

Child morbidity, level of parent's education, and accessibility to health facilities as factors affecting *Posyandu* utilization

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Abstrak

Latar belakang: Pemanfaatan *Posyandu* oleh ibu yang mempunyai balita menurun. Studi ini mengidentifikasi beberapa faktor terkait pemanfaatan *Posyandu* oleh ibu para balita.

Metode: Data berasal dari sebagian data studi potong lintang Riset Kesehatan Dasar (*Riskesdas*) 2007. Populasi adalah semua wanita berumur 15-49 tahun yang mempunyai balita di Provinsi Jambi. Pemanfaatan *Posyandu* berdasarkan wawancara kepada ibu tentang pemanfaatan *Posyandu* oleh ibu selama 3 bulan terakhir sebelum survei.

Hasil: Lebih banyak subjek yang menggunakan (62,9%) daripada tidak menggunakan (37,1%) *Posyandu*. Pendidikan ayah dan ibu, pekerjaan ayah, tingkat sosial ekonomi keluarga, morbiditas balita merupakan faktor risiko dominan terhadap pemanfaatan *Posyandu*. Subjek yang memiliki balita sakit dibandingkan yang tidak memiliki balita sakit 23% lebih banyak memanfaatkan *Posyandu* [risiko relatif suaian (RRa) = 1,23; P = 0,000]. Dari segi pendidikan ayah, mereka yang memiliki pendidikan ayah yang tinggi dibandingkan dengan pendidikan ayah yang rendah memiliki 18% lebih banyak yang memanfaatkan *Posyandu* (RRa = 1,18; P = 0,000). Di samping itu, mereka yang mudah dibandingkan dengan yang sulit berakses terhadap fasilitas kesehatan memiliki 15% lebih banyak memanfaatkan *Posyandu*.

Kesimpulan: Pendidikan orang tua, pekerjaan ayah, dan tingkat sosial ekonomi keluarga, morbiditas anak merupakan faktor risiko utama terhadap pemanfaatan *Posyandu*. (*Health Science Indones 2013;1:27-31*)

Kata kunci: pemanfaatan *Posyandu*, balita, pendidikan orang tua

Abstract

Background: Utilization of Integrated Health Post (*Posyandu*) by mothers with under-five has declined. This study examined several factors related to the utilization of *Posyandu* by mothers with under-five children.

Methods: This cross sectional study analyzed a part of data from the National Basic Health Research (*Riskesdas*) 2007. The population consisted of women aged 15-49 years who had under-five children in the province of Jambi. Utilization of the *Posyandu* was the use of *Posyandu* by mothers in the last 3 months prior to the survey.

Results: More subjects who utilized (62.9%) than did not utilized (37.1%) the *Posyandu*. Education of mother and father, occupation of father, and socioeconomic level of family child morbidity were dominant risk factors for to utilization *Posyandu*. Those who had compared with did not have child morbidity had 23% more chance to utilize *Posyandu* [adjusted relative risk (RRa) = 1.23; P = 0.000]. In term of education of father, those who had high than low education had 18% more chance to utilize *Posyandu* (RRa = 1.18; P = 0.000). In addition, those who had easy than difficult health facilities accessibility had 15% more chance to utilize *Posyandu*.

Conclusions: Education of parents, father's occupation, and family socioeconomic level, child morbidity were dominant risk factors for to *Posyandu* utilization. (*Health Science Indones 2013;1:27-31*)

Key words: *posyandu* utilization, under-five children, education of parents

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Maternal and child health is an important public health indicator. Based on the Indonesian Demographic Health Survey (IDHS) of 2007, the maternal mortality rate was still high at 228/100.000 live births, as well as infant mortality rate (IMR) and crude maternal mortality (CMR) at 34/1000 live births and 44/1000 live births respectively.¹

Posyandu (Integrated Health Post) was developed in 1984, in order all communities may receive basic health services and to accelerate the decline in infant, children, and mother mortality.¹ *Posyandu* implemented primary health care (PHC) by applying the four principles: universal coverage, community participation, multi-sector collaboration, and the use of appropriate technology.²

Children under-five are vulnerable to health related problems.^{3,4} Various studies demonstrated the close relationship between growth and development in under-five children.⁵⁻⁷ Children with impaired growth in fetal life to the age of 2 years will have impaired development of brain function that is irreversible with long-term impact.^{6,7}

Monitoring of growth and development of children is routinely done in *Posyandu* through community-based health independence. Utilization of the *Posyandu* in Indonesia is still at a moderate level, where about 38-68% of families utilized *Posyandu*.⁸ The increasing number of working mothers caused many women not to utilize *Posyandu* because of their job or misperception. *Riskesdas* 2007 showed that the proportion of families utilizing *Poskesdes* (Village Health Post) in Indonesia was 27.3%, while 62.5% did not utilize the *Posyandu* because they did not need to, and 10.3% did not utilize the *Posyandu* for other reasons.⁹ Based on the 2009 Jambi Province Health Profile, infant mortality rate was 39/1000 and mortality rate of children under-five was 47/1000, which was still higher than the MDG target.¹⁰ In order to fulfill the vision of "Jambi Gold 2015" which aims to improve the intellect and increase the productivity of human resources and accelerate the achievement of the MDGs,¹¹ the Jambi Province needs to make efforts or programs with the proper working capital base and specific risk factors analysis of an empirical study.

