DETERMINANT ANALYSIS OF MOTHERS’ PARTICIPATION IN ANTENATAL CLASSES IN INDONESIA’S FIFTH LARGEST CITY

Analisis Determinan Keikutsertaan Ibu dalam Kelas Ibu Hamil di Kota Terbesar Kelima Indonesia

Sutopo Patriadjati¹, Ayun Satriadi²
¹,²Faculty of Public Health, Diponegoro University, Indonesia
E-mail: spjati@gmail.com, ayunsratmi@gmail.com

ABSTRACT

Background: As a form of health promotion, Antenatal Education (AE) class is expected to improve knowledge, attitudes, and practices of mothers facing their pregnancy. Access to antenatal classes for mothers has not been optimal because of the low level of participation. Not all mothers are willing to join antenatal classes for various reasons.

Aim: This study aimed at analyzing the determinant factors that influence mother’s participation in antenatal classes.

Methods: This study was a quantitative study with a cross-sectional approach. The population was all pregnant women in Semarang City with 140 pregnant mothers as samples from 3 Public Health Centers (PHC) including Rowosari, Purwoyooso, and Gayamsari which were selected by using a purposive sampling technique. Data were collected through interview by using a structured questionnaire.

Results: The findings showed that only 54.3% of mothers attended the antenatal classes. Knowledge, support from health personnel, facilities and infrastructure, as well as a history of illness and pregnancy affect mothers' participation in antenatal classes where the support of health workers had the most dominant influence (OR 5.394). The overall influence was 39.2%.

Conclusion: The low mothers’ participation in antenatal classes was influenced by the lack of knowledge and support, inadequate facilities as well as the low health status of mothers. Further socialization and engagement across related sectors with strong networking are needed to solve this problem.

Keywords: Antenatal education, Participation, Public Health Center (PHC)

INTRODUCTION

Every pregnancy has several risks of dangerous complications. Death due to complications of pregnancy and childbirth can be avoided when mothers routinely check their pregnancy to detect the risk of complications that may occur (Agus & Horiuchi 2012; Kemenkes RI
2013: Kemenkes RI 2015). Antenatal care (ANC) also prevents the unexpected occurrence during pregnancy (Shrestha et al., 2014). It can be an opportunity to identify various risks of pregnancy (Agus & Horiiuchi 2012; Kemenkes RI 2013) and monitor health services for mothers from many potentially fatal pathological risks, such as HIV, anemia, malnutrition, tuberculosis, hepatitis, and malaria (Finlayson & Downe 2013). The earlier the risk factors are known, the better handling mechanism of the risk factors is.

Like other developing countries, the utilization of antenatal services in Indonesia is not optimal. From the Indonesian Health Profile in 2016 it was found that coverage of K1 (first visit) and K4 (fourth visit) was 92.3% and 85.35% which illustrates that not all pregnant women use ANC services (Kemenkes RI 2017). Not only do the factors of access affect the low utilization of ANC, but also the level of mothers’ knowledge and attitudes do. Non-compliance with ANC examination standards has an impact on the higher risk factors to detect inaccurate complications which ultimately lead to an increased risk of maternal death (Kemenkes RI 2014).

Antenatal classes are solutions to overcome the knowledge constraints about pregnancy care and complication risks. This activity is integrated with the maternal health services provided by the government (Runjati et al., 2017). The main objective is to enhance knowledge, skills, changed attitudes and behavior, as well as shared learning for pregnant women in groups. The activity is also oriented to improve maternal compliance in routine antenatal care visits. On the other hand, Antenatal classes also have a community empowerment principle because it involves the role and participation of pregnant women. The success of antenatal classes is determined by how many pregnant women attend and get involved in various activities.

In some countries, antenatal classes have managed to meet participants’ expectations. Most participants (96% of pregnant women and 92% of husbands) in Sweden considered antenatal classes helpful for more secure feelings as parents and childbirth preparation (Ahlöhn et al., 2012). Through structured interventions with interactive modules by facilitators, antenatal education activities in Laos increased an average mothers’ knowledge and understanding about basic care for newborn of 10% for low-educated mothers (Weiner et al., 2011). McMillan in Tomintz et al. (2013) stated that through antenatal classes, a material review could be provided comprehensively in more details according to mothers antenatal condition. Qualitative research by Nolan et al., also showed that the existence of antenatal classes is very helpful in increasing parents’ self-confidence and establishing friendships (Nolan et al., 2012), and at the same time creating new social networking (Tomintz et al., 2013).

