©IDOSR PUBLICATIONS
International Digital Organization for Scientific Research ISSN: 2550-7931
IDOSR JOURNAL OF APPLIED SCIENCES 7(1) 41-52, 2022.

Evaluation of how maternal age, height, weight and body mass index affect primary caesarean section rate.

Okeji Hilary Ogueri
Consultant Gynaecologist Missan Hospital Taif Saudi Arabia.

ABSTRACT

How maternal age, height, weight and body mass index affect primary caesarean section rate was evaluated. This is a comparative descriptive study, carried out in the department of obstetrics and gynaecology , Federal Medical centre, Owerri Imo state. The study subjects were recruited using the systematic random sampling technique. The results showed that the mean age of women who had vaginal delivery was marginally higher than that of those who had caesarean delivery : 29.30yrs +/- 4.3SD (vaginal) vs 28.83yrs+/- 4.4SD for caesarean section group. The height of women who had normal delivery ranged from 1.50m to 1.83m with a mean height of 1.65 +/- 0.059SD whereas the height of women who underwent caesarean delivery ranged from 1.45m to 1.77m with a mean of 1.63 +/- 0. 069SD. This was slightly lower than the mean height for vaginal delivery above. The weights of the women who had vaginal delivery ranged from 55 to 130kg with a mean of 81.88kg +/ - 12.53SD,whereas the weight of the women that had caesarean delivery ranged from 53.00 to 148.00kg with a mean of 85.62kg +/ - 20.29SD, which was reasonably higher than the mean weight for vaginal delivery above. On crosstabulation of the women's weight with their modes of delivery, 78.6% (114) of the women whose weight was less than 90kg delivered normally and only 21.4% (31) had caesarean delivery. The Body Mass Index (BMI) of the entire women recruited into the study ranged from 19.38 to 49.45kg/m^2 with a mean of 30.66kg/m^2 +/- 4.76 SD. The BMI of the women who had vaginal delivery ranged from 19.38 to 43.16kg/m^2 with a mean of 30.21kg/m^2 +/ - 4.09 SD. while the BMI of the caesarean section group ranged from 21.34 to 49.45kg/m^2 with a mean of 32.10kg/m^2 +/ - 6.26 SD. In conclusion, Maternal height, BMI, age and socio – economic status were not significantly associated with a risk of primary caesarean delivery. There is need for further studies to evaluate the determinants of primary caesarean section in a larger sample size.

Keywords Maternal age, height, weight, body mass index and primary caesarean.

INTRODUCTION

Maternal morbidity and mortality associated with caesarean delivery in the immediate and long term clearly exceed that seen with normal delivery [1,2]. After controlling for the complications which may be due to the indication necessitating the surgery, morbidity and mortality from caesarean delivery are at least twice that from normal labour and delivery [2]. The risk factors responsible for the higher morbidity and mortality include haemorrhage, anaesthetic complications, post operative infections, thrombo embolic phenomenon, uterine scar dehiscence or rupture, placenta praevia and placenta accreta [2,3]. In Aba, south eastern Nigeria, a high caesarean section rate of 34.8% was also associated with a very high peripartum hysterectomy rate of 5.4% per 1000 deliveries [5]. The most common indication for peripartum hysterectomy in the study was placenta accreta (47%) [3,4]. It is therefore very important that primary caesarean section be undertaken only when it is the only procedure which can save the life or preserve the health of the mother and baby [5]. Efforts to prevent unnecessary caesarean delivery and check the rapidly rising caesarean section rate must take into account the huge contribution by primary caesarean section. A reduction in the first time procedures will naturally reduce the overall rate and hence the risks associated with the high rate facing our women. This is especially important

in developing countries like Nigeria where only 65% and 35% of pregnant women receive antenatal care and skilled attendance at delivery respectively [6]. Such a woman with a scarred uterus may not have antenatal care let alone a specialist supervision in pregnancy, labour and delivery, all of which are necessary for a good outcome in her subsequent confinement [7]. A reduction in caesarean section rate will also reduce health care cost, make for healthier and more productive, psychosocially balanced offspring as mother-child bonding is better and breastfeeding is more effective.

