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Assessment of the Direct Cost of the Management of a Caesarean Section in Three Health Facilities in the Kisanga Health Zone (Sainte Bernadette, Clinique la Grace and HGR/la Foi)

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Abstract

Introduction: Caesarean section performed on time and in good conditions, is one of the obstetrical interventions capable of reducing maternal mortality. **Objective**: the objective of our study is to contribute to the reduction of infanto-maternal morbidity and mortality. **Methodology:** We conducted a cross-sectional descriptive study that covered one year from January 2021 to January 2021. Our study included 114 women; Data were entered in Excel and analyzed in SPSS version 23. **Results**: Out of a total of 245 women who came to give birth in the three structures concerned by our study, 114 had had a caesarean section, *i.e.* a proportion of 46.5%. Most women were from secondary school (49.1%), The majority of women had no history of caesarean section (75.4%), abortion (65.8%) and had a parity ≥ 5 (90.3%), Acute fetal distress was the first reason for caesarean section with 20.1% of cases. The cost of caesarean section was not statistically significant. The average length of stay in the three health facilities was statistically different (P: 0.001). **Conclusion:** Caesarean section remains a therapy that saves the mother and the child in case of dystocia or fetal distress.

Subject Areas

Gynecology & Obstetrics

Keywords

Caesarean Section, Cost, Care, Sainte Bernadette, Clinique la Grace, La Foi

1. Introduction

Pregnancy and childbirth have from the beginning of time put women at mortal risk [1]. This assertion of river remains a truth not only of its time but also today. This risk shames every obstetrician explains the research contained in order to achieve the best conditions for a favorable outcome of pregnancy and childbirth. This could also explain the introduction of cesarean section as an obstetrical technique, an intervention consisting of the surgical opening of the uterus for the rapid evacuation of the product of conception. The caesarean operation is probably one of the oldest interventions in obstetric surgery because we find its references in the ancient Egyptians and in Greek legends [2].

It is quite clear that a caesarean performed for a good indication is quite beneficial for the mother and the child, it is not uncommon to hear nowadays that many caesarean sections are performed with indications very often debatable because posed with doubt. This is evidenced by the associations of indications in the same woman to justify the cesarean operation [3].

Baudet sums up this situation well in these terms: "performing a caesarean section is usually easy, putting the indication for it wisely requires long experience of the art of obstetrics" [4], however caesarean sections performed without indications do not bring any benefit. and deprive us of resources that could be used in areas with low coverage [3]. There is no comprehensive list of indications for cesarean section. The decision to deliver by cesarean section is a personalized indication, after consultation between the obstetrician and the future mother, and after analyzing the advantages and disadvantages of the 2 options: vaginal delivery or cesarean section [3].

2. Methodology

Study environment: Our study is conducted in the city of Lubumbashi in the health district of Kisanga precisely in three health facilities, namely: the Saint Bernadette health center, the clinic La Grâce and the general reference hospital La Foi (HGR la foi) in the province of Upper Katanga in the Democratic Republic of Congo.

Type of study: We conducted a descriptive cross-sectional study with a retrospective approach. The study covered a period of one year, from January 2021 to January 2022.

Study population: The study population consists of parturients who came

directly to the service.

Sampling: We resorted to an exhaustive sampling. Its size is 114 women having undergone a caesarean section.

Data collection: To collect the data, we used a collection sheet. The data was taken from patient files, registers, and the partogram.

Analyzes: Once collected, the data was encoded in Excel and then exported to SPSS statistics version 23 for analysis. The one-factor Anova test was used to compare the means. The Ch^2 test served as a measure of association while the p value helped us for significance.

3. Results

Table 1 indicates that the majority of women were at secondary level (49.1%), married (92%) and were between 26 and 30 years old (36%).

As shown in Table 2, most women had no history of caesarean section (75.4%), abortion (65.8%) and had a parity ≥ 5 (90.3%).

Table 3 shows that 39% or 34.2% of patients had been admitted for progression arrest followed by 26% or 22.8% had eclampsia.

Table 1. Distribution of women according to socio-demographic characteristics.

