

Place of Delivery, Birth Attendants and Fertility Among Mothers in Bajengdoba, West Garo Hills, Meghalaya: A Community-Based Study

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Abstract: Place of delivery and the type of birth attendant are important aspects of maternal healthcare and may reflect differences in healthcare accessibility, cultural practices, and reproductive experiences. The present study examines the relationship between places of delivery, persons conducting delivery, and fertility among mothers in Bajengdoba village, West Garo Hills district, Meghalaya. The analysis is based on data from 212 mothers, who reported a total of 598 live births. Descriptive statistics were used to compare the mean number of live births among mothers according to place of delivery and the person conducting delivery. Analysis of variance (ANOVA) was used to assess differences between groups. The findings indicate that 156 mothers (73.6%) reported home deliveries, while 56 mothers (26.4%) reported hospital deliveries. Mothers who delivered at home had a higher mean number of live births (3.08 ± 0.13) than mothers who delivered in hospitals (2.09 ± 0.16). The reported ANOVA indicated a statistically significant difference between these groups ($F = 16.62$, $p < .001$). Similarly, 153 mothers (72.2%) reported deliveries conducted by traditional birth attendants, locally referred to as dais, while 59 (27.8%) reported assistance from health personnel. Mothers assisted by dais had a higher mean number of live births (3.08 ± 0.13) than those assisted by health personnel (2.15 ± 0.15), with a reported statistically significant difference ($F = 14.77$, $p < .001$). The study highlights the importance of integrating culturally appropriate maternal healthcare with community-based reproductive health education in rural Meghalaya.

Keywords: Fertility, Place of Delivery, Traditional Birth Attendants, Dais, Live Births, Maternal Healthcare, Garo Women, Meghalaya.

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I. INTRODUCTION

WHO (1971) defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Fertility is the reproductive performance of an individual or a population, measured as the number of viable offspring produced over a period (Jones *et al.*, 1995). Fertility is an important component of population dynamics and many lifestyle factors such as the age of marriage, weight, nutrition, psychological stress and occupation can have substantial effects on fertility (Sharma *et al.*, 2013). Socio-economic factors like religion, occupation, education, income, etc., are very important in influencing fertility and mortality rates (Caldwell, 1979, 1982; Cochrane, 1983; Davis, 1984; Mosley and Chen, 1984; Mahadevan, 1986). The number of children born to a woman reflects not only her reproductive history but also the wider circumstances in which childbearing takes place. These circumstances may include maternal age, marriage patterns, reproductive preferences, family expectations, access to healthcare, and the availability of family planning services.

In rural communities, reproductive practices are often shaped by the interaction between formal healthcare services and established community traditions. Decisions regarding childbirth may be influenced by distance from health facilities, transportation, household resources, family support, perceptions of medical care, and the availability of traditional birth attendants. Consequently, place of delivery can serve as an indicator of maternal healthcare access and the interaction between institutional and customary practices.

The World Health Organization (WHO, 2018) emphasises that care during labour and childbirth should be evidence-based, respectful, woman-centred, and responsive to women's individual circumstances. Skilled health personnel play an important role in identifying and managing complications during childbirth. Access to appropriate maternity services is therefore an important public health concern, particularly in rural and geographically challenging settings.

In India, the National Family Health Survey provides important information on fertility, family planning, and maternal healthcare. The Meghalaya report of the National Family Health Survey-5 (International Institute for Population Sciences [IIPS] & ICF, 2021) provides a broader demographic and health context for examining reproductive behaviour and maternal healthcare in the state. However, state-level estimates cannot fully explain the variations that may exist within individual villages and communities.

Among the Garo population of Meghalaya, traditional practices and community-based support systems may continue to influence reproductive experiences. Traditional birth attendants, commonly referred to as dais, may be familiar and accessible to women, particularly where institutional healthcare is difficult to reach. At the same time, hospital delivery offers access to trained healthcare professionals and facilities equipped to respond to obstetric complications. These two forms of delivery assistance should therefore be examined in relation to healthcare access, cultural preferences, and women's reproductive histories rather than treated as interchangeable indicators of the quality of care received.

An important distinction must be made between fertility and childbirth care. Fertility refers to actual reproductive outcomes, whereas place of delivery and the identity of the birth attendant relate to the circumstances under which childbirth occurs. The number of live births may be associated with delivery practices because both can reflect other characteristics, such as maternal age and the number of previous pregnancies. However, the place of delivery itself does not necessarily determine how many children a woman has.

