

Original Article

Characteristics of pregnant women's choice of delivery mode

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Abstract:

The choice of delivery mode is a critical maternal health decision because it directly affects maternal safety, neonatal outcomes, care planning, health service use, and postpartum recovery. The source manuscript contained an inconsistency between the title and the study variables. The available data addressed pregnant women's choice of delivery mode, not the incidence of preeclampsia. This study aimed to describe factors related to pregnant women's choice of delivery mode at Ir. Soekarno Regional Hospital. This quantitative study used a cross-sectional design. The study involved 91 third-trimester pregnant women who received care at Ir. Soekarno Regional Hospital in 2025. Total sampling was used. Data were collected using a structured questionnaire and obstetric information sheet covering age, parity, knowledge, education, socioeconomic status, distance from residence, delivery indication, and delivery mode. Most respondents were aged 27-31 years (39.6%) and were multigravida (68.1%). Most respondents had insufficient knowledge (54.9%), high education (80.2%), low socioeconomic status (65.9%), and lived more than 5 km from the hospital (61.5%). Non-medical indications were reported by 92.3% of respondents. Most respondents selected normal delivery (82.4%), while 17.6% selected cesarean section. Delivery mode selection in this setting was shaped by a combination of maternal characteristics, knowledge, access, socioeconomic conditions, and delivery indications. The findings support the need for structured counseling, clear risk communication, and shared decision-making during antenatal care so that delivery plans remain safe, evidence-based, and responsive to maternal preferences.

Keywords:

delivery mode, cesarean section, normal delivery, maternal decision-making, antenatal care

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INTRODUCTION

Childbirth is the final phase of pregnancy and one of the most important transitions in maternal and family life. A safe delivery process requires early risk identification, adequate preparation, timely referral, and a delivery plan that matches the clinical condition of the mother and fetus. The decision to give birth normally or through cesarean section is not a simple personal preference. It reflects the interactions among clinical indications, maternal knowledge, previous birth experience, family support, access to health services, cost, fear of labor pain, and the quality of communication between

pregnant women and health workers. These elements make delivery planning an important subject in midwifery and maternal health research.

Maternal safety remains a major global and national concern. Preeclampsia, hemorrhage, infection, obstructed labor, unsafe abortion, and other pregnancy complications can increase the risk of maternal morbidity and mortality. Preeclampsia is a hypertensive disorder that commonly appears after 20 weeks of gestation and can progress to severe maternal and fetal complications if not detected and managed early. The clinical definition includes new-onset hypertension with proteinuria or signs of organ dysfunction. Its relevance to delivery planning is strong because severe preeclampsia can become a medical indication for referral, intensive monitoring, induction, or cesarean delivery when maternal or fetal conditions deteriorate. Evidence also shows that preeclampsia is associated with premature delivery and low birth weight, which reinforces the need for careful birth planning and early detection (Ives et al., 2020; Komariah et al., 2023; Meinawati, 2024).

Age and parity are two maternal characteristics that often appear in studies on pregnancy risk, delivery planning, and obstetric complications. Pregnant women at very young or advanced maternal age may face higher obstetric risk, while parity reflects previous exposure to pregnancy and childbirth. Primigravida mothers may have limited birth experience and higher anxiety, while multigravida mothers may use previous delivery experience as the basis for current decisions. A prior cesarean section also changes the counseling pathway because health workers must assess eligibility for trial of labor, vaginal birth after cesarean, or repeat cesarean section. In this context, parity is not merely a demographic variable. It influences risk perception, maternal confidence, family expectations, and the clinical discussion about the safest delivery mode (Andi M et al., 2022; Musdalifah et al., 2024).

Knowledge is another key determinant in choosing a delivery mode. Pregnant women who understand the benefits and risks of normal delivery, cesarean section, referral signs, and danger signs of pregnancy are more prepared to take part in shared decision-making. Adequate knowledge helps mothers distinguish between medical indications and non-medical preferences. It also supports timely care-seeking when danger signs occur. However, information alone is not enough. The information must be accurate, easy to understand, culturally acceptable, and delivered repeatedly during antenatal care. Maternal education, access to information, counseling quality, and family discussion affect how pregnant women interpret the risks and benefits of each delivery option (Leastuti et al., 2023; Novelia et al., 2024).

The increasing use of cesarean section requires careful attention. Cesarean section can save the lives of mothers and infants when medical indications exist, such as fetal distress, placenta previa, severe preeclampsia, obstructed labor, malpresentation, previous uterine surgery with contraindication for vaginal birth, or other high-risk conditions. At the same time, cesarean section without a clear medical indication can increase the risk of postoperative pain, infection, delayed mobilization, longer recovery, breastfeeding difficulty, higher cost, and complications in future pregnancies. Studies show that postoperative cesarean patients may experience anxiety and pain, and that early mobilization is important for wound healing after cesarean surgery (Abidin et al., 2022; Djafar et al., 2022). This means that cesarean delivery should be presented as a necessary intervention when clinically indicated, not as a routine shortcut to avoid labor pain.

