Maternal and Neonatal Outcome in Grandmultiparaous Women at Zagazig University Hospitals

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Abstract:

Background: Egypt is over populated and continuing population growth places a major strain on land and resources alike**.** Grandmultiparity can impose costly burden on Egypt; not only that, but also it can hinder economic development, increase health problems for the mother and children and erode the quality of life by reducing access to education, nutrition and employment. **The aim** of the present study was to compare maternal and neonatal outcome between grandmultipara and low parity women. **Research design:** A case control design was used in carrying out this study and a representative **sample** of 200 grandmultipara and low parity women were recruited for this study. **The tools** used for data collection were; an interview questionnaire sheet, a clinical assessment form, the partograph, a summary of labor sheet and a neonatal assessment sheet. **The results** of the study revealed that, grandmultipara women were more than 35 years, illiterate or can read and write and were living in rural areas. Previous abortion (54.0%), neonatal deaths (51.0%) and previous CS (63.0%) were more common and they had a statistically higher rate of contraceptive failure (p= 0.020). Their current pregnancy was associated with a higher proportion of anemia (65.0%), gestational diabetes and mal-presentation. They also had more failure of labor progress, uterine inertia, elective type of CS (67.6%), and postpartum hemorrhage. Neonatal deaths (5.0%), need of resuscitation as well as admission to NICU were also more common among grandmultipara women. **It can be concluded that**, the grandmultiparity was associated with ante-partum, intra-partum and postpartum complications, as well as neonatal morbidity and mortality. **It was recommended that, the** antenatal care and quality delivery services, adequate counseling to improve patient's awareness pertaining to family planning and on issues relating to education, economic empowerment, as well as the misuse of culture and tradition that impedes their progress.

Keywords: Grandmultiparity, Obstetrical complications of grandmultipara

Introduction:

Gravidity is defined as the number of times that a woman has been pregnant. While, parity is the number of times that she has given birth to a fetus with a gestational age of 28 weeks or more, regardless of whether the child was born alive or stillborn**.** Grandmultiparity is the condition of giving birth after the 28th weeks of gestation, following five or more previous viable babies. [1]

Grandmultiparity continued to be regarded as a high risk factor and challenge for obstetric practice in the developing world. Grandmultiparity is one of the major contributing factor in increasing maternal, neonatal morbidity and mortality. Furthermore, the pregnancy complications are highly related to parity and continue to be of interest to obstetricians. Pregnancies in grandmultiparas have been considered risky for many decades. [2]

The problem of grandmultiparity in developing

countries is further compounded by; a high prevalence of low socio-economic status, poor female literacy, social deprivation, as well as poor utilization of contraceptive services. On the contrary, in developed countries with improved and optimal obstetric services, grandmultiparity is not regarded as a major risk for adverse obstetric and perinatal outcomes [3]. In Egypt the incidence of grandmultiparity was 26.3%. [4] While, in most developed countries the incidence of grandmultiparity has decreased in recent years where women's education and utilization of family planning played a great role. [5]

The known antepartum complications in the grandmultiparas are increased risk of abortion, anemia, multiple pregnancy, malpresentation, ante-partum hemorrhage and preterm labor. Medical complications such as diabetes and hypertension are seen to complicate these pregnancies more than those of lower parity because of increasing age. Intra-partum complications such as fetopelvic disproportion, dysfunctional labor, uterine inertia, uterine rupture, intrauterine death, macrosomia and subsequent operative delivery with its consequent risk of maternal mortality and morbidity. Furthermore, puerperal complications are also more frequently encountered such as postpartum hemorrhage and uterine sub-involution. The neonates of the grandmultiparas are at higher risk of abnormal birth weight, preterm birth, congenital malformation and neonatal intensive care unit stay. [6]

The proper management of grandmultiparity include; taking a careful history especially past obstetric history, assessment of hemoglobin (HB) and iron stores, increasing screening in pregnancy, checking fetal presentation at each visit >36 weeks ,"watch and wait" in labor, using of oxytocins with caution. Moreover, providing good antenatal care, quality delivery services by monitoring the strength of uterine contractions and fetal presentation during delivery, applying active management of the 3rd stage of labour to prevent postpartum hemorrhage, good physiotherapy and postnatal follow up for urogynaecological problems. Furthermore; giving adequate counseling about family planning methods to improve patient's awareness and knowledge. [7]

Significances of the study:

Grandmultiparity is not only a medical problem, but also a major community health problem, because it affects negatively the community development. The Egyptian community is well known for its restricted resources, high unemployment rates and low socio-economic status of a large scale of the community. Usually those with grandmultiparity are those women who are not educated, not working and rarely utilize health care services and lacking knowledge or autonomy regarding utilization of family planning. [8]

Aim of the study:

Aim of the current study was to: Compare maternal and neonatal outcome between grandmultipara and low parity women.