Despite the importance of these issues, village-level studies can provide valuable insights into the relationship between maternal reproductive histories and childbirth practices. An examination of Bajengdoba village can contribute to a more localised understanding of fertility patterns among mothers in rural West Garo Hills.

The present study therefore investigates the distribution of mothers according to place of delivery and person conducting delivery and compares their mean numbers of live births. It also considers the implications of the observed differences for maternal healthcare and reproductive health research in rural Meghalaya.

➤ *Statement of the Problem*

Maternal healthcare and fertility are interconnected components of reproductive health, but their relationship is not always straightforward. In rural communities, women may have different experiences of childbirth depending on their access to hospitals, availability of health personnel, family circumstances, and reliance on traditional birth attendants.

In Bajengdoba village, the supplied data indicate that home deliveries and deliveries assisted by dais account for a substantial proportion of the reported childbirth experiences. The data also show differences in the mean number of live births between mothers according to place of delivery and birth attendant. Nevertheless, these differences require careful examination because women with larger completed families may differ in age, reproductive duration, or other characteristics from women with fewer children.

The central problem addressed by this study is the extent to which place of delivery and the person conducting delivery are associated with the number of live births among mothers in Bajengdoba. Understanding these patterns may help identify areas for further investigation into maternal healthcare access, traditional childbirth practices, and reproductive health awareness.

➤ *Objectives of the Study*

The study has the following objectives:

- To examine the distribution of mothers according to place of delivery in Bajengdoba village.
- To compare the mean number of live births among mothers who delivered in hospitals and at home.
- To examine the distribution of mothers according to the person conducting delivery.
- To compare the mean number of live births among mothers assisted by health personnel and traditional birth attendants.
- To discuss the implications of the findings for maternal healthcare and reproductive health services in rural Meghalaya.

II. METHODOLOGY

The study was conducted in Bajengdoba village, West Garo Hills district, Meghalaya, India, using a quantitative, community-based approach. The analysis included 212 mothers who reported a total of 598 live births. Data were classified according to place of delivery (hospital or home) and person conducting delivery (health personnel or dai). Descriptive statistics, including frequencies, percentages, means, and standard errors (SE), were used to summarise the data. One-way analysis of variance (ANOVA) was employed to compare mean live births between the groups, with statistical significance set at the 5% level ($p < 0.05$). The findings were interpreted as associations rather than causal relationships.

III. RESULTS

Table 1 Fertility by the Place of Delivery

Place of delivery	Bajengdoba		
	No. of mothers	No. of live births	Mean live births $\pm$ SE
Hospital (%)	56 (26.4)	117	2.09 $\pm$ 0.16
Home (%)	156 (73.6)	481	3.08 $\pm$ 0.13

Table 1 shows that home delivery was more common than hospital delivery among the mothers included in the study. Of the 212 mothers, 156 (73.6%) reportedly delivered at home, compared with 56 (26.4%) who delivered in hospitals.

The mean number of live births was higher among mothers who reported home delivery (3.08 ± 0.13) than among those who reported hospital delivery (2.09 ± 0.16).

Table 2 ANOVA for Live Births Between the Place of Delivery

Source of variation	Bajengdoba				
	SS	Df	MS	F	p-value
Between groups	40.71	1	40.71	16.62	p <0.001

The reported ANOVA indicates a statistically significant difference in mean live births between the hospital and home-delivery groups ($F = 16.62$, $p < .001$).

Table 3 Fertility by the Persons Conducting Delivery

Persons conducting delivery	Bajengdoba		
	No. of mothers	No. of live births	Mean live births $\pm$ SE
Health personnel (%)	59 (27.8)	127	2.15 $\pm$ 0.15
Dai (%)	153 (72.2)	471	3.08 $\pm$ 0.13

Table 3 shows that 153 mothers (72.2%) reported deliveries conducted by dais, whereas 59 mothers (27.8%) reported assistance from health personnel. The mean number

of live births was 3.08 ± 0.13 among mothers assisted by dais and 2.15 ± 0.15 among mothers assisted by health personnel.

