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Assessment of the Characteristics and Clinical Outcomes of Un-Booked Obstetric Patients at Tertiary Care Hospital of Southern Punjab

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ABSTRACT

Un-booked obstetric patients often lack adequate antenatal care, leading to increased risks of maternal and neonatal complications. Understanding the characteristics and clinical outcomes in this population is essential to improve healthcare delivery and reduce disparities **Objectives:** To analyze the characteristics and clinical outcomes of un-booked obstetric patients presented at Tertiary Care Hospital in Rahim Yar Khan. **Methods:** This cross-sectional study analyzed the outcomes of 384 un-booked obstetric patients presented at the Department of Obstetrics and Gynecology in a Tertiary Care Hospital, between July 2022 to June 2023 aged 18-35 years. obstetric outcomes including the type of labour, mode of delivery, premature rupture of membranes and postpartum hemorrhage were studied in enrolled patients. **Results:** The mean age and mean gestational age of un-booked obstetric patients were 27.08 ± 4.59 years and 36.31 ± 4.18 weeks respectively. Vaginal deliveries were 257 (66.9%) and C-section was performed in 127 (33.1%) patients. Regarding the type of labor, term and preterm deliveries were 312 (81.3%) and 72 (18.7%), similarly premature rupture of membranes and postpartum hemorrhage were noted in 42 (10.9%) patients and 30 (7.8%) patients. **Conclusion:** It was concluded that un-booked obstetric patients primarily experienced vaginal deliveries with a low incidence of complications such as premature rupture of membranes and postpartum hemorrhage. Parity significantly influenced delivery and labor outcomes, highlighting the need for targeted antenatal care for high-risk groups such as primiparous and nulliparous women. These findings emphasize the importance of improving access to antenatal care to optimize maternal and neonatal outcomes.

INTRODUCTION

In Pakistan and other countries of the world, un-booked obstetric patients are a big problem, especially in developing countries which do not have adequate facilities for antenatal care (ANC). This implies that there is a need to promote and establish maternal healthcare services for women across the world [1, 2]. The causes associated with this situation are therefore complex and include economic and social status, distance, education and culture. These are compounded by poor healthcare facilities, and cultural beliefs that may encourage normal birth practices as opposed to the recommended ones [3, 4]. ANC is significantly associated with an increased risk of maternal and neonatal complications [5, 6]. The women who do not attend antenatal clinics are not taught how to take care of themselves, they do not receive proper nutrition, and they are not checked for complications early. This puts the woman at a higher risk of suffering from serious conditions such as pre-eclampsia, gestational diabetes and preterm labour as well as low birth weight deliveries [2]. Also, these women have a higher risk of adverse neonatal outcomes including stillbirth and neonatal deaths this underlines the need for antenatal care for healthy pregnancy and

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childbirth [7]. Because of these factors, it is important to design interventions for increasing the uptake of antenatal care among women in Pakistan to better fit with their socio-cultural and economic environment. Indeed, strategies such as enhancing the provision of care facilities, and altering attitudes towards pregnancy and child-bearing are some of the few important ways of enhancing attendance to antenatal care [4, 6]. Moreover, it is important to ensure that all pregnant women regardless of their socio-economic or geographic status are provided with the required support for safe pregnancy and childbirth services by addressing the barriers to ANC uptake in the culturally ever-integrating modern healthcare approaches [8, 9]. Effects of un-booked pregnancies do not just remain limited to health issues but also include deep personal and grieving loss for family and society. They highlight the need to work together to make sure that pregnant women get basic essential ANC services in the larger context of improving maternal and neonatal health [10, 11]. Evaluating the characteristics and clinical outcomes of un-booked obstetric patients is crucial, as these individuals face a higher risk of adverse outcomes, including maternal and neonatal mortality, low birth weight, and preterm birth.

This study aims to guide health promotion efforts to increase antenatal care uptake and enhance healthcare facilities' readiness to manage pregnancy-related complications effectively, particularly in resource-limited settings where un-booked pregnancies remain a significant challenge.