Research question:

What is the maternal and neonatal outcome in grandmultipara women?

Subjects and methods:

Research design:

Case control design was adopted in this study to achieve the stated aims.

Setting:

The study was conducted in the labor room at Maternity Hospitals in Zagazig University.

Subjects:

A purposive sample of all parturient women who attended the study setting for delivery during the time of data collection regardless of age, parity or labor condition.

Sampling technique:

A consecutive sampling technique was used through out the period of 6 months of the study; Women were assigned to one of the two groups (100 women in each group). The first group (study group) consisted of 100 women with parity five or more (grandmultiparas). The second group (control group) consisted of 100 women with parity one to four (multiparas). The only exclusion criterion was for primigravida women.

Tools of data collection:

Data collection was done through the use of the following tools:

I) *A structured interview questionnaire:* The questionnaire was designed to collect data from parturient women in both groups regarding to:

- **Socio demographical data:** such as name, age, education and residence.

- **Obstetrical history:** such as parity, number of previous abortion, spacing between deliveries and types of previous deliveries and number of living children.

- **Past medical history:** it included data indicating the presence or absence of the following diseases: diabetes mellitus, hypertension and cardiac disease…….etc.

- **Contraceptive history:** it included data about previous use of family planning method and causes of grandmultiparity from women's point of view.

- **Current pregnancy condition:** it included data about history of receiving antenatal care and any problems encountered during the present pregnancy and presence of any antenatal complications such as placenta previa, anemia, preeclampsia ……etc

- **Current labour data:** it included data about phase on admission to labour room, membrane's condition, amniotic fluid condition and agumentation by oxytocin drug.

II) *Maternal assessment on admission to labor room*:

- **General examination,** such as maternal vital signs, auscultation of FHR as well as recording signs of complications during the examination of the woman.

- **Local abdominal examination and PV examination** to obtain fundal level, fundal grip, umbilical grip and pelvic grip. Furthermore; to determine signs of progress of labour eg cervical dilatation, effacement and fetal station………etc.

- **CTG:** for evaluation of the uterine contractions and fetal heart rate.

- **Laboratory investigations:** such as blood analysis to determine level of hemoglobin, RH, red blood cell count ……etc

III) *Partograph:* The partograph was used for women who had normal labour and emergency cesarean section to evaluate fetal and maternal condition and also evaluate the labor progress during the active phase of the first stage of labor

IV) *Summary of labor sheet*: It includes data about labor progress, assessment of labor complications and its management.

*Labor progress was assessed by using the partograph.

*Also, the mode of labor whether it was spontaneous vaginal delivery or instrumental delivery (forceps or ventous) or cesarean section delivery was assessed. Furthermore, it included data about the condition of the uterus after labor whether there was inertia or not.

It also included data about labour complications which included obstructed labor, uterine inertia, prolonged labor, retained placenta…..etc and immediate post natal problems such as presence of postpartum hemorrhage or maternal mortality.

V) *Neonatal Assessment sheet***:** For evaluation of the neonatal condition, the following data was obtained:

- Apgar scores at the first and fifth minute.
- Birth weighs of the newborn.
- Neonatal complications such as:
- Asphyxia
- Need for resuscitation
- Admission to Neonatal Intensive Care Unit (NICU).
- Neonatal Death
    Content validity:
        The tools were tested for content validity by five experts in the field of obstetrics and gynecological nursing. The recommended modifications were done and the final form was ready for use.

Pilot study:

A pilot study was conducted on 20 parturient women to assess the applicability of the data collection tools and the feasibility of the study. And assess the degree of women's understanding of the questionnaire and acceptance to be involved in the study. Any necessary modifications were done.

Field work:

Data collection took a period of six months - from first of September 2011 till the end of February 2012. After getting the official permission the pilot testing of the study tools was done and analyzed. The researcher started the data collection for 3 days per week during the afternoon shift as the chance to work by self was allowed. The researcher interviewed the parturient women and explained the purpose of the study, and started the data collection.

