

Study on High-Risk Pregnancy in rural areas of Chhattisgarh

Executive Summary

With the fact that in India about 20% pregnancies belong to high risk category & responsible for 75% of perinatal morbidity and mortality, a study on High Risk Pregnancy (HRP) was planned in Chhattisgarh. The study aimed to assess the identification of HRP by ANMs and Mitans, awareness about HRP in HRP group, types of high risk pregnancy identified and various aspect of management of high risk pregnancy with suggestions of improvement.

A cross sectional study was conducted in 9 districts of Chhattisgarh, at least 1 district in each division of the state. In each district random blocks and villages were selected. In selected villages, ANM and Mitans were contacted for providing the list of high risk pregnant women under two category; 01st category of high risk pregnant ANC women in third trimester and 02nd category of post natal high risk pregnant women delivered in last 3 month.

A total of 78 SHCs were visited and 327 women were interviewed (147 ANC and 180 Postnatal women) using a semi structured pretested questionnaire.

Main findings –

- The rate of high risk pregnancy as per ANM list was 7% and as per Mitans list was 12%.
- Major cause for high-risk pregnancy identified by ANM was Severe Anemia (38.7%) followed by previous LSCS (24%) and swelling in feet (12.7%). Similar was case with the Mitans too, however the total numbers of cases with Mitans in same para was more than that registered with the ANMs.
- Of the total women interviewed, 50.7% were aware about their high risk pregnancy.
- Of those who were aware about HRP, 92.1% contacted doctor for checkups & management. Choice of such doctor were government providers in majority of cases (81.8%).
- Of those who went to a doctor, 91% got their blood tested, 92% had BP measured, and 84% cases urine was tested.
- Of those aware of their HRP; 82.5% went for ultrasonography, 43% of them had 1 USG and 57% had more than 2 USG done. USG was done in a private hospital in 80% cases.

- In aware group 71.7% high risk pregnant women were found to be informed to deliver in a functional facility where operation facilities exist. Doctor, ANM and Mitnin were the prime source of such information.
- In Post Natal women category, it was found that around 32% were delivered in a private hospital, 62% in government health facility and 6% in home.
- Of those delivered in a government facility; 20% were in DH, 13% in CHC, 9% in PHC and 16% in SHC.
- In Post Natal women category, 40% had received Govt transport for delivery, 31% were referred from one facility to other despite being high risk pregnancy.
- Around 62% had term delivery, 41% were caesarean deliveries.
- The outcome of delivery was healthy child in 83% cases.

Background:

High-risk pregnancy is defined as one which is complicated by factor or factors that adversely affects the pregnancy outcome (maternal, perinatal or both). Complications can occur anytime during the course of the pregnancy and childbirth, which in turn can affect the health and the overall survival of mother and the fetus.

Identification of high-risk pregnancy through quality antenatal care helps in achieving favorable maternal, obstetric, and neonatal outcome. The high risk pregnancy cases identified need to be followed up at a frequency more than the usual care by the health workers at health facility and home visits by ASHAs (Mitanins) to ensure best possible outcomes. Early and timely detection and effective management of high risk pregnancy can substantially reduce adverse effects..

Apart from follow-up care, prognosis of the outcome also depends on the type of high-risk pregnancy among pregnant mothers. Hence, identification of type of high-risk pregnancy at earliest stage will be useful in directing the appropriate intervention measures for pregnant women.

In India about 20-30%% pregnancies belong to high risk category, which is responsible for 75% of perinatal morbidity and mortality. Chhattisgarh has higher Maternal Mortality Ratio of 159 (MMR) than the national average of 113. However, in Chhattisgarh the 4 ANC coverage is almost equal to the national average.

Hence study was planned to find out the type of high risk pregnancy registered with the ANMs and with the Mitanins individually. It was also tried to assess the awareness level of the high risk pregnant women about the HRP, type of facilities accessed and the outcomes in case of delivery.

Aims and Objectives:

The study aimed at identifying the gaps in high risk pregnancy management and various factors with following objectives.

1. To find out the types of high risk pregnancy identified at Mitandin and ANM level individually.

2. To find out the awareness level of HRP in high risk women's.
3. To find out the management & various associate factors among high risk pregnant women.

