Public Health of Indonesia
Hussen, A. Public Health of Indonesia. 2019 December;5(4):85-90
http://stikbar.org/ycabpublisher/index.php/PHI/index
ISSN: 2477-1570

Original Research

PREVALENCE AND INDICATION AND OUTCOME OF CESAREAN SECTION IN JUGAL HOSPITAL, HARARI REGIONAL STATE, ETHIOPIA, 2019: A RETROSPECTIVE STUDY

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Received: 13 October 2019 | **Accepted:** 11 November 2019
DOI: http://dx.doi.org/10.36685/phi.v5i4.296
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ABSTRACT
Background: Rising rates of cesarean delivery is becoming a concern to developing countries. Though cesarean section is a lifesaving surgical intervention, the rise in rates has resulted in significant health problems of mothers and newborns.
Objective: The aim to undertaking this research is to know the prevalence, indications and outcome of cesarean section delivery In Jugal Hospital, Harari regional state, Ethiopia.
Methods: Hospital based record review cross-sectional study was conducted in Jugal Hospital, Harar, Ethiopia from September 1, 2015 to September 1, 2019. Trained data collector and the principal investigator collected data employing a pre-tested extraction format. After checking the filled extraction format for completeness, data was entered, cleaned and analyzed using SPSS software Version 20.
Results: In five years' time (2015-2019), there were 6,111 deliveries, of which 1,817 were delivered by cesarean section which gives the overall rate of 29.7%. The most common indications for cesarean section were Cephalo-pelvic Disproportion (CPD) 323 (17.78%) followed by fetal distress 292(16.07%) and the least indication was pre-eclampsia 9(0.5%) and the most cause of prenatal death was birth asphyxia 38% followed by prematurity34%.
Conclusion: In this study, there is a steady increase in the rates of cesarean delivery in five years' time, the overall rate of C-section in Jugal Hospital was 29.7%. This rate is higher than the World Health Organization standard. Policies and efforts aimed at decreasing the unnecessary cesarean sections should be promoted and implemented at each health facility.

Keywords: prevalence, cesarean delivery, indications, outcome, Ethiopia

BACKGROUND

Cesarean section refers to the delivery of a fetus, placenta and membrane through the abdominal and uterine incision after 28 weeks of gestation (Bush et al., 2007). Caesarean section (CS) is a life-saving obstetric surgery, which may be necessitated (sometimes the only feasible option) in high risk pregnancies such as those with multiple/ large fetuses, breech presentations, obstructed labor, as well as in women with transmissible infections such as HIV/AIDS (World, 2015).

Once upon a time in the last century, the modern cesarean delivery was begun to reduce the maternal and newborns complications, morbidity and mortality (Kayongo et al., 2006). Unfortunately nowadays, however, undergoing cesarean is not used only when necessary and only to save the mother and the baby; rather, it is gradually being assumed as something luxurious by some communities (Alehagen, Wijma, & Wijma, 2001).

When medically indicated, CS has the potential for reducing maternal/neonatal mortalities and morbidities including delivery complications such as obstetric fistula (Betrán et al., 2016). However, a non-medically indicated CS has no associated additional benefits for mothers and newborns, rather like any surgery, it carries both short-term and/or long-term health risks (Keag, Norman, & Stock, 2018).

The adequate population-based prevalence for this essential obstetric intervention remains a subject of strong contentions, worldwide, revealing a lack of consensus (Baron, 2016). However, evidence suggests that a population-based CS prevalence <5% indicates unmet needs (lack of access to women in need of it), while prevalence >15% may show no additional benefit for mothers and babies (Gibbons et al., 2010). In 1985, the WHO recommended CS rates as a percentage of live births between 10% and 15% as the optimal range, with a declaration that 'there is no justification for caesarean section rates in any region to be higher than 10%–15% (Althabe & Belizán, 2006).

