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Original Research Article

An Assessment of Factors Influencing Maternal Choice of Place of Delivery: Home Versus Institutional

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Abstract:

Background: The place of delivery is a critical determinant of maternal and neonatal health outcomes. Despite efforts to promote institutional deliveries, a significant proportion of women in developing regions continue to deliver at home due to multiple interrelated factors.

Aim: To assess the factors associated with home versus institutional deliveries among recently delivered women.

Methodology: A community-based cross-sectional study was conducted among 90 women who had delivered within the past one year in the field practice area of the Department of Community Medicine, BMIMS, Pawapuri, Bihar. Data were collected using a structured questionnaire covering socio-demographic variables, antenatal care (ANC) utilization, education, accessibility, and awareness-related factors. Data were analyzed using SPSS version 27, and associations were tested using the Chi-square test.

Results: Institutional delivery was reported by 62.2% of participants, while 37.8% had home deliveries. Maternal education and adequate ANC visits (≥4) showed a statistically significant association with institutional delivery ($p < 0.05$). Awareness of government maternity schemes, availability of transportation, proximity to health facilities, and family decision-making also influenced the place of delivery.

Conclusion: Institutional delivery was more common, but home deliveries remain substantial. Strengthening ANC coverage, female education, awareness, and access to services is essential to improve institutional delivery rates.

Keywords: Home Delivery, Institutional Delivery, Antenatal Care, Maternal Education, Determinants.

Introduction

Childbirth is a significant event in a person's life that has major consequences for the health and survival of both the mother and the baby [1]. One of the critical determinants of maternal and neonatal outcomes is the location of delivery (home or health institution). Although there have been considerable advancements in maternal health services over the past few decades worldwide, a large percentage of women still choose to deliver at home, particularly in low- and middle-income nations. Often, the home births are done without the presence of qualified medical practitioners, which, consequently, raises the likelihood of complications like postpartum hemorrhage, sepsis, obstructed labor, birth asphyxia, and neonatal infections [2]. On the other hand, deliveries in health institutions, which means in hospitals, maternity centers, or other health facilities with trained staff and emergency obstetric care, are considered as an effective measure for reducing maternal and neonatal morbidity and mortality. Therefore, it is very important to know the factors that influence women's choice between home and hospital delivery for improving maternal health outcomes and reaching global health targets.

Maternal mortality continues to be a significant public health issue, especially in the less developed countries where the health systems are still very weak and social disparities are the main reasons for the problem [3]. The World Health Organization has pointed out the need for skilled professionals to be present at childbirth and the delivery to take place in hospitals as the most important measures for the safety and well-being of the mothers. However, the

choice of delivery location is not usually based on one factor alone. Rather, it is influenced by a complex mixture of socio-economic, demographic, cultural, geographic, and health system-related factors. Women's ages, number of children, education levels, and previous childbirth experiences are some of the major factors that determine their risk perceptions and the need for institutional care. Generally, younger women and first-time mothers are more willing to go for hospital delivery while multiparous women with a history of normal home births may consider home delivery to be safe and adequate.

Socioeconomic status is certainly the most important determinant of place of delivery. Women from wealthier families are more likely to get supported by the institutional health services due to better financial status, higher health awareness, and capacity to pay for transportation and other costs [4]. On the other hand, poverty is often a major factor preventing women from giving birth in hospitals, even in places where maternity service is officially free. The hidden costs of transportation, informal payments, the loss of wages, and the expenses of accompanying family members discourage many mothers from going to the hospital for delivery. The educational level of both the mother and her partner has always been linked to the use of institutional delivery services because education increases the awareness of pregnancy-related risks and the need for skilled care [5].

Cultural beliefs and traditional practices have a major impact on childbirth preferences, especially in rural and tribal communities [6]. A home birth is commonly perceived as a natural event that ought to occur in the comfortable setting of the home, with family members or traditional birth attendants around to help. The strong customs, confidence in traditional midwives, the dread of medical treatments, and the worries about privacy and dignity in hospitals are some of the reasons why families continue to prefer home births. In certain societies, the power to decide about childbirth is not given to the woman but rather to the elders or the husband, thus further restricting women's freedom to pick the hospital for delivery.

Accessibility by geography and availability of health facilities are critical factors that influence the choice of delivery place. Health centers located far distance, bad road connection, unavailability of transport, and hard terrain create major obstacles, especially in the hospitals and clinics of the remote and underserved areas. Although facilities are there, women may still not feel comfortable to give birth there due to issues like understaffing, lack of basic medical supplies, overcrowding, and providing healthcare perceived as poor quality. Moreover, the women who have had negative past experiences, including disrespectful or abusive treatment by healthcare providers, are less likely to be going to the facilities again for their subsequent deliveries [7].

