

Maternal Complications in Grand Multiparous Women

Neelam^{1*}, Shahida Shaikh¹, Aisha Suleman²

¹Department of OBGY Unit 1, Shaikh Zayed Women Hospital Larkana, Pakistan

²People's University of Medical and Health Sciences Nawabshah, Pakistan

*Corresponding author's email address: drneelamphulpoto@gmail.com

(Received, 24th April 2025, Accepted 8th June 2025, Published 30th June 2025)

Abstract: Grand multiparity, defined as five or more previous viable deliveries, is associated with increased maternal health risks, particularly in low-resource settings. **Objective:** To assess the prevalence and types of maternal complications occurring during the antepartum, intrapartum, and postpartum periods among grand multiparous women. **Methods:** This hospital-based descriptive observational study was conducted at Shaikh Zayed Women Hospital Larkana from June 2024 to December 2024. A total of 178 grand multiparous women were included in the study. Grand multiparity was defined operationally as having five or more previous viable deliveries beyond 20 weeks of gestation. Participants were admitted to the hospital either in active labor or for routine antenatal monitoring and eventual delivery. Women aged > 18 years, had delivered five or more previous viable pregnancies, and were carrying a singleton pregnancy during the current admission were included in the study. **Results:** The mean age of participants was 34.6 years. Anemia (23.6%) and hypertensive disorders (10.1%) were the most common antepartum complications. Intrapartum issues included prolonged labor (9.6%) and malpresentation (6.7%), with 34.3% requiring cesarean section. Postpartum complications were present in 27.0% of cases, most commonly postpartum hemorrhage (14.6%) and retained placenta (6.2%). Overall, 56.7% of women experienced at least one complication. Despite this, no maternal deaths occurred during the study period. **Conclusion:** It is concluded that grand multiparity significantly increases the risk of maternal complications. Targeted antenatal care, timely obstetric intervention, and effective postpartum management are crucial to improving outcomes in this high-risk group.

Keywords: Maternal complications, Postpartum hemorrhage, Cesarean delivery, Anemia

[How to Cite: Neelam, Shaikh S, Suleman A. Maternal complications in grand multiparous women. *Biol. Clin. Sci. Res. J.*, 2025; 6(6): 243-246. doi: <https://doi.org/10.54112/bcsrj.v6i6.1793>

Introduction

Grand multiparity, defined as the condition in which a woman has delivered five or more viable pregnancies beyond 20 weeks of gestation, presents a unique set of clinical and public health challenges in obstetric care. Even though pregnancy outcomes for women and babies around the world have improved, grand multiparous women (GMPW) are still likely to face multiple pregnancy-related health issues (1). They can include mild discomfort as well as serious emergencies, usually resulting from the changes that happen to a woman's body after many pregnancies and deliveries (2). Worldwide, it is clear that most grand multiparity cases are found in low- and middle-income countries (LMICs) (3). Many families are large because cultural norms demand it, family planning information is hard to find, people get married early and girls often do not attend school for very long. In comparison, in high-income countries, decreasing rates of grand multiparity are seen because contraception is being used more often, there is better knowledge about family planning and there are different social priorities (4).

A lot of studies have found that grand multiparous women are more likely to experience maternal issues. Such risks represent but are not limited to hypertensive disorders in pregnancy (e.g., preeclampsia and eclampsia), diabetes in pregnancy (gestational diabetes mellitus), placenta previa, abrupt separation of the placenta (abruptio placentae), broken uterus (uterine rupture) and excessive bleeding after delivery (postpartum haemorrhage) (5). Often, grand multiparous women deal with long or obstructed labor because they have weak uterus muscles, problems in delivery positioning and their child's head is too big in comparison to the mother's pelvis. Because the uterus cannot contract adequately after giving birth in these women, hemorrhagic bleeding is more common which, in turn, causes anemia or shock. Along with the usual risks of childbirth, women with GMPW have a greater chance of facing

