

# Effectiveness of the Health Awareness Community Team intervention in improving the maternal and neonatal health status in Mandailing Natal (Madina) district, Sumatera Utara, Indonesia

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## Abstract

**Background:** Behavior that can influence the status of the health cannot be separated from the cultural habits, particularly in activities such as care and treatment of diseases. Mandailing Natal (Madina) district is one of the regions with high maternal and neonatal mortality rate in Sumatera Indonesia. The life of its community is very much influenced by their tradition and culture.

**Objective:** To determine intervention effectiveness in improving the maternal and neonatal health status.

**Materials and Methods:** This quasi-experimental study with an intervention involving the community members in health education counseling care was conducted with emphasis on local culture and education using local languages. The program was implemented from March to August 2014. The study population included all pregnant mothers in Madina district. The sample comprised 78 mothers selected through purposive sampling technique. The data were obtained through survey using a questionnaire.

**Result:** The intervention used by the Health Awareness Community Team significantly improved the health status of mothers and neonatal, obtaining a *p*-value of <0.05. The health status consisted frequency antenatal care, hemoglobin of pregnant mother, infant and maternal morbidity rate, birth attendant, health center, and pregnancy high-risk detection.

**Conclusion:** Intervention has an impact on improving public health, especially for mothers and their babies, through health care. The government and health workers should involve the community members in the implementation of health program and pay attention to local culture.

**KEY WORDS:** Health, culture, community

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## Introduction

The government's purpose of achievement in the field of health is in line with the Millennium Development Goals (MDGs) Program for 2015, and one of them is to improve the health status of mother and child through minimizing the maternal and infant mortality rate. The progress in minimizing the maternal and infant mortality rate must involve all aspects,

such as medical, health services management, and active role of community. The health status will be determined by the condition commencing during pregnancy up to the delivery and it is related to the behavior of mother and family in daily health care.<sup>[1,2]</sup> Mandailing Natal (Madina) district is one of the districts of the province of Sumatera Utara with higher maternal and infant mortality rate compared to other districts of other provinces.

Madina district is also one of the districts focused on the implementation of the Millennium Development Goals Achievement program, especially the EMAS (Expanding Maternal and Neonatal Survival) program for mother and infant. Besides, most of the life of Madina community is still very much influenced by family tradition and sociocultural habits adopted and practiced for generations.<sup>[2,3]</sup> To date, not much intervention has been used in solving the problems of maternal and neonatal health care related to the sociocultural aspects and the involvement of local community. On the basis of the above assumption and phenomenon, intervention is compulsory to be used to improve the public health status through community empowerment program. The intervention used was the establishment of a model through the sociocultural-based involvement and active role of community in improving maternal health behavior, especially in the form of actions taken in health care during pregnancy, delivery, postpartum, and baby care.

Health status is a dynamic and individual condition influenced by personal and environmental factors. According to Bloom (1908 cited in Ref. 12), four factors influence the health status of an individual, which are heredity, health care, environment, and behavior. Of these four factors, the environmental (45%) and behavioral (30%) factors significantly affect an individual's health. The high maternal mortality rate related to pregnancy and delivery in the community is influenced by tradition with three “late” conditions (too late to take decision, too late to arrive in the venue of medical services, and too late to get adequate medical assistance) and four “too” conditions (too old, too young, too many, and too close birth distance). The application of theory with community empowerment in the prevention and minimization of the maternal and child morbidity and mortality rate is an important aspect that must be paid attention to, especially the problem influenced by sociocultural practices. Culture is a set of guidelines that are inherited by individuals as members of a particular community and notify individuals as members of a particular community how to relate to others, with the supernatural power, and the natural environment.<sup>[2]</sup>

Most of the human actions and behaviors are based on the values of what is considered bad, good, and neutral, although this way of grouping is different from one tribe and culture to the others. Batak community, in general, including the Mandailing who are still on the traditional level in terms of the essence of life, have their common aims of life such as *hamoraon* (wealth), *hagebeon* (having many children), and *hasangapon* (honor).<sup>[2,3]</sup>

Sociocultural factor helps in understanding the attitude and behavior to respond to pregnancy, delivery, and the treatment

of the mother and her baby.<sup>[3,4]</sup> Some part of cultural view on these issues has been inherited from generation to generation in the culture of the given community.

