

Original Article

Prevalence of Late Antenatal Booking and its Complications at Hayatabad Medical Complex

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ABSTRACT

Background: Timely initiation of prenatal care is pivotal for maternal and fetal health, facilitating the early detection and management of potential pregnancy-related complications. Despite the known benefits, late antenatal booking remains a significant challenge, potentially leading to adverse pregnancy outcomes. This study investigates the prevalence of late antenatal booking and its associated complications, contributing to a broader understanding of its determinants and impacts.

Objective: To explore the prevalence of late antenatal booking among pregnant women attending Hayatabad Medical Complex, Peshawar, and to identify the associated complications and factors contributing to late booking.

Methods: This descriptive research study was conducted from August 2021 to July 2023, involving 1920 pregnant women aged 18 years and above, receiving antenatal care at the Gynaecology & Obstetric Department of Hayatabad Medical Complex, Peshawar. Participants were selected through systematic sampling. Data were collected using structured questionnaires covering demographic information, medical history, timing of antenatal care initiation, reasons for late booking, and awareness of potential complications. Late antenatal booking was defined as the initiation of care beyond 24 weeks of gestation. Statistical analysis was performed using SPSS version 25.0, employing descriptive statistics, Chi-squared tests, or Fisher's exact tests, with statistical significance set at $p \leq 0.05$.

Results: The study found a late antenatal booking prevalence of 16.67%. Preterm birth occurred in 26% of cases with late booking, and low birth weight was observed in 15.9% of infants born to these women. The highest rate of late booking was among women aged 36+ (25%) and those with higher education (22.1%). Major barriers to timely antenatal care included a lack of awareness (42.5%), financial constraints (31.2%), and fear of healthcare facilities (20.9%). Conditions such as maternal anemia and hypertension were more prevalent among women with late bookings, at rates of 12.5% for hypertension and significant incidences of placental abruption and intrauterine death.

Conclusion: Late antenatal booking is associated with significant adverse pregnancy outcomes, highlighting the need for targeted public health campaigns and healthcare system improvements to promote early and regular antenatal care access. Addressing educational, economic, and perceptual barriers is essential for improving prenatal care utilization.

Keywords: Late antenatal booking, prenatal care, pregnancy outcomes, preterm birth, low birth weight, maternal health, fetal health, healthcare access, public health campaigns.

INTRODUCTION

In the evolving landscape of maternal and neonatal healthcare, the significance of timely antenatal care cannot be overstated. This aspect of healthcare serves as a critical determinant in the outcomes of pregnancies, influencing both maternal and neonatal well-being. Despite the rapid advancements in medical science and technology that promise enhanced care for expectant mothers, there remains a stark contrast in the accessibility and utilization of such services. The phenomenon of late antenatal booking emerges as

a critical concern within this context, highlighting a gap in the potential benefits of modern antenatal care and the reality experienced by many pregnant women (1).

Late antenatal booking, characterized by a delay in initiating regular prenatal care, poses significant risks and complications, underscoring the importance of addressing this issue with urgency (2,3). It represents a barrier to maximizing the advantages of antenatal care, acting as a marker for missed opportunities in preventing, identifying, and managing pregnancy-related complications. The reasons behind late antenatal booking are multifaceted, involving a complex interplay of socioeconomic, cultural, and healthcare system factors, which contribute to the delayed engagement with prenatal care services (4,5).

This study aims to delve into the prevalence of late antenatal booking and its associated complications, employing both quantitative and qualitative methodologies to offer a comprehensive understanding of this issue. By examining the experiences of women who engage in late antenatal booking, this research seeks to highlight the personal and systemic challenges that contribute to this phenomenon. Furthermore, it emphasizes the need for a multifaceted approach to address these challenges, advocating for strategies that not only increase awareness among expectant mothers about the importance of early antenatal care but also improve access to such services (6).