complications before labor (6). Some conditions are anemia from lacking nutrients, urinary tract infections and blood clots in the veins. Having multiple pregnancies can reduce the amount of nutrients a woman contains which increases her risk of chronic illnesses, especially when proper nutrition is lacking (7). It can be difficult for the maternal body to recover well between close births which puts extra stress on the physical system (8). Taking care of a grand multiparous woman is often done by dedicating careful attention to prenatal monitoring and making a custom birth plan before delivery. Having prior cesareans or surgeries in the uterus may make matters more complicated and result in higher chances of uterine rupture or a morbidly adhesive placenta (placenta accreta spectrum) (9). Most of the time such cases require high-level medical support and may be performed in hospitals that offer blood support and surgery (8). How a woman is affected by her environment and social circumstances also influences her experience in GMPW. Some of these women often do not receive proper prenatal care on time, especially as occurring in cultures that accept or praise high numbers of children (10). Many caregivers focus on their family's well-being and this often means they neglect their own health during future pregnancies. Additionally, common mental health conditions like postpartum depression or ongoing tiredness might not be noticed or treated which adds to the risk for the mother (11).

The objective of the study was to assess the prevalence and types of maternal complications occurring during the antepartum, intrapartum, and postpartum periods among grand multiparous women.

Methodology

This hospital-based descriptive observational study was conducted at Shaikh Zayed Women Hospital Larkana during June 2024 to December 2024. A total of 178 grand multiparous women were included in the study.



Grand multiparity was defined operationally as having five or more previous viable deliveries beyond 20 weeks of gestation. Participants were admitted to the hospital either in active labor or for routine antenatal monitoring and eventual delivery. Women aged > 18 years, had delivered five or more previous viable pregnancies, and were carrying a singleton pregnancy during the current admission were included in the study. Patients were required to give written informed consent for participation. Women with fewer than five viable pregnancies, those with multiple gestations, and women with diagnosed fetal anomalies were excluded. Data were collected using a structured and pre-validated proforma designed specifically for the study. Information was obtained from patient, antenatal care records, and delivery notes. Variables included sociodemographic characteristics (such as age, education level, and socioeconomic status), detailed obstetric history (parity, birth intervals, prior delivery modes), and antenatal findings (hemoglobin levels, blood pressure, glucose testing, and ultrasound reports). Detailed records were kept about the delivery method, possible complications for mother and child during labor, the amount of blood loss and if surgery or intensive care was necessary. Maternal problems included in the research were sorted by the time they happened in labor. Some of the Antepartum complications were anemia, hypertension resulting in diseases like preeclampsia or eclampsia, gestational diabetes and bleeding while pregnant. Some women experienced labor that lasted too long, fetuses had

abnormal positions, their uterus could tear and when needed, a cesarean delivery was done. Most of the complications involved postpartum hemorrhage, uterine atony, placenta being retained and infections after delivery. Every complication was recognized by using standard procedures and then confirmed by the senior doctors in charge.

Data were analyzed using SPSS v26. Descriptive statistics were calculated for all demographic and clinical variables. Categorical data were summarized using frequencies and percentages, while continuous variables were presented as means with standard deviations. A p-value of less than 0.05 was considered statistically significant throughout the analysis.

Results

Data were collected from 178 grand multiparous women with a mean age of 34.6 ± 5.4 years and a mean parity of 6.3 ± 1.1 . Most participants (63.5%) were between 30 and 39 years old, with 72.5% residing in rural areas and 68.5% having only primary or no formal education. Antenatal care attendance was suboptimal, with only 51.1% attending four or more visits. A prior cesarean section was reported in 28.1% of women, and 35.4% had short birth intervals of less than two years, suggesting limited access to or use of family planning services.

