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Original Research

Postnatal Maternal Risks among Multiparous Women and its effect on Pregnancy Outcomes

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Abstract

Background- Pregnancy can be viewed as a developmental stage with its own distinct developmental tasks as well as pregnancy produces marked changes in a woman's body, and it is accompanied with minor discomfort such as nausea, vomiting, urinary frequency, and fatigue. Sometime the pregnancy is complicated by pathologic processes that are dangerous to the health of the mother and fetus in only 16-20% of cases. However, only limited studies have so far been done to identify the maternal risks in postnatal and it is Impact on Pregnancy Outcomes among Grand-Multiparous Women.

Objective- Identify postnatal maternal risks among multiparous women and its impact on pregnancy outcome.

Methodology- A descriptive, cross sectional study design was utilized. Purposive sample of (200) laboring women which consist two groups 100 multiparous women had (Para2-4) and 100 grand multiparous women had (Para ≥ 5) , who were admitted in three hospitals (Baghdad Teaching Hospital, Al- Yarmook Teaching Hospital, Fatima Al- Zahra'a Maternity and Pediatric Teaching Hospital), during the period from 29 April to 8 August 2010. The data was collected through interview technique and use constructed questionnaire format that consists four parts. The data were collected through face-to-face interview technique and by using questionnaire format. Data were analyzed through the application of descriptive and inferential statistical analysis.

Results- The incidence of postnatal complications among the study sample in (multipara, grandmultipara) as follows: Anemia (20%, 22%) , Cesarean section wound infection (9%,14%) , Early postpartum hemorrhage (7%, 10%) , Breast engorgement (6%, 9%), Postpartum blues (5%, 9%), Delivery canal inflammation (3%, 5%), Stress incontinence (3%, 5%), Sub involution of uterus (3%,4%), Mastitis (2%,3%), Uterus prolapsed (1%, 9%), Episiotomy infection (2%,1%), .puriperal sepsis (1%, 2%). In addition there is significant difference in uterine prolapsed (P=0.009) between the (multipara &

grandmultipara), while there are no significant differences in the incidence of other postnatal complications among both group. Health status of the majority of neonates for both groups (85%, 82%) were good, their Apgar score was (7-10) in five minute of neonate's life, and most of them did not have congenital anomalies, only 3% in each group had neonate death after delivery. There is a significant relationship in age for both groups and antenatal risks.

Conclusion: The occurrence of postnatal maternal risks is significantly higher in grandmultiparity compared with multiparty.

Recommendations- Importance of providing health awareness for mothers concerning risks associated with postnatal which were increased in subsequence and high pregnancies through educational programs and mass media, and emphasize on nursing role in this field. Improvement and promotion of postnatal health services especially for those risky women.

Keywords: Postnatal Maternal Complication, Grand Multipara, Multipara.

Introduction:

Pregnancy can be viewed as a developmental stage with its own distinct developmental tasks as well as pregnancy produces marked changes in a woman's body , and it's accompanied with minor discomfort such as nausea, vomiting , urinary frequency, fatigue….etc (Baker, 2006). During the 1920, a wider recognition emerged of the maternal problems of pregnancy as well as those of labor. (Opara, 2007).The term grandmultipara was introduced in 1934 by Bethel Solomon, who called the grandmultipara "The dangerous multipara" since then , many studies have explored the relationship between grandmultiparity & obstetric complications ; some studies have reported notably increased risks , whereas others have reported only minor risks or even lower frequencies of certain complications (Haffner, 2005). In 1954 Scharm stated "To –day the grand multipara has truly become the vanishing American". Law (1954) noted a similar process in England. Unfortunately, this is not so in other countries. There are many women who have not yet realized or come to accept the value of family planning, ever since these authors drew attention to the dangers associated with high parity (Baker, 2006).The international federation of gynecology and obstetrics defined grandmultiparity of the fifth to ninth whereas women who are undergoing their tenth or more delivery are considered to be great- grand multipara (Shahid & Mushtaq, 2009).The incidence of grand multipara is low in the developed countries today. However, the prevalence remains high in developing countries, but the grand multipara contributes to one- third of total morbidity and mortality (Pandubidri & Anand, 2006; Tabassum etal. ,2009).