Methodology:

- A cross sectional study was conducted in 9 districts of Chhattisgarh, with at least one district in each divisions of the state.
- In each district random blocks and villages were selected.
- In selected blocks, first the ANM were contacted and 2 types of information was asked.
- Firstly details on various tests/equipments availability at the Sub Health Center was recorded to assess whether the centre has the capacity to identify HRP cases.
- Secondly line list of high risk pregnant women was collected that was registered with the ANMs in two category; 01st category of high risk pregnant ANC women in their third trimester and 02nd category of post natal high risk pregnant women delivered in last 3 month.
- The study used semi structured pretested questionnaire for collecting information.

Results:

A total of 78 Sub Health Centres were visited covering 21 blocks. From the list provided by the ANMs and Mitanins combinely a total of 327 pregnant women were interviewed that were categorized as high risk pregnancy. Of total 327 women interviewed, 147 were ANC (3rd trimester) and 180 Postnatal women (Delivered in last 3 months)

Results of the study are presented below –

A. Information from SHC-ANM

The records collected from the ANMs of high risk pregnancy registered cases in both categories was classified based on the guidelines of Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) and is presented in the table below;

Table no. 1 High Risk Cases Identified according to ANM (Multiple options)

Sr. No.	Type of HRP	Total Cases	Total	%
1	Severe Anaemia	100	258	38.7%
2	Other problems (Twins, transverse lie, Sickling, Weightless than 40 kg, Abdominal pain, Low BP, multiple gravida, and others)	67	258	25.9%
3	Previous LSCS	62	258	24.0%
4	Swelling in feet	33	258	12.7%
5	High BP in Pregnancy	24	258	9.3%
6	Infant death during previous delivery	19	258	7.3%
7	Swelling in face and hands	18	258	6.9%
8	Young primi less than 20 years	15	258	5.8%
9	Elderly gravida more than 35 years	12	258	4.6%
10	Abortion	12	258	4.6%
11	Possibility of premature delivery	10	258	3.8%
12	Shorter women height	6	258	2.3%
13	Reduced fetal movement of a child	6	258	2.3%
14	Diabetes	2	258	0.7%
15	HIV positive	2	258	0.7%
16	Thyroid	1	258	0.3%
17	RH negative	1	258	0.3%

Major cause for high-risk pregnancy as identified by ANM was Severe Anemia (38.7%) followed by previous LSCS (24%) and swelling in feet (12.7%). Other causes not defined any groups were: Twins, transverse lie, Sickling, Weightless than 40 kg, Abdominal pain, Low BP, multiple gravida, and others accounting to 25%. Rate of HRP was 7%.

The details of the tests and equipment's available at the sub center were recorded and is presented in the table below.

Table no. 2 Tests and equipment's availability at SHCs

S.No	Particular	Frequency	Percentage
1.	Hemoglobin test		
1.1	Availability of hemoglobin test at SHC		
	Yes	68	87.2
	No	10	12.8
1.2	Method of hemoglobin test (n=68)		
	Colour scale	7	10.3
	Digital Hemoglobinometer	47	69.1
	Sahli Method	14	20.6
2.	BP Machine		
2.1	Availability of BP machine		
	Yes	77	98.7
	No	1	1.3
2.2	Type of instrument for BP measurement		
	Digital Machine	46	59.7
	Mercury sphygmomanometer	31	40.3
3	Weighing machine		
3.1	Availability of weighing machine		
	Yes	77	98.7
	No	1	1.3
3.2	Type of machine		
	Both machine available	66	85.7
	weight machine for children	2	2.6
	weight machine for elderly	9	11.6
4	Inch tape		
	Availability of inch tape		
	No	11	14.1
	Yes	67	85.9
5	Uristix testing kit		

	No	13	16.7
	Yes	65	83.3
6	Malaria RDT kit		
	No	7	8.9
	Yes	71	91.0
7	Availability of syphilis test		
	No	57	73.1
	Yes	21	26.9
8	Availability of Solubility test		
	No	51	65.4
	Yes	27	34.6

It was found that hemoglobin test availability was good (87%) followed by BP and weighing machine (98%). Syphilis test kit (27%) and solubility test kit (34%) were the least available ones.