The researcher collected the data through the following phases:

1. ***Interviewing Phase:*** The researcher attended study setting three days per week for six months. All women in both groups were interviewed (structured interview). The researcher collected data related to woman's socio-demographic characteristics, obstetric profile, present medical history, current pregnancy and labour condition.

2. ***Assessment Phase:*** In this phase, the researcher together with the on duty physician started the examination of the parturient woman. Regular assessment of the maternal and fetal condition started immediately after admission to labor and delivery unit, by measuring vital signs, carrying out general, local abdominal and pelvic examination. The required laboratory investigations were done.

- Fetal monitoring by Cardio-Toco Graphy (CTG) was done for each woman throughout labor by the researcher, under the supervision of the on duty obstetrician. The obstetrician was present at all times in order to manage any problem

that can happen such as; none reassuring fetal heart rate patterns.

- Mode of labor and its duration, and the condition of the mother during the labor were also assessed. Neonatal assessment was done through assessment of the Apgar score and finding out any abnormality that needed admission to neonatal intensive care unit, resuscitation or death. These data were recorded in the summary of labor and newborn sheets.

- Medical records for all women were obtained and reviewed in detail to obtain data pertaining to discharge summaries.

Administrative and ethical considerations:

An official permission was granted after submission of an official letter from the Faculty of Nursing to the responsible authorities of the study setting to obtain the permission for data collection.

The aim of the study was explained to every woman before participation, which was totally voluntary. Women were assured that the study maneuver used will not interfere with the course or mode of delivery, and will cause no actual or potential harm on them or their newborns, and professional help will be provided whenever needed.

Statistical design:

After data collection, it was revised, coded and fed to statistical software SPSS version 16. The statistical analysis used considered all tests to be T test with alpha error = 0.05. Microsoft office excel software was used to construct the needed graphs. After data coding the following data manipulations were done. After that all numeric data were expressed in the form of range (minimum to maximum), mean and standard deviation (SD). Categorical

data were expressed in the form of frequencies and percentages.

After data manipulation was done all numeric data were expressed in the form of range (minimum to maximum), mean and standard deviation (SD). Categorical data were expressed in the form of frequencies and percentages.

A. Analysis of numeric data: One-Sample Kolmogorov-Smirnov Test: a procedure compares the observed cumulative distribution function for a variable with a specified theoretical distribution which was the normal distribution at the current data (testing for distributional assumption for numerical data).Nearly all data were found to be following normal distribution so the following statistical analysis was done:

a. *Independent sample t test*: which was used to compare between the means of two normally distributed independent groups.

Some data variables were found to have a skewed distribution so the following non parametric analysis was done:

b. *Man Whitney test (Z):* a procedure compares ranks (medians) for two independent groups of cases. Ideally, for this test, the subjects should be randomly assigned to two groups.

B. Analysis of categorical data

- *Pearson's chi square test*: it is a non parametric statistic that is used to test for the association (or relationship) between the categories of two independent samples (row and column variables) to reflect a real association between these 2 variables in the population.

- *Mont Carlo exact and Fishers exact test*: they are alternatives for the Pearson's chi square test if there were many small expected values.

For all statistical tests done, the threshold of significance was fixed at the 5% level (p-value). A p-value > 0.05 indicates non significant result and the p-value < 0.05 indicates a significant results and the p-value is the degree of significance. The smaller the p-value obtained, the more significant is the result, the p-value being the probability of error of the conclusion.

Results:

Table (1): presents the socio-demographic characteristics of women in grandmultipara group it revealed that their age ranged between 25-35 years with a mean of 35.8 ± 4.0 years as compared with 20-30 and 27.5 ± 4.6 years in the control group. Differences observed were statistically significant (t=13.7 and p=0.000).Meanwhile, the great majority of grandmultipara women were illiterate or had a basic education compared to the women in the control group (36.0%, 45.0% vs. 1.0%, 25.0% respectively). Statistical significant difference was found between the two groups in relation to education (P= 0.000).Concerning women's obstetric history **table (2)** Shows that grandmultipara women had statistically high mean number of para (5.2 ± 0.6) compared to women with low parity 2.0 ± 0.8 (P=0.000). Also they had a higher percentage of abortion and neonatal deaths (54.0% & 51.0%) compared to 26.0% and 7.0% in the control group, with statistical significant difference (p=0.000).