LITERATURE REVIEW

A lot of reasons have been given to explain the rapidly rising caesarean section rate. These include the prevalent high primary caesarean section rate. A number of studies have shown that primary caesarean section alone makes up more than 65% of all caesarean surgeries [8,9,,10,11]. Moreover , primary caesarean section makes a woman more susceptible to a repeat caesarean delivery [10]. The most common reason why women give birth by caesarean section in England, Canada and the United Sates of America is because a previous birth was by caesarean section [11, 12,13]. This finding has been corroborated by a few others in Africa [1,4]. Hence the overall caesarean section rate is increased significantly by an increasing number of women who have a first caesarean birth. A rising primary caesarean delivery rate not surprisingly is trailed by an overall increasing caesarean delivery rate. If women with previous caesarean birth were liberally offered a trial of vaginal birth after caesarean section (VBAC) , perhaps the impact of a high primary caesarean section rate would have been mitigated. However this is not so. Several studies have shown that trial of vaginal birth after caesarean section is successful in 60 to 80 percent of cases [12,13,14]. It is long held that the only absolute contra indication to VBAC is previous classical scar.[12,32.] Similarly, a number of studies show that even parturients with two previous caesarean section scars can selectively be offered a trial of vaginal birth [15]. However , trial of vaginal birth after a caesarean section is currently an extremely controversial issue in obstetrics. The issue is whether an attempt at vaginal birth after a previous caesarean section poses a greater risk to the mother and baby than a planned caesarean section. A meta analysis of retrospective and prospective series on VBAC showed that most major complications are more likely for women who attempt a trial of vaginal birth [16]. VBAC is known to increase the risk of uterine rupture, a catastrophic complication that can lead to fetal demise, massive haemorrhage or even maternal death. While the risk of uterine rupture in trial of labour in women with previous scar is within 0.3 to 2.1% , the risk of rupture on repeat caesarean section is only 0 to 0.2 % [17, 18]. This has led to a more circumspect approach to trial of labour even by the most ardent supporters of VBAC. The optimal route of delivery after a previous caesarean section remains an issue of heated debate internationally especially in the developed world. A recent Cochrane review by Dodd et al found no concluded randomized control trial to the effect as at 2006 [13]. In 1989, 81.5% of United Sates women with a previous caesarean birth had a repeat caesarean section, only 18.5% had a vaginal birth,[30] the proportion of the later further declined to 9% in 2004. In England, only 33% of women with previous caesarean scar had a vaginal delivery [8]. However, earlier studies show as successful rate of vagina birth after caesarean section of 60-80% [12]. In a recent prospective study of VBAC in 2003 at Lagos, Nigeria, a high success rate of 69.1% with a failure rate of only 30.9% was found [7]. Although most women in Nigeria probably would prefer a trial of vaginal birth after caesarean delivery for sociocultural and economic reasons, this finding is hospital based and may not reflect the actual rate in the population of Nigerian women [9]. Defensive medical practice due to providers fear of malpractice suits is thought to be contributory to the downwards trend of VBAC in Europe, America, Australia and the rest of the developed world [12]. Between 1995 and 2001, 82.9% of the 2,821 claims in

obstetrics and gynaecology were related to damages caused to baby at birth, most commonly cerebral palsy Doctors, consequently, tend to resort to caesarean delivery earlier in labour . Some are not ready to risk VBAC for fear of litigation. The caesarean section rate thus soars [8].

The incidence of breech presentation at term has remained 3 – 4%, however, the result of the large prospective study by [9] favoured the delivery of term breeches by caesarean section [12], also leading to a rise in caesarean section rate.

OBJECTIVES OF STUDY

The objective of this research was to determine how maternal age, height, weight, body mass index, parity, booking status and socio-economic status affect primary caesarean section rate.