In Indonesia, a research in Bogor City showed the relationship of maternal participation in AE class with better knowledge and positive attitude in recognizing the danger signs of pregnancy (Sasmitari et al., 2017). The AE class also proved as a dominant factor in increasing antenatal visits in South Lampung (Xanda 2015). A research in Kendal District proved that the participation in AE class was related to knowledge and attitudes, yet it was not related to the practice of postpartum care (Khafidzoh et al., 2016). A research in Public Health Center (PHC) of Kedungmundu in Semarang City also showed that participation and family social support in AE class are related to exclusive breastfeeding behavior, and husband’s social support is the most dominant factor (Pertiwi et al., 2017).

Although antenatal classes provide significant benefits to enhance pregnant women’s knowledge, attitudes, and practices. The facts show that the existing AE has not been optimal in bridging the needs and expectations of pregnant women. It is proven by the high mothers’ reluctance in attending regularly all AE activities. The average maternal presence in antenatal classes was around middle range of 60%-65% or even less (Praday & Margawati 2016; Khaifidzoh et al., 2016). The pregnant women’s reluctance to follow antenatal classes routinely becomes one of indications that AE is not a mother’s need. Only 30% of antenatal class activities run well in Malang City (Kusbandiyah et al., 2013). A total antenatal classes of 39.68% in Purbalingga District had poor performance (Sari 2017). The level of cadres’ participation in class activities was also less active about 47.7% (Agustinawati et al., 2017). There is a relationship between mother’s knowledge and attitudes, motivation, husband’s support and family support for participation in the AE classes (Septiani 2013; Widiantari et al., 2016; Astuti et al., 2016).

Semarang City had the second largest maternal mortality in 35 districts of Central Java with 32 cases in 2016 (MMR 121.5 per 100,000 life births) (Province Health Office of Central Java, 2016). In 2017, a total of 271 antenatal classes were held and attended by around 7-12 participants in each class, while the number of pregnant women was 28,758 spread across 37 PHCs (Province Health Office of Semarang, 2018). The proportion of pregnant women’s participation in antenatal classes was only around 10% from the population of pregnant mothers in Semarang City. By interviewing PHC coordinating midwives during the preliminary survey, it was found that classes and learning materials were also not optimal because of many mothers who did not routinely attend the learning.

Research on factors influencing mother’s participation in AE class in Semarang city has never been done yet. Studies that illustrate the overall factors influencing mother’s participation in AE classes as a whole are also rare, and they generally only look at predisposing and enabling factors. Therefore, this study aims to analyze various factors that influence mother’s participation in AE classes, not only from predisposing and enabling factors, but also from components of their needs.

**METHOD**

It was a quantitative study with a cross-sectional design. Adopted to the model of Andersen’s health utilization (Abraham & Sheeran 2015), the independent variables of the study were...
divided into 3 components, namely predisposing factors (knowledge, attitude, and parity), enabling factors (access to health facilities, environmental, family and community support, health personnel support, regulation, facilities and infrastructure), need factors (history of disease and pregnancy, perception of pregnancy status, the number of pregnancy complaints from mothers, and perceived level of danger). Dependent variables were antenatal class participation. In this study, maternal characteristics (mothers' age, gestational age, education, employment, ownership of health insurance and family income) were included as control variables.

The research population was a total of pregnant women in Semarang City. The samples were determined by using a purposive sampling based on the PHCs which actively organized antenatal classes had the highest number of maternal mortalities, the least and without maternal mortality cases in the last 3 (three) years and represented areas of Semarang City. Selected PHCs included PHC of Gayamsari, PHC of Purwoyooyo and PHC of Rowosari. Each PHC was represented by 2 (two) villages which were opt randomly. Using a minimum sample formula, 140 pregnant women were involved as respondents and taken accidentally. The number of respondents in each PHC was determined proportionally based on the number of pregnant women in the villages.

Primary data were collected through interviews with structured questionnaires that validity and reliability have been tested. Analysis was carried out descriptively and statistically by Chi-Square test for the relationship test and Multiple Logistic Regression to see which variables are the most dominant in influencing mothers’ participation in antenatal class through OR (Odd-Ratio) value. Variables in multivariate modeling were variables which from the bivariate test had p-value <0.25.

RESULTS AND DISCUSSION

Based on the respondents’ characteristics, it is noticeable that most mothers have an ideal age for pregnancy and childbirth around 20-30 years with a current gestational age of ≥ 4 months (second and third trimesters). Generally, they have ≤ 2 children. Compared to the education category, the number of mothers with secondary education (high school level) was higher, and most of them are housewives. The average family income per month is already above the Minimum District Wages of Semarang City (IDR 2,500,000). They also have health insurance, especially Social Security Agency (BPJS).

