

Postpartum Morbidities Following Cesarean Section Deliveries

¹Ayat M., Omar, ²Mervat A., Khames, ³Sanaa A., NourEldein, ⁴Safwat Abd Elrady and ⁵Entesar M., Makhlof

Department of Obstetrics & Gynecological, Faculties of Nursing –¹Elfayoum,
²Assiut, ³Zagazig Universities Egypt and Faculty of Medicine –⁴Assiut University Egypt.
mervat_33@yahoo.com

Abstract: Cesarean section is a major operative procedure and consequently many complications and morbidities may encounter according to the registries of the University Hospital, C.S rate was 45.8% in 2010. **objective:** to identify postnatal health problems experienced by women delivered by C.S. **Methods:** A prospective study design was adopted in this study to achieve the stated aim, a purposive sample of all puerperal women (n=330) puerperal women and their newborns' who had C.S delivery in the postpartum wards of Obstetrics Department, Women's Health Center, Assiut University Hospital, Egypt. The Women's Health Center. **Results:** Minor & major problems were reported by 88.8% & 32.4% of the puerperal women. During 1st visit & Minor & Major problems were reported by 74.2% & 25.4% of the puerperal women in 2nd visit. **Conclusion:** more than one fifth of the women (61.0%) encountered major problem & (89.0%) suffered from minor problems.

[Ayat M., Omar, Mervat A., Khames, Sanaa A., NourEldein Safwat Abd Elrady and Entesar M., Makhlof. **Postpartum Morbidities Following Cesarean Section Deliveries.** *J Am Sci* 2013;9(7):410-418]. (ISSN: 1545-1003). <http://www.jofamericanscience.org>. 51

Key words: cesarean section, health problem, postpartum.

1. Introduction

The postpartum period is the most challenging time for the mothers who deliver caesarean babies, since it is one of the major surgeries where both mother and a baby can be at risk (Rock, 2005). The rate of Caesarean sections between 10% and 15% of all births in developed countries. In 2004, the Caesarean rate was about 20% in the United Kingdom, while the Canadian rate was 22.5% in 2001-2002 (Stephen, 2009). More than 70% of maternal deaths occur in the postpartum period, especially in developing countries due to a number of problems, 77% of these complications occur during or shortly after childbirth (within 24 hours). Such as postpartum hemorrhage, puerperal infection and hypertensive disease (Jhon & Sons, 2007).

Women undergoing C.S have 5 to 20 folds greater risk for infection and other common complications such as fever, urinary tract infections, bacteremia, endometritis and thrombophlebitis, compared with a vaginal delivery (Jhon & Sons, 2007). Also the women experiencing C.S have reported higher levels of tiredness, breastfeeding problems, constipation, depression, headache, difficulty voiding, abnormal bleeding, urinary tract infection, abdominal pain, and vaginal discharge than their counterparts who had a spontaneous vaginal birth (Hannah, 2007). Skilled care and early identification of problems which arise during this period could reduce the incidence of deaths and disabilities, that is consider as a single most important intervention for preventing maternal and newborn morbidities and mortalities .

Significance of the study

Cesarean section deliveries are more likely to be associated with increased mortality and morbidity both for mother and the baby compared to women who deliver vaginally (Alexander, 2006). The Egyptian Demographic Health Survey (EDHS) conducted in Egypt 2005 obtained information on the incidence of C.S. It showed that one-fifth (20.0%) of deliveries were by C.S. At Assiut, according to the registries of the University Hospital, C.S rate was 45.8% in 2010.

Thus there is critical need for early detection, monitoring and providing good quality care of postpartum health problems that can have devastating effect on the mother and her newborn during this period. In addition, improving nurse's knowledge and skills related to nursing care in C.S is deemed necessary to mitigate the mortality and morbidity risks that may be encountered among parturient women and their newborn babies.

Aim of the study

The aim of this study was to identify postnatal health problems experienced by women delivered by C.S and her newborn, and to propose a nursing protocol to meet the needs of the post cesarean women during the puerperium.

2. Subject and methods

Research design: A prospective study design was adopted in this study to achieve the stated aim.

