

# The Relation of Pregnant Women's Class Participation and Childbirth Preparation in Third-Trimester Pregnant Women

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## ABSTRACT

The maternal mortality rate remains high both globally and in Indonesia. Approximately 75% of these deaths are due to complications during pregnancy and childbirth. Therefore, childbirth preparation is essential. Active participation in pregnant women's class activities at least four times during pregnancy is recommended. However, class participation at the Long Kali Community Health Center is still low, with only 53% attendance. This research aims to determine the relationship between active participation in pregnant women's classes and preparation for childbirth among third-trimester pregnant women in the Long Kali Community Health Center's working area. The research method used is descriptive analytics with a cross-sectional approach. The research population consisted of all third-trimester pregnant women who participated in pregnant women's class activities, with a sample size of 33. A questionnaire was used as the instrument for data collection. Data were analyzed using the Chi-square test. The results showed that the majority of respondents were aged 20-35 years (72.7%), had low education levels (48.5%), were not employed (81.8%), had multiparous parity (51.5%), actively participated in class activities (63.6%), and were prepared for childbirth (57.6%). The statistical test results showed a p-value of 0.001, indicating a significant relationship between active participation in pregnant women's classes and childbirth preparation among third-trimester pregnant women in the Long Kali Community Health Center's working area.

**Keywords:** pregnant women, activeness, pregnancy classes, childbirth preparation

## INTRODUCTION

The maternal mortality rate (MMR) is an indicator that describes the welfare of society in a country. According to data from the World Health Organization (WHO), in 2022, the maternal mortality rate worldwide was 295 per 100,000 live births (1). The main complications causing maternal death worldwide account for almost 75% of maternal deaths: bleeding (27%), pre-eclampsia and eclampsia (14%), infection (11%), obstructed labor (9%), and abortion complications (8%). In Indonesia, in 2022, the maternal mortality rate was 183 per 100,000 live births, with the most common causes of maternal death being hypertension/pre-eclampsia/eclampsia, bleeding, and infection. The maternal mortality rate in East Kalimantan in 2022 was 73 per 100,000 live births (2).

The causes of maternal death are related to direct and indirect factors. Direct causes include bleeding, eclampsia, and infection. Indirect causes involve delays in recognizing the dangers of childbirth and making decisions, delayed referrals, and late treatment. This is often due to pregnant women not being adequately prepared to face childbirth (2).

Birth Preparedness and Complication Readiness (BPCR) is a Safe Motherhood, Maternal, and Neonatal Health (MNH) program recommended by WHO (1). Childbirth preparation aims to ensure all needs during pregnancy and the birth process are met. This includes preparing for risk factors for the mother and fetus, understanding psychological and physiological changes, recognizing danger signs and knowing how to respond to them, addressing feelings about giving birth and the baby's development, identifying signs of labor, planning the place of birth, choosing

a health worker and a companion during delivery, making decisions, arranging transportation, identifying prospective donors, and providing family-centered care (3).

One of the efforts made to prepare third-trimester pregnant women for childbirth is through a prenatal class program. Implementing maternal classes benefits both the physical and psychological preparation of the mother for childbirth. The pregnant women's class is a study group for pregnant women with a gestational age between 4 weeks and 36 weeks (before delivery) conducted face-to-face. In these classes, mothers learn together, discuss, and exchange experiences about pregnancy and Maternal and Child Health (KIA) comprehensively and systematically. These sessions are scheduled and continuous to prepare mothers for childbirth (1.4). Previous research shows a significant relationship between the participation of pregnant women in pregnancy classes and their level of anxiety in facing childbirth (5.6).

Long Kali Community Health Center is one of the Integrated Service Units (UPT) in Paser Regency, East Kalimantan. The number of births at the Long Kali Community Health Center from November 2023 to January 2024 was 36. Among these, there were 2 cases of prolonged labor, 1 case of obstructed labor, 3 cases of premature rupture of membranes (KPD), 2 cases of bleeding, and 4 cases of preeclampsia, all requiring further treatment at the hospital. Data shows that of the 12 mothers who experienced problems during childbirth, 5 (41.7%) attended the pregnancy class only once, and 7 (58.3%) never attended the pregnancy class (7).

