



Exploring the Association Adverse Multiparity Outcomes during Pregnancy in Mosul City

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ABSTRACT

Background & Objective: Maternal multiparity is characterized by a woman having two or more pregnancies, irrespective of the outcome (live births, stillbirths, or miscarriages). Adverse neonatal outcomes encompass various detrimental health conditions that can impact newborns.

The study aimed to assess the incidence and severity of maternal and neonatal adverse birth outcomes

Methods: quantitative cross-sectional observational study design due to its ability to gain a clear understanding of the research objectives over a period of 10 months, this study was conducted at three maternity and obstetric hospitals in AL-Mosul, Iraq The sample of the study consisted of 300 pregnant women between the ages of 15 and 45 years, who underwent delivery or were referred from antenatal care units for labor induction

Result: Mean age for grand multiparity is 30.49 and for multiparity is 27.88. 42.4% had babies weighing 2.5KG belongs to grand multiparity women

Conclusion: Most of the study participants Most common neonatal out comes was statistically significant difference in term low birth weight in both group the majority was in grandmother

Keywords:

Multiparity, Neonatal Outcomes. Grand multiparity.

Introduction

The term "parity" was first used in reference to childbirth in the fourth quarter of the nineteenth century and is derived from the Latin verb parere, which means "to give birth, bring forth." Parity the number of pregnancies reaching a viable gestational age¹.

International Federation of Obstetrics and Gynecology defines a grand multiparous woman as having at least five to nine previous term deliveries. Authors in recent research have extensively embraced this concept ².

Low multiparity, after 28 weeks of pregnancy, was defined as two to four live births or stillbirths, "Great grand multiparity" was a term

used by certain academics to describe women who had ten or more live babies³.

Grand multiparous women had greater rates of antepartum hemorrhage, anemia, postpartum hemorrhage, and premature rupture of membrane (PROM) Low multiparous women were more likely to experience prolonged labor, induction or augmentation, prelabor membrane rupture, episiotomy, and post-term pregnancy⁴.

Multiparity has been linked to a number of risk variables, including maternal age, socioeconomic position, level of education, and access to healthcare. Numerous pregnancies are also more common in women with histories of depression or anxiety, traumatic life events, and a lack of

social support, according to studies. Additionally, research has revealed that multiparous women are more likely to be overweight or obese, have higher cholesterol, and suffer from conditions including pre-eclampsia, hypertension, and diabetes⁵. Maternal outcomes throughout pregnancy, such as an increased frequency of antepartum hemorrhages, placenta Previa, obesity, diabetes, and hypertension. Despite postpartum bleeding, cesarean sections, and malpresentation, the existing evidence is still not conclusive. Additionally, great multiparity has been linked to an increased risk of preterm delivery, birth hypoxia, low birth weight, and early infant death admission to the neonatal intensive care unit (NICU)⁶.

Methods

Aim of the Study: The purpose of this study is to exploring the relationship between multiparity and adverse maternal outcomes during pregnancy.

Design of the study: quantitative cross-sectional observational study design, comparative study design.

Setting and Time: The data were collected from the three obstetrics and gynecology units of teaching hospitals in mousl city, the center of Nineveh Governorate (alkhansaa teaching hospital, alsalam teaching hospital, albatool teaching hospital). The data collection was done in the period between the 29th of November 2022 to the 25th of April 2023.

Sample of the Study:

The sample of the study consisted of 300 pregnant women between the ages of 15 and 45

years, who underwent delivery or were referred from antenatal care units for labor induction. The data collection period was from 29 November 2022 to 25 April 2023. All multiparity pregnant women between the ages of 15 and 45. Pregnant women under the age of 15 and above the age of 49 were excluded from the study group.

Data collection and Instrumentation: The data collection tool used in this study was a structured questionnaire form. The questionnaire was designed in Arabic and then translated into English. It consisted of four parts.

Part 1: sociodemographic characteristic includes (age, BMI, level of education, occupation, Place of Residence, monthly income).