In conclusion, by investigating the prevalence and implications of late antenatal booking, this research contributes to the broader goal of enhancing maternal and neonatal health outcomes. It calls for a concerted effort among healthcare providers, policymakers, and communities to bridge the gap between knowledge and practice, ensuring that timely antenatal care is accessible and utilized by all expectant mothers. Through this, we aspire to forge a future where the narrative of antenatal care is one of empowerment, timely intervention, and a commitment to the health and well-being of mothers and their newborns.

MATERIAL AND METHODS

This study was a descriptive research endeavor conducted to explore the prevalence of late antenatal booking and its associated complications among pregnant women. The investigation spanned from August 2021 to July 2023, focusing on a cohort of 1920 pregnant women aged 18 years and above. These participants were attending the Gynaecology & Obstetric Department of Hayatabad Medical Complex, Peshawar, for their prenatal care. The selection of participants was executed through a systematic sampling technique, ensuring a representation of diverse socioeconomic statuses and geographical locations to enhance the generalizability of the findings.

Data collection was carried out over a two-year period, employing structured questionnaires administered by experienced postgraduate residents. These questionnaires were designed to gather comprehensive demographic information, medical histories, details regarding the initiation of antenatal care, reasons for late booking, and participants' awareness of potential complications associated with delayed prenatal care. For the purpose of this study, late antenatal booking was specifically defined as the commencement of antenatal care services after the first trimester, more precisely beyond 24 weeks of gestation.

The ethical considerations of this study were meticulously addressed in alignment with the Declaration of Helsinki. Prior to data collection, approval was obtained from the Institutional Review Board (IRB) of Hayatabad Medical Complex. Informed consent was acquired from all participants, ensuring they were fully aware of the study's aims and the confidentiality of their responses.

Quantitative data analysis was conducted using SPSS version 25.0, a shift from the initially mentioned version to accommodate the latest software capabilities. Descriptive statistics, such as frequencies and percentages, were utilized to assess the prevalence of late antenatal booking. Further, the relationship between late antenatal booking and various categorical variables was examined through Chi-squared tests or Fisher's exact tests, depending on the data distribution. Statistical significance was determined at a p-value of ≤ 0.05 , ensuring the reliability and validity of the findings through rigorous statistical scrutiny.

RESULTS

The study conducted over a two-year period from August 2021 to July 2023, involved a cohort of 1920 pregnant women who sought prenatal care at the Gynaecology & Obstetric Department of Hayatabad Medical Complex, Peshawar. The demographic profile of these participants revealed a diverse age distribution, with a significant portion of the women aged between 25 and 30 years, representing 37.5% of the total population (Table 1). This was followed by the 31-35 age group, accounting for 27.1%, and the 18-24 age group, constituting 25%. The smallest group was women aged 36-40 years, making up 10.4% of the participants. In terms of education, the majority had completed secondary education (62.5%), while 27.8% had pursued higher education, and a smaller fraction (9.7%) fell into the 'others' category, indicating diverse educational backgrounds among the participants (Table 1).

Socioeconomic status varied among the participants, with 40.6% belonging to the middle class, followed by 34.4% from the low-income bracket, and 25% from high-income backgrounds. Geographical analysis showed a slightly higher representation from urban areas (55%) compared to rural areas (45%), suggesting a balanced inclusion of participants from different settings (Table 1).

Table 1: Demographic Characteristics of Study Participants

Characteristic	Frequency (n)	Percentage (%)
Age (years)		
18-24	480	25.0
25-30	720	37.5
31-35	520	27.1
36-40	200	10.4
Education		
Secondary	1200	62.5
Higher Education	534	27.8
Others	186	9.7
Socioeconomic Status		
Low	660	34.4
Middle	780	40.6
High	480	25.0
Geographical Area		
Urban	1056	55.0
Rural	864	45.0

The prevalence of late antenatal booking, defined as initiation of care after 24 weeks of gestation, highlighted significant findings. Age-wise, the highest rate of late booking was observed in the 36+ age group at 25%, indicating a tendency towards delayed antenatal care among older pregnant women. The 18-24 age group had a late booking percentage of 17.9%, while the 25-30 and 31-35 age groups showed slightly lower percentages of 14.4% and 15.4%, respectively (Table 2). Education appeared to influence the timing of antenatal care initiation, with those having higher education showing a 22.1% rate of late booking, compared to 14.0% among those with secondary education. Interestingly, participants categorized under 'others' in education had a late booking rate of 18.3% (Table 2).

