

Original Research

Observation of Postpartum Complications and Neonatal Birthweight among 54 cases of Cesarean Section

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Abstract

Background: The puerperal period is critical for both the physical and emotional well-being of the mother and newborn. Cesarean sections are associated with various postpartum complications and neonatal outcomes, which necessitate thorough observation and management.

Objective: To observe the puerperal conditions and neonatal birth weights among women who underwent cesarean sections at Enam Medical College Hospital, Dhaka, Bangladesh.

Methods: This cross-sectional observational study was conducted at Department of Gynae and Obs, Pabna Medical College, Pabna, Bangladesh during the period from June 2014 to December 2014. A total of 54 patients who had given birth via cesarean section were included. Data on age, pregnancy duration, clinical complaints, comorbidities, previous cesarean section history, puerperal complications, and neonatal birth weights were collected and analyzed.

Results: The majority of participants were aged 21-30 years (66.67%), with a mean age of 26.50 years. Most pregnancies lasted more than 37 weeks (46.30%). Clinical complaints included lower abdominal pain (40.74%) and per vaginal discharge (20.37%). Comorbidities such as gestational diabetes (25.93%) and anemia (24.07%) were prevalent. Previous cesarean section history showed that 57.41% had no prior cesarean sections, 25.93% had one, and 16.67% had two previous cesarean sections. Puerperal complications included tenderness (66.67%) and excessive bleeding (16.67%). Neonatal birth weights were classified as low birth weight (37.04%), normal birth weight (59.26%), and overweight (3.70%), with a mean birth weight of 2.749 kg (SD \pm 0.497 kg).

Conclusion: The study highlights the significant prevalence of clinical complaints, comorbidities, and puerperal complications among women undergoing cesarean sections. These findings emphasize the need for comprehensive monitoring and targeted interventions to reduce maternal and neonatal morbidity, particularly in low-resource settings.

Introduction

The puerperal period, also known as the postpartum period, refers to the time following childbirth when a woman's body is returning to its non-pregnant state¹⁻⁴. This period is critical for both the physical and emotional well-being of the mother and newborn. Healthcare providers must carefully observe and monitor the puerperal condition of their patients to identify and treat any potential problems or complications that may arise^{5,6}. According to the World Health Organization (WHO), the global incidence rate of complications during the puerperal period is estimated to be around 9%⁷⁻⁹. However, this rate varies significantly by region, with the highest rates occurring in low-income countries. In Bangladesh, for example, the incidence rate of puerperal

complications is estimated to be around 18%¹⁰. The primary causes of puerperal complications include obstetric trauma, infections, and hemorrhage¹¹. Other factors that may increase the risk of complications are malnutrition, inadequate prenatal care, and lack of access to skilled healthcare professionals¹¹. The different causes of adverse puerperal conditions can have varied effects on women. For example, obstetric trauma, such as injuries sustained during childbirth—including tears or cuts to the perineum, uterine rupture, or damage to the pelvic floor muscles—can cause pain, bleeding, and difficulty with urination or bowel movements. Puerperal infections, including uterine infections, breast infections, and urinary tract infections, can cause fever, chills, pain, and discharge. If left untreated, these infections can have serious consequences for both the mother and baby. Postpartum hemorrhage, which is excessive bleeding after delivery, can be caused by a variety of factors, including uterine atony (failure of the uterus to contract properly), retained placental fragments, and uterine ruptures. Hemorrhage can lead to shock and organ damage if not treated promptly. Poor nutrition during pregnancy can also increase the risk of complications during the puerperal period, causing anemia and other health issues. Lack of access to proper antenatal care and skilled health professionals can increase the risk of complications such as preterm delivery, low birthweight, sepsis, and complications during cesarean section. Adverse puerperal conditions have a significant impact on maternal mortality and morbidity. Regarding global maternal mortality, approximately one quarter of deaths occur in the antenatal period, one quarter in the perinatal period, and almost half in the puerperium and thereafter^{12,13}. Proper management and treatment of puerperal complications are essential to prevent serious consequences for both the mother and baby. This may include medications to control bleeding or manage infection, as well as proper nutrition and emotional support. It is also important for healthcare providers to educate puerperal patients on how to care for themselves and their newborns during this time, and to encourage breastfeeding, as it has numerous benefits for both the mother and baby. The present study was conducted to observe the puerperal conditions of women admitted to the study hospital.

Methods

This cross-sectional observational study was conducted. This cross-sectional observational study was conducted at Department of Gynae and Obs, Pabna Medical College, Pabna, Bangladesh during the period from June 2014 to December 2014. During this period, a total of 54 patients who had given birth at the study location were included, following specific inclusion and exclusion criteria. Inclusion criteria comprised recently pregnant women who underwent cesarean sections, including both normal deliveries and cesarean deliveries, and those who provided informed consent to participate in the study. Exclusion criteria included patients unable to respond to the criteria questions and those affected by other chronic diseases. Patients were enrolled in the study only after obtaining informed consent from the patients or their legal guardians. Ethical approval for the study was secured from the ethical review committee of the study hospital. Data collection involved detailed recording of patient demographics, clinical history, type of delivery, and any postpartum complications. The collected data were analyzed to observe the puerperal conditions and neonatal birth weights among the study participants.