Of the 140 pregnant women, only 54.3% attended antenatal classes. These results were the same as various studies which the average mothers’ attendance and participation for Antenatal Education were only in the middle range about 60.4% or even less (Pradany & Margawati 2016; Masini 2015). Murwati’s study showed a level of maternal participation in antenatal class was only 52.8% (Murwati et al., 2018). It was also proven by Kusbandroidyah’s study in Malang City where the well-implemented antenatal classes were only about 30% (Kusbandroidyah et al., 2013). Some reasons for absenteeism are housework, inappropriate schedule, child bearing, no idea about the program, nobody accompanying mothers, routine pregnancy checks by medical specialist, reluctance to attaned, laziness, having perception about their healthy pregnancy, and less attractive and mundane materials. The reasons given were generally the same as the study of Boerleider et al. (2013) that found non-western ethnic pregnant women in Sweden did not join antenatal classes for work reasons (night shift), lack of interest, transportation constraints, inflexible boss’ attitudes, and absence of partners or husbands.

The presence and participation of pregnant women in antenatal classes are a form of community’s participation. On the other hand, community’s participation is the key success of maternal health programs because community are the subject and object of this program. According to the study of Grabman et al., efforts to increase community’s participation require a supportive policy to increase their understanding about maternal health problems as a shared responsibility (Howard-Grabman et al., 2017). Therefore, the program must be able to identify what mothers want and need in the antenatal classes. Almalik’s and Mosleh’s study outlined some important materials needed by pregnant women, such as the main causes of pregnancy complications, routine monitoring and follow-up visits to mothers during pregnancy, proper diet and information about medications and supplements (Almalik & Mosleh 2017).

The results showed that most of the mothers had low knowledge (64.3%), especially knowledge about pregnancy and childbirth. Educational factors and occupational factors as housewives contribute to low knowledge because mothers must routinely do domestic work (household). The percentage of support from health workers in good and strong category was 50.7% while the mothers who received poor health staff’s support was 49.3%. In terms of material and infrastructure, pregnant women who found inadequate infrastructures are slightly higher in 50.7% than those who thought that the facilities are adequate. There were 61.4% of mothers experiencing various complaints in their current pregnancies with various levels of complaints. However, those who considered the complaints are less dangerous were amounted to 55% compared to those who thought that the complaints were dangerous. For other variables, in general, in the mothers gave a good and positive response (see Table 1).

Based on the descriptive analysis, the low participation of antenatal classes is caused by low knowledge, weak support, and inadequate availability of materials and infrastructures. The partial analysis with Chi-Square statistical tests proves that knowledge, family’s and community’s support, health workers’ support, regulations and infrastructures are significantly related to the pregnant women’s participation in antenatal classes with p-value <0.05. By adopting the utilization model of health services from Andersen, this study shows that enabling factors are important elements in strengthening pregnant women’s participation in
although there is no statistical correlation between a history of illness and pregnancy with participation in antenatal classes, the descriptive picture shows interesting results. The results showed mothers with a history of pregnancy risks and illness are more likely to join antenatal class activities. On the other hand, mothers who had no history of pregnancy risks are more likely not to follow antenatal classes. It means that mothers who had pregnancy problems dominated in antenatal classes. Due to fear of greater risks, they tried to find a lot of information and support through antenatal classes to increase their self-confidence and self-efficacy.

This research is in line with the study of Sercekus and Baskale which stated that antenatal education reduces fear in labor because it simultaneously increases mothers’ self-confidence (efficacy) towards pregnancy and childbirth (Serçekuş & Başkale 2016) as well as being a parent (Nolan et al., 2012). The study in Turkey conducted by Isbir et al., also showed that pregnant women who attended antenatal education had a greater level of confidence in facing labor because they got better support and monitoring to reduce the fear and symptoms of postpartum stress that often occurred compared to what the control group felt (Gökoçe Isbir et al., 2016).

Another interesting finding in this research is that the perception factor greatly influences mothers’ participation in antenatal classes. Perception directs pregnant women’s attitudes. Pregnant women who had fine-pregnancy perception tend to join antenatal classes, and mothers who had bad-pregnancy perception prefer not to join antenatal classes (not participating). These results are contradict to the previous analysis that described mothers who attended antenatal classes were mostly those who had a history of illness and pregnancy. Even though they know they had a history of illness and pregnancy, but thought their pregnancy is fine, they will tend to participate in antenatal classes. Conversely, even though mothers had no history of illness and pregnancy, but thought their pregnancy is not fine, they will not participate in antenatal class activities.

