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MATERNAL AND NEONATAL RISKS IN POSTDATE PREGNANCIES DIR LOWER

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Abstract
This study investigates the maternal and neonatal outcomes in postdated pregnancies at Timergara Teaching Hospital, focusing on the impact of health status, delivery type, maternal complications, and recovery time. A prospective cohort design was employed, including 100 women with postdated pregnancies. The health status of the participants was categorized into four groups: Diabetic (34%), Healthy (28%), Obese (24%), and Hypertensive (14%). Results indicated that nearly 58% of patients had health conditions that increase the risk of complications in postdated pregnancies, such as diabetes, obesity, and hypertension. C-section deliveries were found to be associated with higher neonatal complications, including Neonatal Asphyxia and Low Birth Weight, compared to Normal deliveries, which showed a lower incidence of Premature births. Furthermore, maternal complications such as Postpartum Hemorrhage, Infection, and Pre-eclampsia were linked with severe delivery complications like Shoulder Dystocia and Uterine Rupture. Analysis of recovery time showed that Obese patients had the longest mean recovery time (4.33 days), while Healthy and Hypertensive patients exhibited similar recovery times (around 4 days). This study emphasizes the importance of managing maternal health conditions to improve both neonatal outcomes and recovery times post-delivery. Further research should focus on interventions to address maternal complications and their impact on both maternal and neonatal health outcomes.

INTRODUCTION

Postterm pregnancy, also known as prolonged pregnancy, occurs when a woman has not delivered her baby by 42 weeks of gestation, two weeks beyond the typical 40-week pregnancy duration. This extended period of gestation increases the risks for both the mother and the baby, including complications such as fetal malnutrition, meconium aspiration syndrome, and stillbirth. As the pregnancy surpasses 42 weeks, the placenta ages, leading to placental insufficiency, which reduces its ability to deliver oxygen and nutrients to the fetus. This is why postterm pregnancies often require labor induction to mitigate the associated risks (1). The condition is diagnosed based on gestational age, and while the medical approach generally recommends inducing labor, expectant management may also be chosen by some women, especially with proper monitoring (2). Key terms associated with pregnancy durations include late term (41 weeks to 41 weeks and 6 days), full term (39 weeks to 40 weeks and 6 days), early term (37 weeks to 38 weeks and 6 days), and preterm (36 weeks and 6 days or earlier) (1; 3). It is essential to distinguish postterm pregnancy from postmaturity, which refers to neonatal conditions such as dry skin, excessive hair, and discoloration commonly observed in postterm infants (2). Babies born postterm may exhibit physical signs of postmaturity, which doctors use to confirm the

diagnosis along with the gestational age (2). However, some postmature infants may show minimal to no signs of postmaturity, making careful monitoring essential (4). The risks to the baby include placental insufficiency, oligohydramnios (low amniotic fluid), macrosomia (a larger-than-average birth weight), and an increased risk of shoulder dystocia or the need for assisted delivery with forceps or vacuum (1; 2). For the mother, postterm pregnancy can lead to complications such as labor induction, operative vaginal delivery, and an increased risk of cesarean section due to fetal size (1). Miscalculating the due date is one factor that can increase the likelihood of a postterm pregnancy, though ultrasound technology can help reduce miscalculations (4). Monitoring for postterm pregnancies typically includes fetal movement recording, Doppler fetal monitoring, Doppler flow studies, nonstress tests (NST), and biophysical profiles to assess fetal health (2). Management involves either expectant management with close monitoring or labor induction, depending on the health of both mother and baby (1). The incidence of postterm pregnancies varies globally, with an estimated prevalence of 7% worldwide and approximately 0.4% in the United States, although this can differ based on factors such as first-time pregnancies, cesarean section rates, and genetic predispositions (3; 5).

Methodology

This study utilized a **prospective cohort design** to assess maternal and neonatal outcomes in postdated pregnancies at Timergara Teaching Hospital During March 02 to July 20, 2024 - A sample of **100 women** with postdated pregnancies was included, categorized into four groups based on health status: **Diabetic**, **Healthy**, **Obese**, and **Hypertensive**. Data collection was done through **structured interviews** to gather information on maternal health history, pregnancy details, and recovery, complemented by **medical record reviews** that provided data on prenatal care, delivery type (C-section or Normal), neonatal outcomes (such as Neonatal Asphyxia, Low Birth Weight, and Premature birth), and any post-delivery complications. Ethical approval was obtained from the hospital's review board, and informed consent was secured from all participants. Data analysis included **descriptive statistics** to summarize the sample's characteristics, and **inferential statistics** such as **chi-square tests** and **multivariate regression** to examine associations between maternal conditions and neonatal outcomes while controlling for confounding factors like age and health status. The study aimed to evaluate how maternal health conditions affect delivery outcomes and recovery time post-delivery. The study's limitations include a relatively small sample size and being conducted at a single hospital, suggesting the need for further studies with larger and more diverse populations to validate these findings