Table (3) shows that repeated abortion and neonatal death were the most common causes with the highest percentage (54.0%), followed by negative attitude toward the use of family planning methods (42.0%) ,desire to have large number of children and early marriage (35.0% &35.0 respectively). Meanwhile, inaccessibility, unavailability and lack of awareness of the family planning methods constituting the rest of the causes (22.0%, 30.0% and respectively).

Table (4) and figure (1&2): describe the complications encountered in both groups. It shows that 40.0% of women in grandmultipara group and more than one fourth (26.0%) had mal-presentation and gestational diabetes, compared to the control group (25.0% & 8.0% respectively) and the difference was statistically significant (p=0.035, 0.040). In addition, they were statistically more likely to have anaemia and preeclampsia (65.0% & 34.0% vs. 32.0% & 12.0%). The same table also shows that preterm labour and multiple pregnancies were significantly more common in the grandmultipara women than the control group, but with no statistically significant difference.

Table (5): reveals the comparison of intra-partum complications among women in the study and control groups has revealed statistically significant differences. It shows that grandmultipara women were more likely to have failure of labour progress (19.0%), uterine inertia (12.0%), obstructed labour (10.0%) and hysterectomy (7.0%). The corresponding figure in the control group were 1.0%, 3.0%, 4.0% and 0.0% respectively, differences observed were statistically significant.

Table (6): shows statistically significant differences were detected as regards the occurrence of postpartum complications between the study and control groups. It indicates, more than one fifth (22.0%) of grandmultipara women had primary postpartum hemorrhage with the most common type was atonic (54.5%), followed by the traumatic (27.3%) and combined postpartum hemorrhage (18.2%). On the other hand only 8.0%

of women with low parity had postpartum hemorrhage, most commonly the traumatic type (62.0%) with a lesser percentage of the atonic type (25.0%). Differences observed were statistically significant.

Table (7): demonstrate points to statistical significant differences between the two groups as regards to their Apgar score at the 1st minute (P=0.000). It is evident that grandmultipara women had less mean Apgar score at the 1st minute (4.9 ± 1.7) compared to low parity group (5.1 ± 1.2). They also had less mean Apgar score at 5th minute (6.9 ±1.8) compared to low parity group (7.3 ± 1.3), but with no statistical significant differences.

Table (8): presents the distribution of the studied women according to neonatal complications. It is obvious that the newborn of grandmultipara women had higher percentage of neonatal death (5.0%) compared to 2.0% in the newborn of women with low parity. Neonatal deaths in the grandmultipara group were due to asphyxia and fits. While it was due to neonatal asphyxia in the control group. Meanwhile, the neonates of women in the grandmultipara were more likely to have the need for resuscitation (26.0%) and admission to the NICU (35.0%) compared to those of low parity (22.0% and 22.0% respectively). Statistical significant difference was noted between the two groups (p=0.047).

Figure (3): illustrate that there is statistical significant difference between the two groups as regards to the mode of delivery (P=0.000). It is evident that that the rate of spontaneous delivery was higher in the control group (58.0%), compared to the study group (26.0%). Conversely, the rate of CS was higher in grandmultipara group and mostly an elective type of CS, compared to the control group (74.0% &67.6% and 42.0% &83.3% respectively, p= 0.005)

Discussion:

Worldwide, more than 200 million women become pregnant each year. Although most pregnancies end with a live baby to a healthy mother, in some cases, the event is a time of pain, suffering, and even death. In fact, an estimated 585,000 women die each year, and another 20 million women develop chronic, debilitating illnesses as a result of pregnancy-related complications. Of these maternal deaths, an estimated 99% take place in developing countries.[9]

Among the factors that may affect grandmultiparity are the socio-demographic characteristics of the mother such as; age and educational level. According to the present study finding, more than three fifth of women in grandmultipara group were older (35+) than those in the control group with statistically significant difference (p=0.000). This is in conformity with Rozina et al.,[10] in Pakistan and Ojiyi et al.,[11] in Nigeria, whose results revealed that, the mean age of grand multipara was significantly high compared with control group. Moreover, Smriti et al.,[12] in India have also found that grandmultipara women had a higher mean age (32.0 ± 5 years) as compared to controls (27.09 ± 4.2), (P 0.001).