Part2: Focus on Outcomes During the Current Pregnancy: These outcomes include gestational hypertension, gestational diabetes, pre-eclampsia, urinary tract infections, anemia, premature rupture of membrane, antepartum bleeding, hyperemesis gravid arum, cervical insufficiency, placenta Previa, placenta abruption, fetal malpresentation, intrauterine growth restriction (IUGR), oligohydramnios, and other potential complications

Statistical Analysis: The data were analyzed using SPSS version 26 to interpret the study's findings.

Result

The study included 300 pregnant women. Demographic Characteristics for Multiparity and Grand multiparity (Table 1).

Table 1: Demographic Characteristics for Multiparity women

Demographic Characteristics		Multiparity		Grand multiparity	
		Frequency	Percent %	Frequency	Percent %
Mother age	15 to 21	25	17.6	19	12.0
	22 to 28	56	39.4	42	26.6
	29 to 35	35	24.6	45	28.5
	36 to 42	19	13.4	38	24.0
	43 to 50	7	5.0	14	8.9
	Total	142	100.0	158	100.0
Body mass index	Underweight	3	2.1	19	12.0
	Normal weight	42	29.5	28	17.7
	Overweight	55	38.7	44	27.9

	Obesity I	38	26.7	58	36.7
	ObesityII	4	2.8	9	5.7
	Total	142	100.0	158	100.0
Residence	Urban	112	78.9	103	65.1
	Rural	30	21.1	55	34.9
	Total	142	100.0	158	100.0
Mothers Educational Level	Illiterate	9	6.3	7	4.4
	Read and Write	21	14.8	42	26.6
	Primary	40	28.3	39	24.6
	Secondary	32	22.5	37	23.5
	Intermediate	6	4.2	15	9.5
	Bachelors	25	17.6	12	7.6
	postgraduate	9	6.3	6	3.8
	Total	142	100.0	158	100.0
	postgraduate	21	19.3	14	8.9
	Total	142	100.0	158	100.0
Occupation	Employee	18	12.7	13	8.2
	Wife House	5	3.5	132	83.6
	Student	119	83.8	13	8.2
	Total	142	100.0	158	100.0
Economic Status	High	42	29.6	43	27.2
	Medium	20	14.1	14	8.9
	Low	80	56.3	101	63.9
	Total	142	100.0	158	100.0

Table 2: Outcomes during Current Pregnancy for Multiparity and Grand multiparity

Characteristics		Multiparity		Grand Multiparity	
		Frequency	Percent	Frequency	Percent
Gestational Hypertensive/ Preeclampsia	yes	58	40.8	92	58.2
	No	84	59.2	66	41.8
	Total	142	100.0	158	100.0
Gestational Diabetes	yes	24	16.9	89	56.3
	No	118	83.1	69	43.7
	Total	142	100.0	158	100.0
excessive diabetes	yes	0	0	12	7.6
	No	142	100.0	146	92.4
	Total	142	100.0	158	100.0
Anemia	yes	91	64.1	97	61.4
	No	51	35.9	61	38.6
	Total	142	100.0	158	100.0
Mal presentation	yes	25	17.6	41	25.9
	No	117	82.4	117	74.1

	Total	142	100.0	158	100.0
Abruptio Placenta	yes	23	16.2	89	56.3
	No	119	83.8	69	43.7
	Total	142	100.0	158	100.0
Placenta Previa	yes	22	15.5	88	55.7
	No	120	84.5	70	44.3
	Total	142	100.0	158	100.0
Premature Rupture of Membrane	yes	9	6.3	50	31.6
	No	133	93.7	108	68.4
	Total	142	100.0	158	100.0
Intrauterine Growth Restriction	yes	20	14.1	34	21.5
	No	122	85.9	124	78.5
	Total	150	100.0	150	100.0
Incompetence Cervix	yes	44	30.9	53	33.5
	No	98	69.1	105	66.5
	Total	142	100.0	158	100.0
Reproductive Tract Infections	yes	92	64.8	105	66.5
	No	50	35.2	53	33.5
	Total	142	100.0	158	100.0