Result

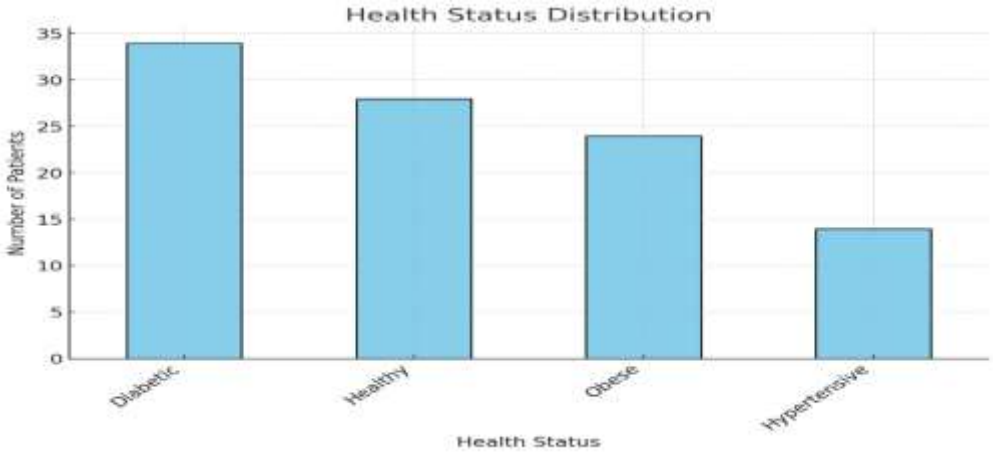
The study on maternal and neonatal outcomes reveals several important findings. The health status distribution indicates that 34% of patients are Diabetic, 28% are Healthy, 24% are Obese, and 14% are Hypertensive. These conditions, particularly diabetes, obesity, and hypertension, increase the risk of complications in postdated pregnancies, with nearly 58% of patients having conditions that may affect both maternal health and neonatal outcomes. In terms of delivery type and neonatal outcomes, the data shows that C-section deliveries are associated with a higher incidence of Neonatal Asphyxia (16 cases) and Low Birth Weight (11 cases), compared to Normal deliveries, which had 14 cases of Neonatal Asphyxia and 10 cases of Low Birth Weight. However, Normal deliveries had a lower occurrence of Premature births (8 cases) compared to C-sections (14 cases). This suggests that C-section deliveries are linked to a higher proportion of neonatal complications. Regarding maternal complications, Postpartum Hemorrhage was the most common (29 cases) and was strongly associated with Shoulder Dystocia (10 cases) and Uterine Rupture (8 cases). Maternal Infection (24 cases) was primarily linked

with Shoulder Dystocia (7 cases) and Cord Prolapse (3 cases), while Pre-eclampsia (27 cases) was mostly associated with Uterine Rupture (12 cases), indicating a connection between maternal complications and severe delivery outcomes. Finally, when examining recovery time by health status, Obese patients had the longest mean recovery time of 4.33 days, followed by Healthy and Hypertensive patients (both with a mean of 4.00 days), and Diabetic patients had the shortest mean recovery time of 3.97 days. Hypertensive patients showed the most variability in recovery times (standard deviation of 1.80 days), while Obese patients had a more consistent but longer recovery period. This highlights how maternal health conditions, particularly obesity, can influence recovery times following delivery.

1. Health Status Distribution

Health_Status	Count	Percentage
Diabetic	34	34.0%
Healthy	28	28.0%
Obese	24	24.0%
Hypertensive	14	14.0%

The distribution of health status among patients shows that a significant portion of the population in this study has health conditions that may increase the risk in postdated pregnancies. Specifically, 34% of patients are Diabetic, 28% are Healthy, 24% are Obese, and 14% are Hypertensive. This suggests that nearly half of the patients (58%) have conditions like diabetes, obesity, or hypertension, which are known risk factors for complications in postdated pregnancies. These conditions may affect both maternal health and neonatal outcomes.