	Frequency	Percentage	Mean (±standard deviation)
Age			
15 - 20	9	7.9	28.6±6.12
21 - 25	30	26.4	
26 - 30	41	36	Min Max
31 - 35	19	16.6	16 45
36 - 40	11	9.6	
41 - 45	4	3.5	
Profession			
Housewives	89	78.1	
traders	20	17.5	
Dressing tables	4	3.5	
Student	1	0.9	
Marital status			
Single	9	8	
Married	105	92	
Study level			
Primary	10	8.8	
Secondary	56	49.1	
University	48	42.1	

Table 2. Distribution of women according to obstetrical characteristics.

	Frequency	Percentage
Gesture		
≤5	90	78.9
>5	24	21.1
Parity		
≥5	103	90.3
>5	11	9.7
Abortion		
yes	39	34.2
No	75	65.8
Death		
Yes	14	12.3
No	100	87.7
History of caesarean section		
Yes	28	24.6
No	86	75.4

Table 3. Distribution of women by reason for admission.

Reason for admission	Frequency	Percentage
Progress stop	39	34.2
Cervical dystocia	11	9.6
Eclampsia	26	22.8
Hemorrhage	18	15.8
Pre-breakup	4	3.5
prolapse	10	8.8
Retention	1	0.9
pregnant uterus	5	4.4
Total	114	100

As shown in Table 4, the means of transport used was non-medical transport in 85.7% of cases.

As shown in Table 5, in 76.3% of cases, women followed the ANC and the majority had to follow 4 ANC (90.8%).

Table 6 shows that 59% or 51.7% of women had a caesarean section in a full-term pregnancy.

As shown in Table 7, acute fetal distress was the first reason for caesarean section with 20.1% of cases.

Table 4. Distribution of women by reason for admission.

Means of transport	Frequency	Percentage
Medicalized	3	14.3
Not medicalized	18	85.7
Total	21	100

Table 5. Distribution of women according to prenatal consultation.

	Frequency	Percentage
Antenatal care followed		
Yes	87	76.3
No	27	23.7
Antenatal care Numbers		
1	1	1.15
2	5	5.75
3	2	2.3
4	79	90.8

Table 6. Distribution of women by gestational age.

Gestational age	Frequency	Percentage
<37 Weeks of amenorrhea	1	0.8
37 - 42 weeks of amenorrhea	59	51.7
≥42 Weeks of amenorrhea	54	47.5
Total	114	100

Table 7. Distribution of women according to indication for caesarean section.

Reason for caesarean section	Frequency	Percentage
Abruption of normally inserted placenta (NIBP)	4	3.5
Lack of commitment	14	12.2
Maternal distress	3	2.6
Disproportion	5	4.3
Dystocia	5	4.3
Trigger failed	8	7.0
Eclampsia	9	7.9
Vesicovaginal fistula	1	0.8
Multiple pregnancy	3	2.6
Lack of commitment	2	1.7
Placenta previa	11	9.6

Continued

Vicious presentation	5	4.3
Cord prolapse	7	6.1
Feet mode seat	3	2.6
Acute fetal distress	23	20.1
Prolonged labour	2	17
scarred uterus	9	7.8
Total	114	100

Table 8. Distribution of women according to caesarean section classification.

Caesarean section classification	Frequency	Percentage
Urgent	59	52
Scheduled	55	48

Table 9. Distribution of women according to the total cost of cesarean section management.

Structure	Total cost	Frequecy	Percentage
Hôpital General de référence la Foi	250	29	25.4
Sainte Bernadette	350	54	47.4
Clinique la grâce	400	31	27.2

Table 10. Distribution of women by cost of caesarean section.

Structure	Average Cost (In Dollars)	Frequency	Percentage
Hôpital General de référence la Foi	43,5	29	25.4
Sainte Bernadette	81	54	47.4
Clinique la Grace	77,5	31	27.2

As shown in Table 8, fifty-nine Caesarean sections were performed urgently (52%).

Table 9 shows that the total for a caesarean section is $400 at the Clinique la Grâce, $350 at Sainte Bernadette and $250 at the La Foi referral general hospital (P-value: 0.0000).