Discussion

In this study, the distribution of age between multiparity and grand multiparity women: multiparity women distributed within the age group (22 - 28 years) at a rate of (39.4%), while for grand multiparity at the highest percentage, it was in the age group (29 -35years) at a rate of (28.5%). mean age for grand multiparity is 30.49 and for multiparity is 27.88. Multiparity mothers had a higher rate of overweight BMI (38.7%) compared with (27.9%), while the comparison group had a higher rate of obesity I (36.7%), compared with (26.7%). studying the BMI of multi-parity women could help healthcare providers better understand and manage these risks during pregnancy and childbirth. It may also help develop interventions and policies that promote healthy weight management and prevent obesity-related health complications in multi-parity women. In contrast with a study conducted by Awuni, and others in south Ghanaian which shows that Obesity increased to 22.74% (121/532) in multiparous (2-3 children/woman) and increased further by 9.58% to 23.53% (12/51) in high parity women.⁷

The urban had the highest percentage of multiparity with a percentage of (78.9%), (57.5%) grand multiparous women live in rural area. may contribute to the prevalence of grand multiparity being higher in rural areas limited access to healthcare and family planning services, lower educational and income levels. A study conducted by Nyada compatible with multiparity conflict with grand multiparity which shows Slightly more than two-thirds (67.5%) of the multiparous women and (49.6%) of the grand multiparous women were urban.⁸

Most multiparity mothers had primary education, with a rate of (28.3%), compared to the highest percentage of grand multiparous mothers who can read and write at a rate of (26.6%).

House wives have the highest percentage with a rate of (37.3%) (83.6%) for multiparity, & grand women. This may be due to economic conditions for families, especially in rural areas, as they seek fewer years of school to save time and money. In some villages and the countryside, marrying a girl at a young age is a custom and tradition in agreement with a study conducted by Tadese The

lower prevalence in this study can be attributed to standard literacy level of grand multiparas, as over 52% had at least primary level of education. Close to two-thirds (63.1%) of the multiparous women and more than three-fourths (75.7%) of the grand multiparous women were housewives⁹. Earner across both groups, the highest percentage of Husband Job multiparity and grandmothers with a rate of (38.0% ,45.5%).

In contrast with a study conducted by Dasa, which shows Women's husbands were merchants (29.9 %)· (63.9%) had a limited incomes belong to grandmothers, compared with multiparity mothers, with a percentage of (61.9%) respectively¹⁰.

In the current study, anemia was one of the major complications found to be higher in multiparity than in grand multiparity women (57.0% vs 61.4%). frequent pregnancies can lead to nutritional deficiencies, such as iron deficiency, which can contribute to the development of anemia. It's also possible that physiological changes related to multiple pregnancies can impair the body's ability to absorb and utilize iron. gestational hypertension (for grand multiparity 58.2% and for multiparity 40.8%), grand multiparity are more exposed to diabetes than multiparity women (for grand multiparity 56.3% and for multiparity 16.9%). Similarly, to the study conducted by Thekrallah that Compared multiparous women, grand multiparous women were more likely to show that grand multiparity is more likely to pregnancy complications such as hypertension (12.4%for grand &4.3%) and diabetes mellitus (6.8for grand &1.2 for multiparity). In the current study, anemia was one of the major complications found to be higher in multiparity than in grand multiparity women (57.0% vs 61.4%)while in Thekrallah study shows There was no difference between the groups in the prevalence of anemia (for grand multiparity 19.3% and for multiparity 13.5%)¹¹.

It's important to note that not all grand multiparous women will develop gestational hypertension or diabetes, and other factors like genetics and lifestyle habits can also play a role. One possible explanation is that the body's ability to process glucose and insulin may become less

efficient with each pregnancy, which can increase the risk of gestational diabetes.