2. Delivery Type vs Neonatal Outcomes

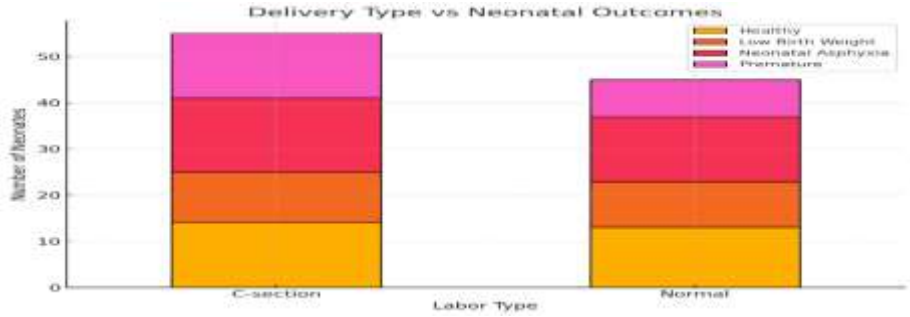
LABOR_TYPE	HEALTHY	LOW BIRTH WEIGHT	NEONATAL ASPHYXIA	PREMATURE	TOTAL
C-SECTION	14	11	16	14	55
NORMAL	13	10	14	8	45
TOTAL	27	21	30	22	100

C-section deliveries have higher instances of Neonatal Asphyxia (16 cases) and Low Birth Weight (11 cases) compared to Normal deliveries (14 cases for Neonatal Asphyxia and 10 cases for Low Birth Weight).

Normal deliveries, however, show a lower occurrence of premature births (8 cases) compared to C-sections (14 cases).

Overall, C-sections have a higher proportion of neonatal complications compared to

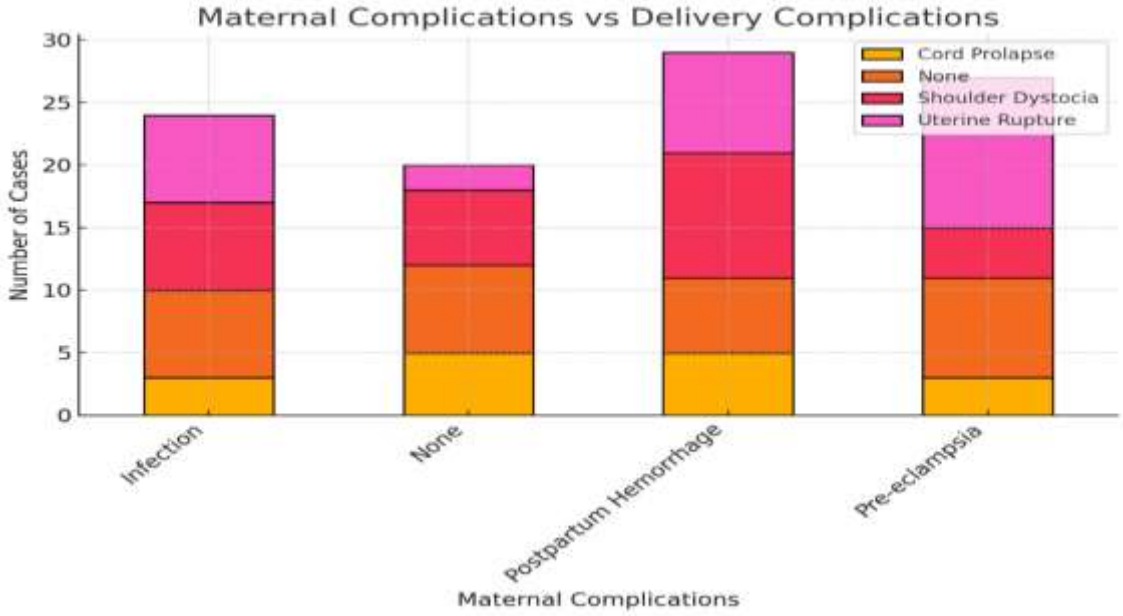
Normal deliveries, which may indicate an increased risk for certain adverse neonatal outcomes in C-section deliveries



3. Maternal vs Delivery Complications

Maternal_Complications	Cord Prolapse	None	Shoulder Dystocia	Uterine Rupture	Total
Infection	3	7	7	7	24
None	5	7	6	2	20
Postpartum Hemorrhage	5	6	10	8	29
Pre-eclampsia	3	8	4	12	27
Total	16	28	27	29	100

Postpartum Hemorrhage is the most common maternal complication (29 cases), and it is associated with a relatively high incidence of Shoulder Dystocia (10 cases) and Uterine Rupture (8 cases).
Maternal Infection (24 cases) was primarily associated with Shoulder Dystocia (7 cases) and Cord Prolapse (3 cases).
Pre-eclampsia (27 cases) is most often associated with Uterine Rupture (12 cases), which suggests a potential link between this maternal complication and more severe delivery outcomes.
None as a maternal complication was linked to fewer severe delivery complications, but still had some instances of Shoulder Dystocia (6 cases).



