Is Grand Multiparity Still An Obstetrics Risk?

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Abstract

Background: Grand multiparity has been known to be an obstetric risk because of the documented complications associated with the condition, and it is an indication for booking in a tertiary health institution.

Patients and Methods : Cross – sectional study was conducted in Al-Batool teaching hospital during the period from July 2014 to November 2014. Total number of deliveries was 200. Samples (100 grand multipara women and 100 woman as control group), who were admitted to the maternity unit for labour and delivery, the two groups were matched for age, antepartum outcome, intrapartum outcome, postpartum outcome and fetal outcome to compare the risk between grand multiparity and control.

Results: Two hundred of grand multiparous woman and control group were included in the present study the mean age was (32.32 ± 6.006) years. There was (56%) of grand multiaparity have anemia and other medical diseases such as hypertension, diabetes mellitus, epilepsy and urinary tract infection. Statistically significant differences noticed when compared with the control group (p- value ≤ 0.05). Also there were higher incidence of preterm labour and abruption placenta in grand multiparity comparing to control group. However higher incidence of caesarian section delivery in grand multiparous woman than control group (60%, 40%) respectively. The most common cause for caesarian section was due to previous scar, which was (58.8%) in control versus (51.6%) in grand multiparity. Regarding the perinatal outcome there was Apgar score ≤ 7 at 1 minute (61%, 28%) in grand multiparity and control respectively which was statistically significant.

Conclusion: The grand multiparity still be considered a high risk in pregnancy due to medical and obstetrical complications, also it is necessary to provide a good health care for grand multiparous woman, and their neonates.

Key Words: Grand multiparity, anaemia, abruption placenta, caesarian section**.**

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Introduction

There are differences in the definition of grand multiparity in the literature. While most authors regard a grand multipara as a woman who has given birth at least 5 times after 22 completed weeks (age of viability) of gestation. Others use the old definition of para 7 or more [1]. Grand multiparity, as per the International Federation of Gynecology and Obstetrics, is the delivery of the fifth to ninth infants [2]

The incidence of grand multiparity is low in economically developed countries, religious or cultural factors mean that it is

common in some populations or communities [3]. Nonetheless, it is still common in many developing countries incidence of grandmultiparity is between (10%-30%). especially in the Arab world where a cultural preference for larger families is still prevalent While in developed countries grand multiparity is becoming rare (3- 4%) of all births [4, 5].

Recent study indicates that, with proper peri-natal care, women with high-parity rates are no longer at high risk [6]. It seems fair that with improved and modern perinatal care, improved perinatal outcomes for both mother and child might be assured. In other words; high parity may not be a great cause for concern if the economy is stable, population is healthy and there is access to high quality medical care and this is obvious in western countries [7].

In relation to obstetric performance is labeled high risk. High risk pregnancy is define as one in which the mother, fetus or newborn will be at increased risk of morbidity or mortality at or after birth. The risk to the mother and child is relatively high in first pregnancy and then this risk decline during second, third and then slowly rises with increasing parity by the sixth pregnancy risks exceeds these of 1st and after that rises steeply with each pregnancy [8].

Historically the complications associated with the grandmultipara have been divided into antepartum, intrapartum and the puerperium. Antepartum complications or risk factors are thought to be anaemia, rhesus incompatibility, increased body mass index (BMI) and multiple pregnancies, with GM women having low haemoglobin levels (≤10g/dl) antenatally1 compared with Multiparous [7,8,9].

Intrapartum complications such as fetal malpresentation, placental abruption, dysfunctional labour, and postpartum hemorrhage, uterine rupture, placenta previa and caesarean section rate are commonly linked to grand multiparity [9, 10]. While other studies found that in uterine activity during labour, they studied 400 multipara including grandmultiparous of Chinese origin. The result was multiparous women with previous vaginal delivery seems more likely to have an easy labour due to easily progression in cervical dilatation, more efficient uterine contraction and reduced pelvic and cervical tissue resistance than those with low parity and prime gravida [11].

Regarding effect of grand multiparity on prenatal health there is a study conducted in United Kingdom (Reunion Hospital) found that grand multipara had more previous intrauterine and perinatal deaths [12, 13]. Another study from Malaysia found that grandmultiparous women were significantly at risk of preterm and low-birth- weight deliveries [13]. A recent study reported that young grand multiparas were more likely to have preterm deliveries, and less likely to experience fetal distress [14]. The main purpose of this study was to determine the prevalence of grand multiparity, and if it is still associated with the previously documented complications in the obstetric population presenting at Al-Batool Teaching Hospital.

