



PREVALENCE OF REFERRALS OF POST-PARTUM HEMORRHAGE, PRE-ECLAMPSIA & ECLAMPSIA AND THEIR MANAGEMENT AT PUBLIC HEALTH FACILITIES IN A STATE OF NORTH INDIA.

Epidemiology

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ABSTRACT

Background. Pregnancy is a normal, healthy state which most women aspire to at some point in their lives. Yet this normal, life-affirming process carries with it serious risks of death and disability.¹ The various complications during pregnancy can be life threatening if not diagnosed and managed in a timely manner. Post-partum Haemorrhage (PPH) and Eclampsia are one of the leading causes of deaths contributing to the highest maternal mortality in the state of Haryana. Therefore there is an urgent need to strengthen health system to prevent maternal mortality in the state.

Methods. A multi-stage stratified systematic sampling design was adopted for the survey. Four tertiary care hospitals bearing a large burden of pregnant women referrals from entire state were selected and four districts were randomly selected including two high priority and two non-high priority districts, with a view to give due representation of the State. The readiness of the public health facilities were also assessed in terms of input, process and output indicators.

Results. Out of the total patients referred annually (1,26,892), 52% of them were referred due to pregnancy or complications related to pregnancy. Out of referrals, most (80%) of referred PPH cases were given conservative/standard treatment at tertiary care hospitals. Almost one-third eclampsia cases referred, had undergone normal vaginal delivery at tertiary care hospitals. Very few cases of PPH and eclampsia were managed at the primary and secondary level of Public health facilities.

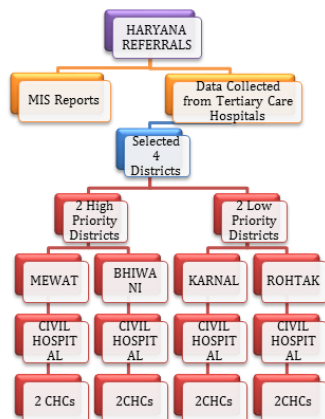
Conclusion. There is high prevalence of referrals (23%) of which referrals of PPH and Eclampsia cases were significant from primary and secondary level of facilities to the tertiary care hospitals. Standard protocols for treatment for management of complications related to pregnancy were not followed at peripheral facilities leading to unnecessary referrals to higher health centres.

KEYWORDS

PPH, Eclampsia, Referrals.

Introduction

Pregnancy and childbirth are significant physiological milestones in the life of a woman which are expected to be covered in the safest ways through effective Healthcare. Still a significant proportion of the pregnancies face various kinds of complications. Every minute one woman dies globally from complications related to childbirth – about 5,29,000 each year – vast majority of them in developing countries. Some 80% of all maternal deaths world-wide are the direct result of complications arising during pregnancy, delivery or during first six weeks after birth. These complications can be averted just by taking timely action. Improving healthcare for women during childbirth in order to prevent and treat PPH is an essential step towards the achievement of Sustainable Development Goal (SDG 3). Hence, in order to assess the readiness & current practices being adopted regarding the management of PPH and Eclampsia cases at Government Health facilities in Haryana, this health facility based retrospective study was conducted by HSHRC.



Material and Methods

It was a retrospective study in which multi-stage stratified systematic sampling design was adopted for the survey. Four tertiary care hospitals bearing a large burden of pregnant women referrals from entire Haryana were selected. Four districts were selected which included two high priority districts and two non-high priority districts,

with a view to give due representation of the State and achieve study objectives. Semi-structured tools were developed to collect both primary and secondary data from the selected Districts and State officials. As a part of quality assessment, readiness of the Government Health facilities, their practices to deal with the complications and knowledge of the staff was also assessed. In-depth interviews were conducted from different cadres of health service providers such as Medical Superintendent/Principal Medical Officer and various facility In-charges. Data collection was done in 2 phases. Primary data collection was done from 4 civil hospitals and 8 Community Health Centres of 4 selected districts (Bhiwani, Karnal, Mewat and Rohtak). In the process of primary data collection, back tracking of these referred cases from selected Civil Hospitals and peripheral health facilities to tertiary care hospitals was done. Secondary data about referrals (of FY 2014-15) was collected from various sources namely from four selected tertiary Healthcare facilities and Management information system (MIS) reports. Secondary data of 1,26,892 cases was analyzed from the MIS reports. 120 cases of PPH and eclampsia was collected primarily from the civil hospitals and community health centres while 682 cases from tertiary care centre were analysed. All vital information regarding demographic profile and reproductive parameters was collected and analyzed using various software like SPSS, MS Office etc.