Cultural values and ethical factors are also related to the results of this study. Mothers who experienced many normal and severe complaints

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during their current pregnancy tend to not attend antenatal classes. Meanwhile, mothers who had no complaints (only mild or fewer complaints) got involved actively in antenatal classes which are organized by PHCs. Socio-cultural values that affect this condition include shame, reluctance, and self-esteem. Mothers feel ashamed if they are considered weak in facing their pregnancy because a mother is valued from the ability to face every problem in her pregnancy process.

In eastern culture and custom upheld by the community, mothers are often considered unethical, disrespectful and unwilling to disclose their pregnancy problems to others even to other pregnant women in antenatal classes that expect them to share information and experiences about their pregnancy. Pregnant women, families and even community have assumed that pregnancy is a natural condition and natural process. If a mother has a pregnancy complaint (dizziness, nausea, vomiting, swelling, etc.), it is considered as a normal thing. Mothers with complaints tend to stay quiet at home without trying to find treatments because they assume that those complaints would disappear with the increase in gestational age.

Multivariate analysis with multiple logistic regression (see Table 2) found that mothers’ knowledge, support from health personnel, facilities and infrastructure, history of illness and pregnancy simultaneously affect mothers’ participation in antenatal classes. The health personnel’s support became the dominant factor with a possibility of 5.394 times greater in increasing maternal participation (Odd-Ratio or OR value of 5.394), and the second dominant factor is mother’s knowledge (OR value of 3.941). The third dominant factor is the availability of facilities and infrastructure (OR value of 3.313), and the fourth one is a history of illness and pregnancy (OR value of 2.831). Based on the R² value of 0.392, it means that the effect of the four variables on maternal participation in antenatal classes is 39.2%, and the rest (60.8%) is influenced by other variables.

If mothers’ knowledge is improved, the possible increase of participation in antenatal classes is 3.941 times greater. Also, if the infrastructures are well equipped, the maternal participation in antenatal classes will also increase by 3.313 times. Good understanding and positive perception about the history of disease and pregnancy also have a possible increase of 2.831 times greater in antenatal class.

Table 2. Multivariate Analysis of Determinant Factors on Mother’s Participation in AE Class in Semarang City*

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>p-value</th>
<th>Odds-Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>1.371</td>
<td>0.458</td>
<td>8.961</td>
<td>1</td>
<td>0.003</td>
<td>3.941</td>
<td>2.395 - 12.872</td>
</tr>
<tr>
<td>Health workers’ support</td>
<td>1.685</td>
<td>0.440</td>
<td>14.692</td>
<td>1</td>
<td>0.000</td>
<td>5.394</td>
<td>2.038 - 11.970</td>
</tr>
<tr>
<td>Materials and Infrastructures</td>
<td>1.198</td>
<td>0.417</td>
<td>8.266</td>
<td>1</td>
<td>0.004</td>
<td>3.313</td>
<td>1.429 - 7.682</td>
</tr>
<tr>
<td>History of illness and pregnancy</td>
<td>1.041</td>
<td>0.445</td>
<td>5.470</td>
<td>1</td>
<td>0.019</td>
<td>2.831</td>
<td>1.765 - 5.973</td>
</tr>
<tr>
<td>Constanta</td>
<td>-2.151</td>
<td></td>
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</tr>
</tbody>
</table>

*Source: Primary Data

The support from health workers as the dominant factor for pregnant women’s participation in antenatal classes is valued from the management of the pregnancy and childbirth process. Health workers (especially midwives) become the first reference for pregnant women who experience pregnancy problems. That kind of trust must be managed well by giving encouragement and support continuously. According to Nasir et al. (2017), prenatal education or antenatal education strengthen the interaction between pregnant women and healthcare providers (including health workers) as well as maternal knowledge and practice for pregnancy care, childbirth, and newborn care (Nasir et al., 2017).

This study is similar to another study which stated that perceptions on the health workers’ attitudes are the dominant factor to predict the use of PHCs as gatekeepers in Bekasi City (Wulandari & Achadi 2016). Another study in Ethiopia also proved there is a relationship between health workers’ and antenatal care, knowledge of pregnancy danger signs and other demographic factors (Birmeta et al., 2013).

Good communication and good health workers’ attitudes will lead to mothers’ positive perceptions in receiving or utilizing health services, including participating in antenatal classes. Boerleider et.al (2013) proved that communication factors became one of the obstacles for prenatal class participation in non-Western (European) pregnant women. Moreover, terms delivered by midwives or facilitators should be in accordance with community language to easily understand (Boerleider et al., 2013). The use of everyday language or community language is one effective way to convey important information and materials to avoid misunderstandings and confusion. An effective pattern of communication is also carried out in every process of socialization for mother, family, and community as a part of learning process and interaction with the environment.