The purpose of this study was to investigate dominant factors associated with utilization of *Posyandu* by mothers with under-five children in the Jambi Province.

METHODS

This study used a part of data from a national cross sectional study of the National Basic Health Research

(*Riskesdas*) 2007 in the province of Jambi. The population in the National Basic Health Research was all families in the Jambi province.

The *Riskesdas* two stage sampling sample families and family members in Jambi were identical to the list of families sample and family members from the National Health Survey (*Susenas*) 2007 in the Jambi Province. From each district/city some census blocks (BS) was taken proportional to the number of families in each district/city (probability proportional to size). From each selected BS, 16 families were selected randomly (simple random sampling), and from each selected family, all family members were individuals samples. The samples of the *Riskesdas* in Jambi 2007 included 380 BS, 6078 families, and 24856 individual family members, spread across 10 districts/cities.¹²

The number of subjects examined in this analysis was 1504 mothers with under-five infants (0-59 months). The utilization of *Posyandu* was defined as the utilization of *Posyandu*/Village Midwife by families in 3 months prior to the survey. The risk factors were maternal age (< 20/20-35/ 35 years), level of maternal education (high if high school or higher graduate/low if not graduated from high school or below), maternal employment (work/not), child's gender (male/female), child morbidity (children have been diagnosed by a professional health as having diarrhea or respiratory infection over the last month or not), fathers' education (high if graduated from high school or college / low if not), fathers' occupation (working if employed / not working), the number of infants (having one of under fives / more than one), the number of family members (few if less than 5 persons / many if 5 or more in one family), residence (urban / rural), socioeconomic level of families (low = income is less than Rp 277115 / high = \geq Rp. 277 115, as the median), and accessibility to health facilities (close = near to health center and hospital / far = travel was more than 30 minutes or distance \geq 6 km from the house).

Cox regression analysis used Stata software version 11.0 to obtain the final model for several factors related to the use of *Posyandu* by mothers with under-five children in Jambi Province.

RESULTS

Table 1 shows that more subjects who utilized (62.9%) than did not utilized (37.1%) the *Posyandu*. Subjects who utilize and did not utilize *Posyandu*

were similarly distributed with respect to age of mother, education of mother, Number of under fives, number of family members, and resident. Furthermore, compared with the respective sub groups, subjects who had employment and high socioeconomic level were more likely utilized *Posyandu*.

Table 2 (the final model) revealed that those who had compared with did not have child morbidity

had 23% more chance to utilize *Posyandu* [adjusted relative risk (RRa) = 1.23; P = 0.000].

In term of education, those who had high than low education had 18% more chance to utilize *Posyandu* (RRa = 1.18; P = 0.000). In addition, those who had easy than difficult health facilities accessibility had 15% chance to utilize *Posyandu*.

Table 1. Several Sociodemographic characteristics and factors of *Posyandu* utilization

	<i>Posyandu</i> utilization				Crude relative risk	95% Confidence interval	P
	No (n= 558)		Yes (n= 946)				
	n	%	n	%			
Age of mother							
< 20 years	12	37.5	20	62.5	1.00	Reference	
20-35 years	423	36.1	748	63.9	1.02	0.66-1.59	0.742
>35 years	123	40.9	178	59.1	0.95	0.60-1.50	0.647
Education of mother							
Low	435	39.6	665	60.4	1.00	Reference	
High	123	30.4	281	69.6	1.15	1.00-1.32	0.051
Occupation of mother							
Work	178	38.1	289	61.9	1.00	Reference	
Not Work	380	36.6	657	63.4	1.02	0.89-1.18	0.739
Gender of child							
Male	288	37.8	474	62.2	1.00	Reference	
Female	270	36.4	472	63.6	1.02	0.90-1.16	0.731
Occupation of father							
Not employed	392	40.0	588	60.0	1.00	Reference	
Employed	166	31.7	358	68.3	1.14	0.10-1.30	0.054
Number of under fives							
>1	97	34.3	186	65.7	1.00	Reference	
1	461	37.8	760	62.2	0.95	0.81-1.11	0.508
Number of family members							
≥ 5	231	39.2	359	60.8	1.00	Reference	
< 5	327	35.8	587	64.2	1.06	0.93-1.20	0.419
Socioeconomic level							
Low	300	39.9	452	60.1	1.00	Reference	
High	258	34.3	494	65.7	1.09	0.96-1.24	0.172
Residence							
Rural	427	37.2	721	62.8	1.00	Reference	
Urban	131	36.8	225	63.2	1.07	0.87-1.17	0.934

Table 2. Relationship between child morbidity, sociodemographic characteristics and the risk of *Posyandu* utilization