B. Information from Mitanins

We contacted 326 Mitanins and asked the type of HRP they had listed with them in their 'paara'. Out of the total mitanins contacted 45% had the HRP cases in the 2 categories which is presented in the table below-

Table no. 3 High Risk Cases identified according to Mitanin (n=272)

Sr. No.	Type of HRP	Identified Cases	%
1	Severe Anaemia	99	36.4%
2	Other problem (Like-Twins, Transverse lie, Sickling, Weightless than 40 kg, Abdominal pain, Low BP, Multiple gravida, hormonal issues and etc	84	30.9%
3	Previous LSCS	64	23.5%
4	Abortion	34	12.5%
5	Sweling in feet	34	12.5%
6	Infant death during previous delivery	26	9.6%
7	High BP in Pregnancy	20	7.3%

8	Swelling in face and hands	17	6.2%
9	Possibility of premature delivery	15	5.5%
10	Shorter women height	13	4.8%
11	Reduced fetal movement of a child	12	4.4%
12	Elderly gravida more than 35 years	10	3.7%
13	Young primi less than 20 years	9	3.3%
14	Less water in the uterus	5	1.8%
15	Syphilis	5	1.8%
16	RH negative	4	1.5%
17	Decreased uterine height	3	1.1%
18	Diabetes	1	0.4%
19	Congenital disorder	1	0.4%
20	Gestational diabetes	1	0.4%

Major cause for high-risk pregnancy as listed by Mitani was Severe Anemia (36.4%) followed by previous LSCS (23.5%) and swelling in feet (12.5%). Other causes not defined any groups were: Twins, transverse lie, Sickling, Weightless than 40 kg, Abdominal pain, Low BP, multiple gravida, and others accounting to 30.8%. Rate of HRP was 12%.

So we found similarity in the types of HRP in list of ANMs as well as Mitani.

C. Information from High risk pregnant women

A total of 327 women were interviewed (147 ANC and 180 Postnatal women). The details of various parameters are described below-

i. Socio-demographic Profile (n=327)

Majority of the women had agriculture (50%) and their main occupation and same was true for their husbands occupation (56%). Around 45% belonged to OBC category. There were 70% who had BPL ration card and 66% lived in Kachha houses.

Socio demographic characteristics of interviewed participants is shown in Table 4 below.

Table 4: Socio-demographic profile

Variables	Frequency	Percentage
Occupation of Women		
Agriculture	162	49.54
Labour	61	18.65
Others	98	29.97
Private job	2	0.61
Self-employment	4	1.22
Occupation of Husband		
Agriculture	184	56.27
Govt Job	12	3.67
Labour	85	25.99
Others	3	0.92
Private Job	22	6.73
Self-Employment	21	6.42
Category		
GN	6	1.83
OBC	147	44.95
SC	48	14.68
ST	126	38.53
Type of Ration card		
APL	30	9.17
BPL	226	69.11
No ration card made	71	21.71
Type of House		
Kachha	217	66.36
Pakka	110	33.64

ii. High Risk Pregnancy and identification

- a) **Awareness** – Out of total women, 50.7% were aware about their high risk pregnancy. Majority of the women got the information about their high risk pregnancy from ANM (57.8%) and Government doctors (37.9%).

b) Treatment and management

Type of Doctors contacted –

Out of the aware HRP women, 92.1% women went to a doctor for check up while in not aware group 73.3% women did not went to doctor. The type of doctors contacted by the women is shown in table below.

Table 5: Type of doctors contacted by HRP women (Multiple options)

Type of doctors contacted	Frequency	%
Govt Doctors	221	81.5
MBBS Private Doctors	119	43.9
Quack	2	0.7
Baiga	2	0.7

Choice of doctor was government in majority of cases.

Check-ups/Tests received

The type of check-ups and tests received by the women who contacted doctors/hospital is presented in table.

Table 6: Check-ups done by doctor for high risk pregnant women

Check-up done by doctors	%
Hemoglobin test	91.1
Urine test	83.7
BP checkup	91.8
Abdominal screening	84.5
Fundal height examination	71.2
Sonography	69
Sugar test	73.8
Weight screening	83.7
Others (HIV, VDRL, Thyroid, CBC, sickling)	13.6

Of those who went to a doctor, 91% got their blood tested, 92% had BP measured. Around 69% has USG done. 82% were prescribed a medicine by the doctor.

Of those who did not went to doctor, majority felt there is no difficulty (23.7%).

Ultra-Sonography screening

Around 73% of total interviewed women had their USG done. In aware group 82.4% had USG done and in not aware group 64% has USG done. Majority (47%) had one time USG done, in most of the cases (80%) USG was done at private hospital. Details of USG is shown in table 7.

