

Dissertation

At

International Institute of Health Management Research, New Delhi

**‘Knowledge and Practices of Health care providers regarding
Management of High-Risk Pregnancies in the selected Public
Healthcare facilities in Karauli, Rajasthan’**

by

Vanshika Awasthi

PG/23/126

Under the guidance of

Dr. Vinay Tripathi

PGDM (Hospital & Health Management) 2023-25



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**International Institute of Health Management Research
New Delhi**

(Completion of Dissertation from respective organization)

The certificate is awarded to

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Management of High-Risk Pregnancies in the selected Public
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He/She comes across as a committed, sincere & diligent person who has a
strong drive & zeal for learning

We wish him/her all the best for future endeavours.


Dr. Vinay Tripathi
Associate Professor
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The Internship is in fulfilment of the course requirements.

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Title of the Dissertation/Summer Assignment	"Knowledge and Practices of Health care providers regarding Management of High-Risk Pregnancies in the selected Public Healthcare facilities in Karauli, Rajasthan."		
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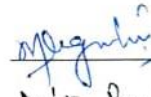
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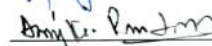
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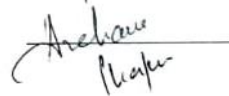
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Name of the Student: Vanshika Awasthi

Name of the Organization in Which Dissertation Has Been Completed: ISHMR, Delhi

Area of Dissertation: Rajasthan

Attendance: Satisfactory

Objectives achieved: Yes, underlying objectives are achieved

Deliverables: Dissertation report and presentation submitted

Strengths: Good understanding of the types and motivation to learn new areas and techniques.

Suggestions for Improvement: —

Suggestions for Institute (course curriculum, industry interaction, placement, alumni):


Signature of the Officer-in-Charge/ Organization Mentor (Dissertation)

Date:

Place:

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ABSTRACT

In India, maternal mortality remains a serious health problem, and high-risk pregnancies (HRPs) cause considerable negative outcomes in the health status of mothers and babies, particularly in terms of lacking resources, as it is the case in Karauli, the state of Rajasthan. This research was conducted to determine the knowledge and practices of healthcare providers, namely, staff nurses, on matters of managing HRPs in sampled public health establishments. The descriptive cross-sectional study design was applied with 38 samples of staff nurses representing the staff nurses working in antenatal clinics, maternity units, and labor rooms in district hospitals and community health centres. A structured self-administered questionnaire was prepared to gather data on the demographic profile, knowledge about conditions that make them high risk, and management strategies.

The results showed that most of the nurses were female (81.6) with half under General Nursing and Midwifery as their training. Although the majority of the participants displayed their knowledge of the major HRP conditions (e.g., pre-eclampsia and gestational diabetes) well, less than a quarter of the participants (23.7%) had attended any formal training on HRP management in the previous year. Practicability was variable though 97.4 percent had HRP records that were consistent, and 78.9 percent were able to report cases to doctors yet only 57.9 percent were able to manage eclampsia administration of Magnesium Sulphate independently and in the same manner. More than half (52.5) expressed

challenges working with HRPs because of under-resource, low preparation, and large patient sizes.

The research identifies the areas of serious disparities between the theoretical knowledge and practice in the clinics caused by the constraints of the system and lack of sustained capacity building. These should be managed by frequent practical trainings, well-defined clinical procedures, and positive supervision in order to make nurses feel empowered, enhance timely detection and efficient treatment of HRPs, and finally minimize maternal and neonatal morbidity and mortality rates in Karauli and other such hospitals. The results are enough to inform interventions and policy making in order to improve the community-based maternal health services.

ACKNOWLEDGEMENT

This dissertation, “**Knowledge and Practices of Health care providers regarding Management of High-Risk Pregnancies in the selected Public Healthcare facilities in Karauli, Rajasthan**” represents the culmination of significant effort and collaboration. I wish to express my profound gratitude to all those who contributed to its successful completion.

First and foremost, I extend my deepest appreciation to my esteemed supervisor,

Dr. Vinay Tripathi, for his invaluable guidance, unwavering support, insightful critiques, and constant encouragement throughout every stage of this research. His expertise and dedication were instrumental in shaping this study and bringing it to fruition.

I am sincerely grateful to the Institutional Ethics Committee of the International Institute of Health Management Research (IIHMR), Delhi, for granting the necessary ethical approval for this study. Their commitment to ethical research practices ensured the integrity and responsible conduct of this work.

My heartfelt thanks go to the healthcare workers of Karauli Rajasthan who graciously participated in this study. Their willingness to share their experiences and insights was fundamental to the success of this research, providing the rich data that underpins our findings. Their voices are central to this work.

Finally, I am grateful to my family and friends for their continuous support, understanding, and patience throughout this academic journey.

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INTRODUCTION

The aspect of maternal health is a valuable indicator of the health-care system quality and commitment to female equality and rights in every country. Pregnancy and childbirth continue to cause deaths among millions of women globally with the highest rate in low and middle-income countries. The World Health Organization (WHO) ascertained that in 2020 approximately 287,000 women died during and after pregnancy and childbirth, of which 94 percent of the deaths took place in low-resource settings, the majority of which would have been preventable with access to quality healthcare in good time (WHO, 2023). High rates of high-risk pregnancies (HRPs) that require comprehensive care approaches and effective decision-making and intervention strategies constitute a very meaningful determinant in this global burden.