## Materials and Methods

This quasi-experimental study with pretest–posttest nonequivalent group design was conducted among two groups, namely intervention group and control group. The study population included all pregnant mothers in Madina district. The sample comprised 78 mothers selected through purposive sampling technique. Intervention was used in two stages: the first stage was to establish the Health Awareness Community Team and the second stage was continuing the intervention to the respondents comprising pregnant mothers. The Health Awareness Community Team comprised 28 members representing community figures, culture figures, health cadres, and village apparatuses who were believed to be the role model in the life of the community. On the basis of the result of consensus, the Health Awareness Community Team Intervention established in Mandailing Natal (Madina) district will be involved in improving the health status of mother and child through a program called “Sehat Umakna, Sehat Anakna.” The team members were then trained for 1 month and educated related to antenatal care (ANC), delivery, postpartum, and neonates based on the perception and culture of local community. After the training, the team was assigned to provide the extension to the intervention group. Control teams worked for 3 months in their respective working area. The extension materials were delivered in local language and in accordance with the understanding of the mothers. The data were obtained through questionnaire distribution and interviews conducted before and after the use of intervention. The obtained data were analyzed through paired *t*-test (pretest and posttest) by the groups of health awareness team. The independent *t*-test was conducted to both intervention and control groups. The statistical test was applied at  $\alpha$  of 0.05.

## Result

Twenty-eight members of Health Awareness Community Team were trained. A difference was observed between the

**Table 1:** Difference of the score of pretest and posttest of the knowledge and attitude of the members of Health Awareness Community Team ( $N = 28$ )

Assessed items	Before		After		<i>p</i> -Value
	<i>N</i>	%	<i>N</i>	%	
Knowledge					
Good	4	14.3	10	35.7	0.03
Poor	24	85.7	18	64.3	
Attitude					
Good	6	21.4	16	56.1	0.00
Poor	22	78.6	12	42.9	

**Table 2:** Frequency distribution characteristics of respondents of pregnant women ( $N = 78$ )

No.	Variable	Intervention		Control	
		N	%	N	%
1	Age (years)				
	a. >20	7	17.94	5	12.82
	b. 20–35	12	30.776	11	28.20
	c. >35	21	55.26	22	56.41
2	Number of children				
	a. 1	4	10.2	3	7.69
	b. 2–3	5	12.8	4	10.25
	c. >3	30	76.9	32	82.05
3	Distance born (years)				
	a. <2	25	64.10	26	66.66
	b. >2	14	35.8	13	33.33
4	Education				
	a. No school	8	10.26	9	11.54
	b. Elementary school	16	20.51	14	17.95
	c. Junior high school	6	7.69	5	6.41
	d. Senior high school	5	6.41	6	7.69
	e. Undergraduate	4	5.13	5	6.41
5	Working				
	a. Peasant/Laborers	6	16.4	4	10.3
	b. Entrepreneur	2	5.1	5	12.8
	c. Government	2	5.1	3	7.7
	d. Other	29	74.4	27	69.2
6	Income (Rp)				
	a. <700,000	10	25.6	6	15.4
	b. 700,000–2000,000	23	59.0	23	59.0
	c. >2000,000	6	15.4	10	25.6
7	Decision-making				
	a. Husband	32	82.1	31	79.5
	b. Wife	2	5.1	1	2.6
	c. Husband and wife	4	10.3	4	10.3
	d. Other family members	1	2.6	3	7.7
	Total		78		

knowledge and attitude of the members of Health Awareness Community Team before and after the training, as shown in Table 1.

The characteristics of respondents (pregnant mothers) are shown in Table 2. On the basis of the data shown in the table, in general the pregnant mothers were found to belong to the high-risk range in reproductive health either in the intervention or in the control group.

Intervention affected several variables of health status such as frequency ANC, hemoglobin of pregnant mother, infant and maternal morbidity rate, delivery attendant options, place of treatment health center, and high-risk detection record.

The extent to which the intervention can influence the health status in the intervention group can be seen through several variables as shown in Table 3. The table shows that intervention significantly influenced the variables of health status: ANC with  $p = 0.03$  with the closeness of relationship of 3.32, hemoglobin of pregnant mothers with  $p = 0.03$  with the closeness of relationship of 3.44, the incident of infant

morbidity with  $p = 0.03$  with the closeness of relationship of 2.39, pregnant maternal morbidity rate with  $p = 0.03$  with the closeness of relationship of 2.43, delivery attendant options with  $p = 0.01$  with the closeness of relationship of 5.29, place of treatment health center with  $p = 0.03$  with the closeness of relationship of 2.51, and pregnancy risk detection with  $p = 0.05$  with the closeness of relationship of 2.02.