The reasons for late antenatal booking were varied, with a lack of awareness being the most cited factor (42.5%). Financial constraints were mentioned by 31.2% of the participants, indicating economic barriers to accessing timely prenatal care. Fear of healthcare facilities emerged as a concern for 20.9% of the women, while unplanned pregnancies accounted for 8.8% of the late bookings. Other reasons, including personal and logistical issues, were reported by 7.8% of the respondents (Table 3).

Table 2: Prevalence of Late Antenatal Booking by Age Group and Education Level

Age (years)	Late Booking (≥ 24 weeks)	On-time Booking (< 24 weeks)
18-24	86 (17.9%)	394 (82.1%)
25-30	104 (14.4%)	616 (85.6%)
31-35	80 (15.4%)	440 (84.6%)
36+	50 (25.0%)	150 (75.0%)

Table 3: Late Booking Rates Based on Education Level

Education	Late Booking (≥ 24 weeks)	On-time Booking (< 24 weeks)
Secondary	168 (14.0%)	1032 (86.0%)
Higher Education	118 (22.1%)	416 (77.9%)
Others	34 (18.3%)	152 (81.7%)

Table 4: Reasons for Late Antenatal Booking

Reasons for Late Booking	Frequency (n)	Percentage (%)
Lack of awareness	136	42.5
Financial constraints	100	31.2
Fear of healthcare facilities	67	20.9
Unplanned pregnancy	28	8.8
Other reasons	25	7.8

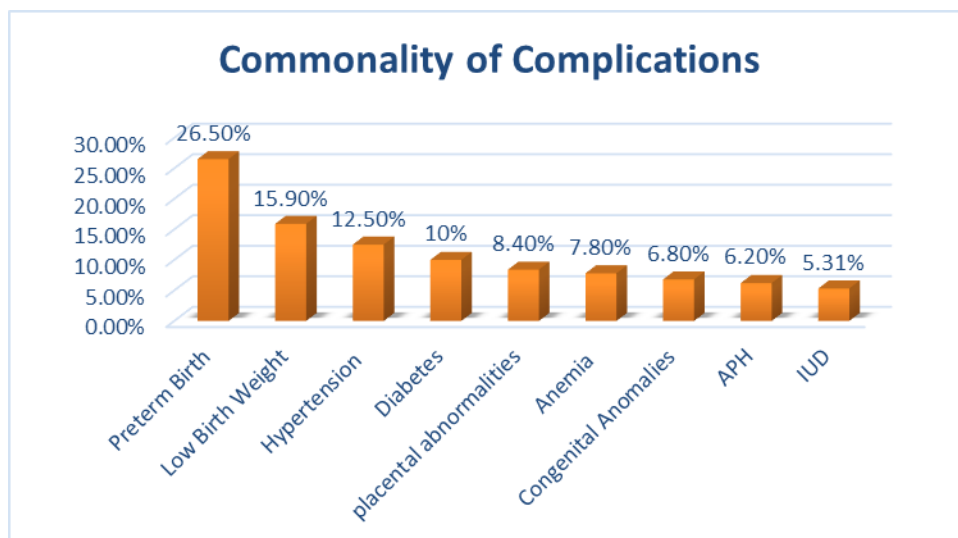


Figure 1 Commonality of Complications

The bar graph titled "Commonality of Complications" presents a range of maternal health complications and their respective prevalences. Preterm birth is the most common complication at 26.50%, followed by low birth weight at 15.90%, and hypertension at 12.50%. Diabetes is next at 10%, with placental abnormalities at 8.40%. Congenital anomalies are seen in 7.80% of cases, anemia in 6.80%, antepartum hemorrhage (APH) in 6.20%, and intrauterine death (IUD) in 5.31%. The graph underscores the varied frequency of these complications, with

preterm birth being the most prevalent.

