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Spectrum of Obstetrics Case Referrals

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ABSTRACT

Background: Maternal health is an important focus for ensuring the well-being of both mothers and their babies. Maternal and fetal mortality which is a burning issue especially in third world countries can be reduced significantly with right obstetric referral. This study reviewed the primary reasons, time, distance, and pattern of obstetric cases referred to a tertiary center.

Methods: This descriptive study was conducted after taking ethical approval {Approval number 136 (6-11) E2} from the review board of Maharajgunj Medical Campus, Nepal, and data of three years from 1st August 2020-31st September 2023 were analyzed from medical records. The study included all referral cases aged 18-45 years who were past 28 weeks of gestation till 42 days post-delivery. Women who had incomplete medical records were excluded from the study. A continuous convenience sampling method was used. The point estimate was calculated at a 95% confidence interval.

Results: Among 174 referred cases, 84 (48.28%) were from the government district-level hospitals with the predominant reason being medical disorders complicating pregnancy 136 (78.17%). The majority of cases 94 (54.02%) were referred during the intrapartum period.

Conclusions: Medical disorders complicating pregnancy were the primary cause for the referral in obstetrics cases, notably from district-level hospitals having less manpower to deal with those cases.

Keywords: Hospital; maternal mortality; obstetric; pregnancy; referrals.

INTRODUCTION

Obstetric complications are unpredictable, requiring urgent management to prevent maternal and fetal mortality.[1] In limited resource settings, 15% of the cases likely develop emergency obstetric complications affecting the poor and marginalized disproportionately.[2,3] The lower-level facilities with limited services refer cases to higher institutions for better management.[1] These referral decrease the preventable maternal mortality.[4]

Among all the pregnancy-related deaths, 57 % died in health facilities.[5] Basic emergency obstetric care services were available in 19.6% of health facilities in Nepal and nearly 20% of facilities lack essential equipment for delivery so have to refer those cases.[6] Nepal has committed to Sustainable Development Goal target for maternal mortality ratio to 70 per 100,000 by 2030.[7] So, referral mechanisms should be strengthened.

This study aims to find out reasons and patterns of obstetric cases referred to a tertiary center. This will help in preparation for management of similar cases.

METHODS

This was a descriptive study where data from 1st August 2020 to 31st September 2023 were retrieved from hospital medical records. Ethical approval was taken from the Institutional Review Board of Tribhuvan University Teaching Hospital [Ref 136(6-11) E2].

All obstetric referred cases of more than 28 weeks of gestation presenting to the Department of Obstetrics and Gynecology at Tribhuvan University Teaching

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Hospital (TUTH), Nepal were included in the study, whereas those with insufficient data were excluded.

A continuous convenience sampling method was used, The required sample size was 139.

Data were collected using a predefined pro forma, including detailed information on patient age, referring center, period of gestation, cause of referral, and distance from the referral center to the tertiary care center. Descriptive analysis of the data was done by using Epi Info (7.2) software.

RESULTS

Within the study period of 3 years, 174 cases fulfilled the inclusion criteria and were included in the study. The majority of the cases 64 (36.78%) were of the age group of 26-30 years and 53 (30.45%) of age 21-25 years. The mean gestational age of the referred women was 35+2 (SD 5.7) weeks. Nine (5.17%) of the referred cases had duly filled referral forms but the rest of the cases 165(94.83%) had only short documentation of treatment given before referral. All cases (100%) could be managed at our center. Among 174 patients, 98(56.32%) received medical treatment, while 76(43.68%) underwent surgical treatment at our center. Most cases were primarily referred from the Government district level hospital 84(48.28%) for various medical reasons. (Table 1)

Table 1. Types of initial treatment center which referred the cases. (n=174)

Types of initial treatment center	Number (%)
Government health post	6 (3.44%)
Government primary health center	17 (9.77%)
Government district level hospital	84 (48.28%)
Government provincial level hospital	11 (6.33%)
Government tertiary care hospitals	37 (21.26%)
Private hospital	18 (10.34%)
Cardiac speciality hospital	1 (0.58%)

A significant portion of cases 50(28.74%) were mostly referred from health facilities located more than 200 km away from our center. (Table 2) Additionally, 44(25.29%) cases were referred from distances within a 20 km radius.

Table 2. Distance in Kilometres (Km) from the health facilities to our center. (n=174)

Distance in Km from which referral was made	Number (%)
<20	44 (25.29%)
20-50	11 (6.32%)
50-100	37 (21.26%)
100-150	15 (8.62%)
150-200	17 (9.77%)
>200	50 (28.74%)

The majority of cases 94(54.02%) were referred during the intrapartum period, followed by the antepartum period 70(40.23%). (Figure 1) A smaller proportion of cases 10(5.75%), were referred in the postpartum period.

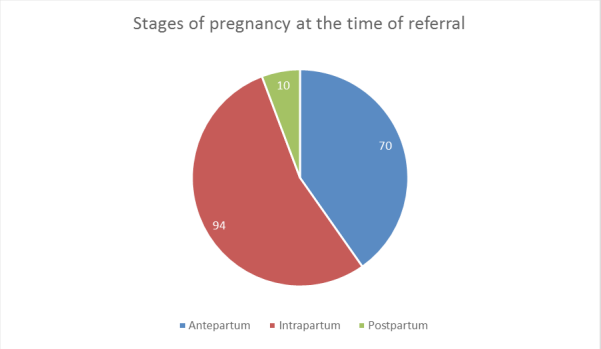

Figure 1. Stages of pregnancy at the time of referral.