A pregnancy could be considered high risk whereby one or more risk factors are present in the form of poor medical conditions, obstetric or even social risk; the risk factors would enhance the possibility of poor maternal and or fetal outcomes. Such conditions are severe anaemia, high blood pressure, diabetes, mothers of an upper age, teenage mothers, multiple pregnancies, a history of problematic obstetric history, low access to qualified care etc. HRPs are largely the principal contributors to maternal and neonatal morbidity and mortality. SDG 3 is based on reducing the maternal mortality ratio of the world to less than 70 deaths per 100,000 live births by 2030. To

attain this aim, health-care systems will be improved with a focus on the efficient diagnosis and treatment of HRPs at their initial phases and specifically, concerning underserved populations.

Maternal deaths have continued to be a community health issue in India despite decades of special attention and maternal health programmes. The maternal mortality rate in India was 97 per 100,000 live births, according to the Sample Registration System (SRS) data from 2018–2020. Despite being a notable improvement over previous decades, the decline is not consistent throughout states and districts. While states like Kerala and Tamil Nadu have reached close to SDG levels, others like Uttar Pradesh, Assam, and Rajasthan continue to have higher maternal mortality rates. The National Family Health Survey (NFHS-5) shows that there are still gaps in antenatal care coverage, anaemia prevalence, early marriage, and institutional deliveries, all of which are direct causes of high-risk pregnancies.

To address maternal health, India has launched a number of national programs, such the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), and LaQshya. These initiatives seek to promote institutional deliveries, provide free maternal healthcare services, raise the standard of care, and facilitate the early detection and referral of high-risk pregnancies. The 9th of each month, PMSMA specifically targets HRPs by offering guaranteed antenatal checkups by experts at government institutions. The knowledge,

awareness, and behaviours of healthcare professionals at the grassroots level, however, have a significant impact on the success of these programs.

One of the states with a heavy burden of maternal mortality is Rajasthan. The SRS 2018–20 data shows that Rajasthan had an MMR of 113 per 100,000 live births, which is much higher than the national average. Data from the NFHS-5 (2019–21) in Rajasthan shows that early marriage is still common, that 53.3% of women between the ages of 15 and 49 are anaemic, and that rural areas have inadequate access to full antenatal care. Although the government has increased the availability of institutional deliveries and maternal programs, the depth and quality of services, especially in identifying and treating high-risk pregnancies (HRPs), still need more focus.

The structural and socio-cultural obstacles to safe motherhood are well illustrated by Karauli, a largely tribal and rural district in eastern Rajasthan. Poor road connectivity, low female literacy, early marriage age, high poverty rates, and restricted access to specialized health care are all features of the area. Karauli's healthcare infrastructure, which includes primary health centers (PHCs), community health centers (CHCs), and sub-centers, is frequently hampered by a lack of skilled staff, insufficient diagnostic resources, and erratic referral systems. Timely identification and treatment of high-risk pregnancies are hampered by these systemic issues, which increases the risk for both mothers and infants.

The function of healthcare professionals, such as Auxiliary Nurse Midwives (ANMs), Staff Nurses, and Medical Officers, is essential in this situation. They are frequently the first, and occasionally the only, point of contact for pregnant women in rural areas. The difference between life and death may depend on their ability to identify warning signs, perform accurate risk assessments during prenatal care (ANC), adhere to accepted clinical standards, and make prompt referrals. But many studies done in India have revealed differences in provider expertise, inconsistent protocol adherence, and difficulties in applying training to real-world situations, especially in high-burden areas like Karauli.

Although national norms and training modules prioritize the administration of HRPs, there is little evidence on how these are being carried out at the facility level in underserved communities. To create context-specific interventions, such refresher trainings, supportive supervision, and system-level reforms, it is necessary to first understand the healthcare providers' knowledge base, practical skills, and current gaps.

By evaluating the understanding and practices of healthcare professionals on the management of high-risk pregnancies in a few chosen public healthcare institutions in the Karauli district, this research attempts to close this gap. The study will look at how well providers are prepared to recognize HRPs, the clinical and operational methods they use, and the difficulties they have while treating these patients. The results will inform local and state policies

for improving maternal care by providing helpful information about actual circumstances.

In the end, ensuring safe motherhood is a societal commitment, not merely a clinical obligation. Every woman, regardless of her location, socioeconomic situation, or background, deserves access to timely, high-quality, and respectful maternal care. This research supports the overarching goal of improving the health system and promoting fairness in maternal health outcomes by concentrating on the skills and behaviours of frontline providers.

Significance and Rationale of the study

Maternal and neonatal mortality rates are substantially increased by high-risk pregnancies, especially in neglected and resource-constrained regions like Karauli. Although nationwide programs have been established to detect and treat HRPs, their effectiveness is contingent upon the frontline healthcare personnel. These professionals are required to perform risk assessments, use evidence-based practices, and make prompt referrals. However, the quality of care at the community level is often compromised by issues such as insufficient knowledge, inadequate clinical training, and overworked healthcare systems.

The purpose of this research is to assess the actual understanding and behaviour of healthcare professionals at public healthcare facilities in Karauli regarding the treatment of HRPs, which makes it important. The

results can inform the development of focused training, supportive supervision, and health system reinforcement strategies that are suited to this environment by drawing attention to existing shortcomings. The goal of the findings is to help healthcare managers, program managers, and policymakers create policies that advance SDG 3 in Rajasthan and elsewhere by increasing the preparedness of health workers and improving maternal health outcomes.

Objectives of the Study

- To assess the level of knowledge among staff nurses about high-risk pregnancy conditions.
- To evaluate the actual practices of staff nurses in the identification and management of high-risk pregnancies.
- To identify gaps between knowledge and practice in managing high-risk pregnancies.
- To provide recommendations for capacity-building interventions to improve maternal care.

