father as the head of the family still plays a dominant role in the final decision making for medical treatment

of their child in Indonesia. But mother's involvement while making decisions is very important because mother knows about the condition and needs of the child. The roles of both the parents can facilitate proper and fast decision-making. The results of this study can create awareness among the public. In this manner the Indonesian government will understand the importance of involvement of both the parents while decision-making related to their children's treatment. In addition, the government can involve and consider the role of the parents when making policies regarding the children's health and education.

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