Caesarean delivery is over-utilized in many middle-income to high-income countries (Betrán et al., 2016). For instance, the rate is as high as 25.9% in China, 32.3% in Australia/New Zealand and 45.9% in Brazil (Gibbons et al., 2012). It has been argued as excess, medically unjustifiable and thus unnecessary (Gibbons et al., 2010).

However, in several low-income countries, where over 60% of the world's births occur, the population-based prevalence of CS is low for example, 3.0% in West Africa (Gibbons et al., 2010). This low prevalence may reflect poor availability of/ accessibility to comprehensive essential obstetric care services (EOC) in the countries/region. For instance in 2014, Ghana12.80%, Lesotho 9.70% and Uganda (Cavallaro et al., 2013; Ghana Statistical Service GHSG & Macro, 2015; UDHS, 2011). In Ethiopia the cesarean section rate of the country based on 2010 report is only 1% (Keag et al., 2018). The Cs rate in some specified hospitals of the country such as Black Lion Teaching Hospital is around 10% in 1992 (Tadesse, Adane, & Abiyou, 1996).

The aim to undertaking this research is to know the prevalence, indications and outcome of Cs delivery In Jugal Hospital. The result will help the hospital staffs to know the trends, common indications and outcomes of Cs as well as the managers to allocate their resources on the most common priority areas.

METHODS

Study Design, Sample, and Setting

A retrospective review of medical notes and records of five years (September 1/2015-september 1/2019) was reviewed; Data was collected from September 4th-30th, 2019 G.C at Jugal hospital, Harar city which is found 525 km to East of Addis Ababa. The hospital has a total of 342 staffs among these 208 of them are health care professionals whereas the rest are non-health professionals, (administrative staffs) the hospital is found in Harar towns. It is the first governmental hospital in Ethiopia, named as Misrak Arbegnoch Hospital and the hospital changed its name to Jugal hospital. Currently, the hospital is providing different health services. The sample of this study was all charts of women who have cesarean section in Jugal Hospital. Non-probable purposive sampling was used.

Data Collection and Analysis

Data was collected from secondary data using checklist. And, the data collectors were those who work delivery room, operation room, intensive care of unit. Data were collected by six BSc. Nurses who were trained for data collection. A standardized data collection form that included age, obstetric history including parity status, maternal outcome, and neonatal outcome was designed to meet the requirement of the study. Neonatal outcomes such as gestational age, gender of baby, birth weight, and perinatal mortality were also documented. The checklists filled were gathered and checked for completeness. For data processing and analysis, SPSS version 20 was used. Data checked for completeness and consistency;

Coded data was entered into computer programs after the required cleaning was done. Univariate, Bi-variate and then multivariate analysis was carried out.

Ethical Consideration

Ethical clearance was obtained from Harar Health Science College research ethical committee before the staring of the field work. An official letter of co-operation was written to Jugal hospital. Consent was obtained from administrative body of the hospital and all data collected were kept confidentially and study was conducted over the dictated time.

RESULTS

During the period of study, there were 6,111 total deliveries in Jugal Hospital, of which 1,817 were by C/S, and its prevalence was 29.7%. The age of the patients' ranged between 18-45years with a mean age of 29.32years with SD ±7.14. Majority of the patients were between 21-34 years 663 (36.49%) were primipara mothers, one third of the mothers do not know their last normal menstrual period (LNMP) and do not have ante natal care (ANC) follow up and also they were from rural (Table 1).

Table 1 Socio-demographic characteristics of mothers who delivered via caesarean section at Jugal Hospital, Harar, Ethiopia, 2019

Variable		Frequency	Percent
Age	≤20	367	20.20
	21-34	857	47.17
	35^{+}	593	32.64
Parity	Primi	663	36.49
	1-4	660	36.32
	>4	494	27.19
LNMP	Yes	665	36.60
	No	1152	63.40
ANC Follow up	Yes	665	36.6
	No	1152	63.40
Residence	Urban	1107	60.92
	Rural	710	39.08
Marital status	Married	1689	92.96
	Not married	128	7.04

Among mothers who undergone with cesarean section 1544(84.98%) were emergencies C/S, only 35(1.93%) mothers Bilateral Tubal Ligation (BTL) was done, most Cs cases were done under Spinal anesthesia 1578 (86.85%) and 90% were term pregnancies (Table 2).

