



Knowledge & Attitudes towards Family Use of Maternal Child Health Handbook

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Abstract

The use of the Maternal and Child Health (MCH) handbook requires family support, but the utilization of the MCH Handbook by the family is still low. The objectives of this research are to know the extent MCH Handbook used by the family and the factors related to it. This is an explanatory research with a cross-sectional design. The study sample is the total population in Kemawi Village, which is 60 families who have pregnant woman or baby or toddler. The results of rank-spearman correlation showed that there is a strong and positive relation between knowledge with the use of MCH Handbook ($r_s = 0.571$, $p = 0.0001$) and between attitude and the use of MCH Handbook ($r_s = 0.468$, $p = 0.0001$). Multivariate analysis with binary logistic regression showed that the knowledge (OR =4.9) and attitude (OR=11.9) variables had a significant influence together on the use of the MCH handbook with probability is 74.3% . It is suggested to village midwives to increase counseling to the community about MCH Handbook related to mother's health in the postpartum period, especially regarding family attitudes towards the MCH Handbook.

Introduction

Based on the Profile of Health Department of Central Java Province, in 2015, there were 619 cases of maternal deaths. In Semarang District, maternal death was still high (17 cases). The biggest percentages of the causes of maternal deaths (40.49%) are hypertension (26.3%), bleeding (21.4%), circulatory system disorders (9.27%), infection (2.76%), etc. Looking at the maternal deaths, as many as 60.9% happened in the postpartum period, 26.33% happened in pregnancy period and 12.75% happened in the labor process (Dinas Kesehatan Provinsi Jawa Tengah, 2015).

Maternal mortality has been attributed to the "3 delays": delay in deciding to seek care, delay in reaching care in time and delay

in receiving adequate treatment. The first delay due to the community, family and mother do not recognize their information in pregnant and life-threatening condition (Nour, 2008). Information about pregnancy and life-threatening condition is available in the Maternal and Child Health (MCH) Handbook which is given to pregnant mothers. The MCH Handbook is a book that contains maternal health records (pregnancy, labor, and postpartum), child (Newborn, baby, and toddler) and other information about how to maintain and care for maternal and child (Yanagisawa et al., 2015). Previous research proved that the MCH handbook can facilitate officers (midwife village) in recording and reporting the monitoring data in the local area

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(Hagiwara et al., 2013; Osaki et al., 2015). The Ministry of Health of the Republic of Indonesia developed the Local Area Monitoring of MCH Program with the aim of detecting causes of death in infants and mothers early to avoid the causes of death so as to result in a decrease in infant and maternal deaths (Anggraini et al., 2018). In addition, the MCH handbook can be used to help health personnel in providing Postnatal Care (PNC) (Kaneko et al., 2017)

An Indonesian ministerial decree of 2004 stated that the Maternal and Child Health Handbook (MCH handbook) was to be the only home-based record of maternal, newborn and child health (Osaki et al., 2009). With the accurate and precise recording of the pregnant mothers, also intensively monitored by family and healthcare workers, therefore every pregnancy until childbirth and postpartum is expected to run safely and securely. In the technical guidelines of MCH Handbook, it is stated that the direct target of the MCH Handbook is pregnant mother, while the indirect targets are a) husband/other family members, child caregivers in orphanage/children's social welfare institutions, b) cadres, c) healthcare workers that are working in mother and child health services, d) The Person In Charge and MCH program manager at the district/city health office. The MCH Handbook user, such as husband/other family members, child caregivers in orphanage/children's social welfare institutions, are required to bring MCH Handbook every time they are visiting health facilities, then keep it well so the MCH Handbook will not lose or damaged, and they also required to actively participate in reading and understanding the contents of the MCH Handbook correctly (Osaki, Hattori and Kosen, 2013). MCH handbook is a tool that can be chosen to monitor the health of baby, toddler, and mothers through family empowerment (Osaki et al., 2019).

Husband or family members as indirect targets of the MCH handbook, are those who are considered to have an influence on the utilization or use of MCH handbook. It is because husband or family members is the closest party to pregnant women who should also learn and understand the MCH handbook. Through a good understanding of the MCH

handbook, the use and utilization of the MCH book can be supported by her husband or family member. The support form that provided can be in the form of participating in following up and implementing messages conveyed in the MCH handbook along with pregnant women. That is accordance with the technical guidelines for the use of the MCH handbook published by the Ministry of Health of Republic of Indonesia. Therefore, the husband or family has an important role related to the use of the MCH handbook by pregnant women. The results of the previous research prove that the use of the MCH handbook in Indonesia has a significant effect on an increase in the proportion of pregnant women coming to the antenatal clinic. This study also explained that the involvement of the husband has impacts or influences the stimulus of pregnant women to use the MCH handbook (Magwood et al., 2019).