## Discussion

In general, the result of this study showed that intervention had influence on the improvement of mother and child health status in Mandailing Natal (Madina) district. The intervention was used through community empowerment by making the community members independent through the materialization of the potential of ability owned in ANC, delivery, postpartum, and neonates by paying attention to the social culture of local community members, involving local community figures and local culture leaders. Intervention was used by activating the

**Table 3:** Influence of intervention on the status of mother and child health of intervention group

No.	Variables	B	Exp	P	CI 95%	
					Lower	Upper
1.	ANC	1.12	3.32	0.03	0.40	8.52
	Constant	0.58				
2.	Hb of pregnant mothers	1.24	3.44	0.03	1.16	10.15
	Constant	0.47				
3.	Infant morbidity rate	1.13	2.39	0.03	1.55	6.50
	Constant	0.69				
4.	Maternal morbidity rate	1.15	2.43	0.03	0.41	7.47
	Constant	0.36				
5.	Delivery attendant options	2.21	5.29	0.01	0.51	12.99
	Constant	0.25				
6.	Place of treatment	1.21	2.51	0.03	0.45	7.73
	Constant	0.26				
7.	Pregnancy risk detection	1.03	2.02	0.05	0.41	4.43
	Constant	0.05				

role of community members who play an important role in influencing beliefs, traditions, and customs.<sup>[5]</sup> This is in line with the concept that community empowerment is an attempt to enhance the dignity of society that in the present conditions is not able to escape from the trap of poverty, ignorance, and backwardness.

Community empowerment is an attempt to make the community members independent through the materialization of the potential of ability owned.<sup>[6]</sup> One of the effective strategies in improving the health status through the application of community empowerment is by adopting educative approach, namely a series of planned and directed activities systematically implemented by the active participation of the individual, group, or community members intended to solve the problems faced by considering the social, economic, and cultural issues.<sup>[7]</sup> Intervention used with the establishment of Health Awareness Community Team is an appropriate strategy in improving the health status of Madina community by optimizing the role of community members.

This opinion is similar to that of Mikkelsen saying that logic model uses underlying participatory strategies or community participation in the effort of community empowerment to achieve the goal of development that can be achieved in harmony and the possibility of the incident of conflict between social groups, but this can be mitigated through the pattern of local democracy.<sup>[8,9]</sup> Community participation has positively influenced the development and is also an effective tool to mobilize local resources such as human beings and nature with the aim of implementing certain development program.<sup>[9]</sup> The extension activity performed is the form of education intended to equip the team members with good and correct or standard knowledge and positive attitude in health care. The implementation of intervention is one of the cognitive approaches that can help optimize the role of community members in improving the behavior of pregnant mothers toward maternal and child health care.

This is in accordance with the theory that knowledge can improve emotional control, improve the independence of client, increase self-esteem, improve endurance, and can help clients to adapt to the problem or a disease that can ultimately improve the quality of life for clients.<sup>[8,10,11]</sup> The behavior started developing with the cognitive domain, which then leads to inner response in the forms of attitude toward an object and eventually in the forms of action or skill. Providing information is a cognitive approach to psychosocial intervention designed to analyze and change the wrong beliefs or values embraced by the client and help the client to learn to use the effective coping strategies.<sup>[9,12,13]</sup> Education, experience, culture, and belief are the factors influencing the knowledge and attitude of individuals.

Besides, the knowledge has influence on the level of awareness in solving health problems, medication, and disease prevention and treatment.<sup>[12,13]</sup> The existence of a tradition in the community, such as cultural views about pregnancy and birth, morbidity, and mortality, in every area varies according to the existing beliefs and customs. Various diseases and cases that led to the maternal and infant morbidity and mortality are closely related to the perception of culture that is not conducive to health, and this condition is still widely found in various places in Indonesia, especially in the areas that are still dominated by local customs.<sup>[2,4]</sup> To make changes in the public behavior that has become their daily habit and belief embraced from generation to generation is a difficult thing to do without involving the person who actively plays a role in the given culture.<sup>[11,14]</sup> The implementation of intervention in this study directly involved community leader in their capacity as a role model for the people in their area.<sup>[8,15]</sup> This agrees with the notion that social condition is a condition or position socially deliberately arranged that a person is put at a particular position in the social structure.