Results

Table 1: Distribution of participants by baseline characteristics (N=54)

Baseline Characteristics	n	%
Age		
<=20	4	7.41
21-30	36	66.67
31-40	14	25.93
Mean Age	26.50 ± 5.036	
Duration of Pregnancy		
≤34 weeks	7	12.96
35-37 weeks	22	40.74
>37 weeks	25	46.30

The study included a total of 54 participants. The majority of the participants were aged between 21-30 years, accounting for 66.67% (n=36) of the sample, followed by 25.93% (n=14) aged between 31-40 years, and 7.41% (n=4) aged 20 years or

younger. The mean age of the participants was 26.50 years (SD \pm 5.036). Regarding the duration of pregnancy, 46.30% (n=25) of the participants had pregnancies lasting more than 37 weeks, 40.74% (n=22) had pregnancies between 35-37 weeks, and 12.96% (n=7) had pregnancies of 34 weeks or less.

Table 2: Distribution of participants by clinical complaints (N=54)

Clinical Complaints	n	%
None	7	12.96
Lower Abdominal pain	22	40.74
Per Vaginal Discharge	11	20.37
Low Fetal Movement	11	20.37
Amenorrhea	4	7.41
Labor pain	2	3.70
History of Cesarean Section	2	3.70
Premature rupture of membrane	2	3.70
Back Pain	2	3.70

Among the 54 participants, the most common clinical complaint was lower abdominal pain, reported by 40.74% (n=22) of the participants. This was followed by per vaginal discharge and low fetal movement, each reported by 20.37% (n=11) of the participants. Other clinical complaints included amenorrhea (7.41%, n=4), labor pain (3.70%, n=2), history of cesarean section (3.70%, n=2), premature rupture of membranes (3.70%, n=2), and back pain (3.70%, n=2). Notably, 12.96% (n=7) of the participants reported no clinical complaints.

Table 3: Distribution of participants by observable comorbidities (N=54)

Comorbidities	n	%
Absent	18	33.33
Anemia	13	24.07
Gestational Diabetes	14	25.93
Gestational Hypertension	5	9.26
Diabetes	11	20.37
Hypothyroidism	11	20.37
Immune thrombocytopenic purpura (ITP)	2	3.70

In the study, 33.33% (n=18) of participants had no observable comorbidities. The most common comorbidity observed was gestational diabetes, affecting 25.93% (n=14) of the participants,

followed by anemia in 24.07% (n=13). Gestational hypertension was present in 9.26% (n=5) of the participants. Additionally, 20.37% (n=11) had diabetes, and 20.37% (n=11) had hypothyroidism. Immune thrombocytopenic purpura (ITP) was noted in 3.70% (n=2) of the participants.

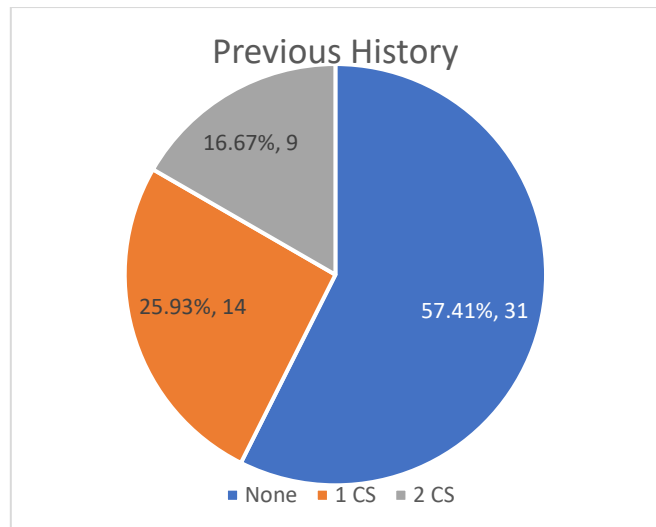


Figure 1: Distribution of participants by previous history of cesarean section (N=54)

Regarding the participants' previous history of cesarean sections, 57.41% (n=31) had no history of cesarean section. Meanwhile, 25.93% (n=14) had one previous cesarean section, and 16.67% (n=9) had undergone two previous cesarean sections.

Table 4: Distribution of participants by Puerperal complications (N=54)

Puerperal Complications	n	%
Tenderness	36	66.67
Excessive Bleeding	9	16.67
Fever	4	7.41
Breast Complications	5	9.26
Discharge From the wound	2	3.70
No Complications	16	29.63

Puerperal complications were observed in a significant portion of the participants. Tenderness was the most common complication, affecting 66.67% (n=36) of the participants. Excessive bleeding was reported by 16.67% (n=9), while 9.26% (n=5) experienced breast complications. Fever was noted in 7.41% (n=4) of the participants, and discharge from the wound was observed in

3.70% (n=2). Notably, 29.63% (n=16) of the participants reported no puerperal complications.

