JKKI: Jurnal Kedokteran dan Kesehatan Indonesia
Indonesian Journal of Medicine and Health
Journal homepage: https://journal.uii.ac.id/JKKI
P-ISSN 2085-4145 | E-ISSN 2527-2950

Parental decision-making in taking care of child health in Indonesia: Findings from a national survey

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Original Article

ARTICLE INFO

Keywords:
parent,
socio-demography factor,
decision-making,
child health,
Indonesia

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DOI: 10.20885/JKKI.Vol15.Iss2.art7

History:
Received: January 4, 2024
Accepted: August 23, 2024
Online: August 27, 2024

ABSTRACT

Background: The decision-making process to search for child health services involves interaction among the mother, partner, and other family members. Parental decision-making is highly complex since it involves an emotional consideration between the benefit and the child's future. The common problem in deciding the service is the lack of capabilities, such as facility, knowledge, and skill.

Objective: The purpose of this study is to analyze the influence of socio-demographic factors on parents' decision-making in obtaining health services for their children

Methods: This study design was cross-sectional data from the Indonesia Demographic and Health Survey (IDHS) of 2017, which was applied in this study. The respondents involved were 8,838 women aged 15-49 who had given birth in the last five years. This study employed descriptive, chi-square, and regression statistics analysis. The results were provided as adjusted odds ratios (AORs) with 95 percent confidence intervals. The statistical analysis utilized SPSS version 21.0 software (SPSS Inc., Chicago, IL, USA).

Results: Bivariate analysis revealed a significant relationship between decision-making and age, living place, educational background, and wealth index (p-values 0.030, <0.001, 0.002, and 0.006), but not with health insurance ownership (p=0.242). After multivariate analysis, only age-related decisions were associated with a significant risk. It explained that younger group (15-29) has a 0.325 times chance of making a joint decision than the 40 to 49-year-old group (AOR: 0.325; 95%CI: 0.144-0.733).

Conclusion: Parental decision-making regarding childcare is related to several factors, namely age, living place, educational background, and socioeconomic status. Health education is a strategy to promote child health in Indonesia by facilitating proper decision-making.

INTRODUCTION

Good decision-making is essential for a family to protect children.[1] The decision-making process to search for child health services involves interaction among mother, partner, and other family members.[2] Parental decision-making is highly complex since it involves emotional consideration between the benefit and the child's future.[3] Decision-making in caring for children balances the family's right to live with the best child benefit and the proper decision to provide child care.[4] Parental involvement in making

decisions is expected to promote the quality of care and child health.[5]

The common problem in deciding the services is lack of capabilities, facility, knowledge, and skill.[6,7] Health literacy becomes essential to support parents in making clinical decisions for children.[8,9] In the middle of a situation that demands parents to make decisions for their child's health, most are helpless.[5] On the other hand, they feel confused to decide because there is much information about child care on social media.[10] This condition causes lateness in making good decisions and impacts on child health.[11,12]

Indonesia is a developing country with various problems of child health. The data shows that 4 percent of children suffer from Acute Respiratory Infection (ARI). The percentage of children with the highest ARI are those whose mothers are not well educated or have low education levels, elementary school, and families with poor economic status. There are 37 to 38 percent of children aged 6 to 23 months suffer from fever, and 19 to 20 percent suffer from diarrhea. The data illustrates that fever is the most common disease among children under five years. Other data indicated that the mortality rate of under-five in Indonesia is still high, with 32 per 1,000 live births. This number exceeds the target in 2030 with 18.8 per 1,000 live births.[13] The problem of child health can be seen in immunization coverage. Based on Indonesian Basic Health Research Survey 2018, only 57.9% of children aged between 12 and 23 months received all recommended vaccinations. Regarding geographical distribution, the vaccination coverage was less than 40% in 7 of the 33 provinces. These numbers are substantially below the 92% of the national target. The causes of this condition are fear of heat, sickness, being disallowed by the family, unreachable places of immunization, less information about its place, and being busy.[14]

