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Assessment of factors associated with burden of Puerperal Sepsis in maternity women at Ishaka Adventist Hospital Bushenyi District

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ABSTRACT

Puerperal sepsis is the infection of the genital tract occurring at any time between the onset of the rupture of membranes or labor and the 42nd day postpartum in which fever and one or more of the following are present: pelvic pain, abnormal vaginal discharge, abnormal odour of discharge, and delay in the rate of reduction of size of the uterus. It is a major cause of morbidity and mortality in most hospitals worldwide especially in developing world. The study was carried out in Ishaka Adventist hospital with the aim of identifying burden of puerperal sepsis and associated factors among mothers in the postnatal ward. A quantitative and qualitative cross sectional study was conducted where by the questionnaires was availed to mothers in maternity ward to fill. From the results, most mothers were age between 25-29 and married. Out of 70 mothers who were interviewed, only 8 mothers were diagnosed with puerperal sepsis and the major risk factors were; home birth 39(55.7%), socio economic factors, i.e., no money 26(37.1%), inadequacy of food during pregnancy 49(70%) and repeated vaginal examination 43(61.4%). Majority of mothers (59%) also believed that puerperal sepsis can lead to a serious complication like infertility, fallopian tube blockage, chronic pelvic pain, acute morbidities and death and 41% don't know. Majority of the respondents agreed that puerperal sepsis lead to the complication like chronic pelvic pain, infertility, acute morbidities, long term disabilities and the major risk factors were home delivery, inadequacy of food, socio economic factors and prolonged labor. Health workers also agreed that management of puerperal sepsis involved a multidisciplinary approach to achieve a good outcome. We therefore recommend the following; encouraging mothers to deliver from the health facility, use of partograph by the health workers and further studies about the topic was also encouraged.

Keywords: Puerperal sepsis, maternity ward, labor, maternal mortality.

INTRODUCTION

WHO defines puerperal sepsis as infection of the genital tract occurring at any time between the onset of the rupture of membranes or labor and the 42nd day postpartum in which fever and one or more of the following are present: pelvic pain, abnormal vaginal discharge, abnormal odour of discharge, and delay in the rate of reduction of size of the uterus [1, 2, 3, 4, 5, 6, 7, 8, 9, 10].

Historically, puerperal sepsis was a common pregnancy-related condition, which could eventually lead to obstetric shock or even death [11, 12, 13, 15, 16]. During the 19th century, it took on

epidemic proportions, particularly in lying-in hospitals, where ignorance of asepsis prevailed. The efforts of Wendell Holmes and Semmelweis to improve asepsis during childbirth resulted in a striking decrease in mortality due to puerperal sepsis between 1846 and 1847 [2, 17, 18, 19, 20]. Most of the estimated 75,000 maternal deaths occurring worldwide yearly as a result of infections are recorded in lowincome countries [3, 4, 5, 6]. Although the incidence in high-income reported countries is relatively low (between 0.1 and 0.6 per 1000 births), it is nonetheless

an important direct cause of maternal mortality[7,21,22,23,24,25,26,27,28,29,30,31].

Apart from deaths and acute morbidities associated with infections during or following childbirth, long-term disabilities such as chronic pelvic pain, fallopian tube blockage and secondary infertility can also occur. Maternal infections around childbirth also have a considerable impact on newborn mortality, and an estimated 1 million newborn deaths are associated with such infections annually [4, 8, 9].

Globally, in 2005, WHO reviewed that puerperal sepsis has been a public burden causing estimated maternal mortality ratio as 900 per 100 000 live births in sub-Saharan Africa, 100-times the maternal mortality ratio of resource-rich countries (nine per 100 000 live births) [10].

WHO estimated the maternal mortality ratio as 900 per 100 000 live births in sub-Saharan Africa, 100-times the maternal mortality ratio of resource-rich countries (nine per 100 000 live births [10, 11, 13, 15, 17].