Patients and Methods

Cross-sectional study was conducted in Al-Batool teaching hospital during the period from July2014 to November 2014. The total numbers of deliveries were 200. Divided into two group which are 100 grand multipara women group (women who delivered fifth to ninth infants) and 100 control group women (women who delivered 0 to 4 infants), were admitted to the maternity unit for labour and delivery. Their antenatal history was assessed retrospectively and then they were followed up for maternal and fetal intrapartum and postpartum outcomes till discharge or admission to neonatal intensive care unit (NICU). The two groups were matched for age,maternal antenatal outcomes (antepartum

haemorrhage, hypertensive diseases in pregnancy, gestational diabetes, premature rupture of Membrane, multiple pregnancy and preterm delivery). Intrapartum maternal outcomes (malpresentation and caesarean section, failure to progress, precipitate labour and obstructed labour) .Postpartum looked at (postpartum hemorrhage, retained placenta, perineal tear and maternal mortality. Fetal outcomes include (fetal distress, intrauterine fetal deaths, stillbirths, early neonatal deaths, LBW, birth asphyxia, admission to NICU and perinatal mortality rate).

Statistical and Analysis

The data analyzed by using SPSS 14 and Chi – square test was used to find the variables. **(**It was $x^{\dagger}2 = ((O-E)^{\dagger}2/E))$

Results

Two hundred grand multipara and multipara woman identified during the period of study.It was found that the age of group was (26-30) which is significantly higher in grand multipara (39%) compared with control woman (18%).The mean age of grand multiparous woman was (32.32 ± 6.006) years, while the mean age of control was (24.39 ± 4.620) years. As show in figure 1.

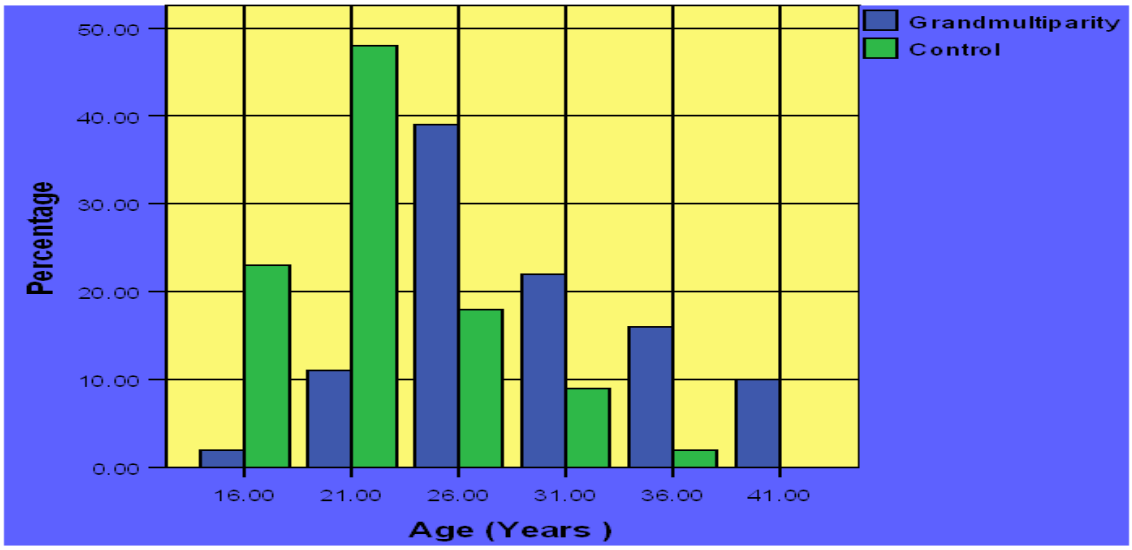

Figure (1): Distribution of age in studied groups.

As shown in table 1 the results revealed that high incidence of anemia (56%) versus (10%), Hypertension (16 %) versus (3%), Diabetes mellitus (9%) versus (2 %), Epilepsy (8%) versus (1%) and urinary tract infection (16%versus7%).

Table (1): Medical complications in studied groups.