The primary reasons for referral were Medical disorders complicating pregnancy 136(78.17%), followed by non-availability of Neonatal Intensive Care Unit (NICU) 24(13.79%). (Table 3)

Table 3. Causes of referral. (n=174)

Causes of Referral	Number (%)
Medical disorders complicating pregnancy	136 (78.17%)
Non availability of Neonatal Intensive Care Unit(NICU)	24 (13.79%)
Manpower shortage	10 (5.75%)
Operation room non functioning	3 (1.72%)
No Blood Bank	1 (0.57%)

DISCUSSION

Improving maternal and fetal outcomes is a critical priority in developing countries like Nepal.

Understanding the spectrum of obstetric referral can help in proper capacity building and advancement and resource allocations at lower resource settings which will decrease the maternal mortality ratio. In this study, most of the referrals were made from government district-level hospitals which were far from the capital city of Nepal due to medical conditions complicating pregnancy.

The WHO has defined referral as a "process in which a health worker at one level of the health system, having insufficient resources (medicines, equipment, and skills) to manage a clinical condition, seeks the assistance of a better or differently resourced facility at the same or higher level to assist in or take over the management of the client's cases." [4,9] Most of the cases in our study were referred due to medical conditions complicating pregnancy. Obstetrics complications are unpredictable and timely referrals from areas with limited health services availability improve the outcome and play a vital role in decreasing one of the 3 delays according to Thaddeus and Maine.[10,11] In a recent report by the Ministry of Health and Population of Nepal 40% of pregnancy-related mortality was associated with delay in receiving appropriate care, which is one of the three delays reported, and 32% were caused by nonobstetric causes.[5] Whereas, 62.8% of health facilities provided delivery and newborn care, 20% still lack essential equipment. [6] Maternal health services are easier to access in urban areas than in rural areas.[7] This situation underlines the need for referral in obstetrics cases in Nepal to a tertiary care hospital with the availability of multidisciplinary teams like our center.

In limited resource settings 75% of maternal deaths are preventable and most affected are the poor and vulnerable population.[2,3,12] An emergency obstetric referral is reported to decrease maternal mortality.[4,13] Nearly 90% of the cases in our study were referred from government hospitals most of which came from district-level hospitals which may be caused by lack of essential equipment in those hospitals and also a lack of manpower. A study done on health facilities in Nepal reports that 90% of the government hospitals have basic equipment for delivery available. [6] But may be due to unavailability of the appropriate manpower patients still need to be referred from those facilities. Other studies also report most of the referrals were initiated from district hospitals.[14,15] In contrast, district-level hospitals of Ghana received more referred obstetrics emergency cases and were pivotal in managing them.[10] This may be because most of these health facilities are ensured manpower and equipment ready for treating the complications.

The cases from the initial treatment center within 100 km of the distance from our center accounted for nearly half of all cases. Cases within a 20 km radius of our center were also referred to. This underlines the situation of lack of manpower and equipment to manage medical disorders of pregnancy, which require a multidisciplinary approach, in most centers. Other studies also point out that most cases are referred within 100km distance.[16-18]

Only 5.75% of cases were referred to our center in post-partum period and all others were antepartum or intrapartum. This is similar to other studies which also report cases referred during the management of antepartum complications. [16-19] More than two-thirds of the cases in our study were referred to our center for the management of medical disorders complicating the pregnancy and only a few cases had fetal distress and nonavailability of NICU services before referral. This is similar to the findings of studies done in urban cities of India where pregnancy-induced hypertension was the most common reason for the referral.[9,14-16,19,20] However other studies report preterm labour, fetal distress, obstructed labour, and other direct obstetrics causes as the common causes mostly followed by medical disorders complicating it.[1,8,10,17,18,21] Our study center is the one with multidisciplinary teams available so most cases we receive are the ones requiring the same. Other causes of referral which are nonobstetrics like lack of manpower, NICU, or blood bank are reported by other studies as well.[9,19,20]

There are reports of unnecessary referrals of up to 15%.[17] The referrals add to the financial burden of the family and would certainly add distress but ultimately women are satisfied. [20] The tertiary care center is also overburdened by referral if manpower and equipment facilities are not addressed appropriately. Referral should be done at the appropriate time and with urgency for a favorable outcome of pregnancy.[22] The filling of referral forms, communication with the referral center, transport facilities, feedback mechanisms, and training of personnel are effective ways to strengthen the referral system.[4,9,10,18] A recent article has also pointed out how to strengthen the referral systems and improve service readiness in Nepal.[23] This will address at least one of the three delays in maternal mortality and will ultimately decrease the maternal mortality rate of Nepal to achieve the SDG goal. This was a single center study done with descriptive data. The study exploring the fetomaternal outcomes and its relation to the stages of pregnancy, delay in referral and disorders in

pregnancy is yet to be done in our settings.

CONCLUSIONS

Medical disorders complicating pregnancy were the primary cause for the referral in obstetrics cases, notably from district-level hospitals having less manpower to deal with those cases.

CONFLICT OF INTERESTS

The authors declare that they have no competing interests.

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