

Original Article

Socio-Demographic Study of Obstructed Labour on 100 Cases

DOI: dx.doi.org

Farhana Ahmed Nancy^{1*}, Tahmina Khan Shammi², Meher Sultana¹, Minara Sikder³

Received: 03 July 2024

Accepted: 15 August 2024

Published: 25 August 2024

Published by:

Sheikh Sayera Khatun Medical College (SSKMC), Gopalganj, Bangladesh

*Corresponding Author

This article is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).**ABSTRACT**

Introduction: Obstructed labor is a leading cause of maternal mortality in Bangladesh and significantly contributes to maternal and fetal morbidity. Identifying the socio-demographic profile of obstructed labor in our country could help in finding preventive measures. This study aimed to evaluate the socio-demographic characteristics of women affected by obstructed labor. **Methods & Materials:** It was a prospective observation study conducted in a 200-bed Hospital, Narayanganj from July 2010 to December 2010. A total of 100 cases of obstructed labor were selected for this study. Data were analyzed by descriptive analysis by statistical package for social science (SPSS) for Windows version 16.0. **Results:** The more vulnerable age group for obstructed labor was 20-25 years 48% and 9% of the study population was within the teenage group. The majority of patients (74%) came from low socioeconomic class. The patient's level of education was very low, 28% were illiterate and 42% were primary level of education. A majority (71%) of the patients were housewives. In 83% of cases, causes of delay in seeking care were economic constraints. **Conclusion:** The social causes associated with obstructed labor are poor socio-economic status, lack of education, and unable to utilize health facilities. Socioeconomic status can have a significant impact on obstructed labor. Access to quality healthcare services, including prenatal care and skilled birth attendants, is often connected with socioeconomic status.

Keywords: Obstructed labor, Socio-demography, Fistula, Cesarean section

(The Insight 2023; 6(2): 32-39)

1. Junior consultant, Department of Obstetrics & Gynaecology, Dhaka Medical College Hospital, Dhaka, Bangladesh
2. Medical Officer, Department of Obstetrics & Gynaecology, Dhaka Medical College Hospital, Dhaka, Bangladesh
3. Junior Consultant, 300-Bedded Hospital, Narayanganj, Bangladesh

INTRODUCTION

Despite the recent emphasis on safe motherhood initiatives, maternal mortality continues to be a significant public health concern in many developing countries. It is estimated that 1,600 women die globally each day due to complications during pregnancy and childbirth, with the majority of these deaths occurring in developing nations^[1,2]. Labor is deemed obstructed when the fetus's presenting part fails to advance through the birth canal despite strong uterine contractions. Obstructed labor is a frequent complication and ranks among the top five causes of maternal mortality in many developing countries, including Bangladesh^[3]. The common causes of this condition are Cephalo-pelvic disproportion (CPD), fetal malposition, and malpresentation. Obstructed labor causes 8% of maternal mortality in developing countries^[4]. It also contributes to maternal morbidity as well as neonatal mortality and complications. This issue is a significant public health concern not only due to the high mortality rates but also because of the traumatic impact on families and communities. In Bangladesh, the maternal mortality rate stands at 1.94 per 1,000 live births, with a substantial portion attributed to obstructed labor (7%)^[5]. So even in the 21st century, obstructed labor remains life threaten catastrophe all over the world mostly in developing countries like Bangladesh. However, it is a preventable condition and can be addressed effectively with timely and appropriate interventions at the right levels^[6]. According to Bangladesh's 2010 Demographic and Health Survey, 21,000 mothers die each year from pregnancy and childbirth-related causes, primarily because only 13 percent of deliveries in Bangladesh are attended by

