**FACTORS ASSOCIATED WITH THE CHOICE OF PLACE OF DELIVERY IN COASTAL COMMUNITIES IN THE WORKING AREA OF BONEGUNU COMMUNITY HEALTH CENTER NORTH BUTON DISTRICT**

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**Abstract**

Background: Delivery assistance by health workers in North Buton District in 2022 was still very low at 89.7% and delivery at non-health facilities was 10.3%. At Puskesmas Bonegunu, the coverage of delivery at health facilities was 61.4%, and delivery at non-health facilities was 38.6%. Purpose: To analyze the factors related to the choice of place of delivery in North Buton Regency. Methods: A cross-sectional study design among 127 respondents. The research sample was taken by using total sampling technique. The research data were analyzed using multiple logistic regression tests. Results: test of the relationship between access and the choice of place of delivery obtained values (p = 0.000), socio-cultural (p = 0.002), family support (p = 0.010), knowledge (p = 0.028), and income (p = 0.000). Conclusion: access, socio-culture, family support, knowledge, and income are related to the choice of place of delivery in the coastal community in the working area of the Bonegunu Health Center

**Keywords:** choice of place of delivery, access, culture, family support, knowledge, income

**INTRODUCTION**

The World Health Organization (WHO) states that the Maternal Mortality Rate (MMR) in the world reaches 296,460 cases, it means that around 810 mothers in the world die from childbirth every day. Of all maternal deaths, 94% occur in lower middle-income countries. The Sustainable Development Goals (SDG's) 2030 have a target of a Maternal Mortality Rate (MMR) lower than 70/100,000 live births, and an Infant Mortality Rate (IMR) lower than 12/1000 live births. 1

The Maternal Mortality Rate (MMR) in Indonesia is still the highest in Southeast Asia and is still far from the SDG's global target of reducing MMR to 183 per 100,000 KH in 2024 and less than 70 per 100,000 KH in 2030. 2 The results of the Indonesian Basic Health Survey found that 90% of maternal deaths were caused by childbirth. 3

The national achievement for delivery indicators in health facilities in 2018 only reached 82.5% of the MDG's target of 90%, while in 2022 it will decrease to 79.3%. These data show that deliveries carried out in non-health facilities are still relatively high, namely 20.7%. 4 The province with the highest coverage of childbirth in health facilities is Jakarta at 102%, followed by Bali at 97.73%. Meanwhile, Southeast Sulawesi Province only had an achievement of 74.26%. 5

**Conclusion:** Assisted delivery by health workers in North Buton Regency in 2021 was 89.7%, and delivery in non-health facilities was 10.3%. In the Bonegunu Community Health Center working area, delivery coverage was 127 women giving birth, with 78 women giving birth in health facilities or 61.4%, and births in non-health facilities as many as 49 women giving birth or 38.6%. 6

Several previous studies concluded that there are several factors that can influence a pregnant mother in choosing a place of delivery such as maternal knowledge, education, facilities, poverty, access to services covering long distances, travel time, family support, income, and the availability of a midwife which are related to the choice. birth attendant 7

Family income is a factor that influences birthing mothers to choose a birthing place, mothers with low incomes prefer cheap birthing places such as dukun beranak. 8 The better a person's knowledge, the better the person's attitudes and behavior, and vice versa, the worse the knowledge, the worse the health behavior, especially behavior in choosing a birthing place. 9

Husbands and families have an important role in choosing helpers during pregnancy, childbirth and postpartum. Relatively young women often think that older people are the best because their parents are more experienced than them. 10 The choice of place of delivery in childbirth will be influenced by knowledge about the benefits of giving birth in health facilities, family income, access to transportation, and other factors which can be categorized as socioeconomic factors.
birth is also caused by the belief and resigned attitude of society that everything that happens is an unavoidable fate. Research conducted at the Long Ikis Community Health Center found that the social culture in the families of pregnant women at the Long Ikis Community Health Center, the majority (52.6%), where mothers who had poor social and cultural backgrounds assumed that giving birth at home was safer because they would not get injections and postnatal sutures.

METHODS

This is an analytical research using a cross sectional study design. The population in this study was all mothers giving birth in the last 1 year in the Bonegunu health center working area, North Buton Regency, totaling 127 people, with a total sample of 127 people taken using total sampling techniques. The variables in this study consist of the dependent variable, namely the choice of place of delivery, and the independent variables consisting of; access, social culture, family support, knowledge and income.