Setting:

This study was conducted in the postpartum wards of Obstetrics Department, Women's Health

Center, Assiut University Hospital, Egypt. The Women's Health Center

Sample:

A purposive sample of all puerperal women (n=330) puerperal women and their newborns' who had C.S delivery in the study settings were recruited for this study, according to the following criteria was recruited.

Inclusion criteria

Gestational age was more than 28 weeks, either primiparous or multiparous, whether elective or emergency, With any type of C.S.

Exclusion criteria

Presence of any psychological problems, women with perinatal and neonatal deaths.

Tools of the study

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

1-Structured interviewing sheet (Annex 1)

This sheet was developed by the researcher to collect data related to :

Socio-demographic data., Obstetric profile, current antenatal condition and Current C.S delivery.

2-Immediate Postpartum Assessment: Annex II):

This part was developed by the researcher to collect data related to the condition of the woman immediately after delivery i.e. during the fourth stage of labor; until patient's discharge, as vital signs, intake and output, general and local condition of the mother as well as her new born.

3-Follow up sheet: (Appendix III):

This sheet was used to record data related to postoperative period and any complications that have arisen. Follow up started during the first postnatal visit (12 days of the puerperium) and second visit (40 Day of the puerperium). Follow up sheet included patient's condition (vital signs, breasts, wound, uterus, lochia, perineum, lower extremities and elimination) and problems encountered. Newborn assessment, included assessment of vital signs, head, chest, abdomen, genitalia and skin condition was also done.

Administrative design.

An official permission was granted by 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. Concerning the ethical consideration, the aim of the study was explained to every woman before participation, which was totally voluntary and an oral consent was obtained.

Field study

Data collection took a period of nine months from the first of January 2010 to the end of September 2010. After getting the official permission the pilot testing of the study tools was done and analyzed

The present study was carried out through three phases as follows

1-Interview phase:

in which all parturient women who were undergoing C.S were interviewed (structured interview) to collect data related to their socio-demographic characteristics, obstetric profile, current pregnancy and labor condition. Personal interview took 10 minutes for each one.

2-Assessment phase:

In this phase, the researcher together with the on- duty physician started the examination of the parturient woman, immediately after the C.S delivery i.e. during the fourth stage of labor. Woman general and local condition was assessed; vital signs, uterus, lochia, intake and output...etc as well as the newborn condition. Problems encountered were recorded and reported.

3-Implementation of the Proposed Nursing Protocol:

The implementation of the nursing protocol started during the assessment phase. Postnatal and newborn care was provided by the researcher during hospitalization and the protocol was tailored to meet each puerperal woman and her baby's needs during this stage. It was given in a form of simple postnatal instructions regarding self care and baby care.

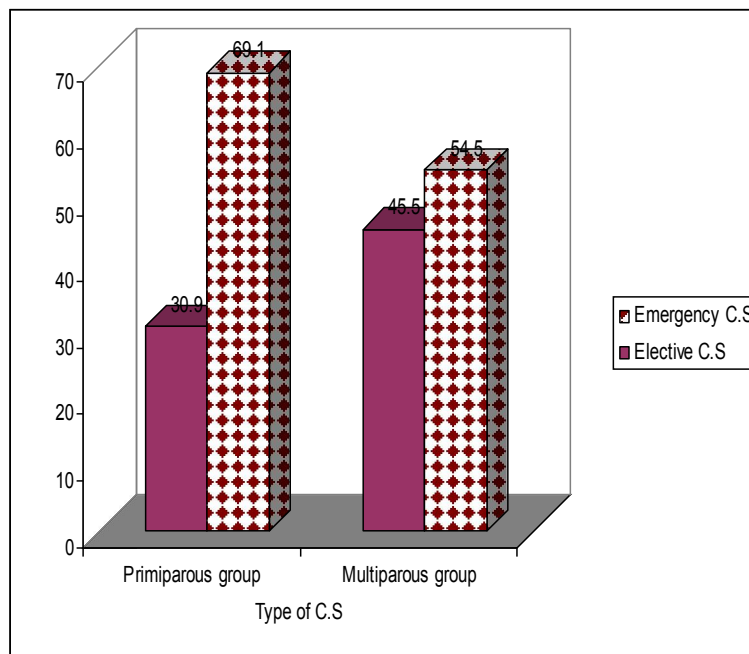
- Then the investigator asked the woman to come as soon as possible to the clinic according to her reported problem to be managed properly or referred if needed. Women were followed up after their discharge, and asked to attend the out patient clinic on the "12th day" and the end of the puerperium" 40th day", whether they have problems or not.
- During these 2 contacts (Follow-up visits) the investigator assessed general condition of the mother such as (Vital signs, breast status, wound condition, uterus, lochia, perineum, nutritional status, elimination and hygiene) and her newborn as (cord condition, hygiene, feeding, sleeping and clothing) in the out patient clinic and asked her if she had any problem either for herself or her newborn and managed it or referred them if needed according to their problem.