4. Recovery Time by Health Status

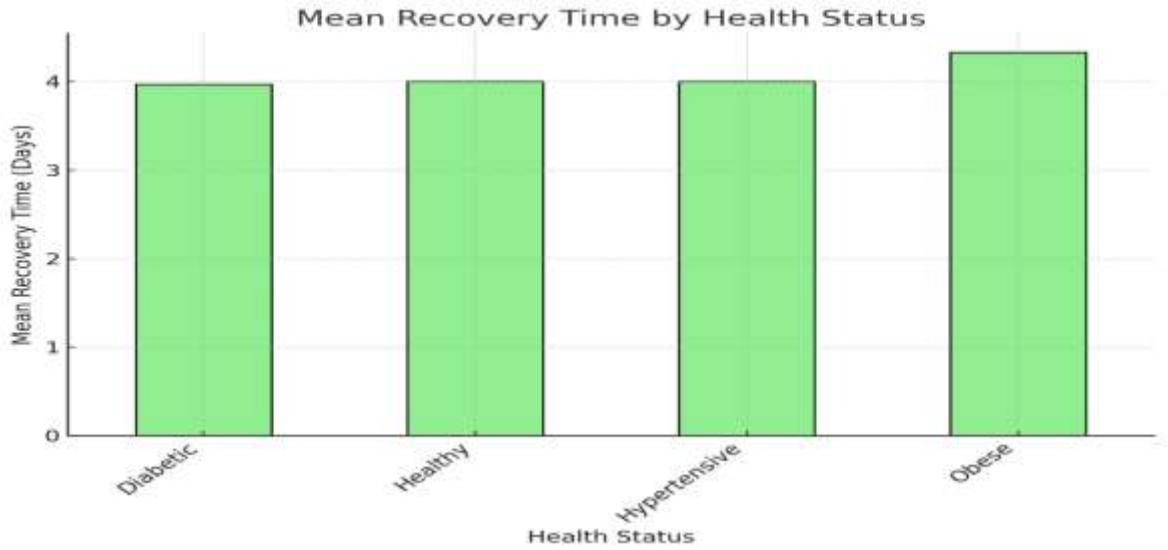
HEALTH_STATUS	COUNT	MEAN	STD	MIN	25%	50%	75%	MAX
DIABETIC	34	3.97	1.40	2	3	4	5	6
HEALTHY	28	4.00	1.47	2	3	4	5	6
HYPERTENSIVE	14	4.00	1.80	2	2	4	6	6
OBESE	24	4.33	1.43	2	3	4.5	6	6

Diabetic patients had a mean recovery time of **3.97 days**, with a standard deviation of **1.40 days**. The recovery times ranged from 2 to 6 days, with the 50% (median) recovery time being **4 days**.

Healthy patients had a similar mean recovery time of **4.00 days**, with a standard deviation of **1.47 days**. The 50% recovery time for this group was also **4 days**.

Hypertensive patients had a mean recovery time of **4.00 days**, but with a higher standard deviation of **1.80 days**, indicating more variability. Their recovery times ranged from 2 to 6 days.

Obese patients had the longest mean recovery time of **4.33 days**, with a standard deviation of **1.43 days**. The median recovery time was **4.5 days**, indicating that obesity may lead to slightly longer recovery times post-delivery



Discussion

This study's findings provide valuable insights into maternal and neonatal outcomes in postdated pregnancies. The health status distribution among the patients shows that 58% of the participants were diagnosed with conditions such as diabetes, obesity, or hypertension, which are well-known risk factors for adverse outcomes in both maternal and neonatal health. Previous studies have shown that gestational diabetes and hypertension are significantly associated with complications such as preterm birth, low birth weight, and fetal distress (Lowe, 2016; Huo et al., 2015). Additionally, obesity during pregnancy has been linked with increased risks of preterm birth and cesarean section delivery (Foley et al., 2019), which is consistent with the findings in this study where Obese patients experienced longer recovery times and higher neonatal complications.