Objective:

The study aimed to identify postnatal maternal risks among grand multiparous women on pregnancy outcome, and their relation with some variables.

Methodology:

A descriptive, cross sectional study design was utilized. Purposive sample of (200) laboring women which consist two groups 100 multiparous women had (Para2-4) and 100 grand multiparous women had (Para ≥ 5) , who were admitted in three hospitals (Baghdad Teaching Hospital, Al-Yarmook Teaching Hospital, Fatima Al- Zahra'a Maternity and Pediatric Teaching Hospital), during the period from 29 April to 8 August 2010. The data was collected through interview technique and use constructed questionnaire format which consists four parts, first part socio-demographic characteristics, second part reproductive history, third part maternal health problems during postnatal. Validity and Reliability of the questionnaire were determined through panel of experts and pilot study, data were analyzed through the application of descriptive

statistical analysis (percentage, frequencies, mean and standard deviation) and inferential statistical analysis (Chi-square test, Fisher's test, Correlation coefficient), and all the statistical procedures were tested at P ≤0.05.

Results and Discussion:

Table (1) Distribution of the Studied Sample According to the Socio-demographic and Personal Characteristics:

Age / years	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
≤20	9	9%	0	0%
21-25	37	37%	14	14%
26-30	28	28%	23	23%
31-35	17	17%	24	24%
36-40	9	9%	32	32%
≥41	0	0%	7	7%
Total	100	100%	100%	100%
Mean±SD :	27.1±6.0		33.2±6.1	
Level of education	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
Illiterate	9	9%	12	12%
Read &Write	2	2%	15	15%
Primary	43	43%	42	42%
Intermediate	20	20%	20	20%
Secondary	13	13%	9	9%
College	13	13%	2	2%
Total	100	100%	100	100%
Employment	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
Not employed	90	90%	97	97%
Employed	10	10%	3	3%
Total	100	100%	100	100%

Continue Table (1)

Consanguinity	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
Related to husband	57	57%	59	59%
Not related to husband	43	43%	41	41%
Total	100	100%	100	100%
Residency	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
Governorate	92	92%	93	93%
Outskirts	3	3%	4	4%
District	5	5%	3	3%
Total	100	100%	100	100%
Social status	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
High	3	3%	1	1%
Middle	20	20%	7	7%
Low	77	77%	92	92%
Total	100	100%	100	100%

Table (2) Distribution of the Studied Sample According to Reproductive Characteristics.

Gravidity	**Multipara**		**Gravidity**	**Grand multipara**	
	F	**%**		**F**	**%**
2	37	37%	5-7	73	73%
3	43	43%	8-10	21	21%
4	20	20%	>10	6	6%
Total	100	100%	Total	100	100%
Mean±SD	2.9±0.7		Mean±SD	6.9±1.9	
Parity	**Multipara**		**Parity**	**Grand multipara**	

	F	%		F	%
2	47	47%	5-7	86	86%
3	37	37%	8-10	12	12%
4	16	16%	>10	2	2%
Total	100	100%	Total	100	100%
Mean±SD	2.7±0.7		Mean±SD	5.9±1.5	
No. of abortion	**Multipara**		**No. of abortion**	**Grand multipara**	
	F	**%**		**F**	**%**
None	85	85%	None	45	45%
1	15	15%	1	33	33%
2	0	0%	2	16	16%
≥3	0	0%	≥3	6	6%
Total	100	100%	Total	100	100%
Mean±SD	0.2±0.4		Mean±SD	0.9±1.0	
No. of still birth	**Multipara**		**No. of still birth**	**Grand multipara**	
	F	**%**		**F**	**%**
None	93	93%	None	89	89%
1	6	6%	1	9	9%
2	1	1%	2	2	2%
Total	100	100%	Total	100	100%
Mean± SD	0.08±0.3		Mean±SD	0.1±0.4	
No. of alive children now	**Multipara**		**No. of alive children now**	**Grand multipara**	
	F	**%**		**F**	**%**
2	55	55%	5-7	89	89%
3	35	35%	8-10	9	9%
4	10	10%	>10	2	2%
Total	100	100%	Total	100	100%
Mean±SD	2.6±0.7		Mean±SD	5.7±1.5	