3.Results

Table 1. describes the sociodemographic characteristics of women in the study sample. About two thirds of women (64.5%) were between 20-30 years and more than one fourth (27.2%) of them were 30 years and more, with mean (\pm SD) 25.85 \pm 4.8 years. Regarding education, the highest percentage had secondary or university education (51.5%), while 29.4% were illiterate. The majority were housewives (91.5%) and were living in rural areas (72.7%).

Table 1. Sociodemographic characteristics of puerperal women

Sociodemographic characteristics	Frequency	Percent
Age (mean+SD)	25.85±4.8155	
< 20	27	8.3
20-	213	64.5
30+	90	27.2
Occupation		
• Housewife	302	91.5
• Employer	28	8.5
Education		
• Illiterate	97	29.4
• Read and write	12	3.6
• Primary school	11	3.3
• Preparatory school	40	12.1
• Secondary school	124	37.6
• University	46	13.9
Residence		
• Urban area	90	27.3
• Rural area	240	72.7

**Fig . 1 Type of C.S in both groups**

More than half of women in both groups had an emergency C.S (69.1% vs. 54.5%) with significant statistical difference.

Fig . 2 illustrate that C.S order in multiparous group was more than one third of women underwent C.S for the second time (38.2%) followed by (32.7%) of them had C.S for the first time. While nearly less than one fourth of women had their third C.S and the rest of them had fourth and fifth C.S(10.3%).

Intra-operative complications among puerperal women illustrated in table 9. the great majority of the studied women (94.2%) had no complications. Among those who had intraoperative complications (5.8%). 15 women (4.6%) had bleeding, and 2 women (0.6%) had bladder injury. An equal proportion (0.3%) of anesthetic complications and rupture uterus were also present in the studied sample.

Table 2. shows the incidence of early major postoperative health problems encountered among women undergoing cesarean section. It indicates that almost one third (31.2%) of women had encountered these problems. Puerperal women had higher percentage of postpartum fever (16.7%) followed by 5.8% who were in need for blood transfusion and 4.5% had exposed to chest infection and 8 women (2.4%) were suffered from postpartum hemorrhage. Five women (5.8%) were admitted to the ICU and the major indication was due to complicated eclampsia (40.0%).

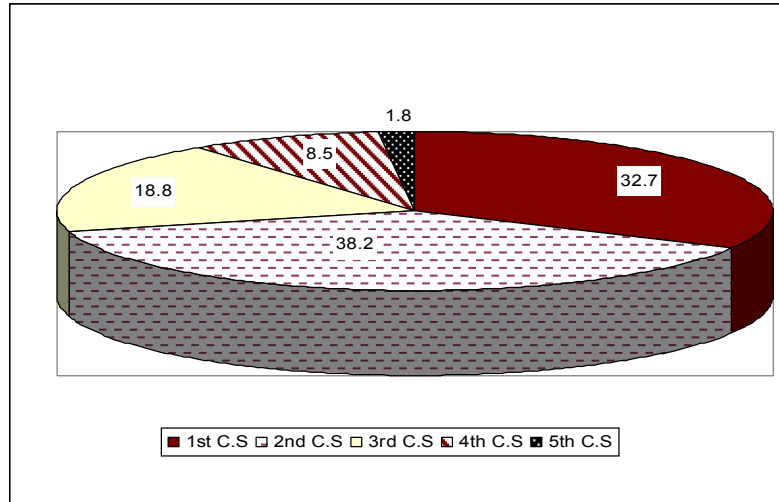


Fig 2 :Cesarean Section order in multiparous group

Table 2. Intra-operative complications among the studied women (n=330).