MATERIALS AND METHODS

STUDY AREA

Owerri is the Imo state capital. It has a population of 403,725 people; comprising 205,481 females and 197,944 males [10]. Imo state is regarded as the eastern heart land bounded by Anambra, Abia, and Rivers . It has a population of 3.9 million people and an annual population growth of 3% [9]. Its landmass is about 100square kilometers and is predominantly inhabited by Igbos. The Federal Medical Centre Owerri is a tertiary health institution in the Imo state capital with a bed capacity of 383. It serves as a major referral centre for Imo state and its environs [12]. Established in 1903 as a military hospital, it has metamorphosed through a general hospital status to its present status [8]. It is more than 100 years old and is currently a centre for residency training in various disciplines including obstetrics and gynaecology [18]. The obstetrics and gynaecology department has 6 consultant led units, 11 senior registrars, 24 registrars and an annual delivery rate of about 2400.

STUDY DESIGN

This is a comparative descriptive study, carried out in the department of obstetrics and gynaecology , Federal Medical centre, Owerri Imo state.

Inclusion criteria:

a) The study subjects are pregnant women who are undergoing caesarean delivery for the 1st time.
b) Women who have normal delivery.
c) Signed informed consent

Exclusion criteria:

1. Women under going repeat caesarean section.
2. Women who do not give consent for participation.

SAMPLE SIZE CALCULATION

The sample size was calculated using the best estimate of prevalence rate[10] from literature review of studies done within the sub-Saharan Africa. The sample size was estimated using the following formula.

$$N = \frac{Z^2 PQ}{D^2}$$

where N = Sample size.

Z= Standard normal deviation usually set at 1.96, which corresponds to 95% confidence interval.

P= Best estimate of prevalence of primary caesarean section from literature review 13% (JIMOH et al Illorin)

Q = (1.00 - P) which is equal to 1.00 - 0.13 = O.87.

D = Degree of accuracy, usually set at 0.05

Thus $N = \frac{(1.96)^2(0.13)(0.89)}{\{0.05\}^2}$

$= \frac{3.482(0.13)(O.87)}{0.0025}$

= 173

However this was made up to 200 in order to increase the power of the study.

RECRUITMENT

The study subjects were recruited using the systematic random sampling technique. On the average, about 200 women deliver every month in our labour ward. This gave a sampling frame of 600 for the 3 months data collection period. With a sample size of 200, the samping fraction was 1/3. This mean that after a simple random sampling for the first subject, every third subject that met the criteria was recruited until the sample size was completed. The study subjects were recruited from the pre natal and labour wards, since every woman for delivery passes through either or both of these wards in our centre. All enrolled subjects were followed from the labour ward to theatre and through the post operative or lying in ward period as the case may be. The maternal height in meters and the weight in kilograms were measured at the time of recruitment and the body mass index (BMI), was calculated by dividing the maternal weight in kilograms by the height in meters squared and entered into the data form. A standard questionnaire was used to extract information on maternal age, booking status, parity, literacy level, occupation ,husbands occupation, route of delivery, indication for caesarean section, nature of surgery (emergency or elective), fetal and maternal outcomes. Social classification was obtained using [9] method. This considers husband's occupation and maternal educational attainment and places her in upper, middle or lower socio economic class based on her score.

DATA ANALYSIS

The data collected was sorted out, coded and entered into spss 16.0 statistical package. Frequency table and charts were generated for relevant variables. Measures of central tendency and dispersion were used to summarise quantitative variables such as age,height, weight, babies weight etc, while qualitative variables such as occupation and literacy level were summarized with proportions. The observed data were subjected to bivariate analysis using the t- test and chi square tests. Multilinear regression analysis was carried out to determine the predisposing factors for primary caesarean section. All analysis were tested at the 5% level of statistical significance with $P < 0.05$ considered statistically significant.

ETHICAL ISSUES

Official approval to carry out the study was obtained from the ethical committee of the Federal Medical Centre Owerri. Only patients who consented to participate were recruited.

DISSEMINATION OF RESULTS

The result of study was submitted to the West African College of Surgeons as part fulfillment of for part 11 FWACS(O/G) examination.