Review of Literature

High-risk Pregnancy and Maternal Health

The quality of healthcare services and its access are critical elements of the maternity health system which indicates the level of population health. High-risk pregnancies (HRPs), which include pre-eclampsia, eclampsia,

gestational diabetes, severe anaemia, and multiple pregnancies make it extremely problematic. Such complications can cause significant amounts of maternal and fetal morbidity and mortality in countries, such as India, that have resource shortages.

According to the emphasis provided by the World Health Organization (2023), the problem of maternal mortality is also urgent in the world because a significant percentage of deaths are caused by improper treatment of high-risk obstetric conditions. The organization reiterates the value of systematic screening, early detection, and timely intervention of the HRPs in the primary healthcare systems.

Knowledge and Practices of Health Care Professionals

Knowledge, skills, and opportunities of continuous training are the key to managing high-risk pregnancies by the nursing personnel. Mohammed & Ghafel (2022) state that there are observable gaps in the practices of nurses when managing the danger signs during pregnancy. Regular assessment, specific special education, and compliance with clinical recommendations are the most important aspects of addressing the issue of provider competence pointed out by the study.

As shown in the National Family Health Survey (NFHS-5, 201921) on Rajasthan state, there is still a problem of some high levels of anaemia, poor use of antenatal care, and irregular training providers. All these factors

influence the effectiveness of nurses in the detection and treatment management of the HRPs.

Archana (2021) also proves that the use of planned teaching programs increases knowledge of nurses about anaemia and its unfavourable impact on mother and foetus and directly proves the necessity of the planned educational program in rural hospitals.

Practice Problems: Limitations and Training:

Research like the one by Dalal et al. (2022) in rural Rajasthan notes these ground realities of nurses and staff who are on the front line and follow vague referral procedures and face a lack of formal training and a resultant shortage of resources. All these obstacles stand as a barrier to bridging the gap between theoretical knowledge and being a good clinician. The insecurity and the lack of practical exposure often makes the frontline nurses rely on close supervision of the physician even on the interventions in their capacity.

In the case of Karnataka, these concerns are echoed by Dramaturg and others (2016), who remark that in many cases community health workers admit to an imperfect understanding of how to manage hypertensive complications during pregnancy because they lack practical practice.

On the other hand, Varghese et al. (2019) present strong proofs based on Bihar that simulation-based and mentor-led training can significantly develop the competency level of nurses in treating pre-eclampsia and

eclampsia. The research proposes consistent, skill-oriented education, clinical mentoring and beneficial supervision as methods of achieving connections among knowledge and practice.

Summary

Across the literature the following is repeatedly brought up:

- Nurses tend to have sufficient theoretical competence in terms of HRPs, yet the knowledge still lacks when it comes to practice.
- Repeating training barriers are limited training and therefore lack of well-developed protocols and constraints in resources.
- Medical education is structured and use of simulations to conduct programs to enhance competence and practice of providers.
- Continued efforts to improve maternal care at facility level should focus on faculty-based training, protocol explanation, resource multiplication to bring significant changes in maternal and neonatal complications.

METHODOLOGY

Study Design

This research used a descriptive cross-sectional design to evaluate the staff nurses in the selected four public healthcare facilities in terms of their knowledge and practice on management of high-risk pregnancies. The cross-sectional design allowed the factor to gather the data at one specific instant

in time, and a snapshot of present-day knowledge doctrine among the nursing staff was projected. This design can be used in recognizing the gaps that exist between theoretical and practical knowledge in maternal healthcare facilities.

Study Setting

Study was carried in a selected list of both District hospitals (DHs) and Community health centres (CHCs) in Karauli district, Rajasthan. These public health services are the first line in providing maternal and child health services within the region and serve the healthcare provisions to the rural and peri urban communities. The choice of these facilities was done to regain a representative picture of nursing in various levels of public health in Karauli.

Study Population

The study population was the staff nurses who worked in the antenatal clinic, maternity wards and the labor rooms in the selected DHs and CHCs. These are frontline healthcare nurses who ensure the detection and management of high-risk pregnancies and is paramount in intervention and referral in time. The inclusion criteria necessitated the nurses to be in active practice in the concerned units at the duration of the data registration.

Sample Size

A total of 38 staff nurses in Karauli, a district selected in Rajasthan, were asked to participate in the study. These nurses were on the frontline in direct

contact with the antenatal clinic, maternity wards and labour rooms as the healthcare provider in monitoring high-risk pregnancies.

Sample Size Determination

This research study used a sample of 38 staff nurses employed in shortlisting public healthcare facilities in Karauli district, Rajasthan. The operational limitation and the fact that the participants were a considerably small number of available staff nurses in the study settings necessitated the use of convenience sampling that aimed towards ensuring that all willing and eligible participants were captured in the data collection process.

The Calculation of Sample size

The final sample size was enforced by availability, but it was in theory calculated by the standard formula of proportions estimate in order to be satisfactory in its representation of the population with a reasonable level of confidence and precision:

$$n = \frac{Z^2 \times p \times (1 - p)}{d^2}$$

Where:

$Z = 1.96$ (at 95 percent level of confidence)

$p = 0.5$ (p = population proportion as that will give a most significant sample size)

$d = 0.15$ (15 percent margin of error in view of resource constraints)

Calculation

$$n = \frac{(1.96)^2 \times 0.5 \times (1 - 0.5)}{(0.15)^2} = \frac{3.8416 \times 0.25}{0.0225} = 42.7 \approx 43$$

Considering that there were only 38 staff nurses available and willing to volunteer in the selected facilities, this became the final number of sample size to consider in the study. This is a bit lower than what may have been estimated based on the statistic, but it was deemed enough in terms of a descriptive cross-sectional study where the main scope was to investigate knowledge and practices pertaining to the management of high-risk pregnancies as applied within the context of Karauli using the set of public health facilities.