The Pregnant Mother Class is a prenatal education program carried out in the Long Kali Community Health Center's working area. This program is conducted four times during pregnancy, including the third trimester. The educational material provided regarding childbirth includes recognizing the danger signs of pregnancy, preparing for childbirth, and how to deal with labor pain. Activities are carried out at Posyandu Bougenvile, Posyandu Alamanda, Posyandu Sedap Malam, and Posyandu Cambodia four times a year according to the Health Service budget, with every pregnant woman encouraged to attend at least three meetings (7).

The number of pregnant women who participated in prenatal classes in the Long Kali Community Health Center Work Area in 2021 was 107 (56%) out of a total of 190 pregnant women. In 2022, there were 91 participants (53%) out of a total of 173 pregnant women, including 33 pregnant women in the third trimester (8). According to data from field evaluations of the implementation of classes for pregnant women in the Long Kali Community Health Center working area in 2022 (7), the decline in participation was due to mothers' lack of knowledge about the classes and their remote locations, which made information about the classes inaccessible. Additionally, access to the activity locations was difficult, with issues such as damaged roads or the need to cross rivers to reach the venues.

From the results of a preliminary study conducted through interviews with 10 pregnant women who were less active in participating in pregnancy classes, it was found that new mothers typically joined the classes at the third meeting. Eight pregnant women had not made preparations for childbirth, either materially or psychologically, and had not yet chosen a place for delivery due to a lack of preparations. In contrast, two mothers had already made childbirth preparations and chosen a birth place, believing that their previous experience sufficed.

Based on this background, it is necessary to conduct research to determine the relationship between class participation and childbirth preparation among third-trimester pregnant women in the Long Kali Community Health Center working area.

## **METHOD**

The research method used in this study is quantitative research with analytical descriptive methods using a cross-sectional design. This research was conducted in the Long Kali Health Center Working Area, Paser Regency, specifically at the Main Health Center, Bougenvile Posyandu, Alamanda Posyandu, Sedap Malam Posyandu, and Cambodia Posyandu. The population in this study consisted of all third-trimester pregnant women in the Long Kali

Community Health Center working area who participated in prenatal classes between January and February 2024, totaling 33 pregnant women. The sample used in this research employed total sampling, resulting in 33 respondents.

The data collection instrument used in this research was a questionnaire with a Likert scale to determine the relationship between participation in prenatal classes and preparation for childbirth in third-trimester pregnant women at the Long Kali Health Center. This relationship was assessed by measuring the respondents' answers. The research questionnaire consisted of 25 items, and the validity tests indicated that 5 items (questions 3, 5, 8, 15, and 20) were invalid, leaving 20 valid items. The reliability test yielded a reliability value of 0.780, indicating that the instrument was reliable.

The data collection technique in this research involved observation, specifically by measuring the activity in prenatal classes and preparation for childbirth. Data analysis was conducted using the Chi-square test, as it involves categorical relationship analysis comparing observed frequencies with expected frequencies. The Chi-square formula is as follows:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

$$df = (k - 1) (b - 1)$$

Keterangan:

$\chi^2$  : Chi-square  
 O : Frequency observed  
 E : Frequency expected  
 df : Degrees of Freedom  
 k : Number of Columns  
 b : Number of Lines

Next, we know the value of Chi-square ( $\chi^2$ ). To test the hypothesis, the calculated  $\chi^2$  value is compared with the critical  $\chi^2$  value from the Chi-square table. The critical  $\chi^2$  value is obtained from the Chi-square table for a significance level  $\alpha = 5\%$  and degrees of freedom  $(df) = (k-1)(b-1)$ . If  $\chi^2$  calculated is greater than  $\chi^2$  table, then there is a significant relationship. Conversely, if  $\chi^2$  calculated is smaller than  $\chi^2$  table, then there is no significant relationship. Additionally, computer calculations show that the null hypothesis is rejected if the p-value  $< \alpha$  (0.05) (9).