Table (3) Distribution of the Studied Sample According to the Following Variables (Age at Marriage, Using Contraceptive, Place of Previous Delivery).

Age at the marriage	Multipara		Grand multipara	
	F	%	F	%
≤15	12	12%	10	10%
16-20	41	41%	46	46%
21-25	32	32%	38	38%
26-30	14	14%	4	4%
≥ 31	1	1%	2	2%
Total	100	100%	100	100%
Using contraceptive	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
No	40	40%	37	37%
Yes	60	60%	63	63%
Total	100	100%	100	100%
Place of previous delivery	**Multipara**		**Grand multipara**	
	F	**%**	**F**	**%**
Hospital	82	82%	59	59%
Home	3	3%	7	7%
Both	15	15%	34	34%
Total	100	100%	100	100%

Table (4) Distribution of the Study Sample (Multipara, Grandmultipara) according to the Incidence of Postnatal Complications:

Complication	Multipara		Grandmultipara		Total	χ^2	df	S.	P≤0.05
	F	%	F	%					
1.Early postpartum hemorrhage	7	7%	10	10%	17	.579	1	N.S	.447
1.a retained placenta &membranes	1	1%	2	2%	3	.338	1	N.S	.561
1.b Perineal tear	4	4%	3	3%	7	.148	1	N.S	.700
1.c Uterus inertia	2	2%	4	4%	6	.687	1	N.S	.407
1.d Hematoma	1	1%	1	1%	2	.000	1	N.S	1.000
1.eShock	0	0%	1	1%	1	1.005	1	N.S	.316
2.puriperal sepsis	1	1%	2	2%	3	.338	1	N.S	.561
3.Delivery canal inflammation	3	3%	5	5%	8	.521	1	N.S	.470
3.a Cervicitis	1	1%	3	3%	4	.338	1	N.S	.561
3.b Vaginitis	2	2%	2	2%	4	.000	1	N.S	1.000
4. Episiotomy infection	2	2%	1	1%	3	.338	1	N.S	.561
5.Mastitis	2	2%	3	3%	5	.205	1	NS	.651
6.Cesarean section wound infection	9	9%	14	14%	23	1.228	1	N.S	.268
7.Uterine prolapse	1	1%	9	9%	10	6.737	1	S	.009
8. Sub involution of uterus	3	3%	4	4%	7	.148	1	N.S	.700
9.Breast engoregment	6	6%	9	9%	15	.649	1	N.S	.421
10.Postpartum blues	5	5%	9	9%	14	1.229	1	N.S	.268
11.Anemia	20	20 %	22	22%	42	.121	1	N.S	.728
12. Stress incontinence	3	3%	5	5%	8	.521	1	N.S	.470

Table (5) Distribution of Neonate Weight, Apgar Score, Congenital Anomalies after Delivery.