In Uganda, there has been a slow decline in maternal mortality ratio (MMR) between 1990 and 2010 (from 550 in 1990 to 438 in 2012). Almost half of deliveries (52 %) in Uganda occur in health facilities and 59 % of all deliveries are assisted by a skilled birth attendant. The percentage of skilled attendance at birth has risen from 42 % to at least 59 % over the last 10 years. About 47 % of women attend at least 4 Antenatal Care (ANC) visits, while the adolescent birth rate is 134.5/1,000 births and the ANC HIV prevalence rate stands at 6.5 % [11, 12].

Problem statement

Puerperal sepsis is among the leading causes of maternal mortality worldwide, accounting for about one tenth of the global burden of maternal deaths [5, 13]. While the number of deaths arising from these infections has decreased considerably in high-income settings, the situation has not improved in resourcelimited settings. Most of the estimated 75.000 maternal deaths occurring worldwide yearly as a result of infections are recorded in low-income countries [6, 14].

The causes of mortality vary and predictors of these maternal deaths in the Ugandan setting are largely unknown. For every woman who dies, about 30 women develop obstetrical near misses [15]. Programs focusing on increasing health facility deliveries need to ensure that pregnant women within the facility have quality health care during the antepartum. intrapartum and postpartum periods. Some of these interventions include improving on the understanding, attitudes and skills of the health care providers, improved involvement of the women in quality of care processes, ensuring implementation of evidence-based care and improving the referral systems [16, 17, 18, 19].

Knowledge of the common causes and factors associated with mortality and morbidity in these women will help in preventing and treatment measures so as to be able to contribute towards improved maternal health outcomes.

Aim of the Study

To determine the burdens and associated factors of puerperal sepsis among mothers attending Ishaka Adventist hospital.

Specific Objectives of the Study

1. To determine the burden of puerperal sepsis among mothers attending Ishaka Adventist hospital

2. To assess the factors associated with puerperal sepsis among mothers attending Ishaka Adventist hospital.

3. To assess the management of puerperal sepsis among mothers attending Ishaka Adventist hospital.

Research Questions

1). what is the burden of puerperal sepsis among mothers attending Ishaka Adventist hospital?

2). what are the risk factors associated with puerperal sepsis among mothers attending Ishaka Adventist hospital?

3). what are the existing strategies use in the management of Puerperal Sepsis in Ishaka Adventist hospital?

Justification

The recognition of the important roles played by factors associated with Puerperal sepsis will lead to a realization that there is need to know the association

between them in relation to the infection. The purpose of this study was therefore to provide detailed representative information on puerperal sepsis in Ishaka Adventist hospital, and assess the associated risk factors, establish the knowledge on puerperal sepsis and come up with the preventive measures as well as planning towards the management of morbidities resulting from puerperal sepsis in Ishaka Adventist hospital.

Study design

A quantitative and qualitative cross sectional study was conducted where by the questionnaires was availed to Mothers in maternity ward to fill. The health workers involved in the management of these patients was also requested to fill the questionnaire.

Study area

The study was carried out in Ishaka Adventist hospital in Bushenyi district, 5km from Bushenyi district Headquarters along Kasese highway.

Study population

study The targeted all women of reproductive age (15-44 years) who visited the hospital for health care services during the time of study. The study also targeted all women who were diagnosed with puerperal sepsis. The health care providers in charge of these patients were also included in the study.

Inclusion Criteria

Women who participated in the study are those who were diagnosed with puerperal sepsis and other mothers in the postnatal ward who are not diagnosed with puerperal sepsis but consented to take part in the study.

Exclusion Criteria

The study excluded eligible women who were not willing to participate, those in critical conditions and those not mentally sound.

Sample size determination. $N = \frac{ZX^2 P(1-P)}{2}$ [20]

д2

Where; N=sample required, P=prevalence of maternal sepsis which is 10%, ZX=level of significant (1.96) for confidence interval 95% and d=standard error of deviation (0.05).

Significance of the study

Results from the study identified the gaps in infection control measures and the information was forwarded to stake holders which will help to come up with the interventions to reduce the levels of infections and associated maternal morbidity.