## RESULTS AND DISCUSSION

The working area of the Long Kali Health Center covers six areas: one sub-district (Long Kali Village) and five villages (Sebakung Village, Bente Tualan Village, Gunung Rotary Village, Putang Village, and Muara Adang II Village). The largest population is in Long Kali sub-district, with 5,549 people (51.9%), and the smallest is in Muara Adang II village, with 683 people (6.3%). Geographically, the Long Kali Health Center is located at 1°30'40.52" South Latitude and 116°20'37.32" East Longitude, with a working area of 399.22 km<sup>2</sup> (7).

From the results of data collection using a questionnaire filled out by 33 third-trimester pregnant women who participated in the pregnancy class, the characteristics of the respondents based on age are presented in Table 1.

Table 1. Distribution of characteristics of third trimester pregnant women who took part in the pregnant women's class based on age, occupation and parity

| Category of Respondents | Frequency (n) | Percent (%) |
|-------------------------|---------------|-------------|
| <b>Age</b>              |               |             |
| < 20 years              | 3             | 9,1         |
| 20-35 years             | 24            | 72,7        |

|                                         |    |      |
|-----------------------------------------|----|------|
| >35 years                               | 6  | 18,2 |
| Education                               |    |      |
| Low (Elementary and Junior High School) | 16 | 48,5 |
| Intermediate (High School)              | 12 | 36,4 |
| Higher (Diploma and Bachelor)           | 5  | 15,1 |
| <b>Occupation</b>                       |    |      |
| Not Working (Housewife)                 | 27 | 81,8 |
| Teacher                                 | 1  | 3,0  |
| Honorary employee                       | 3  | 9,1  |
| Merchants                               | 2  | 6,1  |
| <b>Parity</b>                           |    |      |
| Primipara                               | 15 | 45,5 |
| Multiparous                             | 17 | 51,5 |
| Grandemulti                             | 1  | 3,0  |

It is known that the majority of respondents were in the age range of 20-35 years, accounting for 72.7%, while a small portion were aged under 20 years (9.1%). This indicates that the respondents are within the healthy or safe reproductive age for pregnancy. These results are in line with research conducted by Saputra et al. (10), which found that the majority of pregnant women were aged 20-35 years (63.4%). Additionally, mothers aged under 20 years were more likely to be unprepared for childbirth due to a lack of previous experience.

The research results in Table 1 show that the majority of respondents had low education levels, with 48.5% having completed only elementary school and/or junior high school. This indicates that respondents generally have a poor education, with only a few having higher education (15.1%). The level of education influences a person's knowledge; the higher the level of education, the better a person's knowledge. Pregnant women with a secondary level of education are better prepared for childbirth than those with low education (11).

Based on Table 1, it is evident that the majority of respondents are housewives (81.8%) or unemployed. Laila's research (11) concluded that mothers who do not work have more time to attend classes for pregnant women. However, both working and non-working mothers are equally prepared for childbirth.

In Table 1, it is evident that the majority of pregnant women in the third trimester in this study were multiparous (51.5%). These findings align with research conducted by Fauziah & Rahmawati (12) on 38 pregnant women in the Puskesmas Area, Kembang District, Jepara Regency in 2020, which examined the relationship between characteristics and knowledge of pregnant women regarding childbirth preparation. Their study found that the proportion of mothers with a parity greater than 1 was 18 pregnant women (47.36%). Parity influences a mother's preparation for childbirth. Mothers who have previous experience giving birth tend to have a better understanding of the equipment and preparations needed for childbirth (12).

Similarly, regarding the age factor, for mothers under 20 years old, research results indicate that most primiparous mothers primarily focus on financial preparations, such as covering costs, acquiring baby equipment, selecting a delivery location, and choosing a birth attendant. However, many overlook other essential preparations, such as donating blood, making decisions in the event of childbirth complications, engaging in pregnancy exercises for physical preparation, and addressing psychological aspects. This oversight is common among nulliparous mothers, as they generally lack awareness of the events that may occur towards the end of pregnancy when childbirth approaches (12).