METHODS

This prospective cross-sectional study conducted in the Department of Obstetrics and Gynecology, Tertiary Care Hospital, Rahim Yar Khan, from July 2022 to June 2023. The study population consisted of 384 un-booked obstetric patients, defined as those presenting for delivery or emergency obstetric care without any prior recorded antenatal visits. The sample size was calculated using a 49.3% prevalence rate for vaginal delivery in un-booked cases, with a 95% confidence level and a 5% margin of error. A non-probability consecutive sampling technique was employed for patient recruitment. Ethical approval was obtained from the Ethical Review Committee of the hospital (ERB No.CMH-RYK-00102). Written informed consent was secured from all participants before enrollment, ensuring adherence to ethical guidelines. Patients were prospectively recruited upon their admission to the hospital for delivery or emergency obstetric care. A structured proforma was used to record demographic and clinical data during the patient's stay in the hospital. Information collected included age, parity, mode of delivery, labor type (term or preterm), premature rupture of membranes (PROM), postpartum hemorrhage (PPH), income level, education status, and residential area. Data collection was conducted by trained medical personnel through direct interviews with patients and observation of clinical outcomes during labor and delivery. The inclusion criteria included obstetric patients aged 18 to 35 who presented directly to the hospital for delivery. Patients over 35 years, those with systemic diseases such as diabetes mellitus or hypertension, those with a history of uterine rupture, and patients with two or more prior cesarean sections were excluded. All the collected data were analyzed by using SPSS version 25.0. Descriptive statistics, including mean and standard deviation for continuous variables and proportions for categorical variables, were used to summarize patient characteristics and clinical outcomes. Stratification was done about age, gestational age, income status, education status, area of residence and parity. Post-stratification chi-square test was applied to detect the association of these variables with outcome variables i.e. Mode of Delivery, Type of labor, PROM, Maternal Death, and PPH. p-value≤0.05 was considered statistically significant.

RESULTS

A total of 384 un-booked obstetric patients were selected for this study. The mean age and mean gestational age were 27.08 ± 4.59 years and 36.31 ± 4.18 weeks, respectively. The analysis of delivery patterns revealed that vaginal births occurred in 257 (66.9%) patients, while 127 (33.1%) underwent cesarean sections. Most deliveries were at term (312, 81.3%), with 72 (18.7%) classified as preterm. In contrast, preterm deliveries were less common, occurring in 72 (18.7%). Prolonged rupture of membranes (PROM) was relatively rare, with only 42 (10.9%) of patients experiencing this condition. Similarly, the incidence of postpartum hemorrhage (PPH) was low, observed in 30 (7.8%) cases (Table 1).

Table 1: Delivery Outcomes and Complications in Un-booked Obstetric Patients

Variable	Category	Frequency (%)
Mode of Delivery (MOD)	Vaginal	257 (66.9%)
	C-Section	127 (33.1%)
Labor Type	Term	312 (81.3%)
	Preterm	72 (18.7%)
Prolonged Rupture of Membranes	Yes	42 (10.9%)
	No	342 (89.1%)
Postpartum Hemorrhage	Yes	30 (7.8%)
	No	354 (92.2%)

There was no statistically significant association between age group and mode of delivery (p=0.547). Vaginal deliveries were most common in the 18–24 years' age group, with 71 (68.9%), followed by the 25–29 years' group, with 113 (68.5%), and the 30–35 years' group, with 73 (62.9%).

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Cesarean sections accounted for 32 (31.1%), 52 (31.5%), and 43 (37.1%) of deliveries in the respective age groups. The association between gestational age and mode of delivery approached statistical significance (p=0.057). Vaginal deliveries were highest in the 28–31 weeks' group, with 28 (82.4%), followed by the <28 weeks' group, with 18 (78.3%), and the 32–36 weeks' group, with 59 (70.2%). In the 37–41 weeks' group, vaginal deliveries accounted for 152 (62.6%). Cesarean deliveries were most frequent in the 37–41 weeks' group, with 91 (37.4%), compared to 5 (21.7%) in the <28 weeks' group, 6 (17.6%) in the 28–31 weeks' group, and 25 (29.8%) in the 32–36 weeks' group. No significant association was found between income status and mode of delivery (p=0.646). Vaginal deliveries were reported in 91 (64.1%) of the low-income group, 116 (69.0%) of the middle-income group, and 50 (67.6%) of the high-income group. Cesarean deliveries occurred in 51 (35.9%), 52 (31.0%), and 24 (32.4%) of the respective groups. There was no significant association between education status and mode of delivery (p=0.758). Vaginal deliveries were highest among patients with no education, at 34 (73.9%), and lowest in patients with secondary education, at 93 (65.5%). Primary education and higher education groups had 71 (66.4%) and 59 (66.3%) vaginal deliveries, respectively. Cesarean deliveries ranged from 12 (26.1%) in the no-education group to 49 (34.5%) in the secondary education group. The association between residence and mode of delivery was not statistically significant (p=0.234). Vaginal deliveries were more frequent among urban residents, at 154 (69.4%), compared to rural residents, at 103 (63.6%). Cesarean deliveries were observed in 68 (30.6%) of urban residents and 59 (36.4%) of rural residents. A significant association was observed between parity and mode of delivery (p<0.001). Vaginal deliveries were most frequent among primiparous patients, at 143 (81.3%), followed by multiparous patients, at 54 (69.2%), and nulliparous patients, at 60 (46.2%). Cesarean deliveries were highest among nulliparous patients, at 70 (53.8%), followed by multiparous patients, at 24 (30.8%), and primiparous patients, at 33 (18.8%) (Table 2).