It is interesting to note that some outcomes were more prone in grand multiparity such as Abruptio Placenta (grand 58.2%, multiparity 40.8%)Placenta Previa (for grand 58.2%, multiparity 40.8%). It is believed that a history of multiple pregnancies can cause changes to the uterus that increase the risk of these conditions. Specifically, multiparity has been associated with an increased risk of placenta Previa, However, it is important to note that not all women who are multiparous will develop these conditions, and other factors such as previous cesarean sections and maternal age may also play a role.

In agreement with the study conducted by Kaur Strong associations between abruptio and anemia, and advanced maternal age have also been found. Grand multipara (>P5) had the highest prevalence of placental abruptio. While in multiparity0.5. reported placenta Previa and abruptio placentae more commonly in grand multiparas but without statistical significance¹²

Factors that increase the likelihood of fetal malpresentation in grand multiparas include uterine over distention, poor uterine tone, and decreased amniotic fluid levels. Additionally, other factors such as maternal age, history of previous cesarean delivery, and underlying medical conditions may also contribute to the risk of malpresentation. It is important to note that while grand multiparity may increase the risk of certain complications, many women who have given birth multiple times have healthy pregnancies and deliveries.

It is also worth noting that The results appeared in both categories and in proportions that deserve to be highlighted and mentioned which is Incompetence Cervix (for grand 33.5%, multiparity 30.9%) Premature Rupture of Membrane (for grand 31.6%, multiparity 6.3%)Mal presentation (for grand 25.9%, multiparity 17.6%) Intrauterine Growth Restriction (for grand multiparity 21.5%, multiparity 14.1%).

One possible explanation for this association is that the cervix may become weakened after multiple pregnancies, which can increase the risk of PROM. Additionally, grand multiparous women may be at increased risk of

infection, which can also increase the risk of PROM. It is important for women who are grand multiparous or who have other risk factors for PROM to receive appropriate prenatal care and monitoring to ensure the best possible outcome for themselves and their babies. It is believed that this may be due to factors such as age, maternal nutritional status, and pelvic size. Additionally, grand multiparity has also been associated with other pregnancy complications such as gestational diabetes, hypertension, preeclampsia, preterm delivery, prelabor rupture of membranes, abruption, postpartum hemorrhage, and stillbirth.

multiparous mothers may be at increased risk of cervical incompetence, which can lead to premature birth and IUGR. It is important for women who are multiparous or who have other risk factors for IUGR to receive appropriate prenatal care and monitoring to ensure the best possible outcome for themselves and their

Conclusion

Based on the discussion of results and their interpretations, the present study concludes that most of the study participants have statistically significant difference between the two groups in anemia, gestational hypertension, gestational diabetes, Mal presentation, Reproductive Tract Infections, Abruptio Placenta, Placenta Previa, Premature Rupture of Membrane, Intrauterine Growth Restriction, Incompetence Cervix, It is also worth noting that The results appeared in both categories and in proportions that deserve to be highlighted and mentioned grand multiparity than multiparity women .

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babies. Further research is needed to fully understand the relationship between multiparity and IUGR.

factors that may contribute to the increased risk of infections in multiparous women include changes in hormonal levels, changes in the vaginal microflora, and increased pressure on the bladder and urethra due to repeated pregnancies. Additionally, multiparous women may have underlying medical conditions such as diabetes or sickle cell trait that can increase their susceptibility to infections. It is important for women who are multiparous or who have other risk factors for reproductive tract infections to practice good hygiene, stay hydrated, and seek prompt medical attention if they experience symptoms of infection. Further research is needed to fully understand the relationship between multiparity and reproductive tract infections.

Author Contributions: Study conception, initial draft writing, data gathering, data analysis, and author assessment of the finished product

Acknowledgments: The study's approval by the Mosul Directorate of Health's Ethical Research Committee is gratefully acknowledged by the authors.

Ethical consideration: Official Ministry of Education/Nineveh Directorate permission was obtained prior to data collection, and participants' verbal consent was sought prior to data collection beginning.

Conflicts of interest: Nil

Source funding: Self

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