In numerous nations, health system initiatives and government measures striving to encourage hospital deliveries have changed the scenario to a great extent. Financial incentives, conditional cash transfers, free maternity services, and community health worker support have all proved to be effective in boosting the hospital delivery rates. Moreover, antenatal care utilization plays a significant role here as women having regular antenatal visits are more prone to receive advice about birth preparedness and complication readiness thus making them more likely to deliver in a hospital.

In summary, the decision relating to home and institutional delivery is determined by a complex interplay of various factors that go beyond just the availability of services. To promote institutional delivery, dealing with socioeconomic inequalities, elevating women's education, upgrading health facilities, and guaranteeing maternity care that is respectful, and building up community involvement are the key measures. Awareness of these related factors is critical for the development of specific programs that can connect home with hospital deliveries and hence, better the health of mothers and babies.

Methodology

Study Design: The present study was conducted using a community-based observational cross-sectional study design. This design was considered appropriate to identify and analyze the factors associated with the choice of home versus institutional delivery among recently delivered women. The study aimed to assess socio-demographic, obstetric, healthcare access, and awareness-related factors influencing the place of delivery.

Study Area: The study was carried out under the Department of Community Medicine, Bhagwan Mahavir Institute of Medical Sciences (BMIMS), Pawapuri, Nalanda, Bihar, India.

Study Participants: The study participants comprised women who had delivered within the last six months and were residing in the study area at the time of data collection.

Inclusion Criteria

- Women aged 18–45 years
- Women who had a home or institutional delivery within the past one year
- Residents of the study area for at least six months
- Women who gave informed consent to participate

Exclusion Criteria

- Women who were seriously ill or mentally unfit to respond

- Women who had stillbirths or abortions
- Temporary residents or migrants
- Women unwilling to participate in the study

Sample Size: The total sample size was 90 participants, calculated based on feasibility and availability during the study period. The sample included women who had both home deliveries and institutional deliveries, allowing comparison between the two groups.

Procedure: The data were obtained through the use of a structured, pre-designed, and pre-tested questionnaire. Initially, the questionnaire was prepared in English and then it was translated into Hindi to facilitate better understanding by the respondents. It was tested on a small group other than the study population, and changes were made to ensure clarity and relevance. Data were taken through interviews face-to-face at the participants' homes thereby maintaining privacy and confidentiality. Before the interview, the purpose and significance of the study were thoroughly explained to each participant, and written informed consent was obtained.

The questionnaire was designed to obtain socio-demographic characteristics (age, education, occupation, socioeconomic status), obstetric history (parity, antenatal care visits, previous delivery experience), access to healthcare services (distance to health facility, transportation availability), and awareness-related factors (knowledge of government maternity schemes, benefits of institutional delivery). Also, information was obtained about wifely's decision-making authority, cultural beliefs, and financial constraints. There was daily verification of the completed questionnaires for checking completeness and consistency. Missing or inconsistent data were corrected through a visit or clarification on the following working day if possible. Data collected were coded and entered into a computer database for analysis.

Statistical Analysis: The collected data were entered and analyzed using Statistical Package for Social Sciences (SPSS) version 27.0. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. The association between place of delivery (home vs institutional) and various independent variables was assessed using appropriate statistical tests such as the Chi-square test. A p-value of less than 0.05 was considered statistically significant.

Result

Table 1 illustrates the socio-demographic characteristics of the participants in the study, which numbered 90. Most participants were from the age group of 25-34 years (46.6%), while there were equal numbers in the less than 25 years and 35 years or older groups (26.7% each). As for maternal education, the distribution was rather balanced, with 35.6% being primary educated, 33.3% having secondary education or above, and 31.1% being illiterate. A large majority of mothers were homemakers (80%), and only 20% were working. In terms of social class, the largest number of participants (42.2%) belonged to the lowest class, followed by the middle class (37.8%), whereas a small percentage (20%) was from the upper socioeconomic group.

Table 1: Socio-demographic characteristics of the study participants (n = 90)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	<25	24	26.7
	25–34	42	46.6
	≥35	24	26.7
Education of mother	Illiterate	28	31.1
	Primary	32	35.6
	Secondary & above	30	33.3
Occupation	Homemaker	72	80
	Working	18	20
Socioeconomic status	Lower	38	42.2
	Middle	34	37.8
	Upper	18	20

As illustrated in Table 2, among the 90 subjects, the distribution of participants according to place of delivery showed that institutional delivery was more prevalent than home delivery. The larger part of the participants, 56 (62.2%), had their deliveries in the hospitals, pointing out the increased use of health services for childbirth. On the contrary, there were 34 home births among the participants (37.8%), which means that a considerable number of women still prefer or have the option of delivering at home only. The distribution not only points to the increasing shift towards institutional deliveries but also to the persistent existence of home deliveries among the study participants.