This research was conducted to the entire population in the Kemawi Village, which is family who has pregnant women or have baby or have toddler. Kemawi village is an active alert village that located in Sumowono Subdistrict, Semarang District. The village midwife in Kemawi Village gave the KIA book to pregnant women to detect early health problems in pregnant women. Utilization of the MCH book requires support from various parties. Family or husband is the party that considered to have an important role in the use of the MCH handbook. In Kemawi Village, the use of MCH handbooks by family or husband is still low. There are several related factors that can influence the use of the MCH handbook. When utilizing the MCH Handbook, the role of the family is important as a support for pregnant mothers. Given the low utilization of MCH Handbook by the family and husband, it is desirable to know the extent of the use of MCH Handbook by the family and what are the factors related to the use of MCH Handbook.

Method

This is explanatory research with a cross-sectional design. The population is families who have pregnant women or have baby or have toddler. The samples are the total population as many as 60 families. The research site is at Kemawi Village. It is an active Alert

Village in Sumowono's Community Health Center Area in Semarang District, which has one village midwife and 28 active cadres. The village midwife has done scheduled training to cadres about mother and child health, and to every ANC service.

This research was carried out on December 2018 through interview method. The questions that asked at the interview time were prepared using a structured questionnaire that was developed independently but in reference to the existing literature. The interview was conducted to the respondent personally. The dependent variable in this study is the use of the MCH handbook, whereas the independent variables of this study consisted of knowledge and attitudes of family.

The data were analyzed descriptively and analytically by using percentage, rank-spearman correlation, and binary logistic regression. Descriptive statistical analysis was used to describe dependent and independent variable. The data distribution in this study is abnormal so bivariate analysis of this study uses rank-spearman correlation, whereas multivariate analysis of this study uses binary logistic regression. The rank-spearman correlation is done to determine the relationship between the dependent and independent variables. Furthermore, multivariate analysis of this study uses binary logistic regression to determine the effect of knowledge and attitudes of family on the use of the MCH handbook. The coding stages that conducted on multivariate analysis are based on median valued and grouped into 2 categories (good and bad). Then the total score is categorized as good (given a value of 1) if the total score > median, whereas the total score is categorized as bad (given a value of 0) if the total score < median.

Results and Discussion

The respondents are 60 people, they are 43 husbands (71.7%), 10 parents or parents in law (16.7%) and 7 relatives (11.7%). The average age of the respondents is 37.7 years (SD= 12.6 yr). More than half of the respondents (63.3%) are graduated from Elementary School and most of the respondents are farmers (45%). Respondents' welfare is mostly included in the II Category of Family welfare (35%). Most

of the respondents (83.3%) have more than 2 children, the youngest child is 0.5 month, the oldest child is 156 months with the average age is 19.9 months (SD=25.5 months). Almost all of the respondents already have MCH Handbook (98.3%) as shown in Table 1.

As shown in Table 2, the result showed that most of the respondents could answer correctly about knowledge of MCH Handbook. There are 80% of respondents who answer correctly about MCH Handbook contents, 86% of respondents answer correctly about who needs to read MCH Handbook, and 78% of respondents answer MCH Handbook need to be brought every time pregnant mother visits the community health center/midwife/doctor. However, there are a lot of respondents who answer "do not know" to some questions, such as parents/family need to read MCH Handbook (46.7%), MCH Handbook contains information about blood donor preparation for pregnant mother (45%), MCH Handbook contains information about the danger sign of postpartum mother (45%). As seen in Table 3, the result showed most of the respondents agree to almost the entire questions item. As many as 80% of respondents agree to the questions of husband/parents/parents-in-law/family need to read MCH Handbook to know what should be done during pregnancy. However, as many as 38.3% of respondents answer disagree to the questions of husband/ parents/ parents-in-law/ family need to read MCH Handbook to know health treatment that should be done after giving birth. The result showed that a lot of respondents have never been reading the MCH Handbook. As shown in Table 4, as many as 50% respondents have never been reading the MCH Handbook to know the danger signs in pregnancy, 53.3% respondents have never been reading the MCH Handbook to know the health treatment during postpartum, 53.3% respondents have never been reading the MCH Handbook to remind pregnant mother to keep the MCH Handbook from being lost. The analysis of the Rank Spearman correlation showed that there was a strong and positive relationship between knowledge and the use of MCH Handbook ($r_s=0.571$, $p=0.0001$). It was also shown that there was a strong and positive relationship between attitude and the