Table 2 Type of caesarean section, anesthesia, and obstetric history of the mothers who delivered via caesarean section at Jugal Hospital, Harar, Ethiopia, 2019

Variable		Frequency	Percent
Type of Cesarean Section	Elective	273	15.02
	Emergency	1544	84.98
Bilateral Tubal Ligation	Yes	35	1.93
	No	1782	98.07
Type of Anesthesia	General anesthesia	239	13.15
	Spinal anesthesia	1578	86.85
Gestational Age in Weeks	<37	102	5.61
	37-42	1641	90.31
	≥42	74	4.07
Duration of Labor	>24	1544	84.98
	Not in labor	273	15.02

Outcome of the fetus

The fetuses who delivered by C-section, the majority of them 1785 (98.24%) were alive, 1780 (97.96%) were single fetus and most of the fetuses 1715 (94.39%) weight was greater than 2500g.

Table 3 Outcome of the fetus born among mothers who delivered via caesarean section at Jugal Hospital, Harar, Ethiopia, 2019

Variable		Frequency	Percent
Gender of Baby	Boy	860	47.33
	Girl	957	52.67
Fetal Outcome	Alive	1785	98.24
	Dead	32	1.76
Number of Baby	Single	1780	97.96
	Two or above	37	2.04
Baby Weight	<2500	102	5.61
	≥2500	1715	94.39

Indications of cesarean section

The leading indications for cesarean birth were, Cephalo-pelvic Disproportion (CPD) 323 (17.78%) followed by fetal distress 292 (16.07%) and the least indication was pre-eclampsia 9 (0.5%).

Table 4 Indications of cesarean delivery in Jugal Hospital, Harar, Ethiopia, 2019

Variable	Frequency	Percent
Decrease Fetal movement	99	5.45
Twin	37	2.04
Preeclampsia	9	0.50
Abnormal Presentation & Position	107	5.89
Maternal disease	27	1.49
Cephalo Pelvic Disproportion	323	17.78
Failure of Labor Progression	103	5.67
Fetal Distress	292	16.07
Repeated Cesarean	51	2.81
Mother Suggests	62	3.41
Pre-Rupture of Membrane	102	5.61
Failed Induction	99	5.45
Bad Obstetric History	223	12.27
Obstructed Labor	98	5.39
Ante Partum Hemorrhage	111	6.11
Post Term Baby	74	4.07