Socioeconomic conditions and distance from residence also affect delivery decisions. Women with higher incomes or better insurance coverage may have more options when selecting facilities and delivery methods. Women who live far from a hospital may consider transportation barriers, emergency referral time, family availability, and indirect costs. Rural or remote residence can reduce access to specialist obstetric services, while urban residence can increase exposure to hospital-based delivery options. In practical midwifery care, these factors determine whether a birth plan is realistic. A safe plan must consider not only clinical risk but also the mother's ability to reach the facility on time.

Family and social support also shape maternal choices. The husband and close family members often influence decisions to seek care, pay transport costs, approve referrals, and provide emotional support during labor. Family support has been linked with health awareness and health-seeking behavior in family settings, including maternal and child health decisions (Kurniyawan et al., 2023). For third-trimester pregnant women, the husband's role can also influence readiness to face childbirth, especially when mothers experience anxiety or uncertainty about the delivery process (Leastuti et al., 2023). Thus, delivery counseling should not only target the mother but also involve the family when appropriate.

The preliminary survey at Ir. Soekarno Regional Hospital showed that third-trimester pregnant women had different reasons for choosing normal delivery or cesarean section. Some preferred cesarean delivery because they perceived it as faster and less painful, or because they had a history of cesarean delivery. Others preferred normal delivery because they feared surgery, expected faster recovery, or considered the cost of postoperative care. These findings indicate a need to analyze the factors that influence delivery mode selection. Therefore, this study aimed to describe the determinants of pregnant women's choice of delivery mode at Ir. Soekarno Regional Hospital in 2025.

METHOD

This study used a quantitative observational design with a cross-sectional approach. The design was selected because the study aimed to describe the distribution of maternal characteristics and delivery-related factors at one point in time and to interpret how these factors were related to the choice of delivery mode. The study was conducted at Ir. Soekarno Regional Hospital from November 8 to November 18, 2025. The target population consisted of all third-trimester pregnant women who received antenatal or delivery planning services at the hospital during the study period.

The sample consisted of 91 pregnant women. Total sampling was used because the number of eligible respondents during the data collection period was limited and all eligible respondents were included. The inclusion criteria were third-trimester pregnancy, willingness to participate, ability to communicate with the researcher, and availability of complete information on the study variables. Respondents who were unable to complete the questionnaire or had incomplete essential data were excluded from analysis. Before data collection, the researcher explained the study purpose, voluntary participation, confidentiality, and the right to withdraw.

The study variables included age, parity, maternal knowledge regarding delivery choice, education level, socioeconomic status, distance from residence to the hospital, delivery indication, and selected delivery mode. Age was grouped into 17-21 years, 22-26 years, 27-31 years, and more than 31 years. Parity was grouped into primigravida and multigravida. Knowledge was categorized as sufficient or insufficient based on the questionnaire score. Education was categorized as high when the respondent had completed senior high school, vocational high school, diploma, or university education, and low when the respondent had kindergarten, elementary school, or junior high school education. Socioeconomic status was categorized based on the local minimum wage threshold. Distance from residence was categorized as far when the respondent lived more than 5 km from the hospital and near when the distance was less than 5 km. Delivery indication was grouped into medical and non-medical indication. Delivery mode was grouped into normal delivery and cesarean section.

Data were collected using a structured questionnaire and an obstetric information sheet. The questionnaire covered respondent characteristics, knowledge items, socioeconomic information, access-related information, and preference for delivery mode. The obstetric information sheet recorded parity and delivery indication. The instrument was reviewed by the research team for content relevance before data collection. The researcher checked each questionnaire for completeness after completion to reduce missing data. Data were coded, entered, and cleaned before analysis.

Data analysis was conducted using SPSS version 21. Univariate analysis was used to present the frequencies and percentages for each variable. Because the source dataset provided descriptive distributions and did not include a complete cross-tabulation for all independent variables, the revised manuscript reports the results descriptively and avoids unsupported claims of statistical significance for variables whose inferential values were not available. The interpretation focused on the pattern of respondent characteristics and the practical implications for counseling, risk communication, and delivery planning. The study followed basic ethical principles of respect for persons, beneficence, and confidentiality. Respondent identity was not reported in the manuscript, and the findings were presented in aggregate form.

RESULTS

The study involved 91 pregnant women in the third trimester. The results are presented as frequency distributions for respondent characteristics, knowledge, education, socioeconomic status, distance from residence, delivery indications, and delivery mode.

