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Trends of Cesarean Section: A Hospital Based Retrospective Study

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Research Article

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Abstract: Cesarean section is a life-saving procedure that saves the life of mother and fetus. World Health organization has recommended a threshold rate of 15% caesarean section. It is a major healthcare issues now in all over the world and rising cesarean delivery rate higher than the optimal both in developed and developing countries. The main objective of this study is to assess the trends and magnitude of cesarean section. The study was carried out in one of the regional hospital in Western Nepal. It was the hospital based retrospective review that used the three years record information from data registry of maternity, gynae, operation theater, NICU of regional hospital. The prepared retrospective guidelines were used to collect the demographic, obstetrics and outcome variables of the study. The study analyzed the three years retrospective review of fiscal year 2070 – 2073. The overall magnitude of the cesarean section was 24.25%. The rate of Cesarean section was 23.91, 26.51 and 22.78 percent in the fiscal year 2070/71, 2071/71 and 2072/73 respectively. The study concludes that cesarean section rate was higher than WHO recommendation of particular regional hospital of Western Nepal. The trends of cesarean section seem rising in the year by Year.

Keywords: Cesarean section, Trends, Magnitude, retrospective study.

INTRODUCTION

Caesarean section is an operative procedure whereby the fetuses after the end of the 28th week delivered through an incision on the abdominal and uterine wall. The incision is made either in the lower uterine segment or upper uterine segment. C-section may be elective and emergency; the prearranged operative procedure time during pregnancy of a pregnant women who had a known medical indication, usually one week prior to the expected date of delivery (EDD) is called elective-cesarean section. Emergency C-section is unplanned that performed due to unforeseen or acute obstetrics emergencies [1].

C-section is a life-saving procedure both for the mother and baby and WHO recommended optimal C-section rate that was 15%. The very low rates of cesarean section are indications that access to surgical care is poor and that, in consequence, women, fetuses and neonates are dying unnecessarily. The different evidence shows that 1-2% of all births are commonly associated with absolute indications of cesarean section and 5% rates of C-section are evidence to save the life of both mother and neonates [2]. The average cesarean section rate in Asia is 15.9%, china has the highest cesarean rate of 40.5% in Asia. In Europe, the average rate of cesarean deliveries is 19% with highest rates in Italy (36%) and lowest in the Moldova (6.2%) [3]. A retrospective study that was conducted to find out the rate of caesarean section and its indications in patan hospital Nepal by reviewed through the records shows that Out of 44713 deliveries, 18718(41.9%) had caesarean section. The rate of caesarean section was 38.4% in 2010 which increased to 46.9% in 2014. The study concluded that there is an increasing trend of caesarean section due to various causes [4].

Recently cesarean section is the most common surgeries in the globe to prevent maternal and neonatal mortality rate. Evidence also shows that Cesarean section was performed without medical indications that put the mother and babies on risk of short and long-term health problems [5]. According to annual report rates of cesarean section has risen from 5.3 in the year 2011/12 to 6.7 in the year 2013/14 [6].

Sub-Saharan Africa and Southern Asia account for 85% of maternal deaths worldwide and 73% of intrapartum-related neonatal deaths. Emergency obstetric care is a measure to decrease the burden of maternal and neonatal related deaths [2]. A study conducted to assess the maternity care in rural Nepal: a health service analysis showed that the population based rates on CS was 1.1% in 2000; 2.3% in urban areas, and 0.2% in rural areas [7].

The various research evidence that cesarean section rate is growing without clear understanding of main indications and consequences [5,8,9]. The lack of a standardized classification system to monitor and compare CS rates is one of the barriers to a better understanding of the trend[3,10]. Considering the above factors and statistics researcher is interested to study the trends of cesarean section.

MATERIALS AND METHODS

A hospital based retrospective study was used to assess the magnitude and trends of cesarean section. All the women who had undergone cesarean section after 28th weeks of gestation over the period of 16 july 2013 – 14 july 2016 was the study population. The study used the secondary data. There were total 6422 deliveries by C-section over the above mentioned period. The detailed of information of the cesarean section was retrieved from the record/registry book of the different wards. Data was entered in MS-Excel with validated command and export to the SPSS version 16 for analysis. Frequency and percentage was used to analyze the magnitude and trends of cesarean section and data was presented on tables, graphs and narratives. The study was conducted after getting ethical clearance from the Institutional Review Committee of Pokhara University and permission from regional hospital. There was no harm of the human subjects as data was retrieved from secondary sources. The data was kept confidential and used only for study purpose.