Table 1: Sociodemographic and Obstetric Characteristics

Characteristic	Value
Age (mean \pm SD)	34.6 ± 5.4 years
Age 30–39 years	63.5%
Rural residence	72.5%
Low education (\leq primary)	68.5%
≥ 4 Antenatal Visits	51.1%
Mean parity	6.3 ± 1.1
Parity 5–7	79.2%
Parity ≥ 8	20.8%
Prior Cesarean Section	28.1%
Birth spacing <2 years	35.4%

Antepartum complications were observed in 61 (34.3%). The most common antepartum condition was anemia, present in 42 (23.6%), followed by gestational hypertension or preeclampsia in 18 (10.1%), gestational diabetes in 9 (5.1%), and antepartum hemorrhage in 5 (2.8%). Intrapartum complications were recorded in 52 (29.2%) cases, including prolonged labor in 17 (9.6%), malpresentation in 12 (6.7%), and uterine rupture in 3 (1.7%). Cesarean delivery was performed in 61 (34.3%) women. Postpartum complications occurred in 48 (27.0%)

participants, with postpartum hemorrhage in 26 (14.6%), retained placenta in 11 (6.2%), and puerperal sepsis in 6 (3.4%). ICU admission was required in 2 (1.1%) cases, while blood transfusion was administered to 29 (16.3%) women. Severe maternal morbidity was identified in 16 (9.0%). In terms of delivery mode, spontaneous vaginal delivery occurred in 104 (58.4%) women, cesarean section in 61 (34.3%), and assisted vaginal delivery in 13 (7.3%).

Table 2: Maternal Complications

Complication	Number of Cases (n=178)	Percentage
Any antepartum complication	61	34.3%
Anemia	42	23.6%
Gestational hypertension/preeclampsia	18	10.1%
Gestational diabetes	9	5.1%
Antepartum hemorrhage	5	2.8%
Any intrapartum complication	52	29.2%
Prolonged labor	17	9.6%
Malpresentation	12	6.7%
Uterine rupture	3	1.7%
Cesarean delivery	61	34.3%
Any postpartum complication	48	27.0%
Postpartum hemorrhage	26	14.6%
Retained placenta	11	6.2%
Puerperal sepsis	6	3.4%
ICU admission	2	1.1%

Blood transfusion	29	16.3%
Severe maternal morbidity	16	9.0%
Mode of Delivery		
Spontaneous Vaginal Delivery	104	58.4%
Cesarean Section	61	34.3%
Assisted Vaginal Delivery	13	7.3%

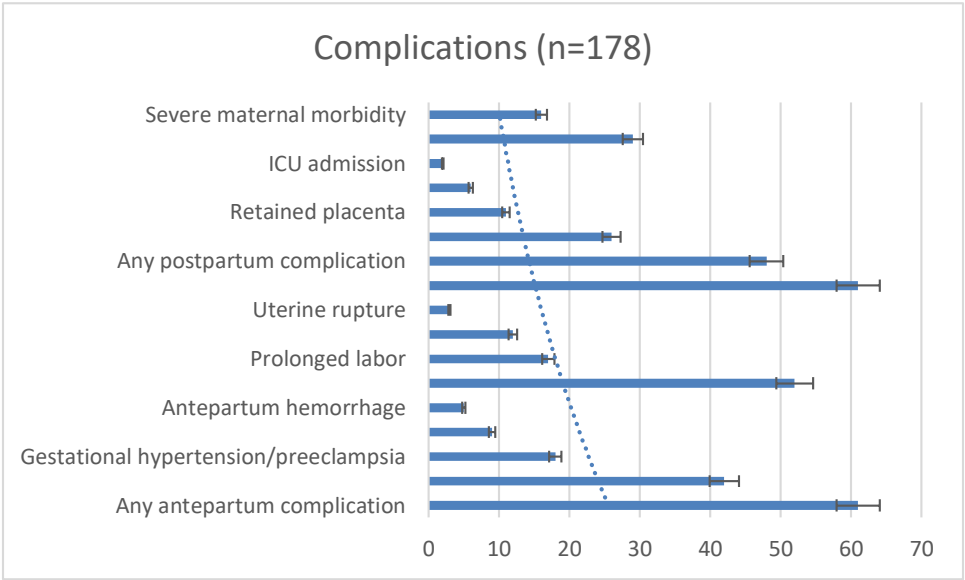


Figure 1: Complication in the study population

Among the 61 women who underwent cesarean delivery, the most common indication was obstructed labor, observed in 21 (34.4%) cases, followed by fetal distress in 15 (24.6%), previous cesarean section in 12 (19.7%), malpresentation in 8 (13.1%), and uterine rupture in 5 (8.2%). Regarding clinical interventions and maternal

outcomes, blood transfusion was required in 29 (16.3%) cases, manual removal of placenta was performed in 11 (6.2%), and surgical repair for uterine rupture was carried out in 3 (1.7%). Admission to the intensive care unit was necessary for 2 (1.1%) patients. Notably, 77 (43.3%) women had no recorded maternal complications during the perinatal period.