On the other hand Benecke et al.,[13] in South Africa, have reported in their retrospective case control study that; there was no statistical significant difference between the two studied groups regarding to their age. Meanwhile, the great majority of grandmultipara women were illiterate or had a basic education compared to the women in the control group. This finding is similar to Rozina et al.,[10] in Pakistan, who reported that, the majority (86%) of the study group had

no education (illiterate). Furthermore, Severinski et al.,[14] study in India, revealed that; grandmultipara women were more likely to be older, less educated and unemployed compared with control group.

Significantly women in the study group were associated with high mean number of para in the present result. In a Nigerian study, the range of parity among grandmultipara women was between 5 and 15 with a mean parity of 7.78± 0.63 as against a parity range of 1-4, and a mean parity of 2.29±0.15 among control group Omole et al. [15] While, Ojiyi et al., [11] in Southeastern Nigerian study revealed that; majority of grandmultipara (89 %) had a statistically higher mean number of para (8.6±1.1) than the present study. Differences observed in the above mentioned studies and the present one may be due to cultural and religious reasons.

In partial agreement with the present study Roman et al,[2] in his prospective study found a significantly higher rate (10.7%) of abortions, neonatal deaths (3.4%) among grandmultipara group. Furthermore, Smriti et al [12] reported that; all grandmultipara women in his study were more likely to have bad obstetric history which include; spontaneous abortions, stillbirths and early neonatal death. Meanwhile Begum [16] in his study found that grandmultipara was more likely to have previous CS. This is inconsistent with the result of Hong et al., [17] in South Africa which show that, women with high parity were less likely to have abortion and neonatal deaths with statistical significant difference (p=0.0001).

The main reasons given for grandmultiparity in the current study include; repeated abortion and neonatal death, negative attitude toward family planning and the economic advantage of having an increasing number of children, early marriage, in addition, to complying to social norms and religious rules. The reasons given to justify grandmultiparity are numerous and similar in almost all studies done in this domain and over the years.[18] On the contrary El Tony [8] revealed that, lack of awareness and lack of availability and accessibility of family planning methods were the most common causes that lead to grandmultiparity.

The present study confirms the statistical association of grandmultiparity with the presence of current obstetrical complications. Anemia was at the top of the list with statistically higher percentage, followed by mal-presentation, preeclampsia and gestational diabetes. This finding is consistent with Shaista et al.,[19] study in Pakistan "Obstetrical Complications In Grandmultiparity" who have reported a higher frequency of complications which include; anemia ,hypertensive disorders in pregnancy, mal-presentation, preterm birth and twins pregnancy than control group (89.0%, 14.0%, 15.0%,6.0% and 4.0% vs 62.0%, 5.0% ,2.0% ,2.0% and 4.0% respectively). Moreover; in India in retrospective case control study have demonstrated that, there was a significant increase in the prevalence of anemia, gestational diabetes, malpresentation, antepartum hemorrhage, preeclampsia, ruptured uterus and obstructed labor among grandmultipara group than women with low parity (P 0.001).[12]

As for the mode of delivery, there was a statistically significant difference between both groups in relation to the mode of delivery, almost three quarters (74.0%) of grandmultipara group were delivered by CS, of those almost one third (32.4) had an emergency CS compared to women with low parity (42.0% and

16.7% respectively). This results is in accordance with the finding of Rozina et al., [10] who reported that, the majority (93.0%)of low parity group had the highest percent of normal vaginal delivery compared to 86.0% of grandmultipara women who were expected to have higher rate of caesarean deliveries (14% vs 7%) than low parity group but, with no statistical significant difference. While, Tahira et al., [20] found that, the CS rate (20%) in the GM group was less than the CS rate (24%) in the MP group and there was no statistically significantly different. This can be attributed to different setting and different sample technique.

The present results were also consistent with those reported by Rozina et al., [10] in his cohort study which revealed that 18.0% of grandmultipara vs 8.0% in multiparous group were more likely to develop uterine inertia and failure of labor progress. On the contrary, Roman et al., [2] found a tendency for a lower incidence of uterine atony and failure of labour progress in grandmultipara group than control group but, with no statistical significant difference.

In the current study, grandmultipara women were significantly more likely to be exposed to precipitated labor, hysterectomy. Also two women had uterine rupture. This is in conformity with Benecke et al., [13] and Ojiyi et al., [11], whose results revealed that, uterine rupture was high among grandmultipara than control group but with no statistical significant difference. In this regard, Onah [21] has claimed that uterine rupture constitutes one of the gravest risks of grandmultiparity. It may be related to intra-partum mismanagement which include; un monitored oxytocin dose, an obstructed labor as a result of delivery of a large baby which resulted in increasing the strain on the uterus and leads to its rupture.