Sampling Technique

In the study, convenience sampling method was used to define the sample. The decision on using this non-probability sampling method was motivated by the limitations of the actuality of the study and the unavailability of the

requisite number of staff nurses in the sampled public healthcare facilities at the time of conducting the study. The study included all the staff nurses serving in the antenatal clinics, maternity wards, and labor rooms of the chosen District Hospitals and Community Health Centers of Karauli district, Rajasthan, and available and willing to provide participation to the study.

The inclusion of the accessible population and obtaining preliminary data on high-risk pregnancies knowledge and practices were possible through convenience sampling. Although these are disadvantages that reduce the generalizability of findings, it would be suitable in the study settings and purposes, since the timeframe and available resources were sufficient to collect data efficiently, and within the specified resources.

Data collection Tool

The form used to collect data was structured and self-administered questionnaire commensurate with the present study. Substantive literature review and contact with the subject matter experts formulated the questionnaire with an aim to establish relevancy and validity of the content.

The tool was composed of three sections:

Specification A: Demographic Data

The demographic traits of respondents such as age, gender, level of education, number of years of experience and current posting (District Hospital or Community Health Center) were recorded in this section.

Section B: Educational Test

This section evaluated how well the participants were informed about some of the conditions associated with high-risk pregnancy like pre-eclampsia, eclampsia, diabetes cases in pregnancy, anaemia etc. Items were also to be asked regarding important clinical values such as normal haemoglobin levels in pregnancy, suggested investigation and emergency protocols.

Section C: Assessment of Practice

The section identified how routine practices done on management of high-risk pregnancy by staff nurses took place. It contained questions related to the utilization of checklists and clinical protocols, use of drugs such as Magnesium Sulphate, record-keeping habits, reporting the habits, and the perceived difficulties in the process of handling the high-risk cases.

The questionnaire itself was given either in English or Hindi based on the needs of the participants to better understand them and make proper responses. The self-administered design allowed respondents time to respond truthfully without interviewer bias and to have their own time responding.

Data collection method

This study was based on a Structured Self-Administered Questionnaire, which was one of the methods used to collect data in this study, to evaluate the knowledge and practices of the staff nurses in the management of high-

risk pregnancies. The questionnaire had three parts which were demographic questions, knowledge on high-risk conditions of pregnancy and practical question in normal care. The sample survey was implemented in course of three months selected District Hospitals and Community Health Centers at the district of Karauli in Rajasthan. Before the administration of the questionnaire, the aim and goals of the study were made known to each of the participants to create clarity and ensure that the participants cooperated. The questionnaires were distributed to the nurses who were able to answer the initial questions at their own speed and did not confer the interviewer-bias that may arise. The approach enabled the compilation of quality and extensive data directly with frontline healthcare professionals in charge of high-risk pregnancies.

Ethical Considerations

Data collection took place after obtaining the ethical clearance of the study by the Institutional Ethics Committee of IIHMR Delhi. The research strictly followed the ethical principles in the research process to protect the rights and confidentiality of the participants.

A written informed consent was taken to participate in the study by all the participating staff nurses after giving comprehensive information about the aims, procedures, risks and benefits of the study. The involvement was voluntary, and where the respondent needed to withdraw, he or she would be told that he or she can quit at any stage.

confidentiality was to be maintained; personal identifiers were not captured on the questionnaire. The data were coded, and were saved carefully in a secure location, only with access by the main researcher. All reports and publications derived by means of the study kept the anonymity of the participants.

The research presented low harm to participants since it did not entail the needs of invasive data collection in any form of questionnaires. A lot of consideration was given so that the answers to the questions did not turn out to be hurtful.

The data obtained were solely used in research leading to better insight of knowledge gaps and practices on the management of patients at high risk of pregnancy among staff nurses.

Data Analysis

The sample included 38 nurses, majority female (81.6%) and most qualified as General Nursing and Midwifery (50%) Auxiliary Nurse Midwives (32.5%) and BSc Nursing degree holders (15%).

Majority of the participants (70%) were attached to Community Health Centres and the rest on District Hospitals (30%).

27.3 percent of nurses had undertaken formal training on management of high-risk pregnancy in the last one year.

Knowledge Highlights:

There was a high percentage of correct answers (84.2%) given to gestational diabetes as a high-risk issue in pregnancy.

94.7 percent were aware of the normal level of haemoglobin during pregnancy which ought to be above 11 gm/dl.

94.7 percent of them identified Magnesium Sulphate as the suggested drug in the prevention and control of eclampsia.

89.5 percent knew the need antenatal visits in order to help detect high risk pregnancies at an early stage.

Practice Highlights:

68.4% agreed that checklist assists in the usual management of HRP.

Most (78.9 percent) indicated that reporting cases of HRP to doctors is policy.

On the other hand, rates were stable and high (97.4 percent) of the organizations had cut across requirements at the HRP cases.

Most of the 57.9 percent administered Magnesium Sulphate independently in cases of eclampsia although 37.5 percent administered it in only some instances where the case is supervised by the doctor.

Reported struggles with the management of HRPs were registered in 52.5 percent, whereby lack of resources and training, paired with an elevated number of patients, were cited as main challenges.

Respondent suggestions on what could be done better in relation to HRP care are:

- Semi-annual practical training.
- Transparent standardized clinical practices.
- Constructive supervision to nurture self-confidence.