skilled birth attendants^[7]. In cultures where child marriage is prevalent and pregnancy often follows shortly after menarche, obstructed labor is frequent because young adolescent girls do not reach their full growth potential and therefore begin childbearing with an insufficiently developed pelvis. This challenging maternity situation is further worsened by malnutrition^[8]. It is frequently noted that in primigravid women, obstruction is linked to a gradual reduction in the strength and frequency of contractions, whereas in parous women, obstruction does not appear to reduce contractility, causing the lower segment to continue thinning until rupture occurs^[9]. Fistula formation is more common in the primigravid woman. Vesicovaginal fistulas occurred after obstructed labor; 65% of women were aged less than 25 years. Vesicovaginal fistulas primarily arise from ischemic necrosis of the vaginal and bladder tissues, which are compressed between the fetal head and the mother's pubic symphysis during prolonged, obstructed labor. Rectovaginal fistulas may also develop but these are less common, probably because of the absence of maternal bony surface near, and posteriorly^[8]. Socioeconomic factors include inadequate family planning and reproductive health services, limited communication facilities, poor transportation infrastructure, poverty, illiteracy, ignorance, and detrimental cultural practices against women. The incidence ranges from 1% to 3% and is associated with the prevalence of cephalopelvic disproportion and the accessibility and use of antenatal care services^[10]. Neglected obstructed labor typically leads to high rates of maternal and fetal mortality and morbidity. It is also linked to a high incidence of cesarean sections (CS). This remains a significant obstetric issue in our

country, where many patients still present with severe complications^[11].

OBJECTIVE

General Objective

- To evaluate the socio-demographic characteristics of those women who are victims of obstructed labor.

Specific Objectives

- To find out the social causes of obstructed labor.
- To identify the cause of delay in seeking care.
- To evaluate the consequences of obstructed labor on mother and fetus.

METHODS & MATERIALS

This was a prospective observational study conducted at 200 Bed Hospital, Narayanganj, from July 2010 to December 2010. Pregnant women experiencing obstruction during labor and admitted to 200 Bed Hospital, Narayanganj, were considered the study population. A total of 100 patients were chosen as study subjects based on inclusion and exclusion criteria. A purposive sampling method was used in this study.

Inclusion Criteria

- Patients with a history of prolonged labor (> 12 hours) despite good uterine contractions
- Patients with the arrest of progressive descent of presenting part.
- Patients with distended urinary bladder.
- Patients having the presence of Bandle's ring.

- Patients with fully dilated cervix or incomplete dilated cervix with oedematous thick cervical rim.
- Patients have the presence of marked molding.
- Patients with the presence of large caput over presenting part.
- Patients who agreed to provide consent.

Exclusion Criteria

- Patients have other complications like pregnancy-induced hypertension, convulsion, antepartum hemorrhage, and other medical diseases.
- Patients who refused to participate in the study.

Some data were collected from the patients through face-to-face interviews, and some were collected during examination. All data were collected using a pre-formed questionnaire. The patient's full record which includes confirmed clinical diagnosis, patient profile, clinical history, and other relevant data was gathered according to the objectives of the study. Collected data were analyzed using descriptive statistics. Analysis of data was carried out by using a statistical package for social science (SPSS) 16.0 for Windows. After analysis, the data were presented in tables and charts. Ethical clearance was taken from the ethical committee of the 200-bed Hospital, Narayanganj. Informed written consent was taken from the participants.

RESULTS

Table I: Age distribution of patients (n=100)

Age group (years)	n	%	Mean ±SD
≤20	9	9.0	24.83±4.64
21-25	48	48.0	
26-30	25	25.0	
31-35	15	15.0	
36-40	3	3.0	

Maximum women (48%) were in the age group of 21-25 years followed by 25% were of 26-30 years, 15% were of 31-35 years, 9% ≤20 years, and 3% were 36-40 years. The mean ±SD age was 24.83±4.64 years. [Table I]

Table II: Socio-economic status of the patients (n=100)

Socio economic status	n	%
Very poor	74	74.0
Poor	19	19.0
Average	7	7.0

Socio-economic condition; Very poor= whose monthly income is below 3000 BDT; Poor= whose monthly income is 3000-5000 BDT; Average= whose monthly income is above 5000 BDT