Table 1. The Distribution of Respondents' Characteristics

	n	%
Age of Respondents		
Minimum = 17 y.o., maximum = 80 y.o., mean=37.7 y.o., SD = 12.6 y.o.		
Age of the Last Child		
Minimum= 0.5 month, Maximum=156 months, Mean=19.9 months, SD=25.5 months		
Number of Children		
>2 children	50	83.3
≤ 2 children	10	16.7
Total	60	100
Education		
Not Going to School	3	5
Elementary School	38	63.3
Junior High School	14	23.3
Senior High School	2	3.3
College	3	5
Total	60	100
Occupation		
Unoccupied	5	8.3
Seller	3	5
Farmers	27	45
Labor	5	8.3
Civil servant	2	3.3
Others	18	3.0
Total	60	100
Ownership of MCH Handbook		
No	1	1.7
Yes	59	98.3
Total	60	100
Family Welfare		
Underprivileged	9	15
Family welfare I	14	23.3
Family welfare II	21	35
Family welfare III	8	13.3
Family welfare III plus	8	13.3
Total	60	100

Source: Primary Data, 2018

use of MCH Handbook ($r_s=0.468, p=0.0001$). Multivariate analysis with binary logistic regression showed a significance of 0.587 for the Hosmer and Lemeshow Test, indicating an acceptable goodness of fit to the model tested. A Nagelkerke R Square of 0.371 showed that good knowledge and attitude of family variable models are risk factors for utilization of MCH handbook at 37.1%. The odds ratio for knowledge was 4.93 and attitude was 11.89 for the incidence of MCH handbook utilization. Families with good knowledge of MCH handbook have a tendency of 4.93 times higher to contribute to the use of MCH handbook. The odds ratio for attitude was 11.89, meaning that families with good attitude of MCH handbook have a tendency of 11.89 higher to contribute to

the use of MCH handbook. Knowledge ($p=0.01$) and attitude ($p=0.026$) variable have significant influence on the use of MCH handbook. Both can be used to construct a logistic regression equation to determine the probability of MCH handbook utilization if MCH handbook used by family with good knowledge and attitude, as follows equation below:

$$\text{Probability of MCH Handbook Utilization} = \frac{1}{1 + e^{-(-3.1+1.6 \text{ Knowledge}+2.5 \text{ Attitude})}}$$

Based on this model, if there was family with good knowledge and good attitude, the probability of MCH handbook utilization was 74.3%. It means 25.7 % of the use of MCH Handbook is explained by other factors besides the independent variables in the logistic regression equation in this research. Most of the

Table 2. Respondents Distribution Based on the Answer in Knowledge Items

Respondents knowledge about MCH Handbook	Do not know		Wrong		Correct	
	n	%	n	%	n	%
MCH Handbook Content						
a. Pregnant mother health record	12	20	0	0	48	80
b. Maternity health record	17	28.3	0	0	43	71.7
c. Postpartum health record	20	33.3	1	1.7	39	65
d. Child health record	16	26.7	0	0	44	73.3
Targets (who need to read) MCH Handbook						
a. Mother	8	13.3	0	0	52	86.7
b. Husband	20	33.3	1	1.7	39	65
c. Parents/family	28	46.7	13	21.7	19	31.7
MCH Handbook need to be brought to this place						
a. Community Health Center / midwife / doctor	12	20	1	1.7	47	78.3
b. Posyandu	13	21.7	0	0	47	78.3
c. Pregnant mother class	20	33.3	0	0	40	66.7
Information about pregnancy in MCH Handbook						
a. Measure body height	18	30	1	1.7	41	68.3
b. Measure Upper Arm Circumference	25	41.7	1	1.7	34	56.7
c. Measure body weight	16	26.7	0	0	44	73.3
d. Consuming Fe pill every day for 90 days	23	38.3	4	6.7	33	55
e. Measure blood pressure every check up	19	31.7	1	1.7	40	66.7
f. Tetanus Toxoid Immunization to prevent tetanus in infants	24	40	4	6.7	32	53.3
g. Husband accompany pregnant mother every check up	15	25	8	13.3	37	61.7
h. Prepare savings for labor costs	19	31.7	0	0	41	68.3
i. Prepare vehicle when needed for labor	16	26.7	0	0	44	73.3
j. Planning for Family Planning	17	28.3	1	1.7	42	70
k. Prepare prospective blood donors for pregnant mother	27	45	8	13.3	25	41.7
Information about pregnancy in MCH Handbook						
a. Sign of giving birth	21	35	0	0	39	65
b. Process / how to give birth	24	40	2	3.3	34	56.7
c. Problems that might happen in giving birth	24	40	3	5	33	55
Information about postpartum in MCH Handbook						
a. How to breastfeed infant	23	38.3	1	1.7	36	60
b. Maternal care after giving birth	24	40	1	1.7	35	58.3
c. Danger signs in postpartum	27	45	2	3.3	31	51.7
Information about child health in MCH Handbook						
a. Child immunization record	15	25	2	3.3	43	71.7
b. Child development record	14	23.3	0	0	46	76.7