Intraoperative complications	Frequency	Percent
• Non	311	94.2
• Bleeding	15	4.6
• Bladder injury	2	0.6
• Anesthetic complication	1	0.3
• Rupture uterus & uterine reparaire	1	0.3

Table 3 .Early major postoperative health problems among the studied women (during hospitalization) (n=330).

Early major postoperative health problems	Frequency	Percentage
• None	227	68.8
• Bleeding	8	2.4
• Fever	55	16.7
• Urinary tract infection	1	0.3
• Chest infection	15	4.5
• Need to blood transfusion	19	5.8
• Amount of Blood /L	1.36+0.93	
• Admission of ICU Indications for admission	5	1.5
-Complicated eclampsia	2	40.0
-Medical disorders	1	20.0
-Heamorrhagic shock	1	20.0
-Anaesthetic complications	1	20.0

Table 4. presents health problems encountered among CS puerperal women during their first postnatal visit. It is evident that almost one third of the studied women (32.8%) had those problems. The highest percentage was that of urinary tract infection (11.5%), followed by wound infection (7.3%) and puerperal pyrexia (3.3%). Women who suffered from secondary postpartum hemorrhage and respiratory tract infection accounted for 3.0% & 2.4%, respectively. Meanwhile, thrombosis & paralytic illus were present in 0.3% & 0.3% respectively of the studied women.

Table 4. Major health problem encountered among the studied women during their first postnatal visit (n=330)

Items	Frequency	Percentage
• None	222	67.2
• Bleeding	10	3.0
• Puerperal pyrexia(fever)	11	3.3
• Wound infection	24	7.3
• Urinary tract infection	38	11.5
• Respiratory tract infection	8	2.4
• Thrombosis	1	0.3
• Paralytic illness	1	0.3
• Others	16	4.8

-Others (genital tract infection)

Total is not exclusive "more than one answer"

Table 5 shows that more than one fourth of the studied women (25.4%) complained of major health problems during their second postnatal visit. The most common type of problem was the urinary tract infection (3.7%) followed by an equal proportion of wound infection & puerperal pyrexia (2.7 & 2.7% respectively). Bleeding and respiratory tract infections accounted for 2.0% & 2.0% respectively. Meanwhile, sub rectal hematoma was present in 0.3% respectively of the studied women. Nine women (3.1%) were readmitted to the hospital with a mean duration of hospital stay (2.3 ± 1.4) days. Wound infection (33.4%) and bleeding (22.4%) were the most common indications for readmission to the hospital.

Table 5. Major health problems encountered among the studied women during their second postnatal visit (n=295)

Items	Frequency	Percent
• None	221	74.9
• Bleeding	6	2.0
• Puerperal pyrexia(fever)	8	2.7
• Wound infection	8	2.7
• Urinary tract infection	11	3.7
• Respiratory tract infection	6	2.0
• Endometritis	2	0.7
• Subrectus hematoma of the wound	1	0.3
• Readmission to hospital	9	3.1
Indication of re hospitalization		
1. Wound infection	3	33.4
2. Bleeding	2	22.2
3. Puerperal pyrexia	1	11.1
4. Subrectus hematoma of the wound	1	11.1
5. Endometritis	1	11.1
• Duration of hospital stay (mean \pmSD)	(2.3 ± 1.4)	
+Others	23	7.7

+ Others (genital tract infections and anal fissure)

The minor health problems encountered among CS puerperal women during their hospitalization are displayed in table 6. The main problem was mostly the general problems (79.1%) as; fatigue and headache. Approximately equal proportion (75.2%) suffered from GIT problems such as; nausea and vomiting, abdominal distension and constipation.

