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Original Article

Level of Birth Preparedness among Pregnant Women in Allied Hospitals of RMU, Rawalpindi

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ABSTRACT

Introduction: Birth preparedness is a comprehensive approach to timely utilization of skilled maternal and neonatal healthcare, addressing high maternal mortality rates in developing countries. Increased awareness about birth preparedness can facilitate early decision-making, ensure safe pregnancies, and minimize delivery-related complications.

Objectives: To assess the level of birth preparedness among pregnant women in allied hospitals of RMU and to identify various factors associated with birth preparedness.

Materials and Methods: This cross-sectional study involved 270 third-trimester pregnant women from allied hospitals of RMU. Participants completed a self-structured questionnaire. Data analysis was conducted using SPSS version 25, with frequencies and percentages calculated for categorical variables. The Chi-square test determined associations between birth preparedness and numerous factors, with a significance level set at $p < 0.05$.

Results: Of the total 270 pregnant women, 40.7% were found to be prepared for birth. The factors significantly associated with birth preparedness were the mother's education (p=0.045), the husband's occupational status (p=0.012), family income (p=0.000), increasing age of the women (p=0.004), and the last place of childbirth (p=0.016).

Conclusions: The level of birth preparedness in Rawalpindi, Punjab, stands at 40.7%. To enhance maternal and neonatal outcomes, it is essential to bolster counseling on the benefits of birth preparedness. This can be achieved through awareness programs led by community health workers.

Keywords: antenatal care; maternal mortality rate; birth preparedness; birth awareness.

Introduction

Early identification of antenatal risk factors and early preparation for dealing with them are necessary for both maternal and neonatal survival. Despite several global efforts, maternal death during childbirth remains an unresolved challenge for developing countries[1]. Birth preparedness is defined as a comprehensive and extensive approach aimed at promoting the timely utilization of skilled maternal and neonatal health care[2]. It is a crucial part of antenatal care[3] and involves timely planning for both normal and complicated deliveries. It includes identifying a skilled birth attendant, choosing a place for delivery, deciding on the type of delivery, arranging for transport and money, identifying the blood group, and finding a compatible donor[6]. It also includes being aware of any health issues that may lead to complications during or after childbirth[1]. The maternal mortality rate (MMR) in developing countries, including Pakistan, is 19 times higher compared to developed countries. Sub-Saharan Africa and South Asia alone account for 87% of global maternal deaths[4]. A low level of knowledge about birth preparedness and danger signs, along with illiteracy, are major factors responsible for this high MMR[1]. Practicing birth preparedness in developing countries can play a significant role in reducing both maternal and neonatal mortality rates[5].

In September 2000, eight Millennium Development Goals (MDGs) were developed, one of which aimed to reduce the MMR by 75%. However, MMR remains unacceptably high in many developing countries[3]. One of the major reasons behind this high MMR is the low level of knowledge and practice of birth preparedness in developing countries compared to developed countries. A study conducted in Saudi Arabia showed that 65% of women had a good level of knowledge about birth preparedness[7]. In contrast, research conducted in Dodoma, Tanzania (a developing country), showed a low level of knowledge about obstetric and newborn danger signs, as well as a low level of birth preparedness[8]. Key factors contributing to this low level of birth preparedness include low socioeconomic status, few or no antenatal visits, and illiteracy[8]. Research conducted in Kenya showed a satisfactory level of birth preparedness at about 56.7%[9]. A study conducted in KPK, Pakistan, like most other developing countries, revealed a low level of birth preparedness[10].

The findings of this study help to identify the gap and strengthen the action to increase the practice of birth preparedness among pregnant women. Awareness of birth preparedness will eventually enable women and their families to make early choices. Birth preparedness practices will ensure that women have safe pregnancies and minimize delivery-related complications[12]. Birth preparedness is a safer and more effective motherhood strategy that will help reduce the maternal mortality rate, particularly in developing countries.

The objectives of this study are to assess the level of birth preparedness among pregnant women in the allied hospitals of RMU and to identify and recognize various factors associated with birth preparedness.

Materials and Methods

This study was conducted in three allied hospitals of RMU: Benazir Bhutto Hospital, Holy Family Hospital, and District Health Quarters in Rawalpindi. The study focused on pregnant women in their third trimester, aged 15-49 years, either visiting Gynecology outpatient departments or being admitted from April to October 2022. Using a descriptive cross-sectional design and non-random convenient sampling, a sample size of 270 was calculated based on WHO guidelines.