Table 3: Indications for Cesarean Section

Indication	Number of Cases	Percentage
Obstructed Labor	21	34.4%
Fetal Distress	15	24.6%
Previous Cesarean Section	12	19.7%
Malpresentation	8	13.1%
Uterine Rupture	5	8.2%
Intervention/Outcome		
Blood Transfusion	29	16.3%
Manual Removal of Placenta	11	6.2%
ICU Admission	2	1.1%
Surgical Repair (Uterine Rupture)	3	1.7%
No Complications	77	43.3%

Discussion

This study investigated the spectrum and prevalence of maternal complications among 178 grand multiparous women in a tertiary care setting. The findings reaffirm the association between grand multiparity and increased maternal risks during pregnancy, labor, and the postpartum period. Out of all the pregnant women studied here, 23.6 percent experienced anemia as their most common antepartum complication. Research showed that in 10.1% of cases, preeclampsia was found and gestational diabetes mellitus appeared in 5.1% (12). Problems that

occurred in labor were found in 29.2% of women and the most common ones included long labor and fetus not being in the correct position. Often such outcomes are caused by tightening of the uterus becoming less and the baby settling in the wrong place which hold a greater risk for women with several previous deliveries (13). 1.7% of women with previous cesarean sections experienced uterine rupture which is a major problem. The study shows a cesarean section rate of 34.3% which is more than the typical rate recorded in the general obstetric field (10). Obstructed labor, problems with the baby’s health, a history of cesarean section and unusual positioning were the main reasons for cesarean section. A total of 27% of

the study subjects reported having postpartum complications. Postpartum hemorrhage was the most common problem, seen in 14.6% of all cases. Uterine atony was mainly to blame which makes sense because grand multiparity often brings about changes in the uterus. It was also common in those cases to see retained placenta in 6.2% of women and puerperal sepsis in 3.4 percent, arising from prolonged labor or an early membrane rupture (14). Severe maternal morbidity, including the need for intensive care, surgical repair of uterine rupture, or multiple transfusions, was recorded in 9 percent of participants. Blood transfusion was required in 16.3% of the women, mostly due to anemia or hemorrhage (15). Despite these complications, no maternal deaths occurred during the study period. Furthermore, 43.3 percent of grand multiparous women delivered without any complications, indicating that while grand multiparity is a risk factor, not all cases are associated with poor outcomes (16). Previous research has shown that the risks of complications in grand multiparous women are influenced not only by parity but also by maternal age, socioeconomic status, antenatal care quality, and comorbid conditions.

Conclusion

It is concluded that grand multiparity is associated with an increased risk of maternal complications during the antepartum, intrapartum, and postpartum periods. The findings of this study demonstrate that conditions such as anemia, hypertensive disorders, prolonged labor, malpresentation, cesarean delivery, postpartum hemorrhage, and other morbidities are more prevalent among women with high parity. Although not all grand multiparous pregnancies result in adverse outcomes, the cumulative physiological strain and obstetric challenges make this group particularly vulnerable. Effective antenatal surveillance, timely identification of complications, and access to skilled obstetric care are essential in reducing the risks associated with grand multiparity.

Declarations

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-24)

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

N (Postgraduate FCPS 2 Trainee)

Manuscript drafting, Study Design,

SS (FCPS)

Review of Literature, Data entry, Data analysis, and drafting articles.