Researchers suggest that a mother's parity significantly influences the risks associated with pregnancy and childbirth. Primigravida, particularly those under 20 years old, may face risks due to immature or unprepared reproductive organs. Hence, regular and periodic pregnancy check-ups are essential to monitor potential risk factors and provide counseling on the

importance of childbirth preparation and potential complications (12). The activity level of pregnant women in the third trimester attending prenatal classes and their readiness to face childbirth is depicted in Figures 1 and 2.

Mothers who actively participated in prenatal classes attended an average of 4 sessions. As shown in Figure 1, the majority of pregnant women in the third trimester actively participated in prenatal classes (63.6%). This may be attributed to the socialization of prenatal classes and government programs aimed at motivating mothers to participate. Motivation plays a significant role, as highlighted in research by Irawan, Subekti & Hidayah (13), which suggests that a mother's motivation is influenced by various factors such as needs, hopes, interests, family encouragement, environment, and media. Intrinsic factors, including knowledge, age, perception, hopes, needs, and education, as well as extrinsic factors such as work, cultural status, and environment, also influence motivation.

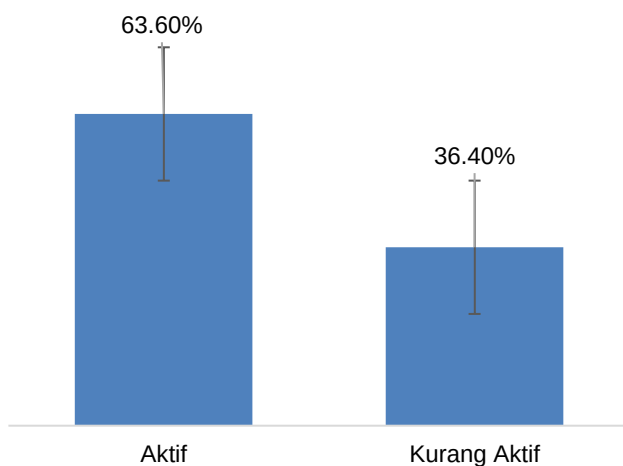


Figure 1. Third Trimester Pregnant Women's Activeness in Participating in Pregnancy Classes

According to Figure 1, it is evident that 36.4% of mothers are not actively participating in pregnancy classes. This may be attributed to various factors, such as age. Older mothers, on average, have more than two children and are therefore less active in attending prenatal classes. Additionally, employment status influences participation, as all working mothers are unable to actively participate due to class schedules conflicting with work hours. This aligns with the theory proposed by Roesli (14), which suggests that work commitments affect participation in health services, particularly when activity times coincide with work hours.

Furthermore, based on field observations, pregnant women's limited participation in prenatal classes can be attributed to accessibility barriers. Accessibility factors include travel time, distance traveled, transportation options, road conditions (such as potholes, muddy terrain, or hilly terrain), transportation costs, and conditions at health facilities (such as service availability, healthcare personnel, and operating hours). Affordability is also a consideration, determined by perceived distance and the availability of private or public transportation to reach the nearest health facility. Accessibility and affordability influence families' decisions regarding seeking healthcare services.