Weight	Multipara		Grand multipara		χ^2	df	S.	p≤0.05
	F	%	F	%				
<2500gm	8	8%	10	10%	9.26	2	S	0.026
2500-4000gm	84	84%	69	69%				
>4000gm	8	8%	21	21%				
Total	100	100%	100	100%				
Mean±SD	3130±565.5		3121.5±623.7					
Apgar score at 5 min of neonate life	**Multipara**		**Grand multipara**		χ^2	df	S.	p≤0.05
	F	%	F	%				
0-3	3	3%	0	0%	4.25	2	N.S	.119
4-6	12	12%	18	18%				
7-10	85	85%	82	82%				
Total	100	100%	100	100%				
Congenital anomalies	**Multipara**		**Grand multipara**		χ^2	df	S.	p≤0.05
	F	%	F	%				
None	96	96%	97	97%	.705	1	N.S	.703
Present	4	4%	3	3%				
Total	100	100%	100	100%				
death after delivery	**Multipara**		**Grand multipara**		*F	df	S.	p≤0.05
	F	%	F	%				
No	97	97%	97	97%	.8836	1	N.S	0.1
Yes	3	3%	3%	3%				
Total	100	100%	100	100%				

***F Fisher's test**

Table (6) Association of Postnatal Maternal Risks with Sociodemographic Characteristics for the Study Sample.

Sociodemographic variables	Multipara				Grandmultipara			
	χ^2	df	S.	P≤0.05	χ^2	df	S.	P≤0.05
Age	22.911	20	N.S	.293	25.324	16	N.S	.064
Educational level	25.856	25	N.S	.415	25.759	20	N.S	.174
Occupation	1.177	5	N.S	.947	13.639	4	S	.009
Socioeconomic status	9.534	10	N.S	.482	6.450	8	N.S	.597
Prenatal care visit	5.257	12	N.S	.949	23.008	12	S	.028

Thirty seven percent of multipara was within age group of (21-25) years with a mean of 27±6.0, while nearly one third (32%) of grand multipara was within age group 36-40 years with a mean of 33.2±6.1. Martin et al., (2003) reported that the average age of the study group was 25.1 years, which was a suitable age for reproduction(1). Simonsin et al., (2005) reported that numerous obstetrics complications have been independently associated with progressive maternal age (2). In addition, older women with 5 or more babies known as risk group (3), Lee, (1967) considered the age factors that increase the hazards of high parity, so the grand multipara is an older woman and suffers those disabilities which accompany age; especially her cardio-vascular system is less resilient so that hypertensive disease is more manifest (4). The educational level for most mothers in both groups (43%, 42%) was limited (primary school graduates) as shown in (Table 1). This result agrees with Roman et al., (2004) who stated in their study that concerning obstetric and neonatal outcomes in grandmaternity that grand multipara

was in lower level of education (5), and consistent with Begum, (2003) who reported that the level of education status almost poor in grand multiparous women (6). Mothers of poor level of education often face the following consequences: social isolation, poor life habits, low education level, maltreatment, stress, and depression, in addition young mothers are at greater risk of leaving school or attaining a lower level of education (7). The majority of (multipara, grand multipara) (90%, 97%) were housewives. These findings are consistent with Shawky & Milaat (2000) study that reported there are (92.4%) women housewives (8). woman's employment during the pregnancy may have an effect on her child's health especially risk of low birth weight and pre-term (6).

The result indicates that more than half of mothers in both groups (57%, 59%) were related to husband (table 1). Nath et al. ,(2008) mentioned in their study the prevalence of consanguineous marriages in a rural

community and its effect on pregnancy outcome in India, the prevalence of consanguinity was found to be 36%, and the majority of the marriages were between first cousins (54.44%)(9), fetal loss was seen to be significantly higher in the consanguineous group as compared to non-consanguineous group, while no significant effect of consanguinity was observed on the number of stillbirths, neonatal mortality, obstetrical complications and congenital malformations, only 7.6% of the women were aware about the hazards of a consanguineous marriage. Basil et al., (2008) mentioned in his study the consanguinity and its adverse pregnancy outcomes: The North of Jordan experiences consanguineous marriages were significantly associated with low birth weight delivery, preterm delivery, and births with congenital anomalies compared with Non-consanguineous marriages (10).