AS (Doctor Of Physical Therapist)

Conception of Study, Development of Research Methodology Design,

All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

References

1. Nazir S, Khan R, Sikandar A, Chaudry S. Feto-Maternal Complications in Grand Multiparous Women Presenting in Gynaecology & Obstetrics Department, Sir Ganga Ram Hospital, Lahore, Pakistan: A Tertiary Care hospital. 2023.

2. Saeed I, Mehmood H, Bilal S, Riaz N, Abbas M, Junaid FF. Unmasking a Hidden Threat: Prenatal Stress and its Link to Maternal and Fetal Health: A Cross-Sectional Study in Tertiary Care Hospital. *Pakistan Journal of Medical Research*. 2024;63(2):64-8.
3. Khalid A, Akhtar B, Yazdani T, Zohra S, Chohan SF. The Linkage of Grand Multiparity with Associated Risks During Pregnancy and Childbirth: A Cross-Sectional Study at Tertiary Care Hospital. *Pakistan Armed Forces Medical Journal*. 2024;74(5):1435.
4. Buyuk GN, Kansu-Celik H, Kaplan ZAO, Kisa B, Ozel S, Engin-Ustun Y. Risk factors for intrapartum cesarean section delivery in low-risk multiparous women following at least a prior vaginal birth (Robson classification 3 and 4). *Revista Brasileira de Ginecologia e Obstetrícia/RBGO Gynecology and Obstetrics*. 2021;43(06):436-41.
5. Yimer NB, Tenaw Z, Gedefaw A. Pregnancy outcomes in Grand multiparous women: Does parity matter? A comparative study. *Ethiopian Journal of Reproductive Health*. 2020;12(1):11-.
6. Kaya Şenol D, Gözüyeşil E. Evaluation of the quality of sexual life and sexual function in women with grand multiparity. *Health Care for Women International*. 2024;45(12):1397-410.
7. Mgaya AH, Massawe SN, Kidanto HL, Mgaya HN. Grand multiparity: is it still a risk in pregnancy? *BMC pregnancy and childbirth*. 2013;13:1-8.
8. Alsammani MA, Jafer AM, Khieri SA, Ali AO, Shaaeldin MA. Effect of grand multiparity on pregnancy outcomes in women under 35 years of age: a comparative study. *Medical Archives*. 2019;73(2):92.
9. Bano B, Yunus S, Yousaf S. Grandmultiparity; A Reappraisal of obstetric outcome. *Journal of The Society of Obstetricians and Gynaecologists of Pakistan*. 2023;13(2):161-5.
10. Alkwai H, Khan F, Alshammari R, Batool A, Sogair E, Alenazi F, et al. The Association between Grand Multiparity and Adverse Neonatal Outcomes: A Retrospective Cohort Study from Ha'il, Saudi Arabia. *Children*. 2023;10(9):1541.
11. Abdelmageed E, Bahaeldin H, Nadiyah A, Abdelbagi A, Duria R, Ishag A. Maternal and neonatal outcomes of grand multiparity in Khartoum, Sudan. *African Health Sciences*. 2022;22(1):164-71.
12. Zafar SMA, Naeem S, Noor S, Niaz A. Comparison of malpresentation between multipara and grand multipara. *Journal of The Society of Obstetricians and Gynaecologists of Pakistan*. 2017;7(2):82-4.
13. Dasa TT, Okunola MA, Dessie Y. Effect of grand multiparity on adverse maternal outcomes: A prospective cohort study. *Frontiers in Public Health*. 2022;10:959633.
14. Lee KE, Wen T, Faye AS, Huang Y, Hur C, Friedman AM. Delivery risks and outcomes associated with grand multiparity. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2022;35(25):7708-16.
15. Tegute I, Maiga AW, Leppert PC. Maternal and neonatal outcomes of grand multiparas over two decades in Mali. *Acta obstetricia et gynecologica Scandinavica*. 2012;91(5):580-6.
16. Dalfra MG, Burlina S, Del Vescovo GG, Lapolla A. Genetics and epigenetics: new insight on gestational diabetes mellitus. *Frontiers in endocrinology*. 2020;11:602477.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, <http://creativecommons.org/licenses/by/4.0/>. © The Author(s) 2025