There is still little research on children's health which is related to parental decision-making in obtaining health services in Indonesia. Several existing studies highlight health service facilities, such as research from Agastya et al. which explores the transformation of health services for abandoned children in Bandung, West Java, Indonesia.[15] Another study has been conducted by Rizkianti et al. which indicated that antenatal care visits determine the decision of the place of birth made by the mother.[2] Additionally, research by Doria et al. in Aceh showed that using a child safety checklist may protect the rights of mothers to get better quality care.[16]

Decision-making is an argumentative or emotional process based on implicit or explicit assumptions. This process is based on culture, perception, belief system, values, attitudes, personality, knowledge, and insight.[17] Decision-making is also a cognitive process that rationally selects actions among several available alternatives. In addition, decision-making means managing choices from several alternatives to achieve the intended outcome.[18] It involves a structured process in the form of understanding or recognizing the problem being faced, sorting, deliberating, and assessing alternatives that provide a solution to the problem, deciding and implementing the decision, and evaluating the results.[3] The right decision managed by parents to get good health services when their child is sick can prevent the child's condition from getting worse or even death, thereby reducing child mortality. Based on the phenomena above, this study aims to analyze the influence of socio-demographic factors on parents' decision-making in obtaining health services for their children.

METHOD

Data source

This study used cross-sectional data from Indonesia Demographic and Health Survey (IDHS) of 2017. The 2017 IDHS data was the latest national survey data in Indonesia and to date, there has been no recent data released by the Indonesian government. It was a nationally representative survey that collects various demographic and health indicators at the person and household level. The 2017 IDHS was performed by the National Population and Family Planning Board (known as *Badan Kependudukan dan Keluarga Berencana Nasional* (BKKBN)) as part of the global Demographic and Health Survey (DHS). The revised list of households in the selected Census Blocks (CBs) from Indonesia Population Census in 2010 was utilized as the sample frame for the 2017IDHS. A Census Block was a geographic area with 80-120 houses selected through systematic sampling.

The sample frame of the 2017 IDHS was the master sample of census blocks from the

population census performed in 2010. The updated list of ordinary households in the selected census blocks served to select the sample. Institutional households, such as orphanages, police or military barracks, and prisons, were not included on the list, nor were the households (boarding houses with a minimum of 10 people). The respondents were selected across a two-stage stratified sampling process. Census blocks are selected using probability proportional to size (PPS) from those CBs based on wealth index categories in the first stage. Then, 25 households of each CB were selected as respondents randomly. The sampling procedures had been presented in more detail elsewhere.[13]

The 2017 IDHS included three core questionnaires: household, woman's, and man's. These questionnaires were based on the regular DHS model. Since IDHS did not include all questions from the DHS model, the questionnaires were adapted to the local context and translated into Indonesian. Before entering fieldwork, the 2017 IDHS questionnaires were pre-tested to ensure instrument validity and data quality.

The Household Questionnaire was applied to collect the data, such as residence, regional characteristics, living arrangement, head of household, family tree, and wealth index. Meanwhile, the Woman's Questionnaire collected data on women's autonomy in decision-making, childbearing history, and maternal health service. Then, the Man's Questionnaire was designed to record the interaction in the house between women and their husbands, such as the decision-making agreement.[19]

A total of 49,621 families was identified from 1,970 CBs over 34 provinces, including both urban and rural geographic areas. A total of 47,963 families were successfully interviewed, which yielded 99.5 percent of household response rates. Moreover; there were 50,730 women eligible for interviews; and the interview was successfully conducted with 49,627 women, resulting in a 98 percent rate. The analysis unit of this study was women who are aged 15 to 49 had given birth in the last five years. According to the analysis, the sample size was 8,838 respondents.