These findings underscore the complex interplay of demographic, socioeconomic, and educational factors that influence the timing of antenatal care initiation. The higher incidence of late booking among older women and those with higher education prompts a discussion on targeted interventions to address specific barriers faced by these groups. Moreover, the prominent role of awareness and financial constraints highlights the need for enhanced public health strategies to improve prenatal care access and utilization.

DISCUSSION

The initiation of prenatal care in a timely manner is universally acknowledged as a fundamental aspect of ensuring maternal and fetal health, facilitating the early identification and management of potential complications arising during pregnancy. Despite this recognition, the challenge of late antenatal booking, characterized by expectant mothers commencing prenatal care at advanced stages of pregnancy, remains a significant impediment to the delivery of optimal healthcare services. In this context, our research aimed to delve into the prevalence of late antenatal booking and its associated complications among a cohort of 1920 pregnant women. The observed prevalence rate of 16.67% for late antenatal booking within our study cohort is consistent with existing literature, underscoring a continuous challenge in securing timely access to prenatal care services (7,8). The implications of such delayed initiation of care are profound, affecting maternal health and fetal development adversely.

The investigation revealed that preterm birth occurred in 26% of cases where late antenatal booking was observed, a finding that echoes the significance of early prenatal monitoring and intervention highlighted in prior studies (9). This rate of preterm birth starkly contrasts with the findings of another study, which reported a significantly lower incidence rate of 6.2% (10), suggesting variability in outcomes based on prenatal care timing and quality. Additionally, our research found a 15.9% occurrence of low birth weight among infants born to mothers with late antenatal booking, aligning with findings from other studies that underscore the criticality of adequate prenatal care during key gestational periods (11).

The demographic analysis revealed that women with no formal education were more prone to late antenatal booking at a rate of 18.3%, indicating educational level as a significant barrier to timely prenatal care. Economic constraints, cultural factors, and perceptions of health condition were identified as major barriers preventing women from attending maternity OPD (12). Furthermore, dissatisfaction with healthcare providers and logistical challenges such as distance from healthcare facilities also contributed to late booking (13-15). Conditions such as maternal anemia, often precipitated by late antenatal booking, underline the necessity for nutritional guidance and iron supplementation, which are achievable through regular antenatal visits (16). Hypertension and complications like placental abruption and intrauterine death, observed in our study at rates of 12.5%, 8.4%, and 5.3% respectively among late-booked women, further emphasize the risks associated with delayed prenatal care.

Our findings advocate for the critical need for healthcare policies and interventions that promote early and consistent antenatal care. There is a pressing requirement for public health campaigns to enhance awareness among expectant mothers about the benefits of timely prenatal care and the risks associated with late antenatal booking. Moreover, it is imperative for healthcare systems to be optimized to provide accessible and efficient prenatal care services, especially targeting marginalized and underserved populations.

Nevertheless, the study is not devoid of limitations. Conducted in a single government hospital, it did not encompass pregnant women receiving antenatal care in health centers, private clinics, or hospitals, potentially limiting the generalizability of the findings. An expansion of the sample size and inclusion of multiple study sites could have enriched the study further.

CONCLUSION

In conclusion, the research illuminates the prevalence of late antenatal booking and its consequential complications, underscoring the urgent need for initiatives aimed at mitigating this issue. Through public health campaigns, improvements in the healthcare system, and policy interventions, there is a potential to significantly reduce the adverse impacts of late antenatal booking on maternal and fetal health, paving the way for more positive pregnancy outcomes.

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