Research variables are measured using a questionnaire whose validity and reliability have been tested. The measurement data were processed and analyzed using a multiple logistic regression test with a confidence level of 95%, using the SPSS application version 25.0

RESULTS

Respondent Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non Health Facilities</th>
<th>Health Facilities</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unreachable</td>
<td>40</td>
<td>35</td>
<td>75</td>
<td>100.0</td>
</tr>
<tr>
<td>Affordable</td>
<td>9</td>
<td>43</td>
<td>52</td>
<td>100.0</td>
</tr>
<tr>
<td>Socio-cultural</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not good</td>
<td>35</td>
<td>36</td>
<td>71</td>
<td>100.0</td>
</tr>
<tr>
<td>Good</td>
<td>14</td>
<td>42</td>
<td>56</td>
<td>100.0</td>
</tr>
<tr>
<td>Family support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not supported</td>
<td>25</td>
<td>30</td>
<td>55</td>
<td>100.0</td>
</tr>
<tr>
<td>Supported</td>
<td>24</td>
<td>48</td>
<td>72</td>
<td>100.0</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>33</td>
<td>37</td>
<td>70</td>
<td>100.0</td>
</tr>
<tr>
<td>Tall</td>
<td>16</td>
<td>41</td>
<td>57</td>
<td>100.0</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>37</td>
<td>38</td>
<td>75</td>
<td>100.0</td>
</tr>
<tr>
<td>Tall</td>
<td>12</td>
<td>40</td>
<td>52</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Candidate selection

Table 3. Probability Value (P-Value) of Candidate Selection Results for Multivariate Modeling

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>0.000**</td>
</tr>
<tr>
<td>Socio-cultural</td>
<td>0.005**</td>
</tr>
<tr>
<td>Family support</td>
<td>0.164**</td>
</tr>
<tr>
<td>Knowledge</td>
<td>0.028**</td>
</tr>
<tr>
<td>Income</td>
<td>0.003**</td>
</tr>
</tbody>
</table>

Information: ** Fulfills the requirements to enter the multivariate test

Tables shows that the factor that most influences the choice of place of delivery in coastal communities in North Buton Regency is access (OR = 4.992). This means that mothers who have access to health facilities in the unaffordable category are at risk of giving birth outside a health facility by 4.992 times compared to mothers who have access to health facilities in the category. Next, the influencing variable is income level (OR = 2.783). This means that mothers with a low-income level are at risk of giving birth outside a health facility 2.783 times greater than mothers with a high income.

Table 4. Factors that most influence the choice of delivery place in the Bonegunu Health Center work area, North Buton Regency in 2023

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E</th>
<th>Sig</th>
<th>Exp (B)</th>
<th>95% CI for Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>1.594</td>
<td>0.443</td>
<td>0.000</td>
<td>4.992</td>
<td>2.066 to 11.723</td>
</tr>
<tr>
<td>Income</td>
<td>1.023</td>
<td>0.425</td>
<td>0.016</td>
<td>2.783</td>
<td>1.210 to 6.402</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.141</td>
<td>0.463</td>
<td>0.000</td>
<td>0.060</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Relationship between access and choice of place of delivery

The results of the univariate analysis showed that out of 127 respondents, 75 respondents (59.1%) had access to health facilities that were not affordable, while 52 respondents (40.9%) had access to health facilities that were affordable. Looking at the results of the study, the researcher considers that there are still many mothers who live in locations far from health facilities. This shows that the distribution of health facilities in North Buton is not evenly distributed. Many areas with coastal and island locations and difficult road access create long distances between regional settlements. In addition, the distribution of health workers is focused on a few points, especially in the islands.

The results of the bivariate analysis obtained a p-value = 0.000, meaning that there is a relationship between access and the choice of delivery place for coastal communities in the Bonegunu Community Health Center Working Area, North Buton Regency. The results of the multivariate analysis also found that mothers who have homes far from health facilities have the potential to choose a place of delivery in non-health facilities that is 4.492 times greater than mothers who have homes in the category close to health facilities.