Greater resource distribution to ease workload and increase quality of care.

This comparison reveals an observable difference between the knowledge and practice, which is primarily conditioned by training weaknesses and limitations of the system to facilitate efficient and effective interventions to benefit maternal health through empowering the nursing staff.

Result

Demographic Distribution

Gender:

Most of the participants were female (81.6%) and 18.4 percent males.

Qualification:

The General Nursing and Midwifery nurses constituted half of the nurses (50%), then the Auxiliary Nurse Midwives (32.5), and Bachelor of Science in Nursing (15%).

Current Posting:

Majority (70%) of the nurses were on duty at Community Health Centres (CHCs) and 30% in District Hospitals.

Training on Management of High-Risk Pregnancy

Arranged training on handling high-risk pregnancies had been organized to only 23.7 percent of the nurses amongst all nurses as compared to 76.3 percent who had not gone through preparation of dealing with high-risk pregnancies in the previous year.

Knowledge Highlights

A high-risk number of gestational diabetes was appropriately identified by 84.2 percent.

Normal haemoglobin levels during pregnancy were known in 94.7 percent.

The recognition of the Magnesium Sulphate as the eclampsia management drug was 94.7%.

89.5 percent were aware of the value of attending antenatal visit in determination of high-risk pregnancy.

Practice Highlights

68.4 percent of the respondents said a checklist is useful in managing HRP.

HRP-78.9 percent reported the cases of HRP to doctors as per protocol.

There were 97.4 percent consistency in record keeping.

57.9 percent conducted Magnesium Sulphate on their own.

37.5 percent of the subjects were supervised upon receiving MgSO 4.

52.5 percent had problems in handling HRPs because of insufficient resources and bulk works.

Key Findings

Key Findings of the study concerning competence and practices of the staff nurses towards the management of high-risk pregnancies (HRPs) in chosen medical institutions in Karauli, Rajasthan are as follows:

Figure 1 shows that most of the respondents (81.6%) were women as compared to 18.4% who were men. This implies that in the public healthcare facilities in Karauli, the provision of nursing care is done mostly by women.

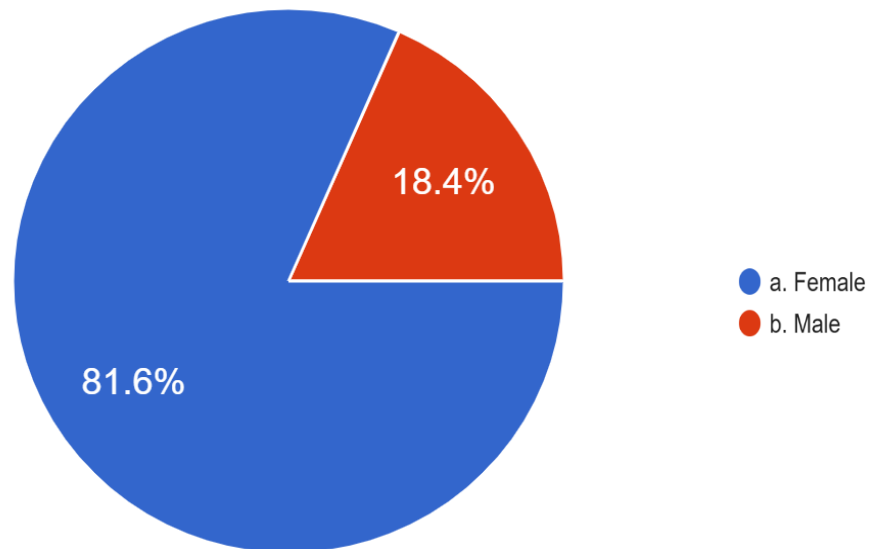


Figure 1 Distribution of participants by Gender

Qualification of staff nurses (Figure 2) indicates that 52.6% of the occupants were trained in General Nursing and Midwifery (GNM), 34.2% Auxiliary Nurse Midwives (ANMs) and 10 percent of Bachelor of Science in Nursing graduates. This indicates a wide educational base, the GNMs numbering the highest providers on the frontline.

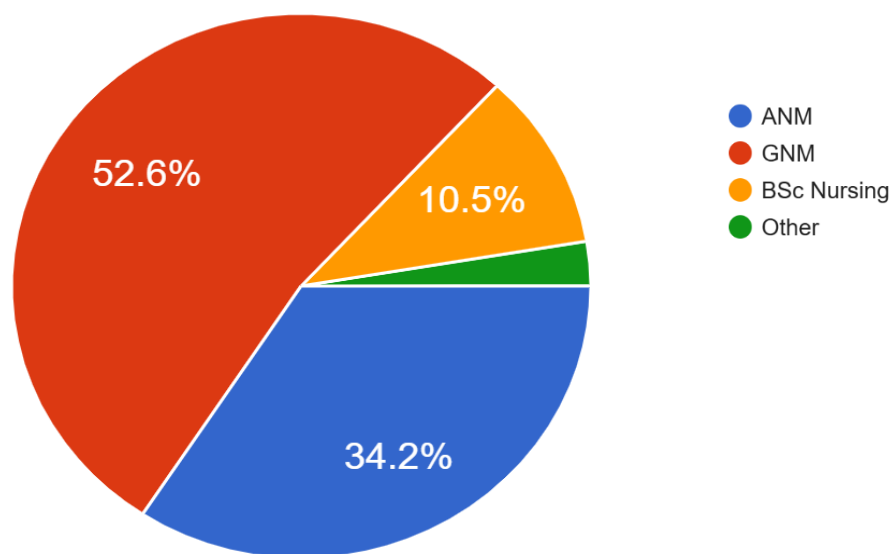


Figure 2 Qualification Profile Staff Nurses

Majority of the respondents (73.7%) reported to Community Health Centres (CHCs), and 26.3 percent reported to District Hospitals (Figure 3). This is indicative of the fact that CHCs are developed into the focal area of maternal care within the rural setting of Karauli.