RESULTS

Table 1 Fetal birth weights

Birth weight	Frequency	Percentage (%)
< 2.5	9	17.3
2.5 – 3.9	40	76.9
≥ 4.0	3	5.8
Total	52	100.0

n = 52 as a result of 4 twin deliveries

Table 2 Apgar score at birth

Apgar score	Apgar in 1 min (%)	Apgar in 5 min (%)
< 7	19(36.5)	11 (21.2)
≥ 7	33(63.5)	41 (78.8)
Total	52	52

Table 3: Need for Special care baby unit (SCBU) / Neonatal death

Fetal outcome

	Frequency	Percentage (%)
Need for SCBU	6	54.5
Early Neonatal Death	5	45.5
Total	11	100.0

Table 4:Birth weight, Blood loss.
Discriptive statics

	N	Minimum	Maximum	Mean	Std Deviation
Birth Weight (kg)	52	1.25	4.50	2.9727	0.75908
Blood loss (mls)	48	200.00	1200.00	412.500	188.9219

Table 9: Socio-economic class.

Socio-economic status

	Frequency	Percentage (%)
Social class 1 (Upper class)	68	34.0
Social class 2 (Middle class)	121	60.5
Social class 3 (Lower class)	11	5.5
Total	200	100.0

Table 10: Descriptive Statistics.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	200	19.00	40.00	29.1850	4.32833
Body weight	200	53.00	148.00	82.7775	14.79990
Height	200	1.45	1.83	1.6413	.06204
Parity	200	.00	8.00	1.0500	1.41688
Body Mass Index	200	19.38	49.45	30.6645	4.75851

Table11: Age of women according to route of delivery.

Age group (years)

Route of delivery		Frequency	Percentage (%)
Vaginal	<= 20	3	2.0
	21 - 30	94	61.8
	31 - 40	55	36.2
	Total	152	100.0
Caesarean	21 - 30	33	68.8
	31 - 40	15	31.3
	Total	48	100.0

Table12 :Body Mass Index with route of delivery.

Body Mass Index Classification

Route of delivery		Frequency	Percentage (%)
Vaginal	18.5 - 24.9	13	8.6
	25.0 - 29.9	66	43.4
	30.0 - 34.9	52	34.2
	35.0 - 39.9	20	13.2
	40.0 - 100	1	.7
	Total	152	100.0
Caesarean	18.5 - 24.9	6	12.5
	25.0 - 29.9	14	29.2
	30.0 - 34.9	15	31.3
	35.0 - 39.9	8	16.7
	40.0 - 100	5	10.4
	Total	48	100.0

Table13

Body Mass Index

Route of delivery		Frequency	Percentage (%)
Vaginal	< 30	80	52.6
	30 & above	72	47.4
	Total	152	100.0
Caesarean	< 30	20	41.7
	30 & above	28	58.3
	Total	48	100.0

BIVARIATE ANALYSIS.

Table 14:Age and route of delivery

		Route of delivery		
		Vaginal	Caesarean	Total
Age group (years)	<= 20	3 100.0%	0 .0%	3
	21 - 30	94 74.0%	33 26.0%	127
	31 - 40	55 78.6%	15 21.4%	70
Total		152 76.0%	48 24.0%	200

	Chi-square	df	P-value
Pearson Chi-Square	1.475	2	.478

Table 15:BMI and Route of delivery

		Route of delivery		
		Vaginal	Caesarean	Total
Body Mass Index Classification	18.5 - 24.9	13 68.4%	6 31.6%	19
	25.0 - 29.9	66 82.5%	14 17.5%	80
	30.0 - 34.9	52 77.6%	15 22.4%	67
	35.0 - 39.9	20 71.4%	8 28.6%	28
	40.0 & above	1 16.7%	5 83.3%	6
Total		152 76.0%	48 24.0%	200

	Chi-square	df	P-value
Pearson Chi-Square	14.448	4	.006

Table 16

		Route of delivery		
		Vaginal	Caesarean	Total
Body Mass Index	< 30	80 80.0%	20 20.0%	100
	30 & above	72 72.0%	28 28.0%	100
Total		152 76.0%	48 24.0%	200

	Chi-square	df	P-value
Pearson Chi-Square	1.754	1	.185

Table 17:Height and Route of delivery

		Route of delivery		
		Vaginal	Caesarean	Total
Height (metres)	< 1.53	1 33.3%	2 66.7%	3
	1.53 & above	151 76.6%	46 23.4%	197
Total		152 76.0%	48 24.0%	200