Measurement

The dependent variable of this study was parental decision-making in taking care of the child. The parental decision meant a person or persons who decide to take benefit on medical care for a child's health in Indonesia. Decision-making participants consist of four categories (0= Respondent; 1= Husband; 2= Husband and Respondent jointly; 3= Other). Meanwhile, independent variables were age, health insurance ownership, residence or living place, educational background, and wealth index. The age was categorized into three (15-29, 30-39, and 40-49). In Indonesia, health insurance covers both public and private sources. Public or government health insurance program was described as follows: *Jaminan Kesehatan Nasional/Badan Penyelenggara Jaminan Sosial Penerima Bantuan Iuran* (JKN/BPJS PBI) was subsidized health insurance; non-subsidized health insurance was known as JKN/BPJS Non-PBI and regional health insurance was known as Jamkesda. Insurance ownership was divided into two categories: yes and no. Then, residence or living place consists of urban and rural areas. Education background was classified into four groups: not in school, primary, secondary, and higher education. Last, the wealth index consisted of three categories: poor, moderate, and rich. The wealth index was a composite measure of a household's cumulative living standard. The wealth index was calculated using easy-to-collect data on a household's ownership of selected assets, such as televisions and bicycles; materials used for housing construction; types of water access; and sanitation facilities.[20]

Statistical analysis

This study employed descriptive, correlation, and logistic regression. statistics analysis. The category of variables used frequency and related percentages. Moreover, this study applied the Chi-square test to investigate the correlation between explanatory variables and their outcome of interest and logistic regression to examine the effect of covariates on the outcome variables. The regression analysis results were provided as AORs with 95 percent confidence intervals. The statistical analysis utilized SPSS version 21.0 software (SPSS Inc., Chicago, IL, USA).

Ethics

This study's ethical statement proposed downloading and utilizing datasets from the

2017 IDHS. It had been sorted from the DHS program before conducting this research. The authorization has been given by the institutional review board program (AuthLetter 142047). The 2017 IDHS had received ethical approval from the National Ethics Committee of Indonesia. This study removed all personal information of respondents from the database. The respondents had been given written consent to participate in this study. Here, the researcher acquired permission to utilize the 2017 IDHS data from the website https://dhsprogram.com/. The 2018 Indonesian Basic Health Survey was approved by the National Ethics Committee (LB.02.01/2/KE.024/2018). Every respondent's identity was eliminated from the dataset by the survey. Written consent was given to respondents to participate in the study.

RESULT

Characteristics of the respondents

The characteristics of respondents were categorized based on age, health insurance ownership, residence, education, and socio-economy. The respondents aged 30-39 were the highest with 48.3% respondents. 62% of respondents did not have health insurance, 58% lived in urban areas, 59.5% had secondary-level education, and 38% categorized as poor (Table 1).

Parental decision-making on childcare

Table 2 shows that decision-making correlates with the age variable (p=0.030). Concurrent decision-making between respondent and husband was much higher than the individual decision in all age categories: 15-29 years, 30-39 years, and 40-49 years (49.6%, 49.9%, and 48.2% respectively). Decision-making does not correlate to health insurance ownership (p=0.242). Meanwhile, decision-making was consecutively related to the residence, educational level, and wealth index with p-values <0.001, 0.002, and 0.006. Childcare decision-making was generally performed jointly between respondent and husband based on residence, education background, and wealth index categories.

Determining decision-making on childcare

Decision-making based on age factor explained that the young group (15-29 years) has a joint decision-making chance of 0.325 times compared to the older group (40-49 years) (AOR: 0.325;

Table 1 Characteristics of respondents in the study (N=8,838)

Characteristics	Unweighted (n/%)	Weighted (n/%)	95%CI (%)
Age			
15 – 29	3,745/43.9	3,740/42.3	40.9-43.7
30 – 39	4,270/46	4,270/48.3	46.9-49.7
40 – 49	823/10.1	829/9.4	8.6-10.2
Health insurance ownership			
Yes	3,345/37.7	3,358/38	36.5-39.5
No	5,493/62.3	5,480/62	60.5-63.5
Residence			
Urban	5,023/49.1	5,133/58.1	55.7-60.5
Rural	3,815/50.9	3,705/41.9	39.5-44.3
Education			
No education	61/1.5	63/0.7	0.5-1.1
Primary	1,986/25	1,956/22.1	20.8-23.5
Secondary	5,219/55.6	5,256/59.5	58-61
Higher	1,572/17.9	1,564/17.7	16.4-19
Wealth index			
Poor	3,423/48.6	3,358/38	36.3-39.7
Moderate	1,890/18.7	1,896/21.5	20.3-22.7
Rich	3,525/32.7	3,584/40.6	38.9-42.3