METHODOLOGY

$$N = \frac{1.96^2 \times 0.1(1 - 0.1)}{0.05^2}$$

N=138.2972, Therefore the 138 participants was used as the sample size for the study.

Sampling procedure

Convenience sampling method was used to obtain participant's responses by the use of questionnaires. The questionnaires contained both open ended and closed questions. The participants were visited at the hospital and whoever was present at the hospital in the postnatal ward at the time of visit was requested to fill the questionnaire.

Data collection

Data was collected by the use of questionnaire and writing materials like pens and papers.

Data collection methods

The interviewer questionnaires were filled during interview with women who were diagnosed with puerperal sepsis. This was used to establish the occurrence of puerperal sepsis among women of reproductive age 15-44 in Ishaka Adventist hospital. It consists of socio demographic characteristic section, risk factors and knowledge status section of PS among the respondents. The interview was done to each respondent individually and in a private space to ensure privacy and confidentiality. Questions was translated to the respondent in the language they understood for more accurate answers

Data Analysis and presentation

Data collected was entered in a computer and analyzed using computer software programs like Microsoft excel and presented in frequency distribution table, pie charts and graph.

Study Ethics

Ethical approval letter was obtained from Kampala International University, western campus, school of allied health sciences. Thereafter permission was obtained from the management of the Ishaka Adventist hospital. The study also obtained informed consent from the participants. Confidentiality was ensured by interviewing the respondents in a private place and none of their personal information (for example; name and contact details) was recorded.

RESULTS

SOCIODEMOGRAPHIC CHARACTERISTICS.

Table 1: Showing Socio Demographic Characteristic of Mothers of Child Bearing Age Attending Ishaka Adventist Hospital.

VARIABLES	FREQUENCY	PERCENTAGES, (%)
AGE DISTRIBUTION		
15-19	8	11.4
20-24	12	17.1
25-29	22	31.4
30-34	18	25.7
35-39	6	8.6
40-44	4	5.7
LEVEL OF EDUCATION		
None	14	20
Primary	21	30
Secondary	19	27.1
tertiary/college	16	22.9
OCCUPATION		
civil servant	14	20
self-employed	18	25.7
Farming	25	35.7
Others (specify)	3	4.3
MARITAL STATUS		
Single	20	28.6
Married	37	52.9
Others	3	4.3

In the study, most participants were aged 25-29(31.4) who stopped the level of their education in primary 21(30%), farmers

25(35.7%), and are married 37(52.9%) as shown in the table below.



Fig 1: A pie chart showing burden of puerperal sepsis in women of child bearing age among mothers attending Ishaka Adventist Hospital.

Majority	of n	nothers	(59%)	had
complicati	on like i	nfertility,	fallopia	n tube
blockage,	chronic	pelvic pelvic	pain,	acute

morbidities and death and 41% did not have.

RISK FACTORS OF PUERPERAL SEPSIS

TABLE 2:	showing	factors	responsible	for	puerperal	sepsis	in	women	of	child	bearing
age among	g mother	s attend	ing Ishaka A	dvei	ntist Hospi	ital					_

VARIABLES	FREQUENCY	PERCENTAGES (%)
PLACE OF DELIVERY		
Home	39	55.7
Health facility	31	44.3
MODE OF DELIVERY		
Spontaneous vaginal delivery	66	94.3
Caesarean delivery	3	4.3
Instrumental/assisted delivery	1	1.4
SOCIO-ECONOMIC FACTORS		
No money to pay for service	26	37.1
Not aware of such services	4	5.7
Cultural belief	10	14.3
Hospital are far	19	27.1
No vehicle	7	10
Fear	3	4.3
Others	1	1.4
NUMBER OF VAGINAL EXAMINATION DONE		
Ones	9	12.9

http://www.inosr.net/inosr-experimental-sciences/					
Twice	12	17.1			
Several	43	61.4			
None	2	2.9			
Don't know	4	5.7			
HYGIENIC PRACTICES					
Washing hands before assisting	22	31.4			
None	8	11.4			
Used gloves	27	38.6			
Don't know	13	18.6			
ASSISTED DELIVERY					
Family member	6	8.6			
Traditional birth attendant	10	14.3			
Health worker	39	55.7			
Other	15	21.4			
LABOR DURATION					
6-12 hrs	13	18.7			
12-24 hrs	50	71.4			
24-30 hrs.	7	10			
ADEQUACY OF FOOD					
Yes	21	30			
No	49	70			