RESULTS

Table-1: Magnitude of Cesarean Section
n= 6422

Year	Total No of Deliveries (f)	No. of Cesarean Section (f)	Percentage (%)
2070/71	8588	2054	23.91
2071/72	9151	2426	26.51
2072/73	8525	1942	22.78
Total	26264	6422	24.25

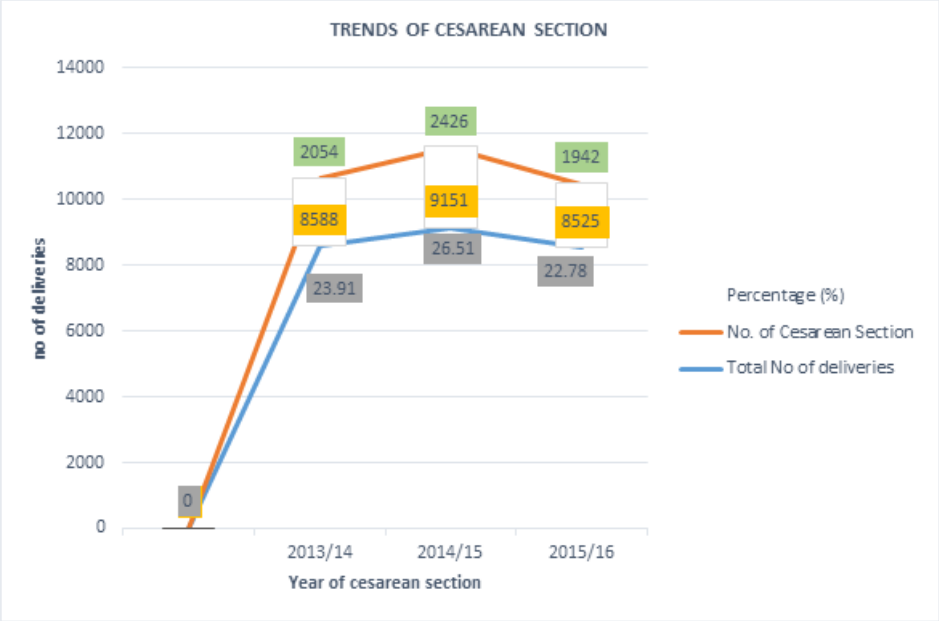

Fig-1: Trends of Cesarean Section over the Study Period

The present study findings show that cesarean section rate was increased. The total no of deliveries over the 3 years period was 26264 and cesarean section constitute the 24.25% total 6422 out of 26264 deliveries. The year 2013/14 C-section was found 23.91 % (2054 out of 8588) and rapidly accelerating 2.6% in the year 2014/15 reached 26.51%. In the year 2015/16 the C-section rate subsided by 3.73% of previous figure reached 1942 (22.78%).

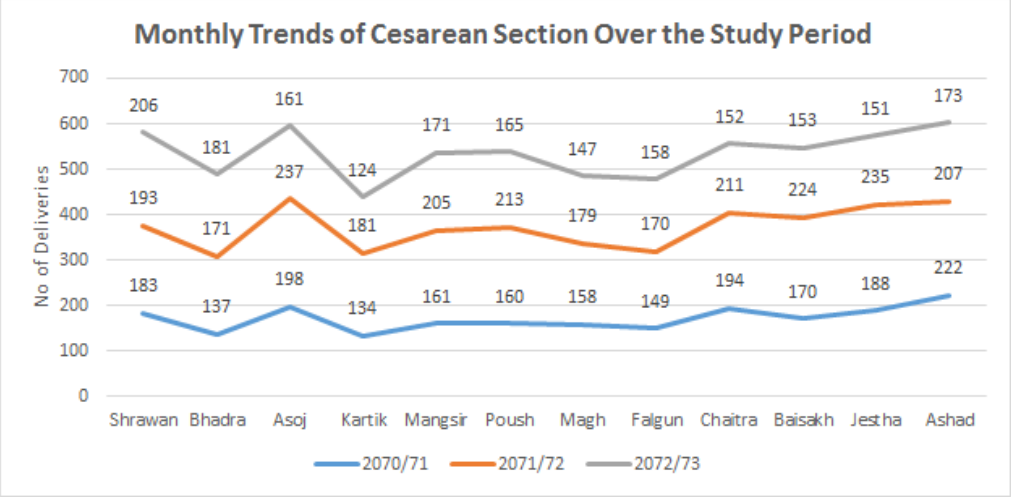

Fig-2: Monthly Trends of Cesarean Section

In the year 2070/71 (2013/14) in the month Shrawan 183 women undergone C-section, decreased in Bhadra and constantly remained static from month of kartik to falgun, steadily raised throughout in others months and reached highest 222 in the month of Ashad. Similarly in the year 2071/72 (2014/15) cesarean section rate was uppermost in the month of Asoj and had some fluctuated in the month of kartik to falgun. Furthermore cesarean section was steadily climbed in next another months.

