

## Analysis Of Referred Cases In A Tertiary Care Centre, Kims Koppal

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### Abstract

**Background:** Referral services play a crucial role in identifying and managing high-risk pregnancies, forming a key component of maternal and child healthcare. This study aimed to evaluate the frequency and reasons for obstetric and gynecological referrals, and to assess the availability of essential emergency care at peripheral health centers.

**Methods:** A total of 5355 patients referred to teaching hospital, KIMS, Koppal from various peripheral and private hospitals were included in this prospective study. Each case was examined for the reason for referral, treatments received before arrival, and delays encountered during the care process.

**Results:** Among 5355 cases, The most common reason for referral was the need for management of hypertensive disorder (2121 cases, 39.61%), lack of NICU (1296 cases, 24.21%), fetal distress (864 cases, 16.13%) lack of maternal ICU (641 cases, 11.97%) lack of speciality (433 cases, 8.08%) neonatal ICU care post-delivery (28 cases, 23.7%).

**Conclusion:** The findings highlight a significant need for both social and clinical reforms in referral systems. Strengthening infrastructure, improving service quality, and ensuring the presence of trained personnel at peripheral health facilities are essential steps toward better maternal and child health outcomes.

**Keywords:** Referral cases, Obstetrics, Gynecology, Obstructed labour

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### I. Introduction:

The concept of a structured maternity referral system originated from the earlier strategy of antenatal risk screening. In this approach, frontline healthcare workers aimed to identify pregnant women at risk of developing obstetric complications and refer them to higher-level facilities—typically hospitals—for specialized care during pregnancy and childbirth<sup>1</sup>.

In the past decade, maternal mortality has garnered increased attention. The World Health Organization (WHO) initiated the Safe Motherhood campaign in 1987 to highlight the high maternal death rates in developing countries and to reduce related health complications.

Referral systems for identifying and managing high-risk pregnancies are a vital component of maternal and child healthcare services.

India's three-tier healthcare delivery system was designed to enable referrals from primary to secondary and then to tertiary care centers, ensuring that patients receive appropriate levels of care. The Prevention of Maternal Mortality (PMM) network introduced the "Three Delays Model"<sup>2</sup> to better understand and address delays in the management of obstetric and gynecological emergencies.

Pregnancy and childbirth are intricate physiological processes that demand advanced medical attention. In developing nations, elevated maternal and neonatal mortality rates are often linked to insufficient healthcare infrastructure and a shortage of skilled personnel to manage both routine and high-risk cases. Contributing factors to poor maternal outcomes include a lack of trained birth attendants, limited education, low social standing of women, poverty, financial dependence on others, and delays in seeking medical care<sup>3</sup>.

Critically ill patients are sometimes referred too late, often in a near-death state, due to a lack of awareness about the appropriate timing for referral. An essential aspect of primary healthcare is the effective coordination between primary, secondary, and tertiary care levels. This coordination relies heavily on timely and suitable referrals, which significantly influence patient outcomes<sup>4</sup>.

The term "referral" refers to the process of directing individuals seeking healthcare to a higher level within the healthcare system<sup>5</sup>.

In addition to offering care at tertiary centers, it is now crucial to evaluate the capacity and gaps within existing health facilities to reduce treatment delays through evidence-based interventions.

This study focuses on cases referred to teaching hospital, KIMS, Koppal, a tertiary care center in Koppal, from nearby primary health centers (PHCs), community health centres (CHCs), taluk hospitals. It also examines patient outcomes and critically assesses the current referral system, proposing strategies for improvement.

## II. Materials And Methods

The study was conducted following approval from the Institutional Scientific and Ethics Committees.

It was a prospective observational study carried out over a 12 month period, from September 2023 to August 2024, in the Department of Obstetrics and Gynaecology atteaching hospital, KIMS, Koppal

During the study period, obstetric referrals were evaluated to determine the reasons for referral, the type of referring healthcare facility, the parity of the patients, and their residential background.