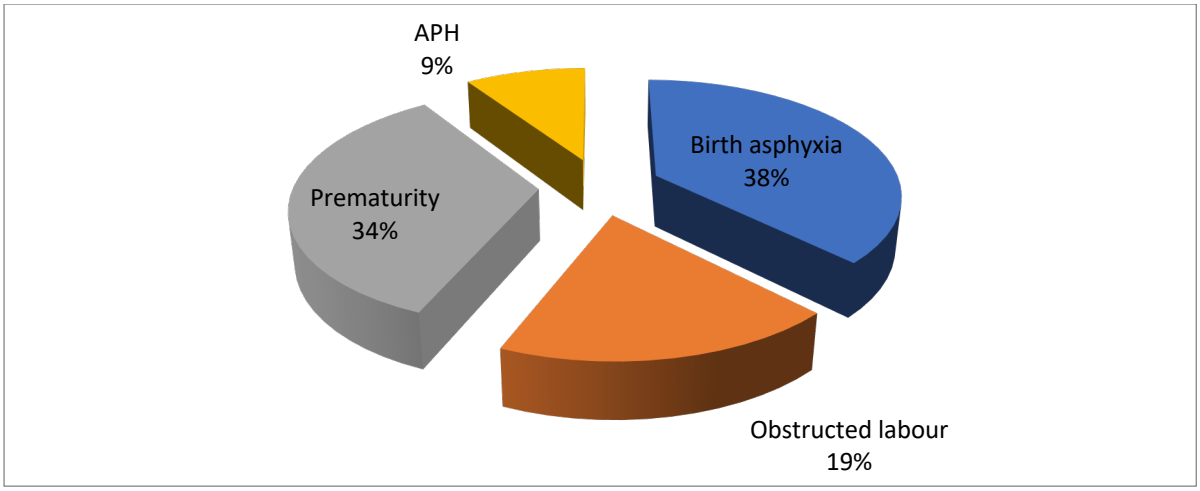

Figure 1 Cause of prenatal death in among mothers who delivered via caesarean section at Jugal Hospital, Harar, Ethiopia, 2019

Cause of perinatal death

The most cause of perinatal death was birth asphyxia 38% followed by prematurity34% (**Figure 1**).

DISCUSSIONS

In this study the largest age group on whom cesarean section was done was between 24-34 years. This was similar with studies in sub-Saharan Africa countries including previous studies from Ethiopia population (Chu et al., 2012; Fesseha, Getachew, Hiluf, Gebrehiwot, & Bailey, 2011; Moges, Ademe, & Akessa, 2015). This can be explained by the fact that this age group is the most common reproductive age group.

In our study, the majority of cesarean deliveries were done under spinal anesthesia. Previous studies from Finland, Addis Ababa and Gondar showed lower number of cases performed under spinal anesthesia (Abdissa, Awoke, Belayneh, & Tefera, 2013; Aman, Negash, & Yusuf, 2014; Pallasmaa et al., 2010). This in line with the standard recommendations to decrease the major complications associated with general anesthesia such as aspiration during emergency surgery.

In this study the overall prevalence of caesarean section was 29.7%. It is low comparing with studies conducted in private and government hospitals in Harar, Eastern Ethiopia (34.3%) (Tsega, Mengistie, Dessie, & Mengesha, 2015). On the other hand the prevalence of CS was relatively higher compared to previous studies in Atata Hospital (27.6%) , study conducted in a tertiary hospital in Northwestern Nigeria and at Tanzania St. Joseph Medical Hospital; the prevalence of CS was (11.3%, 18%) respectively (Daniel & Singh, 2016; Moges et al., 2015; Tsegaye, 2017). The difference observed between this study and studies conducted in Addis Ababa could be due to the time difference in the later study conducted two decades ago. This may reflect the relative overtime improvement of access to cesarean delivery in those mothers having labor complications is likely to attend facility delivery in recent years than ever before. Additionally, it could be partly explained by a difference in study setting as studies conducted in Addis Ababa included public hospitals.

In this study cephalo-pelvic disproportion (CPD) was the major cause of obstructed labor which was similar with other studies conducted in Jimma University Specialized Hospital, Jhalawar Medical College and South West Uganda (Fantu, Segni, & Alemseged, 2010; Henok & Asefa, 2015; Kabakyenga, Östergren, Turyakira, Mukasa, & Pettersson, 2011). CPD remain a common cause of obstructed labor in countries where child hood malnutrition and early marriage is common.

Limitations

The use of secondary data, which lacks more variables, and cross-sectional study more descriptive than analytic.

CONCLUSION

In this study, there is a steady increase in the rates of cesarean delivery in five years' time, the overall rate of C-section in Jugal Hospital was 29.7%. This rate is higher than the World Health Organization standard. Policies and efforts aimed at decreasing the unnecessary cesarean sections should be promoted and implemented at each health facility.

Acknowledgments

The author acknowledges Sr. Rafika Amin, Sr. Tumima Lema and Sr. Hana Kejella for their full cooperation by providing data in operation room and delivery room.

Declaration of Conflicting Interest

The author reports no conflict of interest in this work.

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Cite this article as: Hussen, A. (2019). Prevalence and indication and outcome of cesarean section in Jugal Hospital, Harari Regional State, Ethiopia, 2019: A retrospective study. *Public Health of Indonesia*. *5*(4): 85-90. http://dx.doi.org/10.36685/phi.v5i4.296