Table 1 presents the demographic and obstetric characteristics of the 91 respondents included in this study. The largest age group was 27–31 years (39.6%), followed by 22–26 years (30.8%), while respondents aged 17–21 years constituted the smallest proportion (8.8%). Most respondents were multigravida (68.1%), whereas 31.9% were primigravida.

Regarding knowledge, more than half of the respondents had insufficient knowledge (54.9%), while 45.1% demonstrated sufficient knowledge. The majority had a high educational level (80.2%),

defined as senior high school, vocational school, diploma, or university education, whereas 19.8% had a lower educational background.

In terms of socioeconomic characteristics, most respondents had a low socioeconomic status, with household income below the local minimum wage (65.9%). Additionally, 61.5% lived more than 5 km from the health facility, while 38.5% resided within 5 km. Most deliveries were performed for non-medical indications (92.3%), and the predominant mode of delivery was normal vaginal delivery (82.4%), whereas cesarean section accounted for 17.6% of all deliveries.

Overall, the study population was predominantly composed of multigravida women aged 27–31 years with a relatively high educational background but limited knowledge, low socioeconomic status, greater residential distance from health facilities, non-medical delivery indications, and a high proportion of normal vaginal deliveries.

Table 1. Demographic and Obstetric Characteristics of Respondents (N = 91)

Characteristic	Category	Frequency	Percentage
Age (years)	17–21	8	8.8
	22–26	28	30.8
	27–31	36	39.6
	>31	19	20.9
Parity	Primigravida	29	31.9
	Multigravida	62	68.1
Knowledge level	Sufficient	41	45.1
	Insufficient	50	54.9
Education level	High (Senior High School/Vocational School, Diploma, University)	73	80.2
	Low (Kindergarten, Elementary School, Junior High School)	18	19.8
Socioeconomic status	High ($\geq$ local minimum wage)	31	34.1
	Low ($<$ local minimum wage)	60	65.9
Distance from residence	Far (>5 km)	56	61.5
	Near (≤ 5 km)	35	38.5
Delivery indication	Medical	7	7.7
	Non-medical	84	92.3
Mode of delivery	Normal vaginal delivery	75	82.4
	Cesarean section	16	17.6

DISCUSSION

The findings show that most respondents were aged 27-31 years. This age range is generally considered part of the reproductive age group with lower obstetric risk than very young or advanced maternal age. Even so, age remains relevant because it affects biological risk, psychological readiness, risk perception, and decision-making capacity. Younger pregnant women may have less experience and a greater reliance on family decisions. Older pregnant women may have more confidence but can also face a higher probability of medical complications, especially when accompanied by chronic disease, previous obstetric problems, or high parity. In delivery planning,

maternal age must be interpreted in conjunction with obstetric history and current pregnancy status rather than treated as an isolated factor.

Parity in this study was dominated by multigravida respondents. This pattern suggests that many respondents had previous pregnancy or childbirth experience that could shape their expectations. Multigravida mothers may use prior delivery outcomes to decide whether to choose normal delivery or cesarean section. A positive previous vaginal birth can increase confidence to choose normal delivery. A previous traumatic labor, emergency referral, fetal distress, prolonged labor, or cesarean section can increase preference for cesarean delivery. Musdalifah et al. (2024) showed that knowledge, family support, and health worker support were related to the selection of vaginal birth after cesarean. This supports the argument that parity needs to be accompanied by detailed counseling. Health workers should clarify the mother's previous obstetric history, explain eligibility for normal delivery or cesarean section, and correct misconceptions about both options.

The proportion of respondents with insufficient knowledge was higher than that of those with sufficient knowledge. This result deserves attention because knowledge directly affects the quality of maternal decision-making. Pregnant women with limited knowledge may select cesarean section because they only consider the avoidance of labor pain, speed, or stories from other mothers. Conversely, some mothers may reject cesarean section even when medical indications exist because they fear surgery, cost, or social stigma. Both conditions can create risk. Counseling should explain that normal delivery is generally preferred when the mother and fetus are stable, but cesarean section becomes necessary when medical indications threaten maternal or fetal safety. Knowledge improvement should include danger signs, indications for referral, benefits and risks of normal delivery, benefits and risks of cesarean section, and the expected recovery process.

Education level was high among most respondents, but insufficient knowledge remained common. This finding indicates that formal education does not automatically produce adequate obstetric knowledge. Health literacy depends on the availability, clarity, repetition, and trustworthiness of information. A mother who graduated from senior high school may still lack specific information about labor risk, preeclampsia, fetal distress, VBAC, postoperative recovery, or the meaning of medical indication. This gap supports the need for standardized antenatal education. Counseling should use simple language, visual aids when possible, and short decision aids that compare delivery options based on clinical indications. Health workers should also verify maternal understanding, not only provide information.