Table 10 shows that the average cost of a caesarean section is $81 at Saint Bernadette, $77.5 at Clinique la Grace and $43.5 at La Foie general referral hospital (P-value = 0.91).

Table 11 shows that the average length of stay at La Foi General Reference Hospital is 8 days, 7.2 days at Sainte Bernadette and 6.2 days at La Grace Clinic (P: 0.001).

4. Discussion

Table 1 tells us that most women had a secondary level (49.1%) followed by

Table 11. Distribution of women according to length of stay after caesarean section.

Structure	Average Length of Stay	Anova Test
Hôpital General de référence la Foi	8	F: 4; P:0.001
Sainte Bernadette	7.2	
Clinique la GRACE	6.2	

those with a university level (42.1%). Regarding the marital status, married women represented 92% and the minimum age is 16 years, and the maximum age is 45 years with an average age of 28.6 years (±6.12). Most women were in the age group between 26 and 30 (36%). These results are contrary to those found by Tahila [5] but are similar in terms of the age of women who underwent caesarean section. Sagara found that the majority age group is 20 to 24 years old [6].

Most women had no history of caesarean (75.4%) abortion (65.8%) had never had a case of death or abortion (87.7% and 65.8%) and had a parity ≥ 5 (90.3%) (**Table 2**). Our results are different from those found by Picod [7].

In 34.2% of cases, the reason for admission was progression arrest followed by eclampsia (22.8%) as indicated in **Table 3** and **Table 4** indicates that in 85% of cases, the women arrived at the hospital using non-medical transport (84.7%). These results are similar to those of Benin [8].

Concerning the ANC, we observed that in 76.3% of the cases, the women followed the ANC and the majority had to follow 4 ANC (90.8%). Our results, although lower, are close to those found in Lubumbashi [9].

The majority of women who underwent cesarean section had a pregnancy whose age was between 37 and 42 weeks of amenorrhea (51.7%) followed by those whose gestational age was ≥42 weeks of amenorrhea (47.5%) (**Table 6**).

Acute fetal distress was the primary indication for caesarean section with 20.1% of cases followed by failure to engage (12.2%) (**Table 7**). Another study conducted in Lubumbashi observed that the indications for caesarean section were dominated by fetal-pelvic disproportion (18.6%), acute fetal distress (11.9%), fetal malpresentation (10.1%), placenta previa (9.2%) and narrowed pelvis (8.4%) [9].

Table 8 indicates that 59 caesarean sections (52%) were performed urgently and 55 (48%) were not. Our observations are similar to those found by Kinekinda in Lubumbashi [9] in Morocco [5] as well as in Benin [8].

Table 9 indicates that the total expenses for a caesarean section are $400 at the La Grace clinic, $350 at Sainte Bernadette and $250 at the La Foi referral general hospital. These costs were statistically different (P-value: 0.0000).

Regarding the cost of a caesarean section, we observed that Sainte Bernadette presented an average cost of $81 followed by the Grace Clinic ($77.5) and finally the La Foi Reference General Hospital ($43.5). These differences were not statistically significant (P-value = 0.91). In Benin, the average expenditure made by families was 30,000 FCFA, varying from 0 to 200,000 FCFA [8].

The average length of stay at the La Foi General Reference Hospital is 8 days, followed by the Sainte Bernadette Clinic (7.2 days) and 6.2 days at the Grace Clinic. The difference is statistically significant (F: 4 and P: 0.001) the test and statistically significant (Table 11). In Senegal, the average length of stay depended on the technique used and varied between 3.9 days (±0.7) and 5.2 days (±1.8) (p = 0.0000) [10].

5. Conclusion

We conducted a cross-sectional descriptive study on caesarean section with a sample of 114 women out of a total of 245 women received for delivery, a proportion of 46.5% has been observed concerning caesarian. The study allowed us to document the indications of cesarean section as well as the cost of care in an urban environment of Sub-Saharan Africa which is characterized by socio-economic precariousness.

Conflicts of Interest

The authors declare no conflicts of interest.

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