The present study indicates that women in the study group were significantly more likely to have post partum hemorrhage; thus, more than one fifth of grandmultipara women had primary postpartum hemorrhage, of those the majority was atonic type. Differences observed were statistically significant. This is partially in agreement with Nordin et al. [22] who observed that, postpartum hemorrhage was common among grandmultipara women than low parity group (0.84 vs 0.39) but with no statistically significant (P=0.612). Moreover, Rozina et al., [10] reported that 12.0% of grandmultipara women developed post partum hemorrhage and have blood transfusion vs 3% of control group with statistically significant difference. On the contrary Rayis et al., [23] in Eastern Sudan found no direct association between grandmultiparae and post partum hemorrhage.

As regards neonatal outcome, more than one fourth newborns in the present study (26.0%) had Apgar score at the 1st minute less than 3, which is considered abnormal and needs immediate resuscitation and the difference between the two groups was highly significant (P=0.000). However, it was improved at the 5th minute with no statistical significant difference between the two groups. These findings were not totally in congruence with, Severinski et al., [14] and Rozina et al .,[10] who have reported that; there was significantly higher incidence of low apgar scores at 1 and 5 minutes among grandmultipara group compared with multipara group (P=0.002).

In the current study the neonates of women in the grandmultipara were more likely to have the need for resuscitation and admission to the

NICU compared to those of low parity. Statistical significant difference was noted between the two groups (p=0.047). Conversely, Smiljan et al., [14] reported that, grandmultiparity was associated with low percent of neonatal death (0.0%) compared to control group (2.8%), with no statistical significant difference (P= 0.345).

Conclusion:

According to the findings of the present study, it can be concluded that grandmultiparity is still associated with maternal and neonatal complications.

Recommendations:

▪ The availability of reliable contraception for grandmultipara, regardless of age or ability to pay, is an essential first step. They require access to age-appropriate and culturally sensitive reproductive health care services, including emergency contraception.

▪ Good antenatal care and quality delivery services, adequate counseling to improve patient's awareness on issues relating to education, economic empowerment, as well as the misuse of culture and tradition that impedes their progress is mandatory.

Table (1): Distribution of the studied women according to their socio-demographic characteristics

Socio- demographic data	Group				X^2	P
	Cases (n=100)		Controls (n=100)			
	No.	%	No.	%		
Age:						
▪ 20-	0	0.0	24	24.0		
▪ 25-	4	4.0	49	49.0	95.4	0.000 *
▪ 30-	30	30.0	18	18.0		
▪ 35-	66	66.0	9	9.0		
Mean ± SD	35.8 ± 4.0		27.5 ± 4.6		t =13.7	0.000 *
Education :						
▪ Illiterate	36	36.0	1	1.0		
▪ Basic	45	45.0	25	25.0	73.4	0.000 *
▪ Secondary	19	19.0	63	63.0		
▪ University	0	0.0	11	11.0		

P < 0.05 (significant)

Table (2): Distribution of the studied women according to their obstetrical history (n=200)

Obestatric history	Group				X^2	p
	Cases (n=100)		Controls (n=100)			
	No.	%	No.	%		
Parity:						
▪ Primipara	0	0.0	26	20.0		
▪ 2-4	0	0.0	74	74.0		
▪ 5-8	100	100.0	0	0.0	150.0	0.000*
Mean ± SD	5.2 ± 0.6		2.0 ± 0.8			
Abortion :						
▪ No	46	46.0	74	74.0	16.3	0.001*
▪ Yes	54	54.0	26	20.0		
Neonatal death						
▪ No	49	49.0	93	93.0	47.1	0.000*
▪ Yes	51	51.0	7	7.0		

P < 0.05 (significant)

Table (3): Distribution of the study group according to causes of grandmultiparity from the women's point of view (n= 100)

Factors affecting grandmultiparity $	No.	%
▪ Repeated abortion / neonatal death	54	54%
▪ Negative attitude toward family planning methods	42	42%
▪ Desire to have large number of children	35	35%
▪ Early marriage	35	35%
▪ Unawareness of family planning methods	30	30%
▪ Lack of availability and accessibility of family planning services	22	22%