	Chi-square	df	P-value
Pearson Chi-Square	3.040	1	.081

Table 18: Body weight and route of delivery

		Route of delivery		
		Vaginal	Caesarean	Total
Body weight	< 90	114	31	145
		78.6%	21.4%	
	90 & above	38	17	55
		69.1%	30.9%	
Total		152	48	200
		76.0%	24.0%	

	Chi-square	df	P-value
Pearson Chi-Square	1.985	1	.159

Table 19: Odd's Ratio of Independent Risk Factor Primary Caesarean Section at the Federal Medical Centre Owerri.

Variables	**ODD'S RATIO (OR)**	**95% CONFIDENCE INTERVAL OF OR**	**P-value**
Age (years)			
≤ 20	1.0		
21 – 30	58.60	0.078 – 69.098	0.999
31 – 40	0.98	0.388 – 2.505	0.977
Body weight(kg)			
< 90	1.00		
90 & above	0.385	0.127 – 1.169	0.092
Body Mass Index			
< 30	1.00		
30 & above	2.74	0.950 – 7.918	0.062
Height			
53 & above	1.00		
< 53	6.387	0.315 – 120.38	0.227

RESULTS

The ages of the participants ranged from 19 to 40 years with a mean of 29.2, SD +/- 4.3.The modal age group was the 21 – 30 age group constituting 63.50% of the entire women in the study. Only three women were less than 20years and they all had normal deliveries. However, the mean age of women who had vaginal delivery was marginally higher than that of those who had caesarean delivery :

29.30yrs +/- 4.3SD (vaginal) vs 28.83yrs+/- 4.4SD for caesarean section group. A crosstab of women's ages and their mode of delivery showed that 100% of women aged less than 20 years had normal delivery , only 74.0% of those aged 21 – 30years could deliver normaly with 26.0% undergoing caesarean delivery whereas 78.6% of those aged 31 – 40years could deliver normally with 21.4% undergoing caesarean delivery. Primary caesarean section thus appears to be less associated with the less than 20 years age group. The delivery outcomes in terms of the route of delivery appear a bit similar in the 21 – 30 and 31 – 40 age groups. However, no statistical significance was found between the women's ages and mode of delivery as P = 0.478, and X^2 = 1.475.

The women's heights ranged from 1.45 to 1.83meters with a mean of 1.64m, +/- 0.06 SD. The height of women who had normal delivery ranged from 1.50m to 1.83m with a mean height of 1.65 +/- 0.059SD whereas the height of women who underwent caesarean delivery ranged from 1.45m to 1.77m with a mean of 1.63 +/- 0. 069SD. This was slightly lower than the mean height for vaginal delivery above. On doing a crosstabulation of heights and mode of delivery. 66.7% of women with heights <1.53 meters had caesarean section while only 23.4% of the women with heights >1.53meters had caesarean section. Similarly, more women with heights >1.53 meters(76.6%) had normal delivery when compared to 33.3% for those < 1.53meters. Thus, height less than 1.53 was associated with a risk of primary caesarean section. This however failed to reach statistical significance as P = 0.081, and X^2 = 3.040.

The parturients body weights ranged from 53.00kg to 148.00kg with a mean of 82.78kg +/- 14.80SD. The weights of the women who had vaginal delivery ranged from 55 to 130kg with a mean of 81.88kg +/ - 12.53SD,whereas the weight of the women that had caesarean delivery ranged from 53.00 to 148.00kg with a mean of 85.62kg +/ - 20.29SD, which was reasonably higher than the mean weight for vaginal delivery above. On crosstabulation of the women's weight with their modes of delivery, 78.6% (114) of the women whose weight was less than 90kg delivered normally and only 21.4% (31) had caesarean delivery. On the contrary,only 69 .1% of those whose weight was more than 90kg could deliver vaginally while as much as 30.9% underwent caesarean birth, as opposed to 21.4% caesarean rate for women with weights < 90kg. Women with higher body weights thus appear to be at higher risk of primary caesarean delivery. However, no statistical significant association was found as P was 0.159 and x^2 = 1.985.