Table 2. Parental decision-making is based on the characteristics of the respondents

Characteristics	Decision-making (%)				p-value
	Respondent	Husband	Jointly	Other	
Age					
15 – 29 years	34.6	12,7	49.6	3.1	0.030
30 – 39 years	35.6	12,5	49.9	2.0	
40 – 49 years	39.5	11,3	48.2	1.0	
Health insurance ownership					
Yes	35.2	11,9	50,6	2.3	0.242
No	36.0	13,5	48.0	2.4	
Residence					
Urban	39.5	12,5	45.7	2.3	<0.001
Rural	30.1	12,5	54.9	2.5	
Education					
No education	23.6	21,7	52.9	1.8	
Primary	33.4	14,8	49.7	2.1	0.002
Secondary	37.4	12,3	47.9	2.5	
Higher	32.3	10.1	55.1	2.5	
Wealth index					
Poor	35.7	14,5	47.7	2.1	0.006
Moderate	36.3	12,8	48.3	2.6	
Rich	34.9	10,5	52.1	2.5	

95%CI: 0.114-01.733). A family living in an urban area has a respondent decision-making chance of 1.353 times compared to a family living in a rural area (AOR: 1.353; 95%CI: 0.940-1.947). Moreover, the family with a secondary education level has a decision-making chance of 1.169 times in caring for a child together compared to the family with a higher educational background (AOR: 1.169; 95%CI: 0.695-1.967) (Table 3).

Decision-making based on socioeconomic factors explained that fathers dominated the poor group compared to the rich socioeconomic factors group (AOR: 1.648; 95%CI: 0.990-2.743). Furthermore, decision-making based on the health insurance factor showed that fathers dominate the group with no health insurance compared to those with it (AOR: 1.067; 95%CI: 0.695-1.967) (Table 3).

DISCUSSION

The results of the study showed that childcare decision-making relates to the age factor. The higher age is directly proportional to the more experience and knowledge in deciding. The older an individual's age, the more mature they are in making the right decision.[21] Some studies asserted that an individual age affects decision-making since the more mature they are, the better their emotional level, way of thinking, and analysis skills.[22–25] Additionally, the older age of an individual experiences the escalation of vocabulary, life experiences, and rational thinking in making decisions.[25,26]

The age factor will significantly influence decision-making because this involves several aspects, including psychological processes (cognitive, emotional, or motivational), financial and social domains, and the distribution of information availability). The older a person is, the more stable their cognitive abilities and emotional maturity. In addition, financial strength, social networks, and broader access to information make it easier for adults to make the right decisions.[27] Older adults seem to use different strategies than younger people to come to a decision by using more effective strategies. In

Table 3. Logistic regression for determinants decision based on the characteristics of the respondent in the Indonesian family

Characteristics	Decision making								
	Respondent			Husband			Jointly		
	AOR	95%CI		AOR	95%CI		AOR	95%CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Age									
15 – 29	0.280	0.124	0.630	0.364	0.153	0.866	0.325	0.114	0.733
30 – 39	0.456	0.202	1.029	0.577	0.244	1.366	0.523	0.233	1.174
40 – 49		Ref			Ref			Ref	
Health insurance ownership									
No	1.019	0.702	1.480	1.067	0.715	1.593	0.929	0.642	1.344
Yes		Ref			Ref			Ref	
Residence									
Urban	1.353	0.940	1.947	1.077	0.725	1.600	0.838	0.585	1.198
Rural		Ref			Ref			Ref	
Education									
No education	0.821	0.165	4.099	1.830	0.327	10.241	0.821	0.165	4.099
Primary	1.115	0.583	2.135	1.280	0.622	2.635	1.115	0.583	2.135
Secondary	1.169	0.695	1.967	1.080	0.598	1.949	1.169	0.695	1.967
Higher		Ref			Ref			Ref	
Wealth index									
Poor	1.281	0.793	2.070	1.648	0.990	2.743	1.234	0.766	1.986
Moderate	1.017	0.596	1.737	1.174	0.668	2.066	0.974	0.573	1.655
Rich		Ref			Ref			Ref	

contrast, young adults rely more on deliberative strategies, carefully considering existing options and involving all parties. Furthermore, adults make decisions more quickly because they benefit from their experiences.[21] In addition, the decision-making made by a mother in providing care for her child will be greatly influenced by her husband's involvement. Husbands who are involved in decision-making in the family will have an impact on the wider range of alternatives in providing services to children.[28]