$ *More than one response was allowed.*

Table (4): Distribution of the studied women according to the complications encountered "as diagnosed by doctor" on admission to labour room. (n=200)

Complications$^{\$}$	Group				X^2	p
	Cases (n=100)		Controls (n=100)			
	No.	%	No.	%		
Gestational diabetes:						
▪ No	74	74.0	92	92.0	4.8	0.04
▪ Yes	26	26.0	8	8.0		
Placenta previa:						
▪ No	81	81.0	90	90.0	3.2	0.068
▪ Yes	19	19.0	10	10.0		
Abruption placenta						
▪ No	95	95.0	99	99.0	2.4	0.078
▪ Yes	5	5.0	1	1.0		
Malpresentation:			75	75.0		
▪ No	60	60.0			4.5	0.035*
▪ Yes	40	40.0	25	25.0		
Twins pregnancy:						
▪ No	91	91.0	97	97.0	2.2	0.527
▪ Yes	9	9.0	3	3.0		
Pre term labour:						
▪ No	90	90.0	93	93.0	1.3	0.627
▪ Yes	10	10.0	7	7.0		

$^{\$}$ *More than one response was allowed.*
Total is not exclusive

Table (5): Distribution of the studied women according to intra-partum complications (n=200)

Intrapartum complications $^{\$}$	Group				X^2	P
	Cases(N=100)		Controls(n=100)			
	No.	%	No.	%		
Obstructed labour	10	10.0	4	4.0	1.9	0.178
Uterine inertia	12	12.0.	3	3.0	4.6	0.031*
Ruptured uterus	2	2.0	0	0.0	0.7	0.477
Precipitate labour	9	9.0	1	1.0	5.2	0.032*
Hysterectomy	7	7.0	0	0.0	5.3	0.021*
Failure of progress	19	19.0	1	1.0	14.6	0.007*

$^{\$}$ *More than one response was allowed.*
* P < 0.05 (significant)

Table (6): Distribution of the studied women according to postpartum complications (n=200)

Post partum complications	Cases (n=100) No.	Cases (n=100) %	Controls (n=100) No.	Controls (n=100) %	X^2	P
Immediate P.P haemorrhage					3.9	0.038*
▪ Yes	22	22.0	8	8.0		
▪ No	78	78.0	92	92.0		
Type of P.P haemorrhage	N=22		N=8		6.7	0.001*
▪ Atonic	12	54.5	2	25.0		
▪ Traumatic	6	27.3	5	62.5		
▪ Combined	4	18.2	1	12.5		
Maternal mortality	1	3.8	0	0.0	FET	0.128

$^{\$}$ *More than one response was allowed*

P value based on Mont Carlo exact probability

* P < 0.05 (significant)

Table (7): Distribution of the studied women according to apgar score at the 1st and the 5th minute and birth weight (n=200).

Item	Cases (n=100) No.	Cases (n=100) %	Controls (n=100) No.	Controls (n=100) %	X^2	P
Apgar score after 1 minute					17.6	0.000*
▪ <3	26	26.0	8	8.0		
▪ 4-6	55	55.0	82	82.0		
▪ 7+	19	19.0	10	10.0		
Range	2-9		2-8			
Mean ± SD	4.9 ± 1.7		5.1 ± 1.2		t=0.97	0.332
Apgar score after 5 minutes					5.1	0.081
▪ <3	7	7.0	1	1.0		
▪ 4-6	22	22.0	20	20.0		
▪ 7+	71	71.0	79	79.0		
Range	2-10		3-10			
Mean ± SD	6.9 ±1.8		7.3 ± 1.3		t=1.7	0.086

*Fisher exact test   * P < 0.05 (significant)

Table (8): Distribution of the studied women according to neonatal complications (n=200).