Table 2: Distribution of participants according to place of delivery (n = 90)		
Place of delivery	**Frequency (n)**	**Percentage (%)**
Home delivery	34	37.8
Institutional delivery	56	62.2

The data presented in Table 3 indicate a statistically significant correlation between the number of antenatal care (ANC) visits and the place of delivery ($p < 0.001$). Most women with less than four ANC visits gave birth at home (76.5%), while the institutional births of such women accounted for only 32.1%. Conversely, the majority of women who visited health facilities for ANC four times or more gave birth in hospitals (67.9%), and the proportion of home births was very small (23.5%). Deliveries in health facilities (56 out of 90) were more frequent than home births (34 out of 90) in total. The evidence implies that proper use of ANC (≥4 visits) is very closely linked with increased institutional delivery, thus emphasizing the importance of regular antenatal care in the promotion of a safer delivery process.

Table 3: Association between antenatal care (ANC) visits and place of delivery				
ANC visits	**Home delivery n (%)**	**Institutional delivery n (%)**	**Total**	**p-value**
<4 visits	26 (76.5)	18 (32.1)	44	<0.001*
≥4 visits	8 (23.5)	38 (67.9)	46	
Total	34	56	90	

The findings summarized in Table 4 reveal a statistically significant correlation between the mothers' education and the delivery location ($p < 0.01$). The majority of illiterate mothers (52.9%) chose to deliver at home, and this shows that there was a strong preference or a very powerful constraint for and against home delivery in this particular group since only 17.9% of such mothers had their deliveries in hospitals. Conversely, the primary-educated mothers showed a greater percentage of cesarean deliveries (39.3%) over home births (29.4%). This was even clearer among mothers with a secondary or higher degree, where the ratio of institutional to home deliveries was 42.8% to 17.7%. In summary, the research results imply that empowering mothers by educating them is a very efficient way of ensuring that they opt for institutional delivery services, thus showing the benefits of education in transforming the perception of keeping good maternal health.

Table 4: Association between educational status of mother and place of delivery				
Education level	**Home delivery n (%)**	**Institutional delivery n (%)**	**Total**	**p-value**
Illiterate	18 (52.9)	10 (17.9)	28	<0.01*
Primary	10 (29.4)	22 (39.3)	32	
Secondary & above	6 (17.7)	24 (42.8)	30	
Total	34	56	90	

The principal factors determining whether institutional delivery took place among the study subjects are depicted in Table 5. It is stated that the knowledge of government maternity schemes was the factor with the highest impact, as 64.4% of the respondents mentioned it. So, this very fact underlines the importance of infographics and outreach activities in promoting facility-based childbirth. It was also observed that access to transport had a very positive influence with 60% of the participants stating that they had access; this was an indication of the importance of logistical support in health services. A little over half of the respondents acknowledged that family members made delivery-related decisions (51.1%), which shows the effect of family dynamics on maternal healthcare utilization. The next factor influencing delivery in hospitals was the distance to the health facilities, since 55.6% of the participants lived within 5 km of a health center, indicating that less distance helps institutional delivery. A record of past institutional delivery was also acknowledged by 53.3% of the participants, thereby inferring those good past experiences may lead to the repeated choice of the institutional maternity service.

Table 5: Factors influencing institutional delivery among study participants		
Factor	**Yes n (%)**	**No n (%)**
Awareness of government maternity schemes	58 (64.4)	32 (35.6)
Availability of transportation	54 (60.0)	36 (40.0)
Decision made by family members	46 (51.1)	44 (48.9)
Distance to health facility <5 km	50 (55.6)	40 (44.4)
Previous institutional delivery	48 (53.3)	42 (46.7)

Discussion

The current research indicates that institutional delivery was preferred over home delivery, which shows a slow but sure move towards safer methods of childbirth. This trend is in line with the global and national trends of the past three decades, as the focus on skilled birth attendance has been a contributing factor to the improvement of maternal outcomes (Campbell & Graham, 2006) [8]. Nevertheless, the fact that a considerable number of home deliveries are still taking place as seen in the current study suggests that the progress is not equal everywhere and that there are still several socio-demographic and health system barriers.

In the present study, maternal age did not have a strong independent relationship with the place of delivery, as women from all age brackets chose both home and institutional deliveries. Studies conducted in South India and Nepal came up with similar results, which stated that age in itself does not play a significant role in the choice of delivery once other factors like education and accessibility are taken into account (Furuta & Salway, 2006) [9]. On the other hand, some studies from Africa have reported that younger women are the ones most likely to deliver in hospitals, as they are the ones who are most exposed to modern health-related messages (Addai, 2000) [10], thus pointing to differences in the impact of these factors when comparing various regions.