The Body Mass Index(BMI) of the entire women recruited into the study ranged from 19.38 to 49.45kg/m^2 with a mean of 30.66kg/m^2 +/- 4.76 SD.(10) The BMI of the women who had vaginal delivery ranged from 19.38 to 43.16kg/m^2 with a mean of 30.21kg/m^2 +/ - 4.09 SD. while the BMI of the caesarean section group ranged from 21.34 to 49.45kg/m^2 with a mean of 32.10kg/m^2 +/ - 6.26 SD. These values are higher than those for normal delivery group, suggesting an association between a high BMI and risk of primary caesarean section. Upon crosstabulation of the BMI and modes of delivery, only 20% of those who had a BMI < 30kg/m2 underwent primary caesarean section while 28.0% of the women with a BMI > OR = 30KG/M^2 had caesarean delivery. BMI > or = 30kg/m^2 was hence associated with primary caesarean delivery but this did not reach statistical significane as P was 0.185 and x^2 = 1.754.

DISCUSSION

Majority of the women in the study 127(63.5%) were aged between 21 and 30 years. This was also the modal age group in most other studies [10,14,18]. All the ladies (100%) aged less than 20 years in this study were in their late teens (19 years precisely) and they all delivered vaginally whereas only 74.0% and 78.6% of the women aged 20 – 30years and 31 – 40 years respectively, could achieve vaginal delivery [13,16]. The risk of caesarean delivery appeared higher in the two older age groups than in the women less than 20(19years precisely). Incidentally, no lady aged 18 or less was found during the 3 months of

recruitment. It is feared that teenagers may not have attained their maximum pelvic development and hence are at risk of cephalopelvic disproportion, obstructed labour and a higher caesarean section rate [1]. This may not be true especially for the older teenagers (18 and 19), who are not handicapped by malnutrition and or illness. The finding here may be due to the fact that children tend to attain maturity more rapidly nowadays with improved nutrition. In a sentinel study of caesarean section in England, Wales and North Ireland, the caesarean rate in women less 20years was 13% compared to 33% for women aged 40 to 50years [18]. Though no woman older than 40years was included in this study, the findings are similar. However, no statistical significant association was found between maternal age and the risk of primary caesarean delivery as P was 0.478 and Chi – square was 1.475 . [17], also did not find any statistical difference between the ages of women delivered normally and those who had primary caesarean section. However Smith GC and Martel M both found a significant association between older age of mother and a risk of caesarean section. The proportion of women aged > 35 years was 14.5% in this study. This is comparable to the 16% reported in UK in 2000 [9].

While 66.7% of the women < 1.53m tall had primary caesarean delivery (table 25), only 23.4% of those 1.53 metres tall or more had primary caesarean section. Similarly , more of the women who were 1.53m or taller had normal delivery(76.6%) as opposed to only 33.3% normal delivery in the shorter women(<1.53m). Moreso the mean height of women who had primary caesarean section was slightly lower than that for vaginal delivery (1.6279 =/- 0.06946 SD vs 1.645+/- 0.05193 SD). Thus, height < 1.53m was associated with a risk of primary caesarean section. This also did not reach statistical significance, with p = 0.478 and chi- square = 1.475. This finding was different from most others [14,17].[15], found height < 1.50m significantly associated with a risk of primary caesarean section. [11], also found short stature (mother's height < 1.55m) to be an independent risk factor for primary caesarean section. Failure to reach statistical significance in this study may be because of the smaller sample size. The mean BMI for the women who had primary caesarean section. was slightly higher than those who had vaginal delivery (32.10 +/ - 6.25917 SD vs 30.2101+/- 4.0964 SD) and the proportion of women with BMI = or > 30kg/m^2 who had primary caesarean delivery, was higher than the proportion of the women with BMI < 30kg/m^2 who had caesarean delivery, (28% vs 20%). However, no statistical significant association was found between BMI > or = 30kg/m^2 and BMI < 30Kg/m^2 and a risk of primary caesarean delivery ,with P= 0.165 and pearson chi- square = 0.185. Obese pregnant women have been found in the past to have a higher risk for caesarean section [9]. Obesity(BMI = OR > 30Kg/m^2) was also associated with a risk a risk of primary caesarean section in this study, though without statistical significance.A Statistical significant association may appear with a larger sample size.