It is also noticed that about one half of the women had an incision problems such as; oozing of blood from the wound, pain and tenderness. As for muscle skeletal problems and breast problems, they were present in more than half (52.4%) of the sample (38.8% and 13.6% respectively).

The minor health problems encountered among CS puerperal women during their first postnatal visit are revealed in table 7. The vast majority of the studied women (88.8%) had complained of minor problems. The most commonly reported problems were that of general problems (68.8%) followed by muscle skeletal problems (62.4%), incisional problems (55.5%) and breast problems (32.4%) in the form of breast engorgement, cracked nipples and failure of breast feeding. Additionally, almost one fifth of the women (20.6%) reported having gastrointestinal problems namely; abdominal distension, diarrhea and hemorrhoids.

Table 6. Minor health problem encountered among the studied women during their hospitalization (n=330)

Items	Frequency	Percentage
1.Reported CS postpartum health problems		
• Yes	312	94.5
• No	18	5.5
2.Type of these problems @		
■ General problems	261	79.1
Δ GIT problems	248	75.2
▣ Incision problems	163	49.4
□ Muscle skeletal problems	128	38.8
◇ Breast problems	45	13.6
+ Others	38	11.5

+ *Others (itching, leg pain/edema, dysurea/renal pain and hypotension and hypertension*

Δ *GIT problems (nausea/ vomiting, abdominal distention /pain, constipation).*

■ *General problems (Fatigue, headache).*

□ *Muscle skeletal problems (Backache, neck/ shoulder pain)*

◇ *Breast problems (Cracked / sore nipple, Flat nipple Inverted nipple*

▣ *Incision problems (pain, tenderness/numbness around wound area, oozing of blood from the wound).*

@*Not mutually exclusive*

Table 7. Minor health problem encountered among the studied women during their first postnatal visit (n=330)

Items	N=330	
	(N)	(%)
1.Reported postpartum health problems		
• Yes	293	88.8
• No	37	11.2
2.Type of these problems @		
■ General problems	227	68.8
□ Muscle skeletal problems	206	62.4
▣ Incision problems	183	55.5
◇ Breast problems	107	32.4
Δ GIT problems	68	20.6
+ Others	39	11.8

+*Others(hypotension/ hypertension, leg pain/edema, renal pain/ dysurea).*

Δ *GIT problems (abdominal distention /pain, constipation/diarrhea, hemorrhoids).*

■ *General problems (Fatigue, headache).*

□ *Muscle skeletal problems (Backache, neck/ shoulder pain)*

◇ *Breast problems (Cracked / sore nipple, Flat/ Inverted nipple, insufficient milk flow breast engorgement and failure of breast feeding).*

▣ *Incision problems (pain, tenderness/numbness around wound area, incision itching oozing of serous fluid from the wound, skin rash/redness/hotness around the wound hematoma around the incision edges and separation of wound edges).the incision edges).*

@*Not mutually exclusive*

Table 8. presents the minor health problems encountered among CS puerperal women during their second postnatal visit . It is evident that almost three quarters of the studied women (74.2%) suffered from those problems. Of those more than two fifth of the studied women (44.1%) complained of general problems, followed by muscle skeletal problems (33.9%), incisional problems (18.6%) in the form of pain, tenderness/numbness around wound area, incision itching oozing of purulent fluid from the wound, skin rash/redness/hotness around the wound edges and separation of wound edges. Meanwhile, breast problems were encountered among more than one tenth of the studied women (11.5%) such as; insufficient milk flow, failure of breast feeding, mastitis and breast abscess. Additionally, gastro intestinal problems were present in 27 women (9.2%).

Table 8. Minor health problems encountered among the studied women during their second postnatal visit (n=295)

Items	Frequency	Percent
1. Reported postpartum health problems (during 2nd visit)		
• Yes	219	74.2
• No	76	25.8
2. Type of these problems @		
■ General problems	130	44.1
□ Muscle skeletal problems	100	33.9
▣ Incision problems	55	18.6
◇ Breast problems	34	11.5
△ GIT problems	27	9.2
+ Others	16	5.4

+Others(hypotension/ hypertension, leg pain, renal pain/ dysurea).