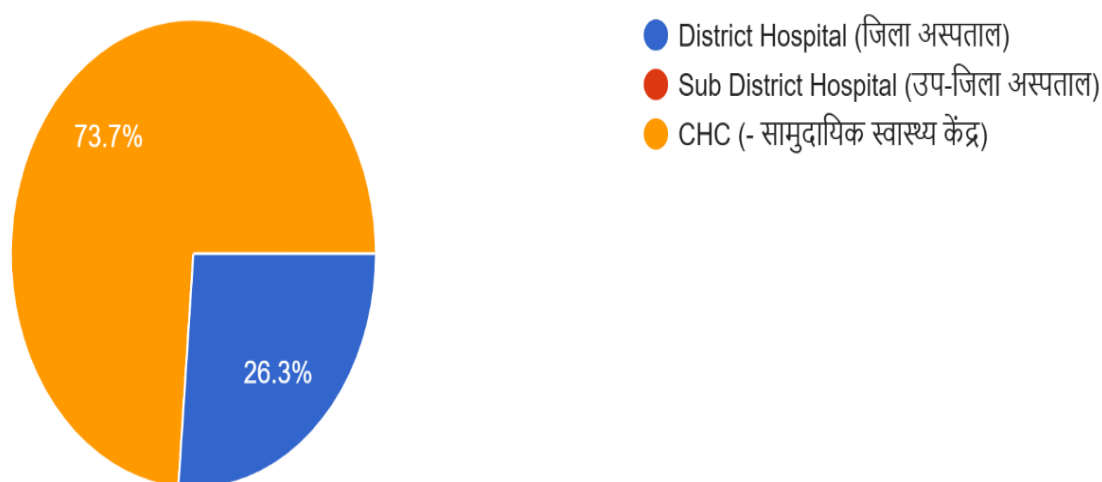


Figure 3 Posting Distribution: CHCs vs. District Hospitals

The rate of continuing professional development of the participating nurses revealed only 23.7% had formal training on the management of HRP in the last 1 year.

As evidenced by assessment of knowledge, it was shown that:

84.2 percent of them correctly responded with gestational diabetes as high-risk pregnancy condition.

As reflected in the figure 4, 94.7 percent of the respondents knew that normal haemoglobin during pregnancy should measure 11 gm/dl and above. This illustrates high awareness levels when it comes to the prevalence of anaemia, which has been major in a district such as Karauli whereby a high rate of anaemia has been registered. The remaining minute portion of the respondents either under or over-evaluated the value, and as such it is because of the importance of reinforcements of the clinical cut-offs during refresher trainings.

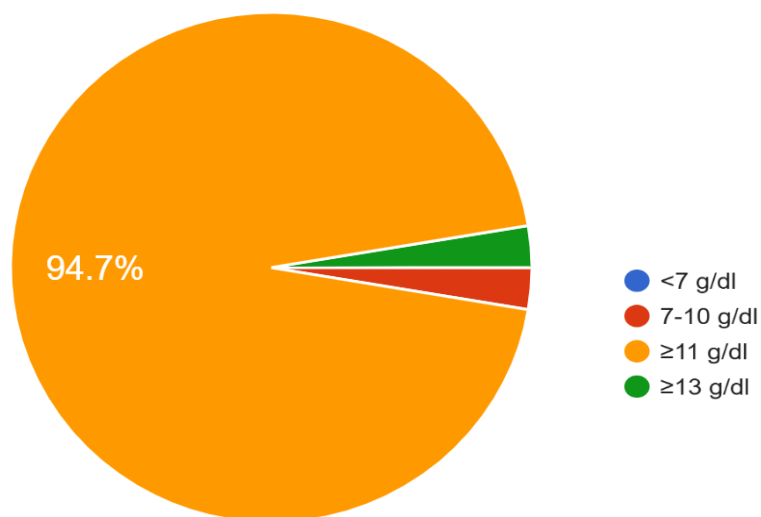


Figure 4. Normal haemoglobin Awareness

Most staff nurses (89.5%) agreed with the fact that ante-natal visits would enable the identification of high-risk pregnancies at an early stage as shown in Figure 5. This portrays a good realization among most of the nurses that ANC check-ups are important in detecting complications like anaemia, high blood pressure, and gestational diabetes at an early stage before they reach advanced levels. ANC allows early detection that would facilitate timely referral and counselling as well as preventative measures that are essential in mitigating risks in either the mother or the newborn. Nevertheless, approximately 10.5 percent of the respondents did not place an emphasis on the use of antenatal visits implying that there is an additional reinforcement that should be directed to ANC practices and their relevance to avoiding negative consequences.