The results of this study are in line with those obtained by Susanti, et.all, who found a relationship between distance and the choice of health service facilities as delivery assistance for pregnant women with p-value = 0.006. Mothers who have a house close to a health facility have the potential to determine the decision to choose a place of delivery assistance at a health facility by 12.50 times more than mothers who have a house in the far category. 12

This research is also in line with what was obtained in Western Carolina (coastal region of the United States), as many as 174 respondents, for every 10 minutes increase in travel distance to the place of delivery, the stress score of pregnant women about going to a health facility increased by an average of 0.72 points. It can be concluded that the longer the distance to a health facility, the more stressed and reluctant pregnant women are to give birth in a health facility. 13

Access is a very significant obstacle for the community, especially pregnant women, because access or distance can determine whether it is easy for the community to take the route to get to a health facility. Mothers giving birth whose homes are far from health facilities will choose to give birth in a place that is closer, apart from limited transportation facilities, considering the costs that will be used to rent a car as a means of coming to health facilities.
such as village birthing centers and community health centers. 

**Results of interviews**

Most respondents who had long access decided to choose to give birth in a non-health facility. Apart from that, respondents felt uncomfortable giving birth at the health center due to the hassle of preparing all the items needed for the birthing process and postnatal care, husbands or family concerns regarding the risks and safety of the mother and baby during the journey and the thought that the mother was giving birth. At the puskesmas are mothers who have an emergency condition so they have to give birth at the puskesmas.

In this study, it was found that 35 respondents (46.7%) chose a health facility to give birth, even though access to health facilities was unaffordable. This is because the mother knows quite well about the benefits of giving birth in a health facility, the mother also understands the risks of giving birth at home far from a health facility. Apart from that, it is supported by a good level of income (finances), so that even though the distance to health facilities is quite far, mothers are willing to spend money to pay accommodation costs to get to health services.

A total of 9 respondents (17.3%) chose a place of delivery that was not a health facility even though access to health facilities was very affordable, this was due to the low level of knowledge of mothers about the dangers of giving birth outside health facilities, besides that there was still a family culture that still trusted traditional birth attendants to help with childbirth, this was exacerbated by the lack of funds from the families of mothers who gave birth, so they preferred to give birth at home assisted by traditional birth attendants, they thought that traditional birth attendants were cheaper than if they had to give birth in health facilities.

The distance from the mother's house to health facilities is quite far, approximately 3 KM. Respondents who utilized health service facilities were mostly only those in the vicinity (village) where health services were located. The distance between home and health services influences pregnant women in visiting health services, so that distance also influences mothers' interest in choosing a place of delivery, especially since very long distances will make it difficult for mothers to come to health services.

**Sociocultural Relationship with the Choice of Place of Delivery**

The results of the univariate analysis showed that 71 respondents (55.9%) had poor social culture, and 56 respondents (44.1%) had a good social culture category. Mothers who have poor social culture say that giving birth at home is a tradition or habit that has been passed down from generation to generation, that all previous births were at home, so that is the cultural reason why mothers choose to give birth at home. Apart from these reasons, in the research area there are trained birth attendants who are still trusted by the community to help or accompany and care for mothers during the birth and postpartum process.

The results of the bivariate analysis show a p-value = 0.005, which means that there is a sociocultural relationship with the choice of birthing place for coastal communities in the Bonegunu Community Health Center Working Area, North Buton Regency. Mothers who have poor social culture have a greater chance of choosing to give birth at home than mothers who have good social culture. The poor socio-cultural conditions in the research location are also exacerbated by the geographical location, namely an island area, which makes access to health facilities more difficult and makes it stressful for pregnant women to cross the sea.

In rural areas, especially coastal and island areas such as the Bonegunu sub-district community, most pregnant women still trust traditional birth attendants to help with childbirth, which is usually done at home. Respondents who chose birth assistance by a midwife were generally people whose distance between their house and the midwife's place tended to be closer than the distance to a health facility. Apart from that, shamans also help with ceremonies or customs that are usually carried out in rural communities. Childbirth assisted by a shaman has advantages in the eyes of the community, namely because the shaman provides massage or potions during the birthing process which the community does not get if they give birth in a health facility.