Table 2: Association of Mode of Delivery with Different Variables

Different Variables		MOD		Total	p-value
		Vaginal	C-section		
Age Group	18-24 Years	71 (68.9%)	32 (31.1%)	103	0.547
	25-29 Years	113 (68.5%)	52 (31.5%)	165	
	30-35 Years	73 (62.9%)	43 (37.1%)	116	
Gestational Age Group	<28 Weeks	18 (78.3%)	5 (21.7%)	23	0.057
	28-31 Weeks	28 (82.4%)	6 (17.6%)	34	
	32-36 Weeks	59 (70.2%)	25 (29.8%)	84	
	37-41 Weeks	152 (62.6%)	91 (37.4%)	243	
Income Status	Low	91 (64.1%)	51 (35.9%)	142	0.646
	Middle	116 (69.0%)	52 (31.0%)	168	
	High	50 (67.6%)	24 (32.4%)	74	
Education Status	No Education	34 (73.9%)	12 (26.1%)	46	0.758
	Primary Education	71 (66.4%)	36 (33.6%)	107	
	Secondary Education	93 (65.5%)	49 (34.5%)	142	
	Higher Education	59 (66.3%)	30 (33.7%)	89	
Residence	Urban	154 (69.4%)	68 (30.6%)	222	0.234
	Rural	103 (63.6%)	59 (36.4%)	162	
Parity	Nulliparous	60 (46.2%)	70 (53.8%)	130	0.000
	Primiparous	143 (81.3%)	33 (18.8%)	176	
	Multiparous	54(69.2%)	24 (30.8%)	78	

No statistically significant association was observed between age group and PROM (p=0.598). PROM was most frequent in the 18–24 years' group, with 3 (12.6%), followed by the 30–35 years' group, with 14 (12.1%), and the 25–29 years' group, with 15 (9.1%). Among those without PROM, the proportions were similar, with 90 (87.4%) in the 18–24 years' group, 150 (90.9%) in the 25–29 years' group, and 102 (87.9%) in the 30–35 years' group. There was no significant association between gestational age and PROM (p=0.701). PROM was most common in the 32–36 weeks' group, with 11 (13.1%), followed by the 37–41 weeks' group, with 27 (11.1%). PROM was less frequent in the <28 weeks' group, with 2 (8.7%), and in the 28–31 weeks' group, with 2 (5.9%). Most patients without PROM were in the 37–41 weeks' group, with 216 (88.9%). PROM showed no significant association with income status (p=0.848). PROM rates were highest among the low-income group, with 17 (12.0%), followed by the middle-income group, with 18 (10.7%), and the high-income group, with 7 (9.5%). Patients without PROM were predominantly in the middle-income group, with 150 (89.3%). Education status did not show a significant association with PROM (p=0.793). PROM was most frequent among patients with secondary education, with 18 (12.7%), and least frequent among those with no education, with 4 (8.7%). Patients without PROM were most common in the secondary education group, with 124 (87.3%). There was no significant association between residence and PROM (p = 0.368). PROM was more common in urban residents, with 27 (12.2%), compared to rural residents, with 15 (9.3%). Among those without PROM, 195 (87.8%) were urban residents, and 147 (90.7%) were rural residents. PROM showed no significant association with parity (p=0.848). PROM was most frequent among primiparous patients, with 22 (12.5%), followed by nulliparous patients, with 13 (10.0%), and multiparous patients, with 7 (9.0%). Among those without PROM, 154 (87.5%) were primiparous, 117 (90.0%) were nulliparous, and 71 (91.0%) were multiparous (Table 3).