	<i>Posyandu</i> utilization				Adjusted relative risk*	95% Confidence interval	P
	No (n= 558)		Yes (n= 946)				
	n	%	n	%			
Child morbidity							
No	473	39.9	712	60.1	1.00	Reference	
Yes	85	26.7	234	73.3	1.23	1.13-1.33	0.000
Education of father							
Low	409	40.9	592	59.1	1.00	Reference	
High	149	29.6	354	70.4	1.18	1.10-1.27	0.000
Health facilities accessibility							
Difficult	191	43.9	244	56.1	1.00	Reference	
Easy	363	34.1	702	65.9	1.15	1.05-1.26	0.003

*Adjusted to each other among risk factors listed on this table, education of mother, occupation of father, and socioeconomic level of family

DISCUSSION

There were several limitations to this study. The first, the data were derived from a large national survey which may make the quality of data questionable, especially since *Riskesdas* 2007 was the first national survey carried out. But efforts were made to provide training and practice in collecting data. Second, data of *Posyandu* utilization were obtained only from questionnaires of whether the family visited *Posyandu* in the 3 months prior to the survey. Third, the variables from the national survey were limited, so that models created were restricted to sociodemographic characteristics of children, mothers, and families available in the data.

Even so, in most of the variables used in this study, exposure preceded outcome can be ensured, thus the possibility of temporal ambiguity bias became less even in a cross-sectional design. Possible recall bias also quite small given the variable in question asked only events within the last 3 months, or the last month for accessibility and child morbidity.

Results of the analysis in this study found that morbidity of under-five children was the most dominant factor for the mother not utilizing *Posyandu*. Children diagnosed with diarrhea or respiratory infections by professional health workers did not come to the *Posyandu/Polindes*. In fact, monitoring the children's growth should be carried out routinely in the *Posyandu* so that they can immediately receive the right treatment when decreased growth is detected or deteriorating health conditions prevented when they come to the *Posyandu* in ill health.

The *Posyandu* is a meeting place between health professional services as coaches and the community in tackling public health issues, especially maternal and child health. Implementation is carried out by a cadre trained in the field of health and family planning. They come from the *PKK* (family welfare movement) members, community leaders, and the community itself. The *Posyandu* holds a wide range of health activities including weighing and recording children's weight in order to improve the nutritional status of children, counseling, immunizations, nutritional supplements, as well as other preventive and promotive activities.¹³

Health services should meet basic requirements where the community can determine certain choices which include: the availability and continuity of services, acceptable and reasonable services, convenient, easy to reach, and of high quality.¹⁴ Results of this study

also found that accessibility to health care facilities such as hospitals and primary health centers, made families or mothers not utilize the *Posyandu*. The same thing holds true for the high level of fathers' education. This suggested that the father, as head of the family, influenced the mother in deciding utilize or not the *Posyandu*. Results of this study are similar to those of Zahtamal et al in the Riau province, where the factors related to maternal and child health services were accessibility to health facilities, the influence of decision makers to utilize which health care facility, knowledge and attitude of mothers.¹⁵ Similarly, studies in Tanzania and Indonesia found the determinants of attendance at delivery was access to health facilities, discussions with husband, and suggestions where to give birth.^{16,17}

Utilization of *Posyandu* by mothers is expected to increase, corresponding to the increasing knowledge of mothers that a sick child should be taken to the *Posyandu*. This can be done by providing communication, education, and information to the public. It is also important to involve religious and community leaders in delivering health messages to men so they will be willing to participate in improving health services for their wives and children.

Although there was no need for alarm, the results of this study indicated that accessibility to health care facilities and the high level of education of fathers related to utilization of the *Posyandu*. This may be due to accessibility to other health care facilities, such as primary health centers or hospitals where services were better and more complete. The higher educational level of the head of the family drove them to carefully select more complete facilities for maternal and child health care. This is supported by findings in a study by Nasution, of the conditions in the *Posyandu* which includes: unsatisfactory capability of cadre, damaged operational facilities making them unfit for use, low and decreasing operational funds, and dysfunctional management. The *Posyandu* was also not supported by stakeholders at the local level (village and sub-district), NGOs, private and religious organizations in their important activities. There was also lack of coordination at the primary health center level in the implementation of these activities.¹³

Based on these findings, the variety of problems should be anticipated jointly. Empowering people would be the most important factor. The Government should develop or enhance strategy on communication, education, and information for all levels of society. It is important to revitalize primary

health center and the *Posyandu* facilities so that they can fulfill their role and function with promotion and prevention as the main pillars of their activities. Efforts to improve maternal and child health care is not just the responsibility of the health sector alone, but also other sectors associated with increased socio-economic level of the community. It must be pursued in synergy and with the right strategy complying with accurate analysis and incorporating local wisdom.

Conclusion

Education of parents, father's occupation, and family socioeconomic level, "health facilities accessibility" child morbidity were dominant risk factors for to *Posyandu* utilization.

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