Socioeconomic status was low in most respondents. This factor can affect delivery planning through direct and indirect pathways. Directly, income affects the ability to pay for transportation, documents, food, family accommodation, postoperative needs, and services not covered by insurance. Indirectly, low socioeconomic status can delay care-seeking because families try to reduce costs or wait until symptoms become severe. For cesarean delivery, cost concerns can increase hesitation, especially when the mother does not fully understand the medical indication. On the other hand, higher socioeconomic status can increase access to elective cesarean delivery even when the indications are weak. Therefore, socioeconomic status should be incorporated into counseling and referral planning. A birth plan should include readiness for transport, financial preparation, insurance status, and emergency contacts.

Distance from the residence was also an important practical issue, as most respondents lived more than 5 km from the hospital. Distance affects the feasibility of timely referral. Pregnant women

who live far from a hospital may arrive late when complications occur. Delay can be dangerous in cases such as severe preeclampsia, bleeding, premature rupture of membranes, fetal distress, or obstructed labor. Distance also increases emotional pressure because families must plan transportation, costs, and support for family members. In this setting, midwives and hospital staff should encourage high-risk mothers to prepare a referral plan earlier. Mothers with warning signs or known risk factors should receive clear instructions about when to go to the hospital and who should accompany them.

Non-medical indications were reported in most respondents. This finding indicates that many delivery mode decisions may reflect preferences, fears, prior experience, family influence, or perceived convenience rather than a strict clinical indication. Non-medical preferences are not invalid, but they must be managed through ethical counseling and shared decision-making. Health workers should respect maternal autonomy while ensuring that choices align with safety, evidence, and available resources. Cesarean section without medical indication should be discussed carefully because it may increase postoperative pain, anxiety, wound care needs, delayed mobility, and future pregnancy risks. NHSJ studies on post-cesarean anxiety, pain, early mobilization, and wound healing strengthen the need to explain postoperative consequences before mothers make decisions (Abidin et al., 2022; Taufik Djafar et al., 2022).

Most respondents selected normal delivery. This is clinically reasonable because normal delivery offers a faster recovery, lower surgical risk, shorter hospitalization, and fewer complications in future pregnancies when no contraindications exist. However, the 17.6% of respondents who selected cesarean section should not be judged as inappropriate without considering clinical indications and individual context. Cesarean section is lifesaving when used for appropriate indications. The central issue is not to reduce cesarean section at all costs, but to ensure that the decision is medically justified, well explained, and accepted by the mother after clear counseling. This is especially important in cases involving preeclampsia, previous cesarean section, fetal malpresentation, prolonged labor, or fetal compromise.

Preeclampsia remains relevant even though this study focused on delivery mode choice. Preeclampsia can change a planned normal delivery into induction, referral, or cesarean section, depending on maternal and fetal status. Ives et al. (2020) explained that preeclampsia is a multisystem disorder that requires timely diagnosis and management. Komariah et al. (2023) reported a relationship between preeclampsia and premature birth. Meinawati (2024) emphasized that midwives' self-efficacy and assertiveness support early detection of preeclampsia among pregnant women. These findings support the need to integrate preeclampsia screening into antenatal counseling for delivery planning. Blood pressure monitoring, urine protein testing, assessment of headache and visual symptoms, edema evaluation, and referral readiness should become routine parts of counseling.

Family support and communication with health workers are also important for interpreting these findings. Pregnant women rarely make decisions alone. Husbands, parents, and other family members can encourage facility-based delivery, approve referral, provide transport, and reduce anxiety. Leastuti et al. (2023) found a relationship between the husband's role and the readiness of third-trimester pregnant women to face childbirth. Kurniyawan et al. (2023) also highlighted that family support improves health awareness. These findings are relevant because delivery planning

requires not only individual knowledge but also family readiness. Antenatal counseling should invite husbands or family members when culturally and practically appropriate.

The study has limitations. The revised manuscript is based on the variables and descriptive results available in the source document. Complete bivariate tables and effect estimates were not available for all independent variables. Therefore, this revised article avoids overclaiming statistical influence. Future studies should provide complete chi-square tables, p-values, odds ratios, and confidence intervals for each factor. Further research should also distinguish between planned and emergency cesarean sections, medical and non-medical cesarean indications, previous cesarean history, insurance coverage, and maternal anxiety level. Despite these limitations, the findings provide a useful basis for improving counseling and delivery planning at the hospital and primary care levels.

CONCLUSION

This study found that pregnant women's choice of delivery mode at Ir. Soekarno Regional Hospital was shaped by maternal characteristics, parity, knowledge, education, socioeconomic status, distance from residence, and delivery indication. Most respondents selected normal delivery, while a smaller proportion selected cesarean section. The findings indicate that delivery planning should combine clinical assessment with structured counseling, family involvement, and practical preparation for referral. Health workers should provide balanced information about normal delivery and cesarean section, strengthen early detection of preeclampsia and other complications, and help mothers make safe and evidence-based decisions.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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