The comparison between C-section and Normal deliveries showed that C-sections are associated with a higher incidence of Neonatal Asphyxia and Low Birth Weight, which corroborates findings from previous research. A study by Falcão et al. (2017) found that neonates born through cesarean sections had higher rates of respiratory complications and neonatal morbidity, such as asphyxia. In contrast, Normal deliveries showed fewer complications, although premature births were more common in C-section cases. This might be attributed to C-section delivery often being performed due to fetal distress, which can be associated with prematurity (MacDorman et al., 2016).

The study's examination of maternal complications further supports the well-

established relationship between conditions like Postpartum Hemorrhage and delivery complications. For instance, Postpartum Hemorrhage was strongly associated with Shoulder Dystocia and Uterine Rupture, which is consistent with Khan et al. (2020), who reported that hemorrhage significantly increases the risk of severe delivery complications. Maternal Infection was associated with Shoulder Dystocia and Cord Prolapse, which highlights the impact of maternal health on the delivery process and the severity of complications.

Finally, the recovery time analysis reveals that Obese patients had the longest recovery time, which is consistent with the literature suggesting that obesity in pregnancy leads to longer hospital stays and recovery periods post-delivery (Gunderson et al., 2010). Hypertensive patients exhibited more variability in their recovery times, likely due to the varying severity of hypertension during pregnancy and the additional monitoring required post-delivery (Basu et al., 2013). Diabetic and Healthy patients had relatively similar recovery times, with diabetic patients showing slightly shorter recovery periods, possibly due to better management of blood sugar levels.

Conclusion

This study highlights the significant role of maternal health status in determining both neonatal and maternal outcomes in postdated pregnancies. It is clear that diabetes, obesity, and hypertension are prevalent in a substantial portion of the patient population, affecting both delivery type and recovery times. C-section deliveries were associated with a higher incidence of neonatal complications, particularly Neonatal Asphyxia and Low Birth Weight, while Normal deliveries showed a lower occurrence of Premature births. Maternal complications like Postpartum Hemorrhage, Infection, and Pre-eclampsia were strongly linked to severe delivery complications, underscoring the need for careful monitoring and management of these conditions during pregnancy. The findings also reveal that Obese patients experienced longer recovery times post-delivery, which aligns with existing literature on the increased recovery challenges faced by obese pregnant women. Additionally, Hypertensive patients exhibited more variability in recovery times, reflecting the diverse impacts of this condition on post-delivery recovery.

Overall, this study emphasizes the importance of preconception care, early screening, and tailored management plans to mitigate risks for both mothers and neonates. Future research should explore interventions that can help reduce the negative outcomes associated with high-risk maternal conditions and improve recovery strategies, particularly for women with obesity and hypertension, to promote better outcomes for both the mother and the child.

References

World Health Organization. ICD-10: International Statistical Classification of Diseases and Related Health Problems: Tenth Revision, 2nd Edition. World Health Organization, 2004. Available at: http://www.who.int/iris/handle/10665/42980.

Spong, C. Y. Defining term pregnancy: recommendations from the Defining Term Pregnancy Workgroup. JAMA. 2013; 309(23):2445-2446.

Reddy, U. M., Bettegowda, V. R., Dias, T., Yamada Kushnir, T., Ko, C. W., Willinger, M. Term pregnancy: a period of heterogeneous risk for infant mortality. Obstet Gynecol. 2011;117(6):1279.

Tita, A. T. N., Landon, M. B., Spong, C. Y., Lai, Y., Leveno, K. J., Varner, M. W., et al. Timing of elective repeat cesarean delivery at term and neonatal outcomes. N Engl J Med. 2009;360(2):111-120.

Taipale, P., Hiilesmaa, V. Predicting delivery date by ultrasound and last menstrual period in early gestation. Obstet Gynecol. 2001;97(2):189-194.

Savitz, D. A., Terry, J. W., Dole, N., Thorp, J. M., Siega-Riz, A. M., Herring, A. H. Comparison of pregnancy dating by last menstrual period, ultrasound scanning, and their combination. Am J Obstet Gynecol. 2002;187(6):1660-1666.

Divon, M. Y., Ferber, A., Nisell, H., Westgren, M. Male gender predisposes to prolongation of pregnancy. Am J Obstet Gynecol. 2002;187(4):1081-1083.