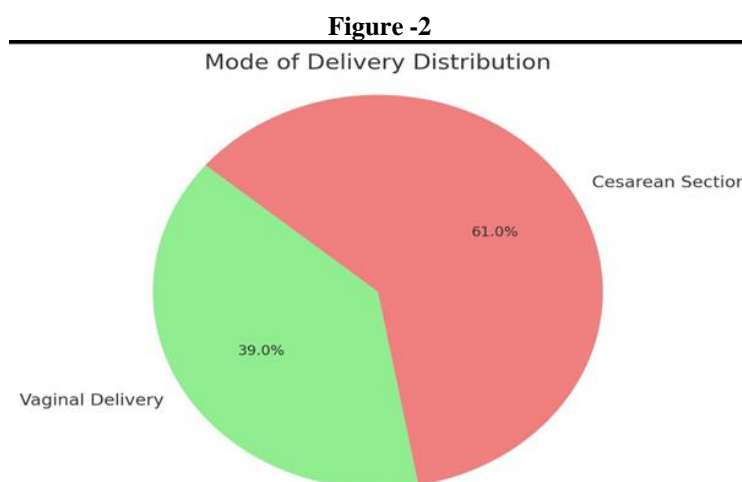
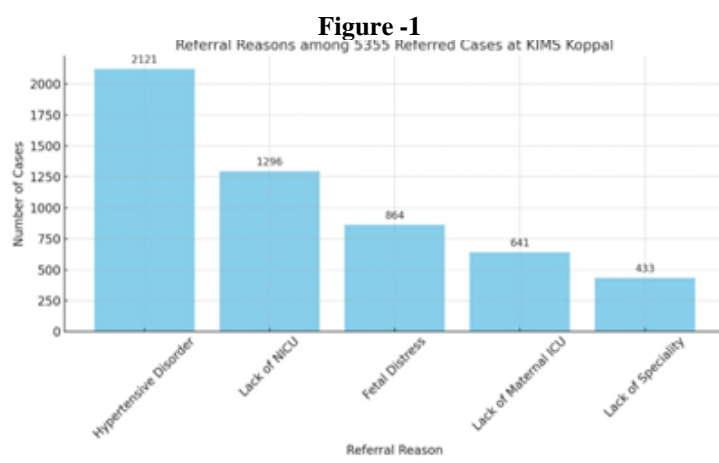
Each referred patient underwent a thorough general and obstetric examination, and their demographic information was recorded.

Data collection, compilation, and analysis were done using Microsoft Excel. Approval from the ethics committee was obtained before the initiation of the study.

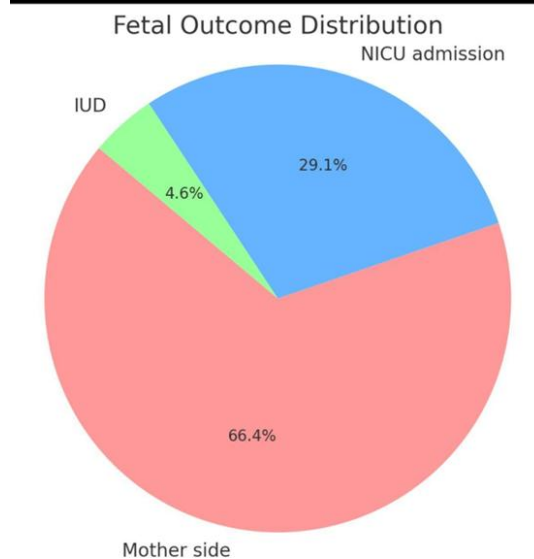
## III. Results

A total of 5355 patients were referred to this tertiary healthcare center during the study period.

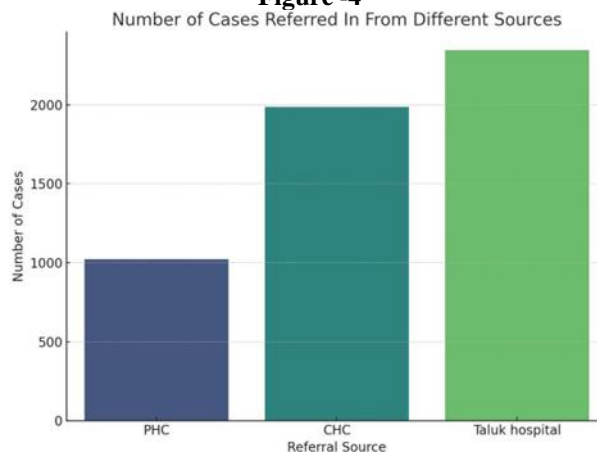
The average age of the study population was  $26.8 \pm 2.1$  years, with most of the women falling within the 20 to 30-year age group



**Figure -3**



**Figure -4**



**Table - 1: Distribution of cases according to age group**

Age	Patients	Percentage
<20 yrs	698	13.03%
20 to 30 yrs	3526	65.85%
30 to 40 yrs	753	14.06%
>40 yrs	378	7.06%
<b>Total</b>	<b>5355</b>	<b>100%</b>

**Table 2: Distributions of patients according to parity status**

Parity status	Patients	Percentage
Primi gravida	2,156	40.26%
Gravida-2	1,634	30.51%
Gravida-3	1212	22.63%
More than 3	353	6.59%
<b>Total</b>	<b>5355</b>	<b>100%</b>

#### IV. Discussion

In the present study, a total of 5,355 patients were referred over a 12-month period to the Department of Obstetrics and Gynaecology at the teaching hospital, KIMS, Koppal.