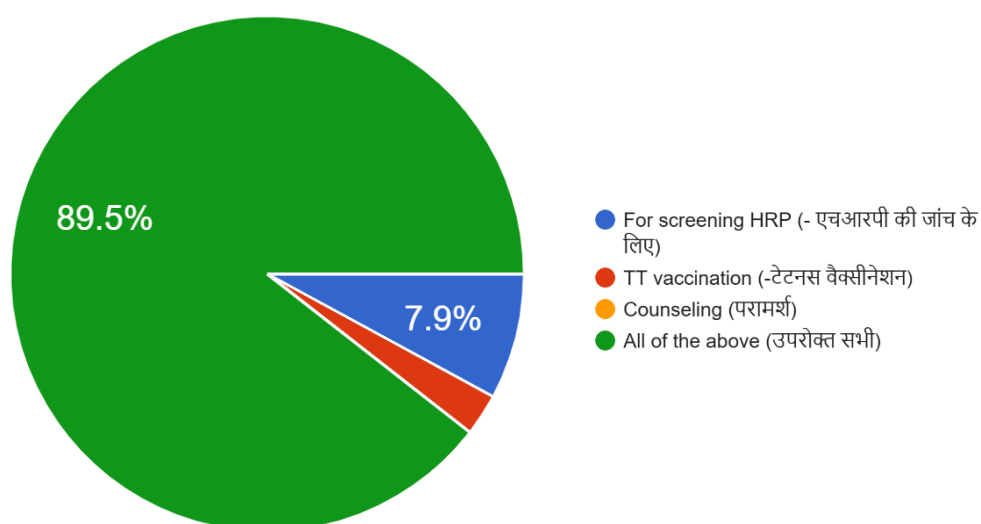


Figure 5. Knowledge of Key High-Risk Pregnancy Conditions among Nurses

As to the practice:

Figure 6, 68.4 percent of respondents indicated that they indeed had used a checklist when handling cases of high-risk pregnancy (HRP) moments on a regular basis. This implies that almost two-thirds of the staff nurses identified the value of structured tools in clinical decision-making and avoiding missing a critical step in taking care of a patient. A checklist is useful not only in facilitating systematic risk factor identification but also in ensuring that there is similarity among multiple providers. Nonetheless, the other 31.6 percent of nurses never implemented such checklists implying possible differences in practice habits and a potential of not noticing early warning signs of difficulties. This gap identifies the necessity to improve training and emphasize the regular utilization of standardized checklists, which would be a part of the HRP management.

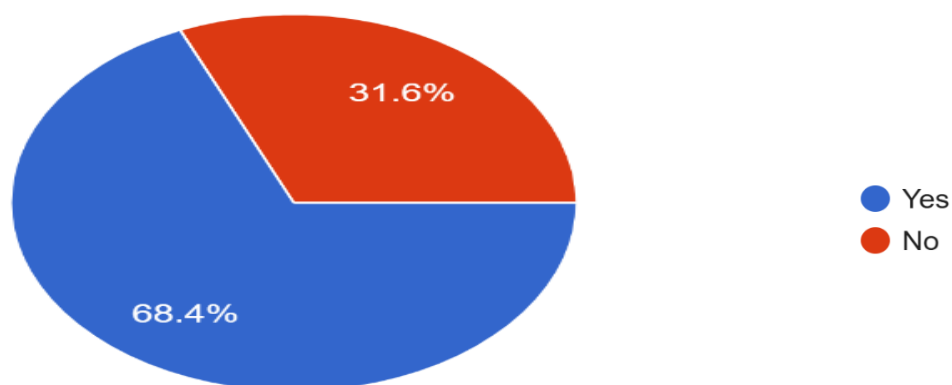


Figure 6. Percentage of staff nurses using checklist

Adherence to high standards of reporting was recorded as high percentage of staff nurses reporting high-risk pregnancy (HRP), 78.9%, cases to doctors as shown in Figure 7. Such practice is essential because the immediate presence of doctors can result in proper treatment and potential elimination of complications. Nevertheless, 21.1 percent of respondents never regularly reported HRPs, which may slow interventions. This dictates the importance of tightening of supervision and enhancing need to report on regular basis on effective HRP management.

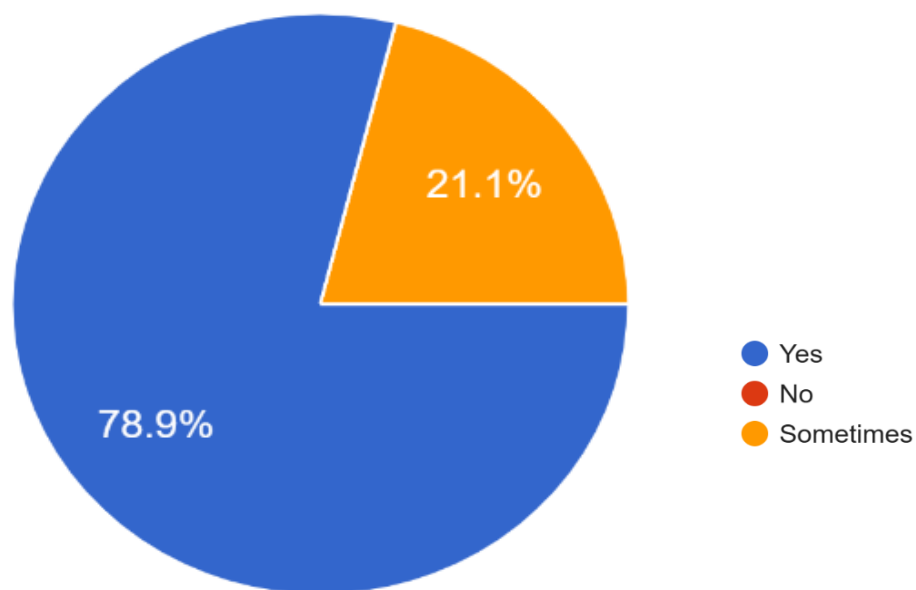


Figure 7. Doctor Confirmed HRP Cases

Figure 8 demonstrates that 57.9 percent of the staff nurses used Magnesium Sulphate managed Eclampsia independently with a fair degree of confidence in competency regarding this emergency procedure. Simultaneously, 37.5% used it only under the control of the doctor, which points out partial subordination to a higher force in emergency treatment. Although it is good to see that over 50 percent of the nurses were competent to work autonomously, the fact that a high number spring back on being supervised reveals that additional levels of skill-based training and confidence building are in order, to ascertain proper and efficient handling of eclampsia whenever it occurs.