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Table 3: Association of PROM with Different Variables

Different Variables		PROM		Total	p-value
		Yes	No		
Age Group	18-24 Years	3 (12.6%)	90 (87.4%)	103	0.598
	25-29 Years	15 (9.1%)	150 (90.9%)	165	
	30-35 Years	14 (12.1%)	102 (87.9%)	116	
Gestational Age Group	<28 Weeks	2 (8.7%)	21 (91.3%)	23	0.701
	28-31 Weeks	2 (5.9%)	32 (94.1%)	34	
	32-36 Weeks	11 (13.1%)	73 (86.9%)	84	
	37-41 Weeks	27 (11.1%)	216 (88.9%)	243	
Income Status	Low	17 (12.0%)	125 (88.0%)	142	0.848
	Middle	18 (10.7%)	150 (89.3%)	168	
	High	7 (9.5%)	67 (90.5%)	74	
Education Status	No Education	4 (8.7%)	42 (91.3%)	46	0.793
	Primary Education	12 (11.2%)	95 (88.8%)	107	
	Secondary Education	18 (12.7%)	124 (87.3%)	142	
	Higher Education	8 (9.0%)	81 (91.0%)	89	
Residence	Urban	27 (12.2%)	195 (87.8%)	222	0.368
	Rual	15 (9.3%)	147 (90.7%)	162	
Parity	Nulliparous	13 (10.0%)	117 (90.0%)	130	0.848
	Primiparous	22 (12.5%)	154 (87.5%)	176	
	Multiparous	7 (9.0%)	71 (91.0%)	78	

No statistically significant association was observed between age group and PPH (p=0.599). PPH was most frequent in the 18–24 years' age group, with 10 (9.7%), followed by the 25–29 years' group, with 13 (7.9%), and the 30–35 years' group, with 7 (6.0%). Among those without PPH, 93 (90.3%) were in the 18–24 years' group, 152 (92.1%) in the 25–29 years' group, and 109 (94.0%) in the 30–35 years' group. There was no significant association between gestational age and PPH (p=0.434). PPH was most frequent in the 32–36 weeks' group, with 10 (11.9%), followed by the 37–41 weeks' group, with 17 (7.0%). PPH was least frequent in the <28 weeks' group, with 1 (4.3%), and in the 28–31 weeks' group, with 2 (5.9%). Most patients without PPH were in the 37–41 weeks' group, with 226 (93.0%). Income status showed no significant association with PPH (p=0.908). PPH was observed in 12 (8.5%) of the low-income group, 12 (7.1%) of the middle-income group, and 6 (8.1%) of the high-income group. Patients without PPH were most common in the middle-income group, with 156 (92.9%). Education status did not show a significant association with PPH (p=0.395). PPH was most frequent among patients with secondary education, with 15 (10.6%), followed by those with primary education, with 8 (7.5%), and no education, with 3 (6.5%). Patients with higher education had the lowest PPH rate, at 4 (4.5%). Among those without PPH, 127 (89.4%) were in the secondary education group. There was no significant association between residence and PPH (p=0.159). PPH was more frequent among urban residents, with 21 (9.5%), compared to rural residents, with 9 (5.6%). Among those without PPH, 201 (90.5%) were urban residents, and 153 (94.4%) were rural residents. Parity showed a statistically significant association with PPH (p=0.007). PPH was most frequent among primiparous women, with 22 (12.5%), compared to nulliparous women, with 5 (3.8%), and multiparous women, with 3 (3.8%). Among those without PPH, 154 (87.5%) were primiparous, 125 (96.2%) were nulliparous, and 75 (96.2%) were multiparous (Table 4).