A majority (74%) were very poor socioeconomic status followed by 19% were poor and 7% were average socioeconomic status. [Table II]

Table III: Educational and occupational status of the patient (N=100)

Variables	n	%
Educational level		
Illiterate	28	28.0
Primary	42	42.0
Secondary	18	18.0
Higher Secondary	10	10.0
Graduate	2	2.0
Occupation		
Housewife	71	71.0
Service holder	10	10.0
Garments worker	12	12.0
Day labourer	7	7.0

In this series, 28% of the study population were illiterate, 42% had primary level education, 18% had secondary level education, 10% had higher secondary level education and 2% were graduate only. A majority (71%) were housewives, followed by 12% were garment workers, 10% were service holders and 7% were day labour. [Table III]

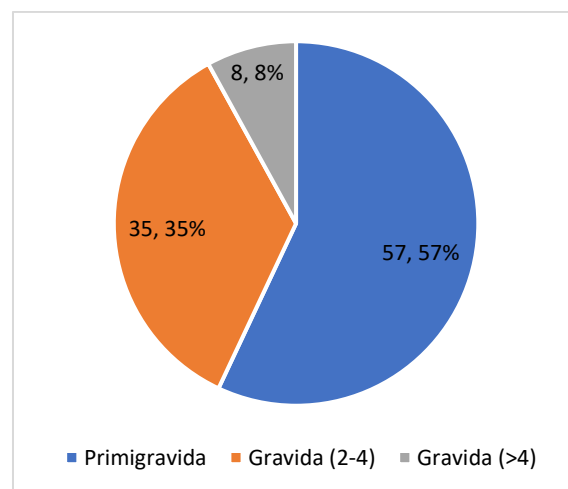


Figure 1: Distribution of the patient's parity (N=100)

In this study, 57% of women were primigravida, 35% were of gravida 2-4 and 8% were of gravida >4. [Figure 1]

Total IV: Past obstetric history of multiparous patient (n=100)

History of difficult labor	n	%
Yes	18	40.0
No	27	60.0

40% of the patients had a history of difficult labor and 60% had no history of difficult labor. [Table IV]

Total V: Antenatal check-up (n=100)

Antenatal check-up	n	%
Regular	21	21
Irregular	26	26
No checkup	53	53

21% had regular antenatal checkups, 26% had irregular antenatal checkups and 53% had no antenatal checkups. [Table V]

Table VI: Labour attended by (outside the hospital) (n=100)

Labour attended	n	%
Untrained TBA	48	48
Relative	26	26
Trained TBA	10	10
Midwife	8	8
Doctors	5	5
CSBA	3	3

TBA=Trained birth attendant; CSBA= community skilled birth attendant

48% of cases of labor were attended by untrained TBA, 26% by a relative, 10% by trained TBA, 8% by a midwife, 5% by doctors, and 3% by CSBA. [Table VI]

Table VII: Duration of labor before admission and patient's general condition on admission (n=100)

Variables	n	%	
Duration of labour			
<12 hours	26	26.0	
>12 hours	74	74.0	
Maternal condition			
Pulse	<100	44	44.0
	>100	56	56.0
Colour of urine	Haematuria	42	42.0
	High coloured	58	58.0

26% were duration of labor <12 hours and 74% were duration of labor >12 hours. 56% of the patients had a pulse rate of more than >100, 85% had dehydration almost half of the patients (47%) had haematuria. [Table VII]

Table VIII: Causes of obstructed labor (n=100)

Cause	n	%
Cephalopelvic disproportion	30	30
Persistent occipital-posterior position	37	37
Deep transverse arrest	22	22
Shoulder presentation	7	7
Face presentation	2	2
Cervical fibroid	1	1

A substantial (37%) number of the cases of obstructed labor were due to malposition, appropriate 1/3rd (30%) were CPD and 31% were malpresentation. [Table VIII]