Table 1: District wise Deliveries in Public Health Institutions & their Referrals

District	Total Deliveries	Total Referrals	Percentage
Ambala	11361	4218	37.1
Bhiwani	13672	3662	26.8
Faridabad	21474	3919	18.2
Fatehabad	11410	2548	22.3
Gurgaon	13102	2905	22.2
Hisar	15935	5600	35.1
Jhajjar	9356	3435	36.7
Jind	13950	4192	30.1
Kaithal	10815	2851	26.4
Karnal	16025	4114	25.7
Kurukshetra	8801	3152	35.8
Mewat	17365	2318	13.3
Narnaul	11180	2215	19.8

Palwal	12403	2150	17.3
Panchkula	10182	2208	21.7
Panipat	12899	2286	17.7
Rewari	7958	1534	19.3
Rohtak	16119	1816	11.3
Sirsa	14552	4655	32.0
Sonepat	17827	2263	12.7
Yamunanagar	10228	3370	32.9
TOTAL	276614	65411	23.6

Results

For the purpose of analyses, results are presented separately into following three groups.

Regarding Referral data (from MIS reports)-

During the fiscal year 2014-15, total 5,44,138 patients were transported in Haryana, out of which 1,26,892 patients were referred from one health facility to another. Out of the total patients referred annually (1,26,892), 52% were referred due to pregnancy or due to its complications. The total no of deliveries and no of referrals from each districts were presented in the Table 1. Districts Ambala, Jhajjar, Kurukshetra and Hisar had higher number of referrals as compared to others. On analyzing further it was observed that even district hospitals have referred 59% cases to tertiary care hospitals and 37% cases were referred from one district hospital to another, indicating gaps in management of cases at district hospitals. More than 80% of cases at Primary health centres were referred directly to district hospitals as their first point of referral, indicating loopholes in referral protocols. Total number of cases of referrals of pregnancy from all types of facilities is mentioned in table 2.

Health Facility Referred From	Health facility Referred To								
	PHC	CHC	SDH	DH	MC	Home	Private	Site	Others
PHC	393 (1.7)	1187 (5.2)	854 (3.8)	18761 (82.8)	1347 (5.9)	21 (0.1)	19 (0.1)	19 (0.1)	55 (0.2)
CHC	46 (0.2)	130 (0.6)	268 (1.3)	18465 (87.8)	1977 (9.4)	46 (0.2)	54 (0.3)	15 (0.1)	37 (0.2)
SDH	34 (1.1)	53 (1.7)	31 (1.0)	2639 (84.1)	377 (12.0)	0 (0.0)	2 (0.1)	0 (0.0)	2 (0.1)
DH	132 (0.8)	240 (1.4)	57 (7.1)	6278 (36.6)	10070 (58.7)	59 (0.3)	130 (0.8)	149 (0.9)	50 (0.3)
MC	9 (3.1)	1 (0.3)	98 (33.2)	51 (17.3)	124 (42.0)	4 (1.4)	3 (1.0)	0 (0.0)	5 (1.7)
Home	135 (17.3)	145 (18.6)	19 (2.4)	419 (53.7)	59 (7.6)	0 (0.0)	0 (0.0)	0 (0.0)	3 (0.4)
Private	4 (3.4)	6 (5.2)	3 (2.6)	87 (75.0)	15 (12.9)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)
Site	1 (1.0)	1 (1.0)	6 (6.2)	76 (78.4)	12 (12.4)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)
Others	17 (13.5)	12 (9.5)	9 (7.1)	84 (66.7)	1 (0.8)	0 (0.0)	0 (0.0)	2 (1.6)	1 (0.8)

Data collected from Tertiary care Hospitals-

Data regarding 682 pregnant women referred from four selected districts to four Tertiary care Hospitals during FY 2014-15 was studied in details and analyzed. Key reasons for referrals reported were Anemia, Haemorrhage, Foetal distress, Breech, Pre-eclampsia and Eclampsia. Fifty percent of the cases of pre-eclampsia and eclampsia occur in primi-gravida women. The correlation of gravida with occurrence of PPH and eclampsia is presented in Table 3 and 4 respectively. It is clearly illustrated that most of the women who have encountered either antepartum or postpartum haemorrhage, fall into the category of either primi-gravida or multi-gravida. Majority (72%) of cases fall in the age group of 21-30 years as this is the most fertile

and child bearing age. It was also observed in almost one-third eclampsia cases referred, had undergone normal vaginal delivery while 80% PPH cases were given conservative treatment at tertiary care hospitals. The tendency of the staff is more oriented towards referring the cases of PPH and eclampsia to the higher centres.