Table 4: Association of PPH with Different Variables

Different Variables		PPH		Total	p-value
		Yes	No		
Age Group	18-24 Years	10 (9.7%)	93 (90.3%)	103	0.599
	25-29 Years	13 (7.9%)	152 (92.1%)	165	
	30-35 Years	7 (6.0%)	109 (94.0%)	116	
Gestational Age Group	<28 Weeks	1 (4.3%)	22 (95.7%)	23	0.434
	28-31 Weeks	2 (5.9%)	32 (94.1%)	34	
	32-36 Weeks	10 (11.9%)	74 (88.1%)	84	
	37-41 Weeks	17 (7.0%)	226 (93.0%)	243	
Income Status	Low	12 (8.5%)	130 (91.5%)	142	0.908
	Middle	12 (7.1%)	156 (92.9%)	168	
	High	6 (8.1%)	68 (91.9%)	74	
Education Status	No Education	3 (6.5%)	43 (93.5%)	46	0.395
	Primary Education	8 (7.5%)	99 (92.5%)	107	
	Secondary Education	15 (10.6%)	127 (89.4%)	142	
	Higher Education	4 (4.5%)	85 (95.5%)	89	
Residence	Urban	21 (9.5%)	201 (90.5%)	222	0.159
	Rual	9 (5.6%)	153 (94.4%)	162	
Parity	Nulliparous	5 (3.8%)	125 (96.2%)	130	0.007
	Primiparous	22 (12.5%)	154 (87.5%)	176	
	Multiparous	3 (3.8%)	75 (96.2%)	78	

There was no statistically significant association between age group and type of labor (p=0.856). Term labor was most frequent in the 18–24 years' group, with 85 (82.5%), followed by the 30–35 years' group, with 95 (81.9%), and the 25–29 years' group, with 132 (80.0%). Preterm labor rates were similar across all age groups, ranging from 17.5% in the 18–24 years' group to 20.0% in the 25–29 years' group. Gestational age did not show a significant association with the type of labor (p=0.962). Term labor was highest in the <28 weeks' group, with 19 (82.6%), followed by the 37–41 weeks' group, with 199 (81.9%), and the 28–31 weeks' group, with 27 (79.4%). Preterm labor was most frequent in the 28–31 weeks' group, with 7 (20.6%), followed by the 32–36 weeks' group, with 17 (20.2%). No significant association was found between income status and type of labor (p=0.915). Term labor rates were similar across all income groups, with 114 (80.3%) in the low-income group, 138 (82.1%) in the middle-income group, and 60 (81.1%) in the high-income group. Preterm labor rates ranged from 17.9% in the middle-income group to 19.7% in the low-income

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group. Education status showed no significant association with the type of labor (p=0.799). Term labor was most frequent in patients with no education, with 39 (84.8%), followed by those with primary education, with 88 (82.2%), and higher education, with 73 (82.0%). Preterm labor rates were highest in the secondary education group, with 30 (21.1%). The residence was not significantly associated with the type of labor (p=0.716). Term labor was slightly more frequent among rural residents, with 133 (82.1%), compared to urban residents, with 179 (80.6%). Preterm labor rates were similar, with 43 (19.4%) in urban residents and 29 (17.9%) in rural residents. Parity showed a statistically significant association with the type of labor (p<0.001). Term labor was highest among nulliparous patients, with 117 (90.0%), and multiparous patients, with 70 (89.7%). Primiparous patients had the lowest term labor rate, with 125 (71.0%), and the highest preterm labor rate, with 51 (29.0%) (Table 5).

Table 5: Association of Type of Labor with Different Variables

Different Variables		Type of Labor		Total	p-value
		Term	Pre-Term		
Age Group	18-24 Years	85 (82.5%)	18 (17.5%)	103	0.856
	25-29 Years	132 (80.0%)	33 (20.0%)	165	
	30-35 Years	95 (81.9%)	21 (18.1%)	116	
Gestational Age Group	<28 Weeks	19 (82.6%)	4 (17.4%)	23	0.962
	28-31 Weeks	27 (79.4%)	7 (20.6%)	34	
	32-36 Weeks	67 (79.8%)	17 (20.2%)	84	
	37-41 Weeks	199 (81.9%)	44 (18.1%)	243	
Income Status	Low	114 (80.3%)	28 (19.7%)	142	0.915
	Middle	138 (82.1%)	30 (17.9%)	168	
	High	60 (81.1%)	14 (18.9%)	74	
Education Status	No Education	39 (84.8%)	7 (15.2%)	46	0.799
	Primary Education	88 (82.2%)	19 (17.8%)	107	
	Secondary Education	112 (78.9%)	30 (21.1%)	142	
	Higher Education	73 (82.0%)	16 (18.0%)	89	
Residence	Urban	179 (80.6%)	43 (19.4%)	222	0.716
	Rual	133 (82.1%)	29 (17.9%)	162	
Parity	Nulliparous	117 (90.0%)	13 (10.0%)	130	0.000
	Primiparous	125 (71.0%)	51 (29.0%)	176	
	Multiparous	70 (89.7%)	8 (10.3%)	78	