Source: Primary Data, 2018

respondents are pregnant mother's husbands (71.7%), which means husbands actively participate in the use of MCH Handbook. Study at Banyumas about the role of husband in the treatment of pregnant women including behavioural in giving information (books), providing the cost of prenatal care, behavioural of maternity care (personal hygiene of wife),

listening to the wives, giving proper nutrient management and physical activity, who have good behaviour is amount 61.1% (Gamelia, Masfiah and Sari, 2016). Husbands' social support and perceived social norms, were identified as underlying factors associated with delivery care utilization (Story et al., 2012). Study at Magu District, Tanzania about the role

Table 3. Respondents' Distribution Based on the Answer in Attitude Questions

Attitude	Disagree		Agree	
	n	%	n	%
Husband/parents/parents in law/family need to read MCH Handbook to know what should be done during pregnancy.	12	20	48	82.0
Husband/parents/parents in law/family need to read MCH Handbook to know the danger signs in pregnancy.	16	26.7	44	73.4
Husband/parents/parents in law/family need to read MCH Handbook to know what should be prepared for giving birth	16	26.7	44	73.3
Husband/parents/parents in law/family need to read MCH Handbook to know health treatment that should be done after giving birth.	23	38.3	37	61.7
Husband/parents/parents in law/family need to read MCH Handbook to know child's development.	14	23.3	46	76.6

Source: Primary Data, 2018

Table 4. Respondents' Distribution Based on the Answer in the Use of MCH Handbook Questions

Questions	Never		Sometimes		Always	
	f	%	f	%	f	%
I read MCH Handbook to know what to do during pregnancy	28	46.7	27	45.0	5	8.3
I read MCH Handbook to know the danger signs in pregnancy	30	50	26	43.3	4	6.7
I read MCH Handbook to know what to do before giving birth	29	48.3	26	43.3	5	8.3
I read MCH Handbook to know health treatment that need to be done in pospartum	32	53.3	25	41.7	3	5
I remind pregnant mother to bring MCH Handbook when escorting to health facilities	30	50	20	33.3	10	16.7
I remind pregnant mother to keep the MCH Handbook from being lost.	32	53.3	14	23.3	14	23.3

Source: Primary Data, 2018

of husband in the treatment of pregnant women including behavioural in giving information (books), providing the cost of prenatal care, accompanying to ANC (Antenatal Care), behavioural of maternity care, listening to the wives, giving proper nutrient management and physical activity (Vermeulen et al., 2016). Based on previous study that conducted by Stapleton, et al., it was found that complication during pregnancy and childbirth was statistically significantly associated with husband support and maternal characteristic (Stapleton et al., 2012). The 2012 Indonesia Demographic and Health Survey (IDHS) reported that complication during pregnancy and childbirth was statistically significantly associated with husband support and maternal characteristic

(Agushybana, 2016). It is proved that husband role very important at pregnancy.

Some respondents are included in the second category of welfare family (35%), where those families can live well, with enough income, family members go to school and have good health status. Half of the respondents stated that they have never read MCH Handbook. It shows that half of the husbands or pregnant mother's families are careless to MCH Handbook (Table 4). Respondents' age was between 17 to 80 years old with the mean of 37.7 years old. Adult age can think mature and has a lot more experiences than those young ages. It is suitable with the research of Yoko Aihara about effect of the maternal and child health handbook on maternal and child health promoting belief and

action in Thailand. It was found that the factors which significantly related to MCH promoting belief were family income, age, and education (Aihara et al., 2006). Aiga also found that the older the age, the higher the level of maturity and physical strength at work (Aiga et al., 2016)

Based on the research result, most of the respondents are graduated from elementary school (63.6%), only 3 respondents (5%) did not go to school. It was the same condition at Bhuiyan's research at Palestine that primary school's education is the most of the population research (68,3%) (Bhuiyan, Nakamura and Qureshi, 2006). Education background is one of the factors related to uses the MCH Handbook. There is a positive correlation between women's educational background and reading behavior with respect to MCH-related information (Hagiwara et al., 2013). Study at Mongolia that conducted by Hikita revealed that education correlated significantly with uses of MCH Handbook by pregnant women (Hikita et al., 2018).