Participation in antenatal classes will get better if it is followed by efforts to strengthen mothers’ knowledge and adequate infrastructures. Good knowledge about pregnancy increases the ability to identify various risk factors for complications and predictions through a history of illnesses and previous pregnancies. Awareness of pregnancy status brings mothers to more routine contact with health workers to find problem solutions and prevention efforts to be done.
Although there was no significant relation between the history of illness and pregnancy and the participation in antenatal classes by partial test, the output of multivariate test proved the effect of this variable to the participation of antenatal classes when combined with other variables, especially mother’s knowledge.

The more mother’s knowledge about pregnancy and childbirth is, the more mothers understand and are able to identify a history of illness and pregnancy that are potential to endanger pregnancy. It also increases awareness to conduct routine antenatal checks and utilize all activities related to the detection and prevention of risk factors.

Information needs to be disseminated continuously to solve confusion, misunderstanding or misinformation. Information access and socialization especially in antenatal classes can be expanded through cross-sectoral support and involvement of local leaders, such as Family Welfare Movement (PKK)/ Dasa Wisma (Dawis), religious leaders, community leaders, community organizations, NGOs, regional officials, and so on. Also, family roles can also be improved and empowered through the support of husbands and/or parents.

The implementation of antenatal classes also cannot take place if necessary materials and infrastructures are absent. Although the materials of antenatal classes are given based on the Maternal and Child Health (MCH) Handbook which is a guide for every pregnant woman in Indonesia, the learning process will be better and more attractive if it is equipped with sufficient CIE (Communication, Information & Education) teaching aids. The needs for other materials and facilities should also be fulfilled, such as representative rooms, good audio-visual aids, and learning materials and discussions tailored to the group’s needs.

The results of this study are in line with the research of Fuada and Setyawati (2015) proved that the success of antenatal classes was determined by facilitators’ potential and support, government’s support, and mothers’ interests in learning materials of antenatal classes. Social support from husbands is the most dominant factor in increasing the participation of pregnant women in antenatal classes despite of maternal education factors, family parity and income (Widiantari et al., 2016). According to Ahlden et al. (2012), maternal classes should be more attractive and interesting so that they can meet participants’ expectations and readiness to be “perfect parents” later.

Building positive perceptions about antenatal classes is a key factor in increasing maternal participation in antenatal classes conducted by PHCs. Perception is a psychological process that affects mindset or mind mapping and learning processes of a subject. The source of perception comes from knowledge, experience, thoughts, feelings, and attention faced by mothers from the environment. Problems caused by misperception will result in bad social relation and social interaction. Several ways to build good perceptions include respecting others’ opinion, seeing things from many perspectives, becoming a good listener, learning how to argue and taking an initiative. Besides, good perceptions also come from the ability to have good interpersonal communication, have a considerable conclusion, receive processed information, and use the process of intra-personal thinking.

Reducing gaps that focus on various issues of physical, psychological and emotional status and risks of possible complications must be anticipated by national programs through the development of antenatal education models based on mothers’ perceptions of pregnancy (Almalik & Mosleh 2017) and program and content development (Serçeküş & Başkale 2016).

CONCLUSION

Low participation of pregnant women in antenatal classes is influenced by the low level of knowledge, the health worker’s support, the availability of facilities and infrastructures, as well as the history of illness and the history of previous pregnancies. Health worker’s support is the most dominantly influential factor. Building mothers’ positive perceptions of antenatal classes is the key to successful implementation. Support from health workers through persuasive communication, mentoring, and empathy models can motivate mothers to participate in AE classes. PHC can provide training on healthcare to MCH officers. In addition, the mechanism of routine visits can also be improved.

Organizers of health programs (especially MCH program) need to conduct more intensive socialization by using attractive and interesting media for health promotion. Also, they need to routinely advocate facility support for community leaders, such as regional officials, religious leaders, and local community leaders. Antenatal classes based on community empowerment needs to be done. Community empowerment is a basic instrument to assess the performance of MCH programs, which one of the benchmarks is regular participation of pregnant women in antenatal classes. Also, regional health teams should be more active in attending the structured training, and they should have clear division of labor and reward systems. Mechanisms for supervision, monitoring, and evaluation must also be developed regularly to ensure the implementation quality of antenatal classes.

REFERENCES


Widiantari, N.K.N., Suariyani, L.P. & Karmaya, M.,