Medical Complications	Grand multiparity		Control		P-value
	No.	(%)	No.	(%)	
Anaemia (Hb ≤ 10)	56	(56 %)	10	(10 %)	0.000
Hypertension	16	(16 %)	3	(3 %)	0.01
Diabetes mellitus	9	(9 %)	2	(2 %)	0.02
Epilepsy	8	(8 %)	1	(1 %)	0.04
Asthma	4	(4 %)	1	(1%)	0.1
Urinary Tract Infection	16	(16 %)	7	(7 %)	0.03
Deep Venous Thrombosis	3	(3 %)	0	(0 %)	-

According to the table (2) grand mutiparous woman was significantly are more likely to delivered pretermly than control woman (27 %, 1%) respectively, also the grand multiparous woman are more likely to developed abruptio placenta (6%) than control woman (1%).

Table 2: Obstetrical complications in studied groups.

Obstetrical Complications	Grand multiparity		Control		P-Value
	No.	(%)	No.	(%)	
Post Partum Hemorrhage	5	(5 %)	0	(0 %)	-
Ante partum Hemorrhage	4	(4 %)	1	(1 %)	0.16
Placenta previa	5	(5%)	0	(0 %)	-
Abruptio placenta	6	(6 %)	1	(1%)	0.05
Cord prolapse	1	(1 %)	0	(0 %)	-
Preterm labour	27	(27%)	1	(1%)	0.000
Obstructed labour	7	(7 %)	2	(2 %)	0.08
Premature Rupture Of Membrane	3	(3%)	1	(1 %)	0.30

The present study which revealed that higher incidence of caesarian section delivery (60%) in grand multiparous woman compared with control group (34%) while there were a higher incidence of normal vaginal delivery (NVD) (66%) in control group compared with (40%) of grand-multiparous woman.As show in figure (2).

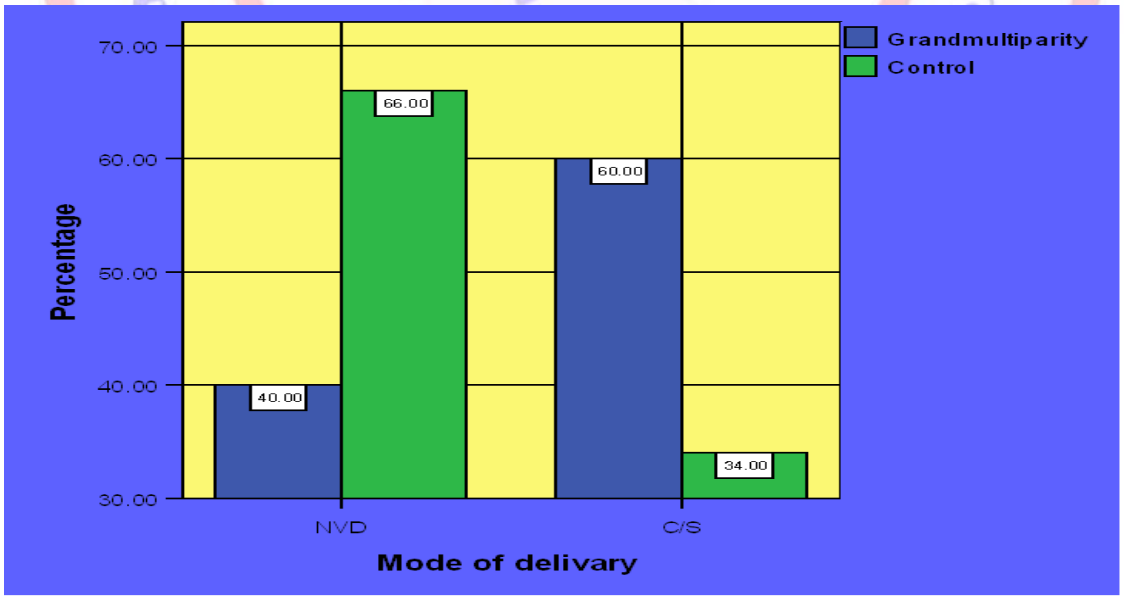

Figure (2): Mode of delivery in studied groups.

In table 3 there were a higher incidence of previous scars in control group (58.8%) versus (51.6%) in grand multiparous woman.

Table (3): Indications of caesarian section delivery in studied groups.