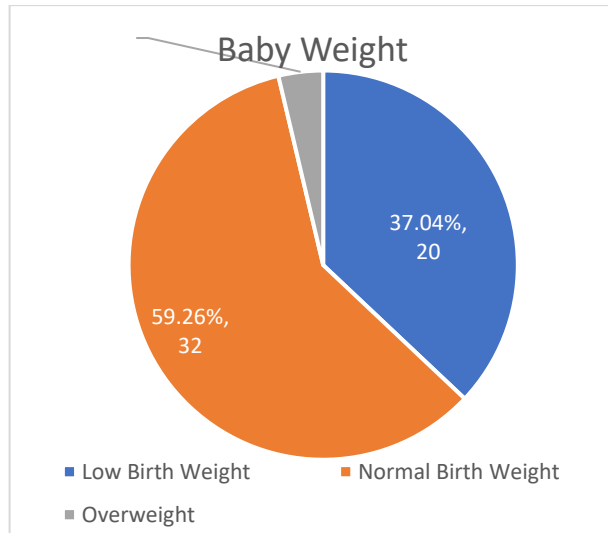


Figure 2: Distribution of birth weight among the neonates (N=54)

Regarding neonatal birth weights, 37.04% (n=20) of the newborns were classified as low birth weight, while 59.26% (n=32) had normal birth weight. A small proportion, 3.70% (n=2), were classified as overweight. The mean birth weight was 2.749 kg with a standard deviation of 0.497 kg.

Discussion

This study aimed to observe the puerperal conditions and neonatal birth weights among women who underwent cesarean sections at Enam Medical College Hospital, Dhaka, Bangladesh. Our findings revealed that the majority of participants were aged between 21-30 years, which is consistent with the demographic distribution observed in other studies, such as Kinnunen et al. (2019), which highlighted similar age-related trends in postpartum women¹⁴. The mean age of our participants was 26.50 years, aligning closely with D'Souza et al. (2017), who reported a mean age of 27.4 years among their study population¹⁵. In terms of pregnancy duration, 46.30% of our participants had pregnancies lasting more than 37 weeks, while 40.74% had pregnancies between 35-37 weeks, and 12.96% had pregnancies of 34 weeks or less. This distribution is comparable to the findings of Ziadeh

& Yahaya (2001), who examined pregnancy outcomes in older women and noted variations in gestational age at delivery¹⁶. Clinical complaints were prevalent among our participants, with lower abdominal pain being the most common, affecting 40.74%. This finding is supported by Darney et al. (2016), who also observed significant clinical complaints among postpartum women¹⁷. Comorbidities were notably present in our study, with gestational diabetes (25.93%) and anemia (24.07%) being the most common. This is in line with Jolly et al. (2000) and Liu & Zhang (2014), who reported high incidences of gestational diabetes and hypertension in their respective studies^{18,19}. Furthermore, previous cesarean section history showed that 57.41% of our participants had no prior cesarean sections, while 25.93% had one, and 16.67% had two previous cesarean sections. This distribution aligns with findings from Rodríguez-Palma et al. (2023) and Milosevic et al. (2009), who documented the increased risks associated with multiple cesarean sections, including surgical site infections and placental complications^{20,21}. Our study also highlighted significant puerperal complications, with tenderness being the most common (66.67%). Similar findings were reported by Gelaw et al. (2017), who identified tenderness and other complications such as excessive bleeding and fever as prevalent issues following cesarean sections²². The incidence of surgical site infections in our study was 16.67%, which is within the range reported by Biswas (2003), who emphasized the importance of managing these risks in postpartum care²³. Neonatal birth weights in our study were classified as low birth weight in 37.04% of the cases, normal birth weight in 59.26%, and overweight in 3.70%. These figures are comparable to the outcomes observed by Scifres et al. (2011), who reported similar neonatal weight distributions in their study on VBAC attempts²⁴. Additionally, Alshehri et al. (2019) noted that complications such as adhesions and intraoperative bleeding, which were also common in our study, significantly impact neonatal outcomes²⁵. Overall, our findings underscore the importance of meticulous monitoring and management of puerperal conditions and neonatal outcomes in cesarean section cases. The observed comorbidities and complications necessitate targeted interventions to reduce

maternal and neonatal morbidity. Comparative analyses with existing literature further validate our observations, highlighting consistent trends and emphasizing the need for continued research and improved clinical practices in managing cesarean section deliveries.

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

Conclusion

This study provides valuable insights into the puerperal conditions and neonatal birth weights among women who underwent cesarean sections at Enam Medical College Hospital, Dhaka, Bangladesh. The findings highlight the significant prevalence of clinical complaints, comorbidities, and puerperal complications in this cohort. The study underscores the importance of comprehensive monitoring and management to mitigate maternal and neonatal morbidity associated with cesarean sections. Comparative analyses with existing literature validate our observations and emphasize the need for targeted interventions and improved clinical practices. Future research should focus on identifying specific risk factors and developing strategies to enhance postpartum care for women undergoing cesarean deliveries, particularly in low-resource settings like Bangladesh.

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