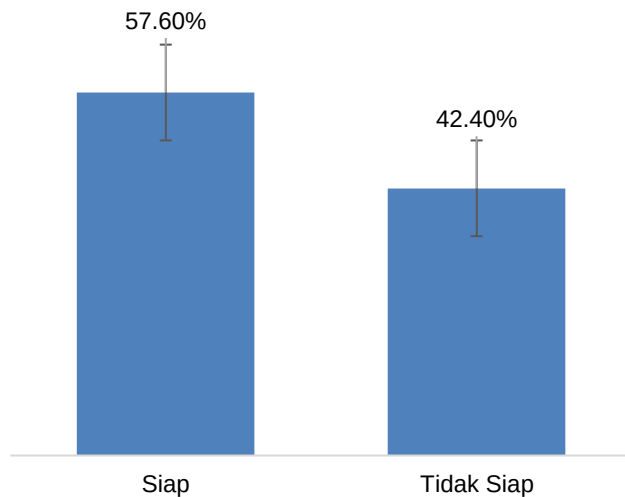


Figure 2. Third Trimester Pregnant Women's Readiness in Facing Childbirth

According to Figure 2, the majority of pregnant women are ready to face childbirth (57.6%). This indicates their readiness both physically and psychologically, as well as financially and culturally. Childbirth preparation encompasses all the necessary arrangements during pregnancy and the birthing process. It involves everything that a pregnant woman, along with her family members and midwife, prepares to welcome the arrival of her child (6). Birth preparation entails the creation of an action plan involving various crucial components, such as financial arrangements for selecting a birthing location, securing the services of trained healthcare professionals, decision-making plans, transportation arrangements, blood donations, and acquiring mother and baby essentials. Additionally, physical preparations, including engaging in pregnancy exercises, and psychological readiness are integral parts of birth planning (15).

To prevent complications during childbirth, thorough preparation before birth is essential. This preparation encompasses physical, mental, and logistical needs of the mother during and after delivery. Pregnant women who have uncomplicated pregnancies may assume that their childbirth will proceed smoothly, leading them to overlook the importance of birth preparation (15). The correlation between active participation in prenatal classes for pregnant women and preparedness for childbirth is illustrated in Figure 3.

As depicted in Figure 3, the majority of pregnant women in the third trimester who actively participate in prenatal classes exhibit readiness to face childbirth (81%). Conversely, the majority of pregnant women who are less active in attending prenatal classes are not adequately prepared for childbirth (83.3%). The analysis of the relationship between third-trimester pregnant women's participation in prenatal classes and readiness for childbirth is presented in Table 5.



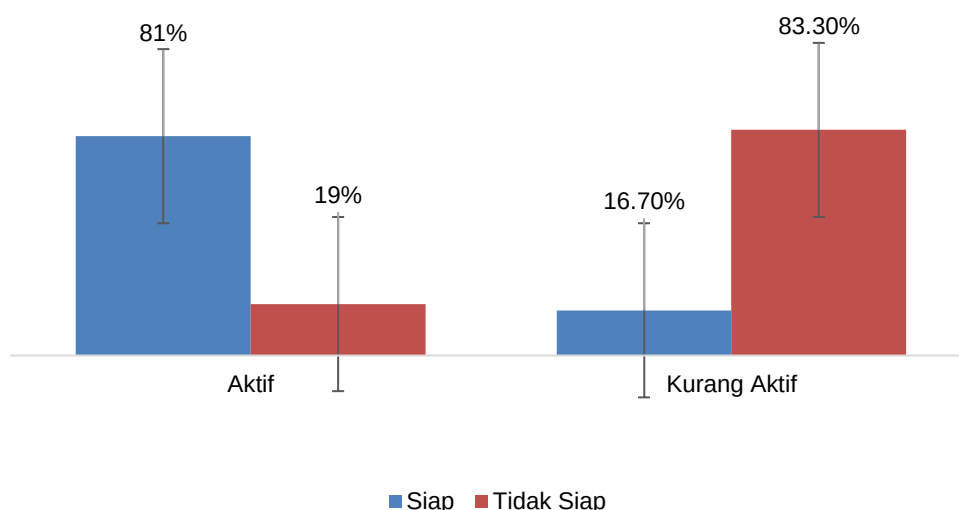


Figure 3. Cross distribution between active participation in classes for pregnant women and childbirth preparation

Table 2. Relationship between Pregnant Women's Class Activity and Childbirth Preparation for Pregnant Women in the Third Trimester

| Class Activity<br>for Pregnant<br>Women | Preparation for Childbirth |      |            |      | Total |     | <i>p-value</i> |
|-----------------------------------------|----------------------------|------|------------|------|-------|-----|----------------|
|                                         | Prepared                   |      | Unprepared |      |       |     |                |
|                                         | f                          | %    | f          | %    | f     | %   |                |
| Active                                  | 17                         | 81   | 4          | 19   | 21    | 100 | 0,001          |
| Less active                             | 2                          | 16,7 | 10         | 83,3 | 12    | 100 |                |
| <b>Total</b>                            | 19                         | 57,6 | 14         | 42,4 | 33    | 100 |                |

The research findings in Table 2 reveal a significant relationship between participation in prenatal classes and preparedness for childbirth, with a significance value of 0.001. This is evident from the higher percentage of pregnant women who actively participate in prenatal classes being ready to face childbirth (81%), compared to those who are less active, of whom the majority are not adequately prepared for childbirth (83.3%).