Indications of C/S	Grandmultiparity		Control		P-value
	No.	(%)	No.	(%)	
Previous scars	31	(51.6%)	20	(58.8%)	0.31
Breech presentation	6	(10 %)	2	(5.8%)	0.47
Cephalopelvic disproportion	1	(1.6 %)	1	(2.9%)	0.67
Face presentation	3	(5 %)	1	(2.9%)	0.62
Obstructed labour	1	(1.6%)	1	(2.9%)	0.67
Hypertension	5	(8.3%)	0	(0%)	-
Failure to progress	2	(3.3 %)	4	(11.7%)	0.09
Meconium aspiration	0	(0 %)	1	(2.9%)	-
Fetal distress	0	(0%)	1	(2.9%)	-

In table 4 Apgar score ≤ 7 at 1 minute was higher in grand multiparous group compared with control group (61%) and (28%) respectively , Apgar score ≤ 7 at 5 minute was also higher in grand multiparous group compared with control group (11%) and (4%) respectively (p-value ≤ 0.05). There was (31%) It was found that the weights (≤ 2.5 kg) which are significantly higher in grand multipara woman 27% compared with control 8%, (P-value 0.011).

Table (4): Perinatal outcome in studied groups.

Perinatal outcome	Grandmultiparity		Control		P- value
	No.	(%)	No.	(%)	
Apgar score ≤ 7 At 1 minute	61	(61%)	28	(28%)	0.000
Apgar score ≤ 7 At 5minute	11	(11%)	4	(4%)	0.05
Sex ♂ ♀	45 55	(45%) (55%)	45 55	(45%) (55%)	1.00
Neonatal Intensive Care Unit	31	(31%)	6	(6%)	0.000
Intra Uterine Death	3	(3%)	1	(1%)	0.30
Fetal distress	7	(7%)	2	(2%)	0.08

The mean weight of neonates of grand multiparous woman was (2.87 ± 0.528) kg, while the mean weight of neonates of control group was (3.16 ± 0.483) kg .As show in figure (3).

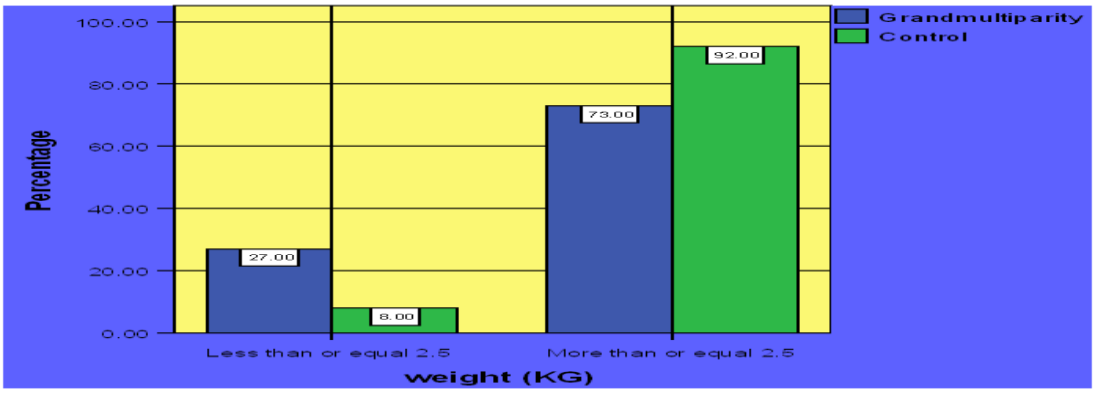

Figure (3): Neonatal weight outcomes in studied groups.

Discussion

Grand-multiparity has been known to be an obstetric risk because of the documented complications associated with the condition, and it is an indication for booking in a tertiary health institution.

In this study the mean age of grand multiparous woman was significantly higher than the mean age of control. This may be related with culture of Arab societies that tend to have large families, which leads to the continuation of child-bearing women until old age.

Anemia, hypertension, Diabetes mellitus were significantly higher in grand multiparous compared with control group and this agree with Nabeel (2005) who found that the incidence of these medical complications was double of that of the control group [12], while disagreement with Monjurul *et al* (2008) who found that there is no significant differences in anemia, gestational hypertension and diabetes compared to multiparas [14].

According to the result of present study epilepsy and deep venous thrombosis were statistically significant in grand multiparous, also urinary tract infection(UTI) was more common in grand Multiparous group compared to control group which was statistically significant this disagreement with with Kavitha *et al* (2011) were show the incidence of UTI was higher in grand multipara comparing with control group but statistically non – significant [2], this may be related with lack of awareness of health care in our society and low educational level of most of our patient that make them not take care of their health during pregnancy that increase incidence and complications of existing diseases during pregnancy compared with developed countries .