According to the World Health Organization, timely access to existing emergency obstetric care could prevent approximately 88–98% of maternal deaths<sup>6</sup>.

A majority of the referred patients (65.85%) were in the 20–40 years age group, which is consistent with findings from Gupta et al<sup>7</sup>. (82.9%) and Morsheda et al<sup>8</sup>. (74%). In contrast, Devneni et al. reported a lower percentage (64%) of patients in this age group.

Primigravida women constituted the majority of referrals in this study (40.26%). This is higher than the rates reported by Gupta et al. and Morsheda et al., who found the proportion of primigravida women to be 52.1% and 50%, respectively.

The most common reasons for referral in the current study were pregnancy with hypertensive disorders. On the other hand, Gupta et al. identified anemia, hypertensive disorders of pregnancy, and mal-presentations as the leading causes for referral. Similarly, Rath et al.<sup>9</sup> reported hypertensive disorders and preterm labor as the main reasons for referral, while Maskey et al.<sup>10</sup> highlighted medical comorbidities during pregnancy as the most frequent cause.

## **V. Conclusion**

Effective referrals go beyond just transportation and the availability of referral centers—they also require clear communication and feedback between the referring and receiving healthcare facilities. Specific protocols are needed to identify high-risk and complicated cases appropriately. Referrals should be managed by trained personnel and coordinated teamwork to ensure proper case selection. Maintaining consistent and standardized records is essential.

Additionally, strengthening peripheral hospitals is vital to enhance their capacity to manage complicated cases.

### **Acknowledgements:**

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**Conflicts Of Interest:** None declared.

### **Strength Of The Study:**

This research was conducted in a tertiary care center that receives referrals from 2 to 4 surrounding districts, providing a broad and diverse patient population.

**Declarations & Funding:** None

**Ethical Approval:** The study was approved by the Institutional Ethics Committee

## **References:**

- [1] Murray, SF And Pearson, SC. Maternity Referral Systems In Developing Countries: Current Knowledge And Future Research Needs. *Social Science And Medicine*. 2006; 62:2205–2215.
- [2] Thaddeus S, Maine D. Too Far To Walk: Maternal Mortality In Context. *Social Science And Medicine*. 1994;38:1091–1110.
- [3] Shilpa SB, Anandpk. Study Of Obstetric Referral Stoteaching Institute, Indian Jappl Res 2013;3(7):469-71. Gupta PR, Chaudhari SN, Gonnade NV. Maternal And Fetaloutcome In Referred Patients To Tertiary Care Centre, Sch Japp Medsci2016;4(5C):1624-1631
- [4] Jain Drv, Jain Drs. A Study On Referred Obstetric Cases In A Tertiary Care Hospital In Central India. *International Journal Of Clinical Obstetrics And Gynaecology* [Internet]. 2020 Nov 1 [Cited 2024 Apr 30];4(6):100–3. Available From:<https://www.gynaecologyjournal.com/articles/740/4-5-47-542.pdf>
- [5] Jahn A, De Brouwere V. Referral In Pregnancy And Childbirth: Concepts And Strategies. *Safe Mother Strateg Rev Evid (Studies In HSO&P)*. 2001.
- [6] WHO. Mother-Baby Package: Implementing Safe Motherhood In Countries. 1994. Geneva: WHO/FHE/MSM/94.11.
- [7] Gupta PR, Chaudhari SN, Gonnade NV. Maternal And Fetal Outcome In Referred Patients To Tertiary Care Center. *Sch J App Med Sci*. 2016; 4:1624–31.
- [8] Morsheda B, Shamsun N, Hashima EN. Assessing The MANOSHI Referral System Addressing Delays In Seeking Emergency Obstetric Care In Dhaka's Slums. *MANOSHI Working Paper Series No. 10*.2010; Manoshi-WP10:1-36 Published By ICDDR, B, BRAC. 2010.
- [9] Rath N, Gupta S, Chowdhury H. Pattern Of Obstetrical Emergencies And Fetal Outcomes In A Tertiary Care Centre. *Acta Medica International*. 2015;2(1):105-110.
- [10] Maskeys.Obstetric Referrals To A Tertiary Teaching Hospital Of Nepal. *NJOG*2015;19(1):52-56.