Kemawi Village has a midwife who is actively empowered the society. Therefore, those who were only graduated from elementary school already know about mother and child health. It improves their knowledge, attitude and use of MCH Handbook. Based on Table 2, most of the respondents have answered correctly to the knowledge questions. It shows that respondents already have a good understanding about the information in MCH Handbook. This was confirmed from research in Kenya that resulted a high level of health knowledge was significantly associated with possession of an MCH handbook (Kawakatsu et al., 2015). A good knowledge will encourage respondents to have a good attitude and good behaviour, as well as the research result of Yanagiswara that found a relationship of knowledge and cadre's role in using MCH Handbook (Yanagisawa et al., 2015). Good knowledge tends to shape the supportive attitude, which is shown in this research result that most of the respondents have supportive attitude toward the use of MCH Handbook, where many agree statement was conveyed by the pregnant mother's family (Table 3).

Another result in knowledge items that need to be noted is that there were a lot

of respondents who did not know that MCH Handbook needs to be read by parents/family (46.7%). As many as 45% of respondents did not know that MCH Handbook contains the information of danger signs after giving birth, and the same percentage did not know that MCH Handbook contains the information of the necessity of providing prospective blood donors for pregnant mother (Table 2). The respondents' attitudes also need to be noted. As much as 38.3% of respondents answered disagree that husband/parents/parents-in-law/family need to read the MCH Handbook to know health treatment after giving birth (Table 3).

The analysis of the Rank-Spearman correlation showed that there is a relationship between knowledge, attitude, and age with the use of MCH Handbook. Knowledge and attitude have a positive relationship, while age has a negative relationship with the use of MCH Handbook. It means that the better the knowledge and attitude of the family, the use of MCH Handbook by the family will be increased. It is suitable with the research of Kitabayashi in Palestine household, that the better mother's knowledge, the better the MCH Handbook use for ANC (Kitabayashi et al., 2017). The same thing also found by Baequni, by using meta-analysis technique, that mothers who use MCH Handbook during pregnancy tend to have better knowledge than mothers who did not use MCH Handbook (Baequni and Nakamura, 2012). A good family's knowledge about MCH Handbook will encourage a better use of MCH Handbook by the family. As well as the attitude of supporting the MCH Handbook use will encourage the utilization of MCH Handbook. This research result proves that attitude has a straight correlation with the use of MCH Handbook. Good knowledge tends to build a supportive attitude. There was an effect of knowledge, attitudes and family support on the quality of utilization of MCH books (Osaki et al., 2019). Age will determine how they act. The older they are, the higher the level of maturity and physical strength at work. The level of maturity which marked by age will increasingly show maturity, including independence in the attitude. Age had significant relation with respondent's perceived in the use of MCH

Handbook (Susilaningrum et al., 2018).

Conclusion

The results from all of the respondents are 63.3% who graduated from elementary school, 45% working as a farmer, and 98.3% have MCH Handbook. Respondents' knowledge about MCH Handbook, mostly could answer correctly, however as many as 45% still answer wrongly that MCH Handbook contains the information about danger signs of postpartum. Respondents' attitudes about MCH Handbook, mostly agree, however as many as 38.3% answered disagree related to husband/parents/parents-in-law/family need to read MCH Handbook to know the health treatment that should be done after giving birth. In the variable of MCH Handbook use, as many as 53.3% of respondents have never read MCH Handbook to know the health treatment after giving birth. Rank-spearman correlation analysis showed that there was a strong and positive relation between knowledge with the use of MCH Handbook ($r_s=0.571$, $p=0.0001$), between attitude and the use of MCH Handbook ($r_s=0.468$, $p=0.0001$). Whereas multivariate analysis that uses binary regression logistic showed that knowledge ($p=0.01$) and attitude ($p=0.026$) variable have significant influence on the use of MCH handbook. Within binary regression logistic, it also shown that families with good knowledge and good attitude have the probability 74.3% to use MCH handbook.

It is suggested to village midwives to increase counseling to the community about MCH Handbook related to the mother's health in the postpartum period. Attitude variables more contribute to the use of MCH handbook than knowledge variables, so it is suggested that the interventions that will carry out are more prioritized to lead to family attitudes that related to MCH handbook. Authors would like to gratefully acknowledge the support from the Dean of Faculty of Public Health of Diponegoro University.

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