Asthma was common in grand multiparous statistically non – significant and these result with Nabeel (2005) who revealed that the incidence of Asthma was double in grand multiparous than of the control group (2 % vs. 1%) respectively [12].

Regarding the obstetrical complications we found the abruption placenta were statistically significant in grand multiparous compared with control group ,this agree with Shaista *et al* (2009) who demonstrated that the incidence of abruption placenta (2 %) in control group and (11 %) in grand multiparous on the other hand this disagreement with him. Regarding preterm labour which was statistically highly significant this may be related with low socioeconomic conditions of most of our patients and hardworking leading to preterm premature uterine contraction and non-visiting of antenatal care clinic for tocolytic drugs.

Antepartum hemorrhage (APH) and premature rupture of membrane (PROM) were more prevalence in grand multiparous this agree with result of Ogbe *et al* (2012)

who found that the incidence of APH was higher in grand multiparous and lower in control (1.6 % , 0.8 %) respectively also the incidence of PROM in grand multiparous and control (2.4 % , 2.8%)respectively [1].

Despite that postpartum hemorrhage (PPH) were high in this study in grand multiparous than in control group but it is statistically not significant, and this disagreement with result of Ismaldin (2013) who demonstrated that the incidence of PPH was more common in control group(9.7%) than grand multiparous (8.7%) although it was statistically not significant[11].

Our data revealed that cord prolapse was more prevalence in grand multiparous than in control and this agree with Neda *et al* (2009) who found the incidence of cord prolapse in grand multiparous (0.5 %) than in control (0%) [15].

Other complications like placenta previa, obstructed labour are also high in this study in grand multiparous than in control but statistically non - significant.

Regarding the mode of delivery in this study there were higher incidence of caesarian section delivery in grandmultiparous woman compared with control group while there were a higher incidence of normal vaginal delivery (NVD) in control group compared with grand multiparous woman and this not agree with Isamaldin (2013) that found the incidence of caesarian section was more in control (22.3 %) than grand multiparous (17.3 %) and the incidence of NVD were more common in grand multiparous (76.7%) than control (60.3%) this may be due to high trend toward caesarean section because of low efficiency and training of midwifes or because maternal exhaustion due to ill health of most of grand Multiparous [11]. regarding the indications of caesarian section there were a higher incidence of breech presentation in grand multiparous woman than in control group but statistically not significant and this not agree with Horace *et al* (2004) who found there were higher incidence of breech presentation in control (4.1 %) compared with grand multiparous (3.5%) but it is also statistically not significant . Other indications in this study were statistically not significant in this study [15].

Regarding the perinatal outcome in this study, Apgar score ≤ 7At 1 minute and Apgar score ≤ 7 At 5minute were statistically significant in grand multiparity than control group and this agree with Neda *et al* (2009) that found Apgar score ≤ 7 At 1 minute were (14.7 % , 8.5 %) in grand multiparous and control respectively [3]. And Apgar score ≤ 7 at 5minute were (7.3 %, 3.9 %) in grand multiparous and control respectively. Admission to (NICU) were statistically significant in grand multiparous than control in this study and this not agree with Adeola *et al* (2013) who found that the incidence of NICU were more common in grand multiparous group (22.2%) than control (14.1%) but statistically not significant [13].

In this study the incidence of intrauterine death (IUD) were more common in grand multiparous group than control but statistically not significant and this agree with Ogbe *et al* (2012) [1] that found the incidence of IUD is more common in grand multiparous group (2.0%) than control (0.4%) but also statistically not significant While fetal distress was more common in grand multiparous group than in control this disagreement with him when he said that the incidence of fetal distress were more common in grand multiparous group (4.8%) than control (1.2 %) which was statistically significant . The birth weight ≤ 2.5 kg were more common in grand multiparous than in control but statistically not significant and this not agree with Neda *et al* (2009) who found higher incidence of weight in grand multiparous and in control [3]. There were no significant differences in type of gender of neonates in both groups in this study.

In conclusion, the grand multiparity should still be considered a high risk in pregnancy due to medical and obstetrical complications and lead to increase in the rate of preterm labour, abruption placenta , hypertension, diabetes mellitus and anaemia and also increase in caesarean section delivery and also affect their neonates with birth Asphyxia and admission to neonatal intensive care unit with low birth weight , and it is necessary to provide a good health care for grand multiparous woman, And also to their neonates.

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