Table-I Table showing the association of numerous factors with birth preparedness

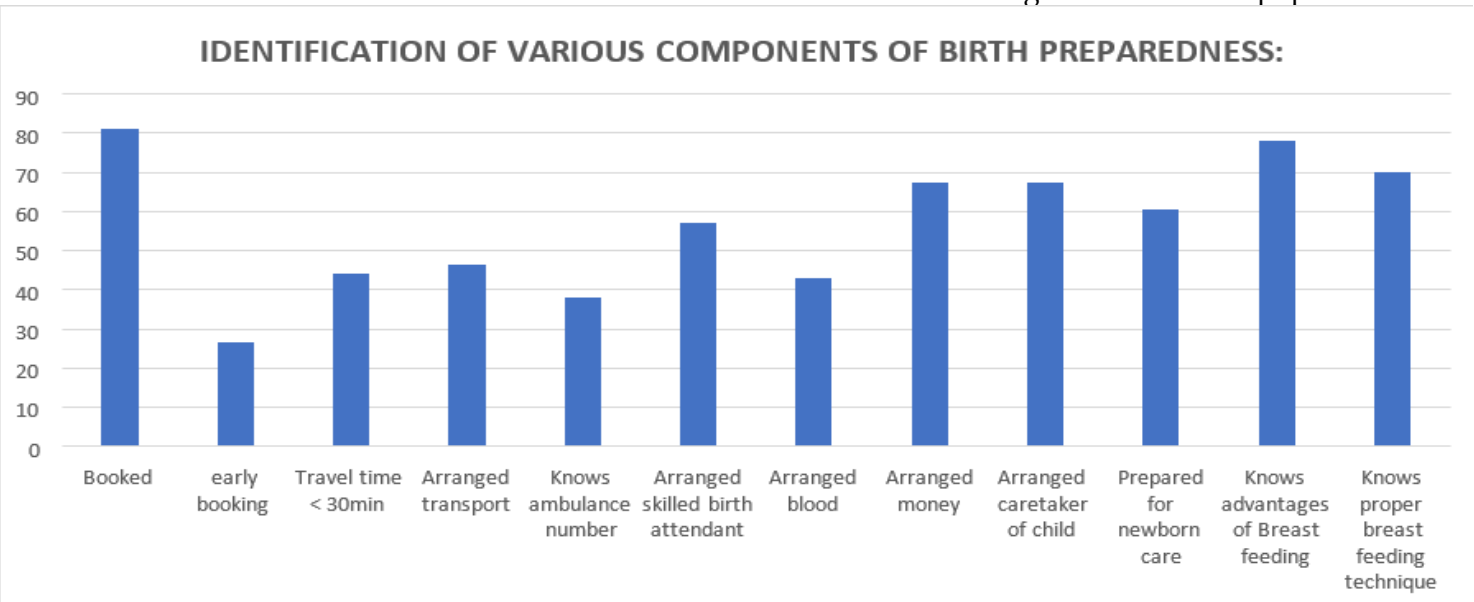
Sociodemographic & Obstetric characteristics	Significance (p-value)	Confidence Interval (I)
Age	0.004*	1.15-1.26
Residence	0.588	1.21-1.34
Father's education	0.284	1.88-2.15
Mother's education	0.045*	1.69-1.95
Father's occupation	0.012*	2.51-2.75
Mother's occupation	0.604	3.69-3.87
Family income	0.000*	1.86-2.16
Parity	0.05*	2.23-2.48
Last place of childbirth	0.016*	1.03-1.11
Previous C-Section	0.285	1.52-1.66

Pregnant women meeting the inclusion criteria were included, while those in labor or experiencing emergencies were excluded. Data collection employed a self-structured questionnaire covering sociodemographic characteristics, obstetric characteristics, birth preparedness components, and newborn care.

Interviews were conducted after obtaining informed consent. Data analysis was performed using SPSS version 25, with quantitative variables presented as mean ± standard deviation and categorical variables as frequencies and percentages. The Pearson Chi-Square test assessed associations between birth preparedness and several factors, with a significance level of $p < 0.05$. Ethical considerations included approval from hospital authorities, maintaining participant confidentiality, and obtaining consent prior to data collection.