From the interview results, information was obtained that the respondent's decision to use health facilities during childbirth was still greatly influenced
The majority of respondents in this study are pregnant women, who feel they receive treatments and follow customs will prefer a shaman to a midwife during pregnancy, childbirth and postpartum. They are only have expertise in checking pregnancy, childbirth, and child who will be born in the hospital, and they prefer to give birth at home rather than in a hospital, this is because the mothers have good social and cultural conditions. This is because income levels and long distances make mothers prefer to give birth at home. It is known that the majority of respondents in this study are women who live in coastal and island areas, where to go to health services, they have to cross the sea to get there, this of course makes the cost of going to health services more expensive compared to those who give birth in home with the help of a shaman or even a midwife who is called to the house.

Relationship between family support and choice of place of delivery

The results of this univariate analysis showed that 55 respondents (43.3%) did not receive family support, while 72 respondents (56.7%) received family support. This means that most pregnant women in the Bonegunu Community Health Center work area receive family support to give birth in a health facility. This is because the pregnant woman's family, both husband and in-laws and parents, feel concerned about the health of the mother and child who will be born.

The results of bivariate analysis using the chi-square test showed that the \( p \)-value = 0.164, which means that there is no relationship between family support and the choice of birthing place for coastal communities in the Bonegunu Community Health Center Working Area, North Buton Regency in 2022.

The results of this research are in line with those obtained by Syukaisih (2020), that there is no relationship between family support and the decision.
of mothers giving birth in the Banteng Community Health Center working area to choose a place of birth in a health facility with a value of \( p = 0.132 \), where it was found that most mothers gave birth. felt they had the support of their husband and family to give birth in a health facility.\(^{18}\)

As many as 30 respondents (54.5%) chose a place of delivery at a health facility even though they did not receive family support, this was because the distance between the mother's home and the health facility was very affordable. Meanwhile, 24 respondents (33.3%) chose a birthing place that was not a health facility even though they had family support, this was due to the distance and large costs involved in giving birth. It is known that most of the respondents in this study live in areas of the island that do not have health facilities.

Although family support is not related to the choice of place of birth, in theory the family plays an important role in creating perceptions and actions by family members. Especially when it comes to making decisions about choosing a birth attendant, a pregnant woman tends to be influenced by the people around her, especially her husband and close family. If the people closest to the pregnant woman recommend that the birth attendant be a health worker (health facility), then the pregnant woman has a tendency to choose a health worker as the birth attendant.

Husbands and families have an important role in choosing helpers during pregnancy, childbirth and postpartum. This especially happens to women who are relatively young so their ability to make independent decisions is still low. They argue that the choice of older people is the best because older people are more experienced than them.\(^{19}\)

The Relationship between Knowledge and Choice of Place of Delivery

Univariate analysis results were obtained from 127 respondents, 70 respondents (55.1%) had low knowledge, while 57 respondents (44.9%) had high knowledge. Low maternal knowledge is caused by the mother's low education level, namely elementary school - junior high school. Apart from that, mothers are also less exposed to information media from health workers. Meanwhile, for mothers who have high knowledge, this is because mothers are exposed to information media, both from health workers and from online media by using cellphones to access health information, especially during childbirth.

The results of bivariate analysis using the chi-square test showed that the \( \rho \)-value = 0.028, meaning that there is a relationship between knowledge and the choice of place of birth for coastal communities in the Boneguru Community Health Center Working Area, North Buton Regency in 2022. So it can be concluded that the lower the mother's knowledge regarding the benefits of giving birth in health facilities, the more pregnant women choose to give birth outside health facilities, in this case at home with the help of a birth attendant or midwife who is called to the house.

The results of this research are in line with the results of research conducted by Sianipar, et al (2022), which found that there was a relationship between maternal knowledge at the Mogan Community Health Center, Samosir Regency and the reasons for choosing a place of delivery with a value of \( p = 0.013 \). Mothers who have a high level of knowledge mostly give birth in health facilities (64.3%), while mothers with low knowledge mostly give birth at home with the help of a birth attendant or with a midwife who is called to the house.\(^{20}\)

The results of this study are also in line with what was found by Selina (2023), that mothers with poor knowledge were 8.125 times more likely to give birth in non-health facilities compared to mothers with good knowledge.\(^{11}\)