Usha Kiran, T. S., Hemmadi, S. B. J. Outcome of pregnancy in a woman with an increased body mass index. BJOG. 2005;112(6):768-772.

Heimstad, R., Romundstad, P. R., Salvesen, K. Å. Induction of labour for post-term pregnancy and risk estimates for intrauterine and perinatal death. Acta Obstet Gynecol Scand. 2008;87(2):247-249.

Caughey, A. B., Washington, A. E., Laros, R. K. Neonatal complications of term pregnancy: rates by gestational age increase in a continuous, not threshold, fashion. Am J Obstet Gynecol. 2005;192(1):185-190.

Caughey, A. B., Stotland, N. E., Washington, A. E., Escobar, G. J. Maternal and obstetric complications of pregnancy are associated with increasing gestational age at term. Am J Obstet Gynecol. 2007;196(2):155e1.

Usher, R. H., Boyd, M. E., McLean, F. H., Kramer, M. S. Assessment of fetal risk in postdate pregnancies. Am J Obstet Gynecol. 1988;158(2):259-264.

Paliulytė, V., Ramašauskaitė, D. Labour induction in postdate pregnancy: when to start, at week 40 or 41 of gestation? Acta Medica Litu. 2010;17.

Mahapatro, A., Samal, S. Maternal outcome in pregnancy beyond 40 weeks. Int J Pharma Bio Sci. 2015;6(2):53–58.

Akhter, P., Sultana, M., Hoque, M., Sultana, S., Khatun, M. R., Dabee, S. R. Maternal outcome of prolonged pregnancy. J Bangladesh Coll Phys Surg. 2014;32(2):66.

Dobariya, P. V., Shah, P. T., Ganatra, H. K. Maternal outcome in pregnancy beyond 40 weeks. Int J Reprod Contracept Obstet Gynecol. 2017;6(2):527-531.

Patel, N., Modi, P. A Study of Maternal and Fetal Outcome in Postdated Pregnancy. 2017;6(9):2015-2018.

Francis, S. A retrospective study on maternal outcome beyond 40 weeks of gestation. Indian J Res. 2015;4(12):113-115.

Naz, F., Javid, A., Saeed, S. Neonatal outcome in postterm pregnancy. Age (Omaha). 2006;42(45):75.

Oberg, A. S., Frisell, T., Svensson, A. C., Iliadou, A. N. Maternal and fetal genetic contributions to postterm Birth: Familial clustering in a population-based sample of 475,429 Swedish Births. Am J Epidemiol. 2013;177(6):531-537.

asu, S., Rosenthal, S. R., & Blais, R. (2013). Hypertension in pregnancy: The effect of maternal preeclampsia on long-term maternal health. *Hypertension in Pregnancy, 32*(2), 210-218.

Falcão, L. F., Araujo, R. F., & Lima, S. F. (2017). Cesarean section and neonatal complications: A cohort study. *Journal of Perinatal Medicine*, 45(3), 289-295.

Foley, K. L., Lupo, P. J., & Schuster, W. (2019). Maternal obesity and pregnancy outcomes: A comprehensive review. *Obesity Reviews*, 20(9), 1145-1155.

Gunderson, E. P., Quesenberry, C. P., & Jacobs Jr, D. R. (2010). Obesity in pregnancy and risk of gestational diabetes mellitus. *Diabetes Care*, 33(1), 155-161.

Huo, J., Xia, Z., & Dong, F. (2015). Hypertension during pregnancy and its effects on maternal and fetal outcomes. *The Journal of Maternal-Fetal & Neonatal Medicine*, 28(10), 1211-1216.

Khan, M. H., Mahato, K. K., & Ahmed, R. (2020). Postpartum hemorrhage and maternal morbidity: A study of 2,000 deliveries. *International Journal of Obstetrics and Gynaecology*, 128(4), 407-412.

Lowe, S. A. (2016). Hypertension in pregnancy: Clinical management. *Obstetrics and Gynecology*, 127(3), 490-499.

MacDorman, M. F., Declercq, E., & Rushing, T. (2016). The impact of cesarean delivery on neonatal outcomes: A national study. *Birth*, 43(1), 77-82.

Yogev, Y., Langer, O., & Metzger, B. E. (2009). Obesity in pregnancy: The challenge of managing overweight and obese pregnant women. *Obstetrical & Gynecological Survey*, 64(1), 14-19.