Results

A total of 270 pregnant women in the third trimester participated in this study. 63.3% of the population were less than 30 years of age. 184 (68.1%) were residing in urban areas. 48.9% had no formal education, 21.9% had primary education, 23.7% had secondary education, and 5.6% had university-level education. Most participants (70%) had a family income of less than 30,000 PKR. The 25% of the women were experiencing their first pregnancy. 92.5% of the women gave birth to their last child in a health institution setting. 37.8% of the population



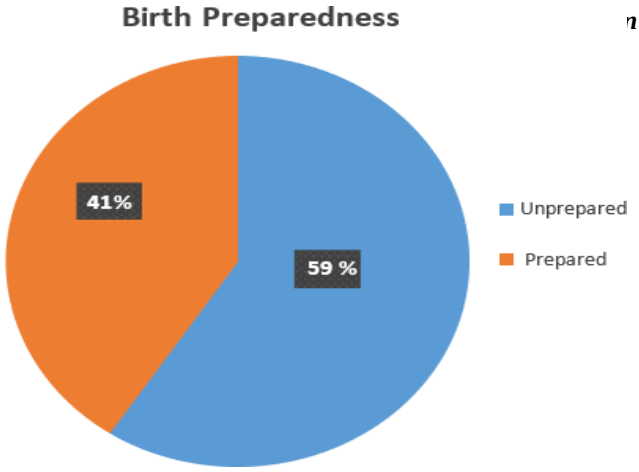


Figure 2: Pie chart showing the level of Birth Preparedness

Overall, a low level of birth preparedness was found. Out of the 270 pregnant women, 110 (40.7%) were found to be prepared for birth, while 160 (59.3%) were unprepared. Birth preparedness was assessed based on a total of 12 components. A woman who identified 7 or more components was considered prepared for birth, while the rest were deemed unprepared. Most of the population (81.1%) was booked. Only 26.5% had early bookings. Additionally, only 44.7% of the total population reported travel times of less than 30 minutes. 46.3% had arranged for emergency transportation, while 37.8% of the population knew the ambulance number. 56.7% had arranged for a skilled birth attendant. 42.6% had arranged for blood, and 67% for money. Moreover, 67% of the population had identified a care provider for the child if needed. 60.4% had made arrangements for the newborn, and 77.8% knew the advantages of breastfeeding, while 70% of them knew the proper breastfeeding technique.

The chi-square test shows that family income (p=0.000), educational status of the mother(p=0.045), occupational status of the husband (p=0.000), age of the mother (p=0.004), and last place of childbirth (p=0.016) were found to have a significant and very strong association with birth preparedness. Women who had a family income of more than 40,000 were found to be three times more prepared for birth than those with a family income of less than 20,000 (p=0.000). Among women having no formal education, only 40.9% of them were prepared for the birth, while among those who had graduated, 66.7% of them were prepared for the birth (p=0.045). The occupational status of the husband was also found to be a significant predictor of birth preparedness (p=0.037).

Birth preparedness was reported most in the women whose husbands were government employees, and it was reported least in the women whose husbands were not working. Other factors having a positive association with birth preparedness were parity, i.e., women having more children were more prepared for birth (p = 0.056), and residence, i.e., the urban population was more prepared for birth as compared to the rural population. Previous birth-related complications and pre-existing medical conditions were also found to have an impact on birth preparedness but there was not a significant association between them. No association was found between a father's education and birth preparedness.

Discussion

Birth preparedness was evaluated based on 12 components. Women identifying 7 or more were deemed prepared, while those identifying fewer were considered unprepared. However, overall preparedness fell short, with only 40.7% of the population deemed ready for birth. This finding is consistent with the level of birth preparedness in some developing countries like Ethiopia (37%) [13], Cameroon (46%) [15], and Southwest Ethiopia (41%) [17]. The birth preparedness level reported in this study is lower compared to that reported in Ghana (78%) [16], North India (67.5%) [6], Saudi Arabia (65%) [7], and Southeast Nigeria (69.7%) [11] due to better health awareness. On the other hand, the study reported a higher birth preparedness compared to some other developing countries such as Tanzania (16.7%) [1], Kenya (11.4%) [19], Bangladesh (12.2%) [8], and even when compared to other provinces of Pakistan, such as KPK, where the birth preparedness level was found to be low[10] particularly owing to the low educational attainment by family and demand for a large family size due to social and cultural pressures. Similarly, in Thatta Sindh, only 21.2%[14] of the population was prepared for birth due to traditional societies and gender discriminatory practices.

Out of the 12 components on which birth preparedness was assessed, the most mentioned component was booking; 81.1% of the population was booked. Only 44.7% reported a travel time of 30 minutes or less, indicating that these women understand the importance of reaching the healthcare facility as early as possible at the time of delivery. Additionally, 46.3% (128) of the total population had arranged for emergency transportation. This finding is similar to the findings in Uganda (46%) [12] and Sindh (40.8%) [12]. In Sindh, this is practiced mostly in urban societies.