Neonatal complications	Group				X^2	P
	Cases (n=100)		Controls (n=100)			
	No.	%	No.	%		
Early neonatal death						
▪ No	95	95.0	98	98.0	1.5	0.630
▪ Yes	5	5.0	2	2.0		
Need of resuscitation						
▪ Yes	26	26.0	22	22.0	0.44	0.508
▪ No	74	74.0	78	78.0		
Admission to NICU						
▪ Yes	35	35.0	22	22.0	3.9	0.047*
▪ No	65	65.0	78	78.0		

* P < 0.05 (significant)
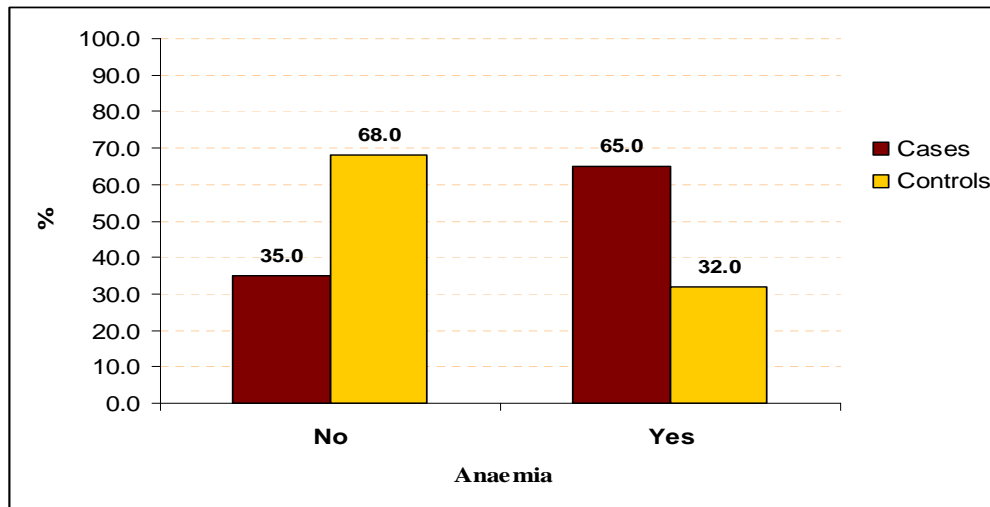
Figure (1): Distribution of the studied women according to presence of Anemia during pregnancy (n=200)

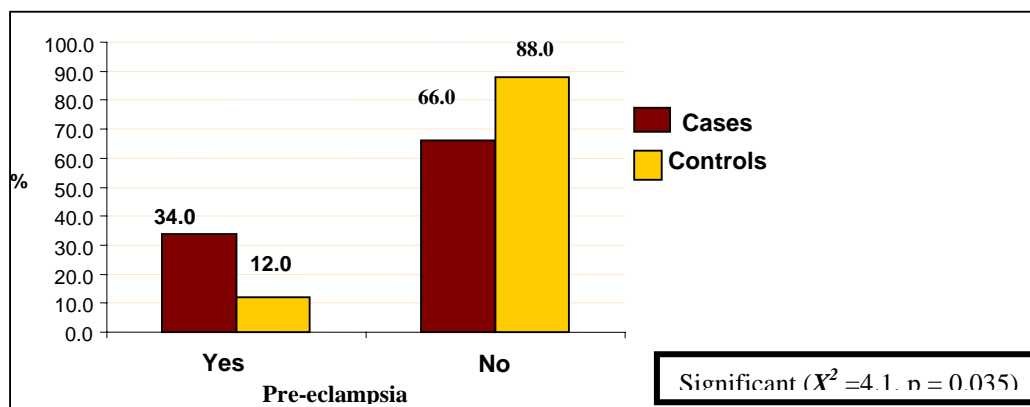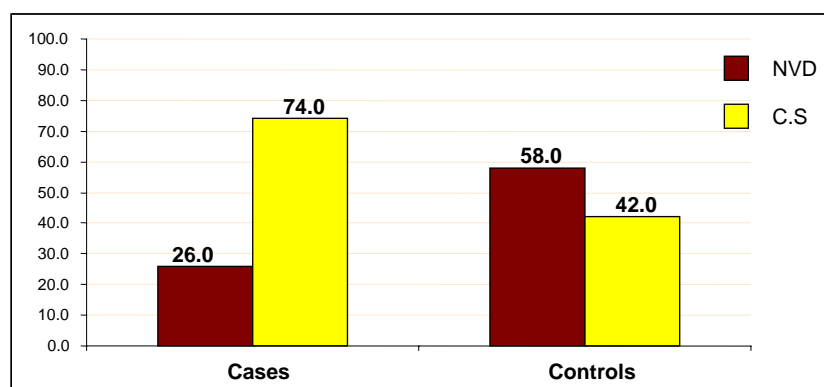**Figure (2):Distribution of the studied women according to presence of preeclampsiaduring pregnancy(n=200)**

Figure(3): Distribution of the studied women according to mode of delivery (n= 200)

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