The implementation of intervention by involving community members and paying attention to the social culture of local

community in improving behavior, especially the behavior of pregnant mothers in ANC, delivery, postpartum, and neonates, is an appropriate and effective action in supporting the program to achieve the more optimal degree of public health status.<sup>[16]</sup> This fits with the role and function of the health workers who facilitate the involvement of all of family and community members in assisting the individual and families to be able to make decisions, to help families gain a positive experience in accordance with their expectations, to overcome the problems in maternal and infant care, and to improve interaction among them through an educational program known as a family-centered maternity care.<sup>[15,17]</sup> The approach to public health behavior change must be preceded by the ability of health workers to master a wide range of sociocultural background of the people concerned.

Social and economic backgrounds have a relationship with the public health behavior.<sup>[18,19]</sup> The daily life of the people of Madina district is still much influenced by the customs, myths, and beliefs in supernatural power including the ANC, birth, and neonatal care.<sup>[17,20,21]</sup> Particularly in Mandailing ethnic community, in regulating the system of life, they use the system of *Dalian Na Tolu* (the three pedestals): the *anakboru* (sons-in-law of the family of our wife's father and his clan), *kahanggi* (our wife's brothers and those who marry our wife's sisters or any son of the family of those with the same clan as that of our wife's father), and *mora* (our wife's father and the male members of the family with the same clan as that of our father-in-law).<sup>[17,22,23]</sup> If there is a problem in one family bound in marriage, the *Dalian Na Tolu* (the three pedestals) is entitled to make a decision.<sup>[24]</sup> The culture views a marriage without children as less fortunate, that any child born by a married couple is always traditionally blessed in a ceremony known as *di pasu-pasu*.

A less prepared geographical condition and service facilities aggravate the problematic situation. In addition, the high maternal mortality rate is related to the three "late" conditions (too late to make decision, too late to arrive in the health service facilities, and too late to get adequate help) and four "too" conditions (too old, too young, too many, and too close birth interval).<sup>[24]</sup> Behavior is an influencing factor for public health status including the health status of mother and infant. In general, it cannot be separated from the culture and habits of the family and community environment.<sup>[3,19,24]</sup> This is in line with the opinion that the indirect causes of maternal and neonate mortality are the community conditions such as education, the information received, the role of health workers, and the socioeconomic and cultural conditions.

As a health worker, to understand the culture-related community behavior is important in influencing the behavior of pregnant mothers and their family. Mandailing culture is part of core culture of Batak, in which various traditions and cultures in daily health care are still much adopted in the life of Mandailing community.<sup>[20,22]</sup> According to Leininger in the theory of transcultural nursing, health care is an area of cultural science in the process of learning and nursing practice focusing on looking at the difference and similarity between

cultures with respect to the care, being healthy, and ill based on human cultural values, beliefs, actions, and the knowledge used to provide nursing care particularly the culture or cultural integrity to the human being.<sup>[15,23,24]</sup> The culture and tradition adopted by the community can be positive, but there is also a culture that does not comply with the principles of health. As health workers who are responsible to provide education to the community should be able to correct the perceptions and negative habits that are not conducive to health. This is consistent with the theory of Leininger (1979), Culture Care Diversity and Universality: Transcultural Care stating that three measures that can be adopted in accordance with the culture of patients/community such as cultural care preservation (to support a culture conducive to health), accommodation (modifying the one in accordance with the knowledge and public perceptions), and re-patterning (straighten the wrong things and contrary to health that could result in morbidity and mortality).

## Conclusion

The use of intervention through the establishment of Health Awareness Community Team "Sehat Umakna, Sehat Anakna" (Healthy Mother Healthy Neonatal) has improved the mother and child health status of the Mandailing Natal (Madina) district community. The variables with significant influence were frequency ANC ( $p = 0.03$ ), hemoglobin of pregnant mothers ( $p = 0.03$ ), infant morbidity rate ( $p = 0.03$ ), maternal morbidity rate ( $p = 0.03$ ), delivery attendant options ( $p = 0.01$ ), place of treatment health center ( $p = 0.03$ ), and pregnancy high-risk detection record ( $p = 0.05$ ). The community of Madina district has its own habit, or tradition and culture regarding ANC, delivery, postpartum, and neonates. Some of the cultural practices positively support the health but some do not comply with the principles of health.

## Recommendations

1. Health workers need to understand the cultural background of the local community, the habits and cultural traditions related to the ANC, delivery, and baby care adopted and practiced by the pregnant mothers and their family that the positive culture or habits can be optimized and the negative culture can be avoided.
2. The implementation of government program especially in the field of health and the decision-making related to the behavior of community should have involved the public figures such as culture leader, religious leader, and local rural apparatuses who can function as a role model.

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