Table 7: Information on Ultrasonography done for high risk pregnancy

No of times Sonography done	%
1	47.1
2	37.1
3	12.5
4	1.2
>5	2.1
Place of Sonography	%
Govt Hospital	16.7
Govt and Private both	3.7
Private Hospital	79.6

Informed to deliver in a functional facility

There were 59% women who were suggested to deliver in a health facility with operation facility, in aware group this was 71.7% and in not aware group 45.7% The source of information for such suggestion is presented in table 8 below.

Table 8: Source of information to deliver in facility with operation facilities

Informed by	%
ANM	30.6
AWW	1.0
Doctor	31.6
Family member	4.1
Mitanin	32.1
Others	0.5

Place of Delivery

For women in Post natal category, the place of delivery was asked and is presented in table 9.

Table 9: Place of delivery for PNC women

Place of delivery	%
Private Hospital	26.7
DH	19.4
SHC	15.6
CHC	13.3
PHC	8.9
Private Clinic	5.6
Medical College	5.0
At Home	5.5

It was found that around 32% were delivered in a private hospital and around 61% in Government health facility. Of those delivered in a government facility, 19% were in DH, 13% in CHC, 9% in PHC and 16% in SHC.

Other details

It was found that only 40% had received Govt transport for delivery.

Also 31% were referred from one facility to other despite being high risk pregnancy.

Around 62% had term delivery.

Majority of the delivery was normal but significantly 41% were caesarean deliveries.

The outcome of delivery was healthy child in 83% cases.

Table 10: Other details during delivery

Ambulance facility (102/108) provided during delivery	
Yes	40.0
No	60.0
Referred to one hospital to another hospital n=180	
Yes	30.5
No	69.4
Month of delivery	
9 months (37 weeks and above)	62.2
9 month within a 2 weeks (less than 37 weeks and more than 35 weeks)	29.4
Within 7 months (28 weeks to 31 weeks)	5
Within 8 months (32 to 35 weeks)	3.3
Mode of delivery	
Normal delivery	59.4
C-Section	40.5
Child status after delivery	
Normal live birth	82.7
Low weight	8.3
Still birth	5.5
Severe ill admitted in SNCU or NICU	3.3

Key Summary

Overall it was found that both ANM and Mitadin were listing similar type of HRP conditions, however the number of HRP with the Mitadin was more than the ANMs. There may be apprehension among ANMs to register more number of case. Major type of HRP was anemia, previous scar and oedema. Around 51% of the HRP were aware about their condition. The awareness of HRP was found majorily from Government providers. High proportion of women aware were going to the doctors (majorily to government) for further checkups. Majority of deliveries were in Govt hospitals. The outcome of delivery was healthy child in 83% cases. The study on HRP done earlier in 2021 and current study had almost similar findings.

Suggestions/Recommendations

.To encourage ANMs to share the list of HRP women with Mitadin and also check any missing cases that are avialble with the Mitadin.

- For increasing identification of high-risk pregnancies repeated training of ANMs, regular review and asking ANM to take names of high risk women from Mitadins is suggested.
- Mitadin Trainers (MTs) should also compile the names of the high risk pregnancies identified by Mitadins and give a compiled list to BMO periodically.
- For a high-risk woman, ensure at least one ANC by a doctor. Make Mitadin responsible for facilitating that. Re-introduce monthly 1-2 fixed day ANC clinics every month by doctors in PHCs (especially in tribal areas) and to keep their focus on high risk pregnancies.
- Identification of pre eclampsia is found low, more stress on regular blood pressure checkup especially in 2nd and 3rd trimester to be stressed upon to ANMs.
- PMSMA currently calls all the pregnant women in their 2nd and 3rd trimester which should be changed to include and identify HRP cases only which will improve quality also.
- Increase availability of USG in public facilities. Atleast every FRU should provide this service daily.
- We found that lot of pregnant women are also sent for many number of times for USG hence the guidelines of 18-24 weeks USG only should be adhered to reduce the OOPE.
- Increase availability of laboratory tests necessary during ANC. At least every CHC should provide the tests.
- Increase availability of referral transport – especially for bringing delivery cases from home to hospital

- Ensure delivery of all high-risk pregnant women in functional FRUs and avoid delay in multiple referrals, change 102 guidelines to allow direct transport of high-risk women to FRUs.
- Operationalise Birth Waiting Rooms near FRUs in tribal areas. High risk pregnancies reaching such FRUs for check-ups around 9th month should be encouraged to stay there.