In addition, results indicate the study groups almost (92%, 93%) were from governorate and the other come from district and outskirts. These findings are in a consistent with Raymajhi et al., (2006) who reported that 60.4% of the grand multipara live at a rural resident compared with 27.7% of multipara because the higher parity is more frequently encountered in the rural and low socioeconomic population and these compounding factors continue to pose a high risk in the obstetric and perinatal outcome (11).The findings reveals that (77%, 92%) of (multipara, grand multipara) were from low socioeconomic status (table 2). Lack of knowledge is one of the contributing factors for poor health among many people of low socioeconomic status (12). Forty three percent of multipara had 3 pregnancies while 73% of grand multipara had 5-7 pregnancies. Tabassum et al., (2009) stated that grand multipara (para ≥5) more to perinatal complications rather than multipara (Para1-4) (13). Begum, (2003) reported the lack of health education , religious taboos, against use of family planning methods and vogue of having large families (especially in a rural areas) accounts for increased incidence of high gravidity(6) . Akwuruoha etal., (2009) revealed that there is an increased risk of perinatal outcomes in grand multiparous women rather than multiparous women (14). Shahid & Moshtaq, (2009) reported in their study that maternal complications increase with increase of parity, so the grand multipara still as high-risk pregnancy (15).

The result indicates that (85%, 45%) of (multipara, grand multipara) did not have abortion, while (15%) of multipara had one abortion, while more than half of grand multipara (55%) had abortions, (33%) of them had at least one abortion as shown in table 2. This result accords with Karim et al., (1994) who stated in his study that the spontaneous abortion was found more in the grand multipara compared with other parturients(16). The finding reveals that (93%, 89%) of (multipara, grand multipara) did not have still birth, while (6%, 9%) had one still birth (table 2). These findings accord with Sipim etal., (1991) who mentioned that the still birth in the grand multipara was higher than in the women of low parity (1.9%Vs0.9%). Most of the study sample (55%, 89%) in (multipara, grand multipara) had alive child (2, 5-7), while the lowest (10%, 2%) had (4, 10 and more) alive child. Limiting births and spacing them at least two years apart are good for maternal and child health (17). Every pregnancy carries potential health risks for women, even for women who appear healthy and at low risk (18). The result indicates that (41%, 46%) of (multipara, grand multipara) their ages at marriage were (16-20 years) table 3. Both teenaged mothers (younger than 20 years) and older mother (35 years or above) are associated with higher than average rates of pre – term birth, growth restriction, and perinatal mortality (19). Rayamajhi et al., (2006) reported that (28.8%, 55.7%) of (multipara, grand multipara) their ages at marriage were between (16- 20) years (11).

WHO, (2009) found that approximately 16 million girls their ages 15-19 became pregnant, with 95% of them are in the developing countries that is due to the low socioeconomic status and low education (The result indicates that (60%, 63%) in (multipara, grand multipara) used the contraceptive, while (40%, 37%) did not use contraceptive (20).

The result indicates that (82%, 59%) of (multipara, grandmultipara) prefer delivery in the hospital (table 3). Healthy pregnant women with no risk factors for complications during pregnancy, labor or delivery can consider a planned homebirth. While women who are at low-risk for problems during pregnancy, labor and delivery may choose to deliver at hospital and according to the U.S. Department of Health and Human Services, in addition newborns need many important tests and procedures to ensure their health. The American College of Obstetricians and Gynecologists (ACOG) is against homebirths they state that hospitals are the safest place to deliver a baby. In case of an emergency, says ACOG, a hospital's equipment and highly trained physicians can provide the best care for a woman and her baby (21).