Moreover, Table 2 indicates that out of the 21 mothers who actively participated in prenatal classes, 4 individuals (19%) were not ready to face childbirth. Economic constraints played a significant role, as these mothers had low economic status and lacked funds for childbirth preparation, exacerbated by the absence of coverage under the BPJS health insurance scheme. Additionally, three of them resided far from healthcare services, posing challenges in accessing birthing facilities and incurring expensive transportation costs. Furthermore, one individual was culturally influenced, as there was a cultural expectation of a "salvation" event involving the slaughter of a goat, adding to the financial burden of childbirth preparation.

Mothers with low economic status often face difficulties in preparing for childbirth, as they struggle to afford delivery and transportation costs. Consequently, some opt for traditional birth attendants (dukun) due to perceived affordability and proximity of their services (16). Affordability considerations are influenced by factors such as perceived distance to healthcare facilities and the availability of transportation, which are crucial considerations for families seeking healthcare services (17).

Interestingly, the research identified two women who were less active in attending prenatal

classes but were still adequately prepared for childbirth. This underscores that readiness for childbirth is influenced by various factors beyond class participation, including previous experience, emotional and physical readiness, material resources, system support, environment, stress management, culture, and attitudes toward pregnancy.

Several factors influence childbirth preparation, including age, parity, education, employment, and income of the pregnant mother (6). Parity, for instance, influences a mother's preparedness for childbirth; those with prior childbirth experience are more knowledgeable about necessary preparations (15). Additionally, younger mothers may exhibit less attention and experience during labor due to unpreparedness for pregnancy acceptance (15).

The consequences of maternal unpreparedness for childbirth contribute to high maternal mortality rates. Lack of readiness may lead to delays in receiving appropriate and timely services during obstetric complications, resulting in adverse outcomes (18,19). Birth preparedness, a key component of maternal safety programs, ensures timely access to professional birth services and reduces delays associated with obstetric complications (20).

Having a birth plan is crucial to mitigate confusion during labor and ensure timely care. Key components of a birth plan include selecting a birthing location, trained health workers, communication methods with health workers, transportation arrangements, birth companions, financial planning, and family support arrangements (3). Establishing decision-making processes during emergencies and preparing transportation systems are vital to ensure access to competent healthcare services during critical situations (3).

Encouraging families to create a savings plan is crucial to ensure funds are available for pregnancy care and emergencies. Many mothers forego seeking or receiving care due to financial constraints. Additionally, preparing necessary delivery equipment is essential. Families can gather items such as sanitary napkins or cloth, soap, and bed sheets in advance (21).

Before childbirth, mothers should focus on staying calm and avoiding panic or fear. Seeking support from loved ones can provide encouragement during this time. Key components of childbirth preparation include creating a birth plan, establishing decision-making processes for emergencies, arranging transportation options for emergencies, following a savings plan, and ensuring readiness with necessary equipment (22).

However, this research has limitations. It primarily measures attendance in prenatal classes quantitatively, without assessing pregnant women's knowledge and perceptions regarding the class materials. Consequently, the depth of understanding among pregnant women regarding their participation in prenatal classes remains unmeasured..

## **CONCLUSION**

The research findings indicate a significant relationship between the activity of pregnant women in attending prenatal classes and their readiness for childbirth. Most third-trimester pregnant women in the Long Kali Health Center area, Paser Regency, East Kalimantan, who participated in this study, were actively involved in prenatal classes and adequately prepared for childbirth.

To further enhance the effectiveness of prenatal care, it is recommended that the community health center implement policies aimed at increasing the dissemination of information and socialization regarding the importance of attending prenatal classes. Additionally, efforts should be made to expand the availability of prenatal class locations, with careful consideration given to accessibility aspects. By doing so, it is hoped that prenatal classes can reach a wider audience within the Long Kali Community Health Center working area, thereby promoting better maternal and neonatal health outcomes.



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