The topmost number of cesarean section 206 in the month of shrawan of year 2072/73(2015/16) while rest in the months it was instable of some minor variations till the month of chaitra. In next three months it was gradually increased.

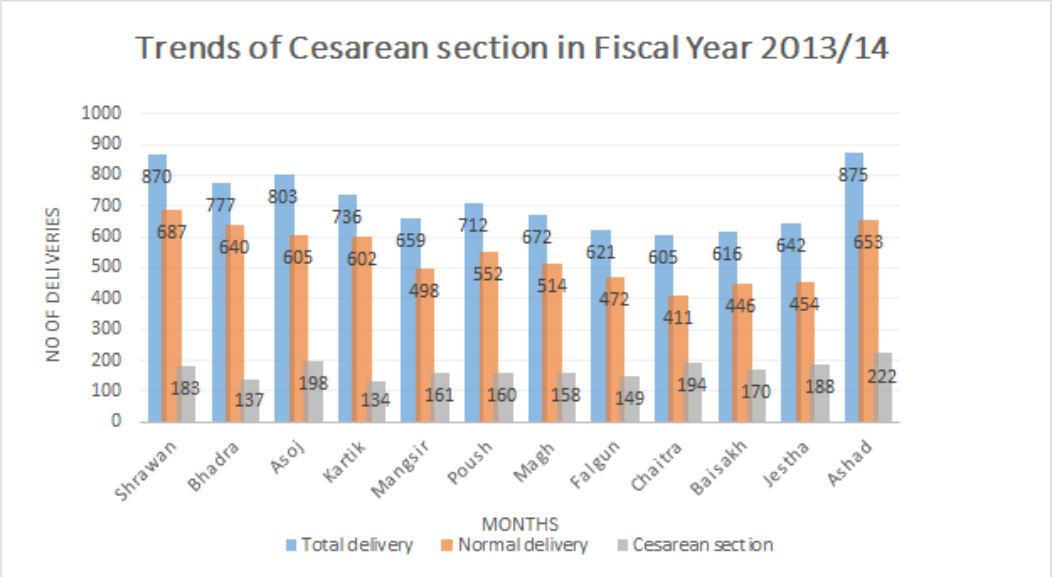

Fig-3: Rate of Cesarean Section in the year 2013/14

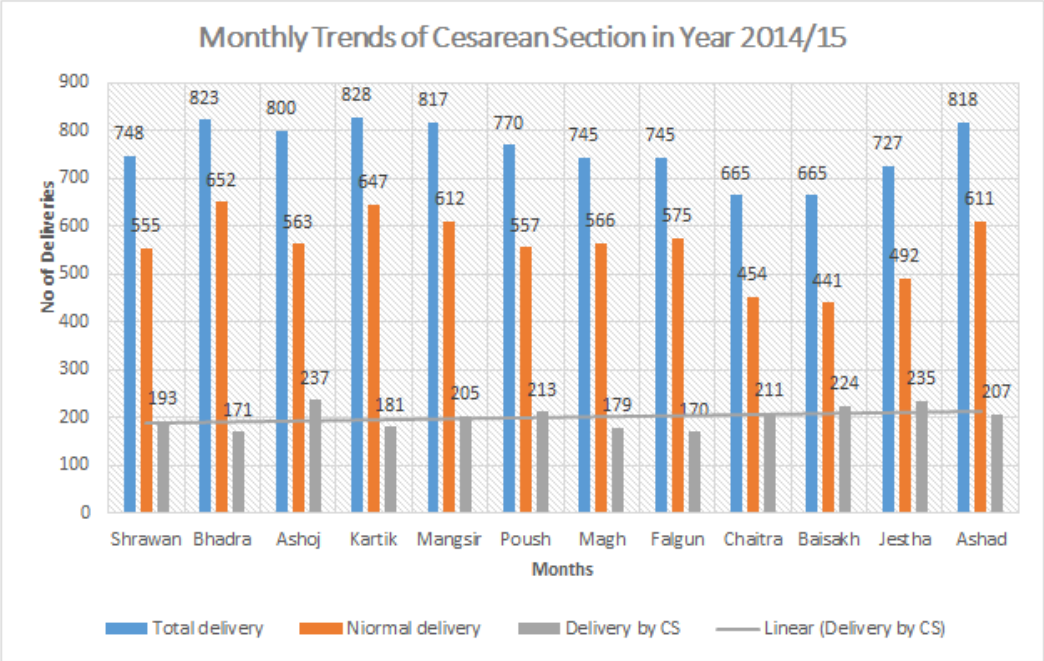

Fig-4: Cesarean Section in the Year 2014/15

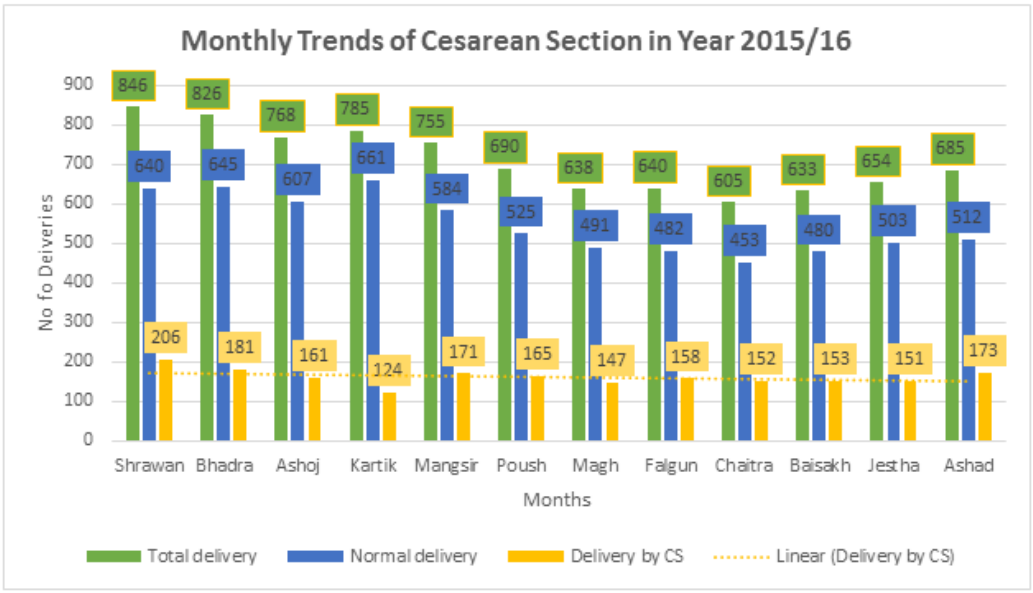

Fig-5: Monthly Trends of Cesarean Section in the Year 2015/16

DISCUSSION

The increasing rate of cesarean section is not only the major issues of Nepal and is the concerns of all over the world [11]. The present study findings shows cesarean section rate was increased from 23.91% in 2013/14 to 26.51% in 2014/15 and decreased again to 22.78% in fiscal year 2015/16 which is similar to the findings of study conducted in Ziekenhuis Oost Limburg, Genk Belgium where 19.67% of deliveries undergone cesarean section and overall cesarean section rate increased from 20% (380/1937) in 2001 to 25% (534/2121) in 2007 ($p < 0.001$), and decreased again to 20% in 2010 (415/2068) ($p < 0.001$) [12].

Another study conducted in Peru also shows the caesarean section rate was 27% and a yearly increase in the overall caesarean section rates from 2000 to 2010 from 23.5% to 30% (time trend $p<0.001$) [13]. However the various studies shows the dramatically rising trends of cesarean section over the past several decades in US but the CDC study founds it was decreased in more than half of the US states. The reason of declining CS in various states of US may be the efforts made by Government and preferable to low risk cesarean section in case of emergencies [14, 15]. The rising trend of cesarean section in this hospital is the regional hospital and referral center for various region of Western part of Nepal and managing many complicated cases.

The study revealed that Cesarean section rate of 24.45% which is similar to the proportions of different centers of Raipur India (26.2%), Philippines (22.7%), Malaysia (19.1%), and Indonesia (29.6%)[16,17]. The study conducted in tertiary center of Eastern Nepal 28.6% in 2006 and 33.7% in 2007 which was higher than the present study [18].

CONCLUSION

The study concludes that overall cesarean section rate of 3 years study was 24.45% which is above the 15% recommended by WHO for developing countries the reason behind rising the cesarean section probably due to the studied hospital was referral center of western part of Nepal as well as regional hospital that manage the complicated cases.. The trends of cesarean seem rising in the year by year. The study shows that in the year 2013-15 the cesarean rate was increasing in trend but in the year 2016 somehow it was slightly dropped. The study concluded even the rate of cesarean section was high the rate of CS can be reduce by encouraging vaginal birth after CS, and thoroughly evaluated for CPD, trial of labor, induction of labor and possibility for vaginal delivery. Awareness creation to the community by health authorities, especially laboring mothers should come to health institute before obstetrics complications happens can reduce the increasing trends of cesarean section. The details and large scale study with using of both primary and secondary data can be done for generalization.

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