DISCUSSION

This study revealed that the more vulnerable age group for obstructed labor was 20-25 years in 48% and 9% of the study population within the teenager group. The mean±SD was 24.83±4.64 years. These findings near Chhbra et al. study which was 65% between 20 and 29 years, 20.11% teenagers and 15.19% were >30 years [12]. Another study by Ali et al. showed that mean±SD was 27.5±5.7 years [13]. This study found that 55% of patients were primigravida, 8% were grand multipara & 35% were para 2-4. It was statistically similar to Ali et al.'s study, which found that 52.4% of the participants were primigravidae and 69% were illiterate [13]. Another study by Chhbra et al. study showed that 31.4% were primigravida, 22.1% second gravida, 25.5% third, 14.7% fourth, and 6.4% fifth gravida [12]. Generally obstructed labor was seen in primigravida. A study in Nigeria was done where the incidence of obstructed labor among primigravida was 59% [14]. The status of antenatal check-ups in this study was very poor, 48% of the responders had no antenatal check-up at all, 31% had irregular & 21% had regular antenatal check-ups. In India & Pakistan, booked cases were 11.45% and 7% respectively [15,16]. In a study in Nigeria where the incidence of obstructed labor was much higher for the unbooked patients (3%) than for the booked cases (1.78%) [14]. This study shows that 74% of the patients came from low socioeconomic classes. 19% came from average and 7% from good socioeconomic class. The edu-

cational status of the patients was very low, illiterate 28%, primary 42%, secondary level 18%, higher secondary 10%, and graduate 2%. In the study, Gupta 1.5% of patients were from high socioeconomic conditions. This study found that 71% of the patients were housewives, 10% were service holders, 12% were garment workers and 7% were day laborers. In Gupta's study, 85% were housewives which was close in this study [16]. In this study, most of the delivery were conducted at home. The patient was referred to the hospital by T.B. As (trained/untrained) 58% and by relatives 26%. The individuals attending childbirth were unaware of the risks associated with delayed obstructed labor, and in most cases, they referred the patient only when both the mother and the baby were in serious jeopardy. Most patients 26% came within 12 hours of labor pain, and 74% of the patients admitted themselves after neglected and uncared labor with a duration of labor pain of more than 12 hours which was similar to the study of Chhbra et al. found the incidence of prolonged labor (over 24 hours) was 10% [12]. The medical causes of obstructed labor in my study population were cephalo pelvic disproportion was 30%, persistent occipitoposterior position was 37%, and deep transverse arrest was 22%. Shoulder presentation was the commonest malpresentation (7%), face presentation was 2%, and cervical fibroid was 1%. The study of Omole-Ohonsi et al. showed cephalo-pelvic disproportion (75.5%), malposition of the fetal head (13.7%), malpresentation (transverse lie) 9.8%, fetal abnormalities (hydrocephalus) 1% [17]. Another study by Chhbra et al. shows the commonest cause of obstruction was a malpresentation (53.2%) followed by cephalopelvic disproportion in 41.2% [12].

Melah et al.'s study found that cephalopelvic disproportion was the primary cause of obstructed labor, accounting for 513 cases (83.0%) [18]. Transverse lie was second with 38 (6.1%), and fetal macrosomia third with 32 (5.2%). Defallah et al. study showed (57%) of cases of cephalopelvic disproportion followed by cephalopelvic disproportion and previous CS (10.2%) [11]. Occipitoposterior had the same percentage. The breech presentation was found in (4.8%) of patients and shoulder presentation, face presentation together accounted for (9.6%).

Limitations of The Study:

The study was carried out in a single hospital with a small sample size, so the findings may not be representative of the entire community. Additionally, data on labor duration were often inaccurate because labor began at home and was managed by untrained midwives or relatives. Maternal and fetal monitoring was limited to clinical examination and stethoscope, without the use of advanced methods such as CTG, scalp blood pH, or intrauterine pressure catheter.