According to the table above, the study showed that majority of women 39(55.7%) deliver from home by spontaneous vaginal delivery 66(94.3%) due to lack of money to pay for service in the health facility 26(37.1%) with several vaginal examination done 43(61.4%), prolonged labor 50(71.4%) and the person who assisted in the delivery used gloves 27(38.6%). However, majority of women also did not have adequate food 49(70%) during pregnancy.



Fig 2: bar graph below show variation in management of puerperal sepsis executed by different health working staffs in maternity ward

The bar graph above show the number of working staff interviewed in relation to the management of puerperal sepsis, the tallying frequency showed that out of eighteen staffs, (18) staffs found to be using partograph, (17), staffs used aseptic techniques, hygiene education to the mother (16), health seeking behavior of mothers (14) and use of antibiotic therapy (17)

DISCUSSION

Burden of Puerperal Sepsis. 41(59%) respondents out of 70 had

complications like chronic pelvic pain, infertility, and fallopian tube blockage. These complications are due to poor management of these patients, irrational use of antibiotics, and poor health seeking behaviors of the mothers. However, these complications are similar according to the study done by Lawn in 2008 [21].

Risk Factors of Puerperal Sepsis. Among the risk factors, home birth 39(55.7%), socio economic factors i.e. No money 26(37.1%), inadequacy of food during pregnancy 49(70%) and repeated vaginal examination 43(61.4%) are the major factors which contributed to puerperal sepsis. However, in comparison with the study done by Maharaj, 2009 [22] who also further suggested that the major risk factors for puerperal sepsis in

resource-rich countries are home birth in unhygienic conditions, low socioeconomic status, poor nutrition, prim parity, anemia, prolonged rapture of the membranes, prolonged labor. multiple vaginal examination. caesarean section. instrumental deliveries, retained product postpartum conception, and of hemorrhage. Most mothers deliver from home due to lack of money with the help of traditional birth attendants who observed poor aseptic technique during time of delivery and they come to the hospital after getting the infection. However, greater percentage of the infection was contributed by inadequate food during pregnancy which leads to poor general health like malnutrition and anemia predisposing them to the infection.

Management of Puerperal Sepsis.

Eighteen health workers who consented and are involved in the management these patient was interviewed and most of them gave their views that management of puerperal sepsis involves а multidisciplinary collaboration to achieve a good prognosis such as observing aseptic technique during delivery. antibiotic therapy, improving health seeking behavior of the mothers, use of partograph to monitor the progress of labor, and giving health education to the mothers. Their intervention to reduce the incidence of puerperal sepsis was similar to the study suggested by Allergranzi in 2007 [23].

According to the study; majority of the respondents agreed that puerperal sepsis lead to the complication like chronic pelvic pain, infertility, acute morbidities, long term disabilities and death.

The major risk factor for puerperal sepsis was home delivery, inadequacy of food, socio economic factors and prolonged labor.Health workers also agreed that management of puerperal sepsis involved a multidisciplinary approach to achieve a good outcome.

Mothers should be encouraged to deliver from the health facility.

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Strength and Weakness.

The number of mothers interviewed did not meet proposed sample size because the hospital received a small number of patient which require much more time than the one stipulated in the study to meet the proposed sample size. However, the dependent variables were captured and during data collection the matron was available from time to time and also with the great effort of my supervisor who tirelessly guided me in the analysis and presentation of the data collected, this make this dissertation to be valid and forwarded for consideration.

CONCLUSION

- The ministry of health through the health service provider should provide health education to mothers about the importance of health care and observing personal hygiene after delivery.
- Health workers • should be encouraged to use partograph in the management of labor and observing aseptic technique during delivery.
- Further study should be encouraged about the condition.

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