Knowledge about birth and place of birth is a very important domain for shaping a mother's behavior in choosing a place of birth. Mothers with less knowledge will more likely choose to give birth in a non-health facility (home). This is because mothers don't know that during labor complications can occur at any time and if they give birth at home and experience complications, they cannot be handled properly immediately.\(^{14}\)

Exposure to information media can also influence mothers' knowledge, the more good information they receive, the higher their knowledge will be. It is hoped that this high level of maternal knowledge can be a reference in maternal health attitudes and behavior in selecting birth attendants for the safety and health of the mother and her baby in the future.\(^{21}\)

Although the results of this study provide evidence of a relationship between knowledge and the choice of place of birth, in this study it was also found
that 16 respondents (28.1%) chose a birth place that was not a health facility even though they had good knowledge, this was due to the lack of family support. obtained by the mother, the mother's closest family wants the mother to give birth at home because they think that the birthing process can be monitored directly by the family rather than in a health facility. Apart from that, access to health services is a long distance factor so that the affordability of the health facility is burdensome for the mother and family. Baggage for birth needs that must be prepared.

Apart from that, this research also found that 37 respondents (52.9%) chose a place of delivery in a health facility even though they had poor knowledge, this was because the mother received family support to give birth in a health facility, in addition to the distance from the mother's home. with health facilities still in the affordable category for the family of the mother giving birth. The family wants the mother to give birth in a health facility to anticipate undesirable things during the birth process if done at home.

**The Relationship between Income and Choice of Place of Delivery**

The results of the univariate analysis were obtained from 127 respondents, 75 respondents (59.1%) had low income, while 52 respondents (40.9%) had high income. This is because the only types of work in the Bonegunu Community Health Center working area are fishermen and craftsmen. This will certainly affect your monthly income. For some respondents who have a high level of income, this is because one of their family members works as a state civil servant, and some of them are entrepreneurs, such as doing business.

The results of statistical analysis using the chi-square test showed that the p-value = 0.003, meaning that there is a relationship between family income and the choice of place of delivery for coastal communities in the Bonegunu Community Health Center Working Area, North Buton Regency in 2022. This is confirmed by the results of the multivariate analysis which found that Family income level is the second most influential factor in determining the choice of place of delivery with an Exp (B) value of 2.783.

The results of this research are in line with research conducted by Suciawati (2020), which found that the majority of respondents whose income was below the UMK (< Rp. 2,630,162) chose to give birth at home. The results of the influence test from this research obtained a p-value = 0.008, which means that the economic status/family income of pregnant women is very closely related to the choice of place of delivery.22

This research is also in line with what was found by Muni, (2022), that the majority of pregnant women (75.4%) in the Tarus Health Center Working Area who have sufficient income, tend to choose to give birth in a health facility. The results of the rank spearman correlation test show that there is a significant relationship between income and the choice of place of birth (p-value = 0.000). In this research, it was found that respondents with low family incomes preferred delivery places outside health facilities such as at home with the help of a birth attendant, in contrast to mothers who had high family incomes who chose to give birth in health facilities.21

Income is a reason for women to prefer home as a place to give birth, because they argue that choosing to give birth at home costs less than giving birth in a health facility. They think that by giving birth at home they can save money on delivery costs and the birth money can be diverted to pay for the services of health workers. Family income influences the family's ability to pay for needed health services such as childbirth assistance, buying medicine, paying service fees, paying transportation costs to health services and so on.23

Respondents with low income but who gave birth at a health facility were 38 respondents (50.7%), this was because the respondents received material support from other families, and had an insurance card in the form of the Healthy Indonesia Card (KIS). The KIS card makes people less worried about having to give birth in a health facility

Meanwhile, 12 respondents (23.1%) chose to give birth at home or outside a health facility, this was due to the family's habit of giving birth at home and nothing happened to the baby. This then creates the perception of pregnant women that giving birth at home with the help of a birth attendant is actually safe.

Financial preparation is very necessary in preparation for the process of pregnancy, childbirth and the postpartum period and the complications that
CONCLUSION

This research concludes that access, social culture, knowledge, and income are related to the reasons for choosing a place of delivery in coastal communities in the work area of the Bonegunu Health Center, North Buton Regency. Meanwhile, family support has no relationship with the mother's choice of place of birth. The factors that most influence the reasons for choosing a birth are access and income.

REFERENCES