Conclusion:

Socioeconomic status can greatly influence obstructed labor. Access to quality healthcare services, such as prenatal care and skilled birth attendants, is often linked to socioeconomic status. Obstructed labor frequently arises from the ignorance and neglect of both the family and, at times, society toward a pregnant woman. Maternal mortality can be substantially reduced if women have access to emergency obstetric care. Women with obstetric complications encounter various barriers to ob-

taining such care, including cultural, geographic, and gender-related obstacles.

Recommendation:

Obstructed labor by either LSCS or destructive operation according to the situation has been a favorable outcome. However, our primary goal should be to ensure universal access to high-quality obstetric care and prevent obstructed labor. Education in primary health providers and traditional birth attendants on the dangers of labor and the need for referral is suggested to reduce the incidence of complications due to obstructed labor. Moreover, awareness should be raised especially for families of low socioeconomic conditions.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee.

REFERENCES

1. Shah D, Shroff S, Sheth S. Reproductive and sexual health and safe motherhood in the developing world. *The European Journal of Contraception & Reproductive Health Care*. 1999 Jan 1;4(4):217-28.
2. Jowett M. Safe motherhood interventions in low-income countries: an economic justification and evidence of cost effectiveness. *Health policy*. 2000 Oct 1;53(3):201-28.
3. Yinger N. Focus on maternal mortality. *Population Today* 1990;8(5):6-7
4. Rather S, Qureshi A, Parveen S. Obstructed labor – current scenario in a developing country. *The Internet Journal of Gynecology and Obstetrics*. 2010;13(2):21-28.
5. Bangladesh Maternal Mortality Survey (BMMS) 2010.
6. *Emergency Obstetric Care, Intervention for the reduction of maternal mortality Obstetrical*

- and Gynecology Society of Bangladesh and UNICEF, 2007;2-13.
7. Bangladesh Demographic and Health Survey, 2010.
 8. Neilson JP, Lavender T, Quenby S, Wray S. Obstructed labour: reducing maternal death and disability during pregnancy. *British medical bulletin*. 2003 Dec 1;67(1):191-204.
 9. Radhakrishnan G, Vaid NB, Agarwal N. Rupture uterus--changing Indian scenario. *Journal of the Indian Medical Association*. 2001 Nov 1;99(11):634-7.
 10. Nwogu-Ikojo EE, Nweze SO, Ezegwui HU. Obstructed labour in Enugu, Nigeria. *Journal of Obstetrics and Gynaecology*. 2008 Jan 1;28(6):596-9.
 11. Dafallah SE, Ambago J, El-Agib F. Obstructed labor in a teaching hospital in Sudan. *Saudi medical journal*. 2003 Oct 1;24(10):1102-4.
 12. Chhabra, Deepa Gandhi, Meenakshi Jaiswal S. Obstructed labour-a preventable entity. *Journal of Obstetrics and Gynaecology*. 2000 Jan 1;20(2):151-3.
 13. Ali AA, Adam I. Maternal and perinatal outcomes of obstructed labour in Kassala hospital, Sudan. *Journal of Obstetrics and Gynaecology*. 2010 May 1;30(4):376-7.
 14. Ozumba BC, Uchegbu H. Incidence and management of obstructed labour in eastern Nigeria. *Australian and New Zealand journal of obstetrics and gynaecology*. 1991 Aug;31(3):213-6.
 15. Kwast BE. Obstructed labour: its contribution to maternal mortality. *Midwifery*. 1992 Mar 1;8(1):3-7.
 16. Roohi KS. Obstructed labor: The preventable factors. *J. Pak. Med. Assoc*, October 1995; 45(10):261-263.
 17. Omole-Ohonsi A, Ashimi AO. Obstructed labour—a six year review in Aminu Kano teaching Hospital, Kano, Nigeria. *Nigerian medical practitioner*. 2007 Aug 27;51(4):59-63.
 18. Melah GS, El-Nafaty AU, Massa AA, Audu BM. Obstructed labour: a public health problem in Gombe, Gombe State, Nigeria. *Journal of Obstetrics and Gynaecology*. 2003 Jan 1;23(4):369-73.