△ **GIT problems** (abdominal distention /pain, constipation/diarrhea, hemorrhoids).

■ **General problems** (Fatigue, headache).

□ **Muscle skeletal problems** (Backache, neck/ shoulder pain)

◇ **Breast problems** (Cracked / sore nipple, Flat/ Inverted nipple, insufficient milk flow failure of breast feeding , mastitis and breast abscess).

▣ **Incision problems** (pain, tenderness/numbness around wound area, incision itching oozing of purulent fluid from the wound, skin rash/redness/hotness around the wound edges and separation of wound edges).

-Some of women had more than one problem.

-(15 women primiparous and 20 women multiparous defaulted from the second visit of follow-up).

@Not mutually exclusive

4. Discussion

According to the present study findings, The majority of the studied women were housewives and living in rural areas. In the same line, these findings were also in congruence with Abd El-hamid (2006) & Mahmoud (2007) who clarified that the highest percentage of women were housewives and living in rural area. This finding could be because women in rural areas have little access to antenatal care.

According to the present study nearly more than half of women in both groups had an emergency C.S 69.1% vs. 54.5% with significant statistical difference. In congruence with these findings, Abd El-hamid (2006) and Mahmoud (2007), have shown that the majority of C.S were emergency.

As for C.S order more than one third of women underwent C.S for the second time 38.2% followed by 32.7% had C.S for the first time. While nearly less than one fourth 18.8% had their third C.S and the rest of them had fourth and fifth C.S 10.3%. These findings were not totally incongruence with Mahmoud (2007), who showed that more than two thirds of women 67.3% had C.S for the first time, while 20.8% had the second C.S, 11.9% had their three or more C.S According to the present study results, about 15.8% of women had intraoperative complications. The most common types of these

complications were bleeding (4.6%) and only 2 women (0.6%) had bladder injury and one woman had rupture uterus and anesthetic complications. This proportion of women could be the women who had risk factors during pregnancy. These post operative complications could be related to the past medical history which showed that preeclampsia, renal disorders, DM, respiratory problems and blood diseases were reported by the women.

These results were in partial agreement with that reported by Mahmoud (2007), who added that the vast majority of women had no intraoperative complications compared to 2.7% who had intraoperative complications. The most common complications were bleeding and bladder injury and only 6 women had intraoperative anesthetic complications.

As regards to early major post operative complications, our study indicates that almost one third of women had encountered these problems, postpartum fever followed by need for blood transfusion and chest infection and 8 women (2.4%) suffered from postpartum hemorrhage. Five women (5.8%) were admitted to the ICU and the major indication was due to eclampsia. These findings were in congruence with Makhloah (2007), who reported that postpartum hemorrhage, post partum eclampsia

puerperal pyrexia were the most common postpartum complications of mothers in the study and the control groups. Meanwhile, Uygur et al., (2005), reported that 1.4% of women underwent C.S had blood transfusion, 0.2% women had postoperative fever and only one woman had wound infection.

According to the present study, more than three quarters of the women had less than 2 days period of hospitalization. This may be attributed to the hospital rules and policy. Abd El-hamid (2006), reported that two days was the most hospitalization period among 45.3% of the women and 17.0% of women the period of hospital stay extended to four days.

As regards the major health problems encountered among C.S puerperal women during the first postnatal visit, the present study showed that almost one third of the studied women had problems as urinary tract infection, followed by wound infection and puerperal pyrexia.

This finding was in agreement with Abd El-hamid (2006), who reported that the highest percentage of subsequent postoperative complications among women in their study were mostly related to infections, in the form of wound infection and wound dehiscence, urinary tract infections, and respiratory infections. On the same line Lefty *et al.* (1996), reported that the common types of infections after C.S included wound infection, endometritis, urinary tract infections and occasionally pelvic abscess.

The present study illustrated that more than one fourth of the studied women complained of major health problems during their second postnatal visit.