The table (4) shows that there is significant difference in uterine prolapsed (1%, 9%) of (multipara & grandmultipara), while there were no significant differences in the incidence of other postnatal complications among both groups such as postpartum heamorrahge, cesarean section wound infection, anemia, mastitis, breast engorgement.etc. These findings do not agree with Khadija, (1997) who stated that the grandmultipara had various complications such as anemia pulmonary embolism, maternal mortality.etc during postnatal (22). Table (5) indicates that (84%, 69%) their weight of neonate of (multipara, grand multipara) is between 2500-4000 gm. High parity is a risk factor for adverse fetal outcomes. However, the impact of heightened parity is more manifest as shortened gestation rather than physical size restriction (23). The risk of poor birth outcomes is greatest among the youngest mothers (aged15 years and under). Clearly, therefore, continued work was needed to educate women, particularly young women, about the need to begin prenatal care early in pregnancy (24).

Ahmed et al., (2005) who reported that there is statistical difference in the two groups about increased incidence of large babies (macrosomia) 19.7% comparing to 9.4%, whereas the incidence of low birth weight was almost doubled in MP group 14.1% compared to 7.4 % in GMP. Apgar score of the neonates for the majority of the study groups was ranged between 7-10 at the fifth minute of the neonate life (25). The results indicate that the majority (96%, 97%) of (multipara, grand multipara) did not have congenital anomalies, while (4%, 3%) had congenital anomalies which are hydrocephalus and anencephaly. The cause of 40-60% of congenital anomalies in humans is unknown (26). When a baby dies in the first 28 days of life, it was called neonatal death. In the United States in 2006, about 19,000 babies died in their first month (27). The results of the present study indicate that (97%, 97%) of neonates live after birth, only (3%, 3%) neonates die after delivery due to RDS, hydrocephalus and anencephaly. These results are confirmed by Khadija, (1997) who stated in their study about grandmultiparity is a significant risk factor in this new millennium that were few early neonatal deaths in grand multipara (22). Table (6) shows that there is no significant association between postnatal maternal risk and sociodemographic characteristic in multipara. While there is significant relationship of occupation and prenatal care visit with postnatal maternal risk among grandmultipara. Educational level is well correlated with perinatal outcome, higher levels of education associated with use of specific types of health servecies. Heron etal.,(2009) reported in their study maternal occupation and delivery outcome, indicated

that maternal occupation is not a major factor in the outcome of these deliveries. There was variation in the rates of low birth weight infants, according to maternal occupation, which may have an effect of socioeconomic factors associated with the occupation. Within occupational groups, working situations may exist which entails an increased teratogenic risk (27).

Conclusions:

Based on the study results, discussion and critical interpretation of such findings, the study arrived at the following conclusions:

- Most multipara had 3 gravidity and 2 parity, while grand multipara had 5-7 gravidity and the same range for parity...
- Nearly two-third of both groups used contraceptive methods. Most of them previously delivered in hospitals.
- Most of both groups attended prenatal care throughout the current pregnancy irregularly, 1-5 visits only.
- There is significantly higher differences in incidence of postpartum uterine prolapsed among grandmultipara than multipara.
- Health status of the neonate for both groups were good, they weighted between 2500 – 4000 gm, their Apgar score at five minute was 7-10 , almost they have no congenital anomalies . And there is a significant difference in weight of neonate only Neonatal deaths for both groups are (3%), although are not significant.
- There are significant association of grandmultiparous women's occupation and their prenatal care visits and the incidence of postnatal complications among grandmultipara.

Recommendations:

1. Grandmultipara were considered risky women so they need for early and proper pregnancy evaluation and regular antenatal checkup, and they need follow up for mother and neonate during postpartum period.
2. High parity at risk that requires special care and referral of such women in well-equipped and adequately staffed hospitals.
3. Mass media should play a significant role in presenting the reproductive health aspects among the population such as healthy hygiene, nutrition, immunization, family planning, breast feeding and the nurse should take her role through health education.
4. Concentrated efforts need to be directed in reducing high parity through effective family planning initiatives and supervision of this group should be available
5. Because of missing many important data in patient records, there is a need for improvement of database concerning details information regarding mother's medical and obstetrical history that is useful for retrospective studies.

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