Only 37.8% of the population knew the ambulance number. A good portion of the population, 56.7%, had arranged for a skilled birth attendant. This finding was lower than in Uganda, where 66.2% of the population had arranged for a skilled birth attendant. In Thatta Sindh, the level of arrangement for a skilled birth attendant was 39.9%, which is less compared to our finding in Rawalpindi, Punjab. This may be ascribed to the fact that most of the population in Thatta lives below the poverty line and is mostly uneducated.

Only 42.6% (115) of the total women's population had arranged for blood. This component of birth preparedness was better prepared compared to Uganda, Ethiopia, and Thatta Sindh, where only 15%[12], 7.8%[13], and 18.2%[14], respectively, had made arrangements. A major share of the population in our study, 67%, had arranged for money. This finding was consistent with SNNPR Ethiopia, where 65% of the population had arranged the money needed for delivery[14]. Additionally, 67% of the population had identified a care provider for their child if needed. 60.4% of the total population had made adequate arrangements for the care of their newborn. A very large proportion, 77.8%, knew the advantages of breastfeeding, while 70% knew the proper technique of breastfeeding.

Maternal education was found to have a significant impact on birth preparedness. Out of the total uneducated women's population, only 40.9% were prepared for birth, while of those who had achieved university-level education, 66.7% were prepared for birth. This finding is consistent with studies conducted in Tanzania[1] and South Ethiopia[3]. Educated women are empowered and more aware of birth-related complications. They can autonomously make decisions about seeking healthcare and grasp the importance of birth preparedness.

Birth preparedness is significantly linked to the spouse's occupation. Government employee spouses had the highest preparedness (64.7%) compared to private employees (43.3%) and daily wagers (35.8%). Only 33% of women with unemployed spouses were prepared. This finding is consistent with a study conducted in Southern Ethiopia[3] but contradicts the results of studies in North India[6], Saudi Arabia[7], and Southwest Ethiopia[17]. Stable occupational status likely enables better birth preparations, as individuals can make necessary arrangements and provide their wives with greater access to healthcare facilities.

Family income significantly influenced birth preparedness (p=0.00). Only 25% of women with a family income below 20,000 were prepared for birth, while 76.9% of those with a family income exceeding 40,000 were prepared. This finding is consistent with research conducted in North India[6], a rural health center in Mandara, Pakistan[20], and Thailand[22]. The link between birth preparedness and family income may stem from improved access to healthcare facilities and better arrangements for delivery. Our findings differ from those in Saudi Arabia, where family income wasn't linked to birth preparedness[7].

The mother's age emerged as another significant predictor (p=0.004). This finding corresponds to the study conducted in Kenya[9]. Similar findings were reported in the Kassena Nankana district of Ghana[21]. Our study found that 59.2% of women above 30 were prepared for birth, while only 36.7% below 30 were prepared. This increase in preparedness with age may be attributed to gaining experience and increased confidence in making health-related decisions as women grow older.

Birth preparedness significantly varied depending on the last place of childbirth. For women delivering in a hospital or healthcare setting, 47.7% were prepared, compared to only 14.3% prepared for those delivering at home. This finding is consistent with the results of Thatta, where women delivering previously in a healthcare setting were found to be two times more prepared[14]. Women delivering in healthcare settings receive guidance from healthcare workers, leading to greater awareness and knowledge of birth preparedness and newborn care.

Parity significantly influenced birth preparedness, with women having two or three children being more prepared compared to those with one or no children, likely due to increased experience with each childbirth.

Residence also played a role, but not significantly, with 41.8% of urban residents and 38.4% of rural residents prepared for birth. This aligns with findings from Southeast Nigeria[5]. Obstetric characteristics such as previous birth-related complications and pre-existing medical conditions had little association with birth preparedness. Father's education showed no association with birth preparedness in our study.

However, this study is not without limitations. There is a need for larger sample size to improve generalisability and sampling should be random to avoid bias. Moreover, this study was only conducted among pregnant women. Therefore, to overcome the limitations encountered in this study, it is recommended that future researchers go further in assessing the roles of the family and the community in birth preparedness by following a different approach and using other study designs like follow-up studies.

Conclusion

The proportion of women who were found to be prepared for birth (when birth preparedness was assessed on the basis of various components reported by them) was found to be low, i.e., 40.7% in Rawalpindi, Punjab. It is possible to increase the general level of birth readiness through a variety of methods. These

include educating the public about birth preparedness through community health workers, expanding the number of antenatal care clinics and the number of neonatal health care providers in these clinics, counseling expectant mothers on the importance of being prepared for childbirth at every antenatal visit, and empowering women. It is crucial to prioritize these interventions in order to ensure better outcomes for both mothers and newborns. Additionally, continuous monitoring and evaluation of the effectiveness of these programs will be essential to achieving sustainable improvements in birth preparedness.

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