Age (in years)	Primi Gravida	Second Gravida	Third Gravida	Multigravida (4 & above)	Total	Percentage
17-20	26	0	0	0	26	15.8
21-25	29	20	5	12	66	40.0
26-30	6	15	8	24	53	32.1
31-35	0	0	0	12	12	7.3
36-40	0	0	0	7	7	4.2
41-45	0	0	0	1	1	0.6
Total	61	35	13	56	165	
%	37.0	21.2	7.9	33.9		

Age	Primi Gravida	Second Gravida	Third Gravida	Multigravida (4 & above)	Total	Percentage
17-20	10	0	0	0	10	13.5
21-25	25	15	4	2	46	62.2
26-30	2	5	2	3	12	16.2
31-35	0	0	1	3	4	5.4
36-40	0	0	0	2	2	2.7
41-45	0	0	0	0	0	0.0
Total	37	20	7	10	74	
%	50.0	27.0	9.5	13.5		

Analysis of PPH and Eclampsia cases at District Hospital and Community Health Centres-

Sample size of 120 cases of PPH, pre-eclampsia and eclampsia were studied in detail and readiness of the facilities were also assessed in terms of input, process and output indicators. Very few PPH cases were managed in District Mewat (37.5%) and Rohtak (41.7%). Only 18.2% Eclampsia cases were managed in District Mewat and 19.1% cases in district Karnal. Major causes of PPH reported were uterine atony (51% cases) and retained placenta (25%). On assessing readiness it was observed that Personal Protective Equipment (PPE) was not present in a large number of Public Health facilities. Various essential drugs such as Misoprostol, Sodium Bicarbonate, Hydrocortisone, Hydralazine, Labetalol were found unavailable in some of the facilities. Standards protocols for filling partograph, Maternal and child health cards and records were not maintained.

Discussion

MMR is one of the critical indicators to judge the quality of health services in any country. About 830 women die from pregnancy- or childbirth-related complications around the world every day. It was estimated that in 2015, roughly 303000 women died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and most could have been prevented.²

Most of the studies showed that majority of maternal deaths in India occur due to haemorrhage (38%), followed by sepsis (11%) and abortions (8%). Haemorrhage includes both ante-partum and post-partum bleeding. The present study reported that there is high number of referrals (23%) out of which 52% were referred to higher facilities due to pregnancy or due to its complications. The systematic review by Singh S et al¹ also reported that referrals from various public health institutions range from 25% to 52% for pregnancies or its related complications as similar to our findings. The study indicates the prevalence of Haemorrhage (75%) during pregnancy was more commonly seen to occur in the two extreme gravida i.e. primi and multi gravida women (4 or more) as similar to the study done by Devi K et al.⁴

Essentially any bleeding occurring within the first 24 hours after the birth is considered Primary PPH whereas any bleeding that occurs between 24 hours and 6 weeks after the birth is considered Secondary PPH. Haemorrhage can also occur if small pieces of placenta are retained, if there is any injury to the uterus, cervix, vagina and perineum which can happen when the delivery is not monitored properly or in case of bleeding disorders. Almost all the deaths and complications from PPH are preventable. Actively managing the third

stage of labour (the period between when the baby is born and when the placenta is expelled) can prevent most cases of PPH. Uterine atony was found to be the main cause leading to (51%) cases of PPH as analogous to the study done by Shirazee H et al.⁵ Morbidity and mortality due to haemorrhage are largely preventable through skilled care during childbirth. However, delays in identifying haemorrhage, transportation to the appropriate point of care and in receiving the required treatment all contribute to high rates of maternal mortality and morbidity due to haemorrhage.

Long standing untreated hypertensive disorders of pregnancy can lead to Pre-eclampsia and later Eclampsia. Pre-eclampsia is a disorder of pregnancy characterized by high blood pressure and excretion of protein in the urine. More than half of the women of eclampsia cases were primigravida as comparable to the study done by Swain s et al.⁶ The study highlighted that the staff posted at the health facilities are not following protocols and standard management treatment for eclampsia and preeclampsia cases. About 30% of the cases have undergone normal vaginal delivery and conservative treatment at the higher/tertiary care facilities. Referral to the higher centre should not be the key for management of such cases.

Conclusion

Referral Protocols should be made to prevent unnecessary referrals. Referral system needs to be revised so that back tracking of referred women can be done from one health facility to another. Strengthening of public health facilities is urgently required for management of pregnancy related complications. Record keeping needs improvement, especially in case of high risk pregnant women. A system to monitor the same is required. Referral Linkage should be established and accurate referral slip should be filled and sent along while referring a patient to another health facility. Capacity building of the Human resources with evidence based interventions and consolidated package of services should be delivered for management of the complications and to handle emergency situations thus avoiding referrals to the higher facilities.

Limitations

Analysis of the study was based on secondary data, so there could be some discrepancy in the real practices and the record keeping done. The sample size was small and only four Districts could be covered from the entire State of Haryana. Primary data collection from community could have been done, but since this was in the domain of another research study Near Miss Audit being carried out by HSHRC, it was dropped from this research.

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Conflict of Interest: None declared

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