This study shows that a family living in an urban area tends to make decisions easier. Respondents are 1.3 times more dominant in decision-making in rural areas. Women have strong abilities in making decisions for their children's health. This is due, in part, to choose good nutrition for their children.[29] Several studies indicated that families in urban areas are better at making decisions than those in rural areas.[12,30,31] It occurred because of the availability of health service access. Moreover, rural families struggle to access health care and information because they live in remote areas.[32] Rizkianti et al. also revealed that geographical factors might affect health service access.[2] Urban and rural resident factors will impact on the existing of health facilities and socioeconomic, political, and environmental conditions. Mothers who live in rural areas will have limited access to health services compared to mothers who live in cities. Mothers living in rural areas have lower levels of education. Education improves children's health by enhancing income and wealth, empowering women, changing attitudes, and improving their knowledge about health care.[33]

Furthermore, it indicated that family's decision-making in caring for a child relates to education, both the education of the wife and the husband. Individuals with higher education have better knowledge of receiving information and making decisions.[34] Education positively correlates with cognitive maturity, point of view, information

access, and emotional stability in decision-making. Hence, an individual with no educational background has lower autonomy than secondary and higher education.[35]

This study shows that family decision-making in caring for a child does not relate to the health insurance factor. It is affected by the negative perception of respondents concerning the BPJS. According to Sukartini, most respondents still negatively perceive BPJS.[36] They found it difficult to access information about it. Moreover, Daapah and Nachinaab's study, as well as Kalesche's study stated that health insurance ownership does not significantly affect the time needed to make decisions. It indicated that the family with health insurance does not make decisions to care for the members faster than the family without health insurance.[37,38] One factor that does not affect decision-making is information, such as the premium price offered and the benefit received.[38]

In addition, the results of this study show that the family's decision-making in caring for a child's health relates to socioeconomic factors. Financial ability and equipment availability determine socioeconomic status, supported by education, income, occupation, and cultural background. Decision-making possibly occurs if an individual has a higher education level. This study aligns with Inguane et al., which state that low and medium-income countries are limited in making decisions.[7] It occurred due to low decision-making autonomy in several countries with low and medium incomes. The limitation of this study is in the data collected using a cross-sectional design, the possibility of causal inferences is limited, mainly due to the snapshot nature of the design. The data used in this study are retrospective self-reporting data.

CONCLUSION

Decision-making, which consists of the respondent, husband, and jointly, in child health care, correlates with age, residence, education level, and socioeconomic factors. Families in rural areas with low education and socioeconomic levels must be supplied and protected. Health education, such as health services in the community, is an essential strategy to promote child health by facilitating the proper decision-making to take care of children in Indonesia.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGEMENTS

First and foremost, we would like to express our gratitude to the Measure DHS initiative for granting us access to the DHS statistics. Second, we want to thank all mothers who volunteered to be interviewed for the survey.

AUTHOR CONTRIBUTIONS

YBP is a significant contributor in conducting this study by interpreting the data and writing the paper. MF plays a role in developing the proposal, analyzing the data, and interpreting patients' data. YSD, TH, and RAL are contributors who perform the study, analyze the data, and write the paper. All authors have read and approved the final paper.

LIST OF ABBREVIATIONS

IDHS: Indonesia Demographic and Health Survey; AORs: adjusted odds ratios; ARI: acute respiratory infection; BKKBN: National Population and Family Planning Board; PPS: probability proportional to size; CBs: census blocks; JKN: *Jaminan Kesehatan Nasional*; BPJS: *Badan Penyelenggara Jaminan Sosial*; PBI: *Penerima Bantuan Iuran*

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