CONCLUSION

Maternal height, BMI, age and socio – economic status were not significantly associated with a risk of primary caesarean delivery. There is need for further studies to evaluate the determinants of primary caesarean section in a larger sample size.

REFERENCES

1. Depp R. Caesarean Delivery. In: Gabbe SG, Niebyl JR, Simpson JL (eds).Normal and Problem Pregnancies. 4th edition. Philaldephia: churchill living stone inc; 2002, pg 539 – 545.
2. Enki M, Keirse MJN, Chalmers IA. A guide to effective care in pregnancy and child birth. Oxford University Press 1990, 247- 255.
3. Umezurike CC., Feyi – Waboso PA, Adisa CA. Peripartum Hysterectomy in Aba, south eastern Nigeria. Australian and New Zealand Journal of obstetrics

and gynaecology 2008; 48: 580 – 582
4. Chapman DJ, Perez-Escamilla R. Identification of risk factors for delayed onset of lactation. Journal of the American Dietetic Association 1999; 99(4):450 – 4.
5. Postnote {Parliamentary Office of Science and Technology}, October 2002, number 184: Caesarean Section, pg 1 – 4. (available at www.parliament.uk/post home.htm)
6. Ijaiya MA, Aboyeji PA. Caesarean Delivery: the trends over a ten year period at Illorin, Nigeria. The Nig J Surg Res 2001;3(1):11 -18
7. National Institute for Clinical Excellence(NICE), Clinical Guidance 13: Caesarean Section. April 2004.
8. Adimma J I B. Caesarean Section: A review from a sub- urban hospital in Nigeria. Nig Med. J. 1993; 24(1):9 - 12.
9. Onwuhafua PI. Perinatal mortality and caesarean section at Ahmadu Bello University Teaching Hospital, Kaduna ,Nigeria. Nig Trop. J Obstet. Gynaecol. 1999;16 (1): 6 - 9.
10. Jimoh A A G, Nwosu I C. Primary caesarean section at the University of Ilorin Teaching Hospital, Ilorin: A 4 Year Review. Nig Hosp Pract 2007; 1(1):7 – 11.
11. Depp R. Caesarean Delivery. In: Gabbe SG, Niebyl JR, Simpson JL (eds).Normal and Problem Pregnancies. 4th edition. Philaldephia: churchill living stone inc; 2002, pg 539 – 545.
12. Postnote {Parliamentary Office of Science and Technology}, October 2002, number 184: Caesarean Section, pg 1 – 4. (available at www.parliament.uk/post home.htm)
13. Myerscough PR. Caesarean section : Sterilization: Hysterectomy. In: Munro Kerr's Operative Obstetrics. London: Bailliere Tyndal (pub) 1995: 295 - 313.
14. Ezechi O, Fasubaa O, Kalu C., Nwokoro C, Obiesie L. Caesareaen Section, why the aversion. Trop. J . Obstet. Gynaecol 2004;21{2}:164 – 167.
15. Cisse CT, Faye EO, de Bernis L, Dujardin B, Diahiou F. Caesarean section in Senegal: coverage of needs and quality of services. Sante:1998; 8(5):369 – 97.
16. Cunnigham FG,Grant NF, Kenneth J, Leveno LC, Gilstrap JC, Hauth CD. Caeserean section and peripartum hysterectomy. In: Williams obstetrics.21st edition. NewYork: Mc Graw – Hill professional;2001: pg 425 – 458.
17. Caesarean Section fact sheeth, 1995 – 1998. Childbirth.org.
18. Owolabi A T. Fatusi A O. Kuti O. Adeyemi A. Faturoti S O. Obiajunwa P O. Maternal complications and perinatal outcome in booked and unbooked mothers. Singapore Med. J 2008: 49(7); 526 – 531.