The most common minor health problems encountered among women during hospitalization in the present study were the general problems (79.1%) followed by GIT problems, incision problems and muscle skeletal problems. Eugene (2008), examined "Mothers reports of their postpartum experiences with pain" stratified by method of delivery and pointed that about 79 % of mothers who had a C.S experiencing pain from their surgery in the first 2 months after birth. Kashaninia (2007), studied "the effect of discharge planning on physical status of Iranian mothers in the postpartum period" and found no significant differences were observed in some others complications, such as abnormal nipple, nipple fissure, abnormal uterine size, dysuria, frequency and incontinence of urine, chronic fatigue and sleep disorders, and mothers' re-hospitalization rate at sixth week.

Conclusions

During the 1st visit

- Minor & major problems were reported by 88.8% & 32.4% of the puerperal women.

•During the 2nd visit

- Minor & Major problems were reported by 74.2% & 25.4% of the puerperal women.

Recommendations

- It was recommended to implement a development program for maternity nurse.

- Activate the follow up program for women in postpartum and postpartum health problems for the mother and newborn

- Also, it was recommended to conduct further research in different settings to form an evidence based practice.

Corresponding author:

Mervat Aly Khamis. Department of Obstetrics & Gynecological Nursing, Faculty of Nursing, Assiut University

Email: mervat_33@yahoo.com

Reference

1. Abd-Elhamid A., M., (2006): Post operative complications following Cesarean Section delivery in Zagazig: prevalence and nursing implication. Thesis of philosophy degree in maternal newborn nursing, Zagazig University.
2. Alexander, J. M., Leveno, K. J., Hauth, J., Landon, M. B., Thom, E., Spong, C. Y., *et al.* (2006): Fetal injury associated with cesarean delivery. *Obstet Gynecol*, 108(4), 885-890.
3. Egyptian Demographic Health Survey (EDHS), maternal health care ,National population council,Cairo , Egypt ,Marco, USA, 2005 pp129 -132
4. Eugene Declercq, PhD, Deborah K. Cunningham, MN, MPH, Cynthia Johnson, MD, and Carol Sakala, PhD, MSPH (2008): Mothers' Reports of Postpartum Pain
5. Hannah ME, Hannah WJ, Hodnett ED, Chalmers B, Kung R, Willan A, *et al.* (2002): Outcomes at 3 months after planned cesarean vs. planned vaginal delivery for breech presentation at term: The International Randomized Term Breech Trial. *JAMA* 2002; 287: 1822-31.
6. Jhon W., and Sons, L., (2007): The Cochrane collaboration, prophylaxis for Cesarean Section, review (2).
7. Kashaninia Zahra, MSc; Sajedi Firoozeh, MD, Ashraf Khoramirad, (2007): The effect of

- discharge planning on physical status of Iranian mothers in the postpartum period, February 2007 - Volume 1, Issue 1
8. Lefty L., Apozzio J and Vintziles S. (1996):operative obstetrics 2nd ed., New York ,pp 401.
 9. Mahmoud.G.A.,(2007): The prevalence of women undergoing cesarean section in Women's Health center, Assiut University Hospital , thesis of Doctorate in obstetrics and gynecology
 10. Makhloogh E., M. (2007) : Normal versus high risk postpartum new mothers randomized clinical trial. Thesis of doctorate degree of Nursing sciences. Assiut University
 11. Rock, J.A., (2005):when you need an operation , cesarean section . American College of Surgeons , Chicago, <http://www.facs.com>
 12. Stephen J. Robson, MPH, MD, F,Woo Syong Tan, MBBS, (2009): Estimating the Rate of Cesarean Section by Maternal Request: Anonymous Survey of Obstetricians in Australia
 13. Uygur D., Tapisiz O and Mungun T (2005)multiple repeat cesarean section maternal and neonatal outcome I J O Obs & Gyn, 89:284-285
 14. World Health Organization (WHO) (2009): Monitoring emergency obstetric care: A handbook. France: World Health Organization
 15. World Health Organization (WHO), (2006): Maternal and child health Relevance and importance of quality postpartum care, practical guide.

6/2/2013