In the current study, maternal education was spotlighted as the strongest predictor of institutional delivery. Women having a secondary education or more were in a situation that was very much more favorable for them to deliver at health facilities compared to illiterate women who mostly went for home delivery. This result is in very close proximity to the findings of previous studies which are also showing a positive correlation between education and the utilization of maternal health services (Cleland & Van Ginneken, 1988; Navaneetham & Dharmalingam, 2002) [11,12]. It is the educated women who are more likely to be aware of the danger signs, understand the advantages of skilled care and assert themselves in making health-related decisions. On the other hand, low literacy levels restrict access to health information and make the reliance on traditional practices stronger.

The socioeconomic status was the main factor regarding the place of delivery. The women who were in the lowest economic strata in the current research were the ones more likely to give birth at home, the reason being primarily financial constraints and indirect costs like transportation, which will be discussed later. Similar studies have been conducted in Bangladesh and Turkey, where the lack of money was considered a major barrier to hospital delivery, notwithstanding the fact that services were available (Hossain & Hoque, 2005; Celik & Hotchkiss, 2000) [13,14]. On the other hand, women from middle and upper economic groups had higher hospital delivery rates, which is also in line with the multi-country analyses that identified wealth as a key determinant of facility-based childbirth (Montagu et al., 2011) [15].

In the current study, antenatal care (ANC) use was a major determinant of hospital delivery. Women who went to a hospital for four ANC visits or more had larger odds of having their baby in a health center than women who had fewer visits. This study contributes to the existing literature in Ethiopia and Tanzania, where women's visits for ANC to hospitals made them two to three times more likely to give birth at an institution (Nigussie et al., 2004; Mageda & Mmbaga, 2015) [16,17]. It is thus through the ANC visits that the women get to meet health professionals regularly, get counseling done, and have their birth plan strengthened, which in turn affects their choice of delivery positively.

In the current research, the enabling factors like knowledge of government maternity schemes, access to transport, and closeness to medical facilities were also major determinants. Among the facilitators, knowledge of schemes was reported the most frequently and this clearly highlights the vital role of information spreading. Nepal and Kenya had the same situation where the women who knew about the free delivery and incentive-based programs were more inclined to go for institutional delivery (Wanjira et al., 2011) [18]. But, even in cases of high awareness, the absence of transportation and long distances were still the reasons for less service utilization, which is a problem that has been reported consistently in rural areas with limited resources.

In the current research, family decision-making dynamics played a crucial role in influencing the delivery practices, and it was found that more than half of the women indicated that family members were the ones making the decisions. This observation correlates with the studies from South Asia and Africa that stress the involvement of husbands and elders in deciding the place of delivery (Furuta & Salway, 2006). On the other hand, the places where women's autonomy was higher reported more use of institutional delivery services which implies that empowerment and gender-sensitive interventions are very important.

The current research recognized previous institutional delivery as a factor strengthening the repeat use of health facilities. It was noted that women with institutional delivery were more inclined to opt for a hospital again for their next child; this was considered to be one of the factors leading to the flourishing of confidence in the health system through positive experiences. As in the case of Bangladesh and Indonesia, where the mothers' satisfaction with the previous hospital delivery was the determining

factor for their future care-seeking decision (Titaley et al., 2010) [19]. On the contrary, unpleasant experiences, anxiety about medical procedures, and bad care have all been identified as the main reasons for avoiding hospital deliveries (Wanjira et al., 2011).

Overall, the findings of the current investigation are primarily in line with the research done from 1990 to 2022, thus validating that the decision between home and institutional delivery is influenced by a combination of factors including education, socioeconomic status, ANC utilization, health system access, and the sociocultural context. On the one hand, the rise in institutional deliveries is an indication of development, whereas the stubbornness of home deliveries is a signal to the need for an all-encompassing approach that includes female education, quality and access of ANC, transport and referral systems enhancement, and awareness-raising programs targeting families and communities in order to ensure that all women have access to safe delivery services without any barriers.

Conclusion

The present study concludes that institutional delivery was more common than home delivery among the participants, indicating a positive shift toward safer childbirth practices. However, a considerable proportion of home deliveries persists, highlighting ongoing socioeconomic, educational, cultural, and accessibility barriers. Maternal education and adequate antenatal care utilization emerged as strong determinants of institutional delivery, emphasizing the role of awareness and continuous contact with health services. Socioeconomic status, availability of transportation, proximity to health facilities, awareness of government schemes, and family decision-making dynamics also significantly influenced the place of delivery. The findings underscore that improving institutional delivery rates requires more than service availability alone. Strengthening antenatal care coverage, enhancing female education, improving transport and infrastructure, ensuring respectful maternity care, and involving families and communities in awareness initiatives are essential to further reduce home deliveries and improve maternal and neonatal health outcomes.

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