Table 4 ANOVA for Live Births Between the Persons Conducting Delivery

Source of variation	Bajengdoba				
	SS	Df	MS	F	p-value
Between groups	36.50	1	36.50	14.77	p <0.001

The reported ANOVA indicates a statistically significant difference in mean live births between mothers assisted by health personnel and those assisted by dais ($F = 14.77$, $p < .001$).

IV. DISCUSSION AND CONCLUSION

The present study found that home delivery was more common than hospital delivery among mothers in Bajengdoba, with 73.6% reporting home delivery and 26.4% reporting hospital delivery. This finding is consistent with the qualitative study conducted by Sarkar et al. (2018) in the Bhoirymbong area of Meghalaya, where home delivery assisted by traditional birth attendants was also common. The researchers identified financial constraints, transportation difficulties, poor road conditions, distance from health facilities, and community confidence in traditional birth attendants as factors influencing women's choice of delivery setting. The similarity between the two studies suggests that home delivery remains an important subject for maternal healthcare research in rural Meghalaya

The predominance of deliveries conducted by dais in the present study further reflects the importance of traditional birth attendants in the reported childbirth experiences of the respondents. This finding is comparable to the observations of Sarkar et al. (2018), who reported that women in their study area often relied on traditional birth attendants because of community confidence in their services. The study also suggests that Meghalaya are still dependent on the traditional system of giving birth at home, the percentage conducted by skilled birth attendant has been very low, this implies that the deliveries conducted at home are mostly assisted by the traditional birth attendant like the 'Dai' or family members and relatives (Thadani, 2021).

An important finding of the present study is that mothers who reported home delivery had a higher mean number of live births (3.08 ± 0.13) than mothers who reported hospital delivery (2.09 ± 0.16). The reported ANOVA indicated a statistically significant difference between these groups ($F = 16.62$, $p < .001$).

This result can be discussed alongside Sarkar et al. (2018), who identified maternal age and parity as factors associated with home delivery in rural Meghalaya. Their findings suggest a possible demographic explanation for the pattern observed in Bajengdoba. Mothers with more live births may be older or have longer reproductive histories, and these characteristics may also be associated with their experiences of childbirth and access to institutional healthcare.

The present study also found that mothers who reported deliveries conducted by dais had a higher mean number of live births (3.08 ± 0.13) than mothers assisted by health personnel (2.15 ± 0.15). The reported ANOVA showed a statistically significant difference between the two groups ($F = 14.77, p < .001$). This pattern is consistent with the broader observation by Sarkar et al. (2018) that traditional birth attendants were frequently involved in home deliveries in rural Meghalaya.

The findings can further be discussed in relation to Pautunthang (2024), who analysed National Family Health Survey data from 1992 to 2021 to examine fertility preferences among women in Meghalaya. The study reported a decline in ideal family size over time and identified education, media exposure, wealth, and religion as factors associated with fertility preferences.

Pautunthang's findings demonstrate that fertility patterns need to be understood in relation to women's preferences and the wider social environment. In comparison, the present study focuses on actual live births according to place of delivery and birth attendant. These outcomes represent different dimensions of reproductive behaviour: fertility preferences concern the number of children women desire, while live births reflect their actual reproductive histories.

One of the main findings is the predominance of reported home delivery in Bajengdoba. Approximately three-quarters of the mothers in the sample delivered at home, while about one-quarter delivered in hospitals. This pattern highlights the importance of understanding local maternal healthcare practices and the accessibility of institutional childbirth services.

Several factors may influence the choice of delivery setting, including geographical distance, transportation, perceived costs, household decision-making, cultural familiarity, previous childbirth experiences, and the availability of maternity services.

The WHO (2018) recommends quality, respectful, evidence-based care during childbirth. Improving access to such care requires attention not only to the availability of health facilities but also to women's experiences, preferences, and practical ability to reach appropriate services. In rural areas, transport, referral arrangements, communication, and community awareness may be important considerations for maternal health planning.

The findings have practical implications for maternal healthcare planning in Bajengdoba and comparable rural communities. The high proportion of home deliveries suggests the need to investigate the availability, accessibility, and acceptability of institutional maternity services. Local health programmes could assess transport facilities, referral pathways, community awareness, and communication between healthcare providers and families.

The study also highlights the importance of reproductive health education across the reproductive life course. Such education can provide information about antenatal care, the benefits of skilled attendance, recognition of obstetric warning signs, birth preparedness, and the availability of emergency services. These interventions should be culturally appropriate and designed in consultation with community members.

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