DISCUSSION

The investigation into the health trajectories of 384 un-booked obstetric patients not only sheds light on the ramifications of lacking antenatal care but also contextualizes these findings within a global landscape of similar challenges. With a demographic profile marked by a mean age of 27.08 ± 4.59 years and gestational age of 36.31 ± 4.18 weeks, this study aligns with global observations on the critical need for proactive maternal healthcare interventions. This analysis revealed a distinct preference for vaginal delivery among younger women in this cohort, with 68.9% of those aged 18–24 opting for this mode of birth. This trend is comparable to findings by Shaheen *et al.*, who reported that 39% of un-booked cases resulted in vaginal deliveries [12]. These similarities suggest a potential universal pattern in delivery modes among un-booked patients across different settings. However, in this study, cesarean section rates were higher among women aged 30–35 years, at 37.1%, underscoring the need for preventative health measures to address risk factors necessitating surgical interventions. Older women may prefer cesarean delivery due to a combination of medical, psychological, and social factors. Advanced maternal age is associated with a higher likelihood of pregnancy complications, including gestational diabetes, hypertensive disorders, and reduced uterine elasticity, which increase the risk of prolonged labor and adverse neonatal outcomes. Consequently, healthcare providers may recommend cesarean sections more often for older women to mitigate these risks. Additionally, older women are more likely to have had prior cesarean deliveries, leading to repeat cesareans due to concerns about uterine rupture or other complications associated with vaginal birth after cesarean (VBAC). Psychological factors, such as a preference for greater control over the timing and method of delivery, may also influence older women to opt for cesarean sections. The prevalence of PROM in this study, at 12.6% in the youngest age group, highlights the risks linked to un-booked pregnancies. This observation aligns with findings from Shaheen *et al.*, who noted that 61% of their patients required cesarean sections, often due to complications like PROM [12]. These findings emphasize the importance of antenatal care in mitigating such risks. Furthermore, this study observed postpartum hemorrhage (PPH) in 9.7% of patients aged 18–24 years, consistent with Latif *et al.*, who reported significant complications among both booked and un-booked patients, including anemia affecting 47.1% of their total population [13]. Interestingly, these results suggest that educational and socio-economic status did not significantly impact the mode of delivery. This observation contrasts with commonly held assumptions that higher socio-economic status and education levels equate to better maternal health outcomes. Qureshi *et al.*, similarly noted that while maternal age and socioeconomic backgrounds differed significantly between booked and un-booked patients, such differences did not always translate to disparities in delivery outcomes [14]. The findings of this study reinforce the critical importance of antenatal care. This is supported by Butt *et al.*, [15] and Ago *et al.*, who highlighted the role of regular antenatal visits in improving maternal and neonatal outcomes [15, 16]. Moreover, Baloch *et al.*, emphasized that un-booked pregnancies are more prevalent in lower socioeconomic groups, pointing to the urgent need to

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overcome barriers to accessing prenatal care in these populations [17]. Traditional and cultural norms also influence the health choices of pregnant women, particularly in rural areas. Studies by Barbi *et al.*, and Abbas *et al.*, reported that home births and reliance on traditional midwives remain common in certain cultures, contributing to the higher prevalence of un-booked cases [18, 19]. Addressing these cultural preferences by integrating traditional practices with medical services is critical. Suleiman and Pappan, found that community engagement and reliable communication channels significantly increase antenatal care utilization, thereby reducing unattended maternal health issues [20].

CONCLUSIONS

It was concluded that this study of 384 un-booked obstetric patients highlights the critical importance of antenatal care in reducing maternal and neonatal complications. This analysis evaluated the clinical characteristics and outcomes associated with un-booked pregnancies, revealing that younger women predominantly experienced vaginal deliveries, whereas older women were more likely to undergo emergency cesarean sections. Complications such as Premature Rupture of Membranes (PROM) and Postpartum Hemorrhage (PPH), though observed in a smaller proportion of cases, underscore the elevated risks linked to inadequate antenatal care. Addressing barriers to antenatal care such as socioeconomic disparities, limited education, and cultural norms is vital.

Authors Contribution

Conceptualization: UIK
Methodology: UIK, SG, FM, SSJ
Formal analysis: UIK, SU, ZS, SSJ
Writing review and editing: UIK, SU, ZS, SG, FM

All authors have read and agreed to the published version of the manuscript

Conflicts of Interest

All the authors declare no conflict of interest.

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