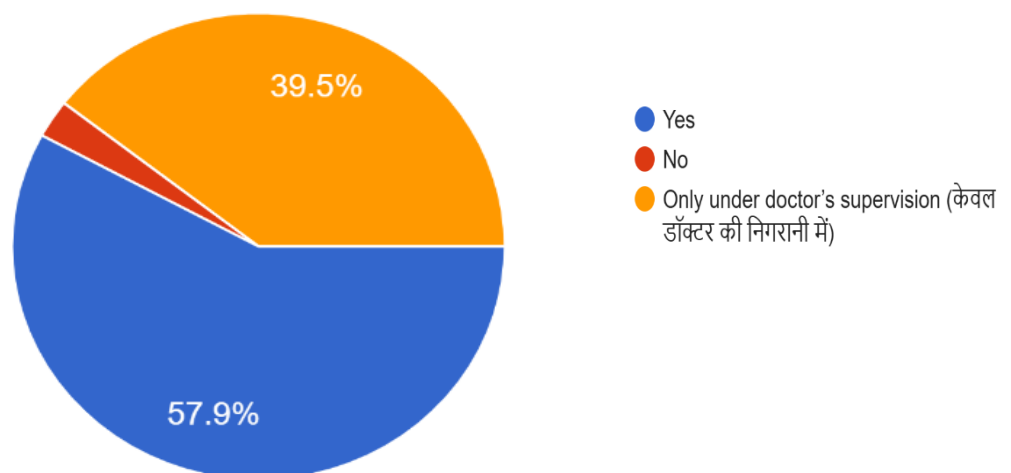


Figure 8. Percentage Of Staff Nurses Administering Magnesium Sulphate Independently and Under Supervision

In Figure 9, over a half of the staff nurses (52.50%) indicated that they experienced difficulties when managing high--risk pregnancy cases. The most frequently mentioned obstacles comprised the lack of needed supplies, including medications and equipment, few chances to take refresher courses, and the amount of combined workload with a significant number of patients. Such aspects limited them in providing timely and effective care most of the time and, according to them, even though they had sufficient theoretical knowledge. Not only companies providing such systemic obstacles to their nursing personnel but also to prevent the chance of complication detection and management to be missed. It would be essential to improve HRP care in the public-owned health faculties by addressing these issues using enhanced resource deployment, frequent skills-based training, and enhanced workload management.

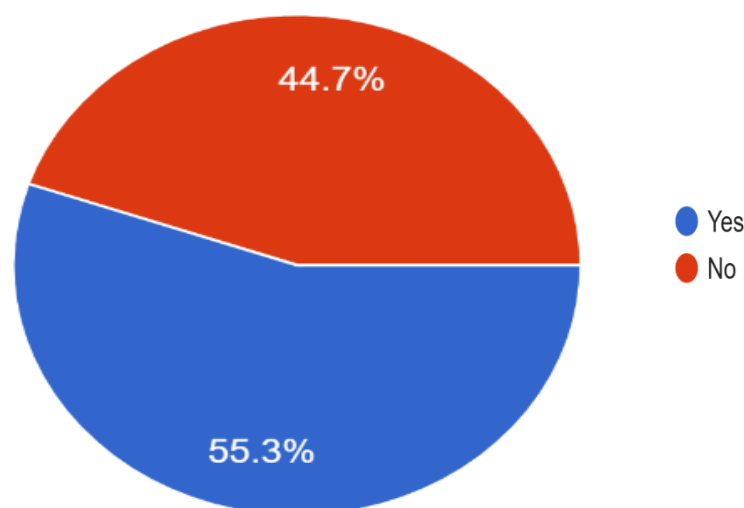


Figure 9. Percentage Of Staff Nurses Facing Challenges in Managing HRP

The research also identifies the existent disconnect between theory and practice with both issues being largely determined by lack of recent training and job-related issues enforced at the workplace. A similar conclusion in the literature of related studies indicates that a structured, simulation-strength training enhances HRP management competency.

It infers that more practical trainings, more explicit clinical guidelines and favourable supervision plays an essential role in managing the risky pregnancies and maternal health status.

Based on these key findings, it becomes apparent that there is a need to intervene in the key findings to improve nursing capacity and the quality of care in public health facilities that manage high-risk pregnancies in this region.

Discussion

This study has been conducted to evaluate knowledge and practices of staff nurses regarding the treatment of high-risk pregnancies (HRPs) and to investigate the level of concordance between the theoretical concepts they received and their real practice. The majority presented with a good understanding of the prevalent high-risk disorder's pre-eclampsia and gestational diabetes. Such degree of knowledge can be attributed to the fact that nurses are considered as the frontline in antenatal and maternity care. The necessary knowledge including the usual haemoglobin values of pregnant women and the adequate administration of Magnesium Sulphate in the

prevention and treatment of eclampsia was on a very good scale among the staff on the nursing unit. It was also found however that only a minority (23.7%) had received formal training on HRP management in the recent past. This small amount of training recently implies the constant lack of continuing professional education, which can influence clinical confidence and the possibility to apply the revised evidence-based practices. This is comparable to what other studies have found before such as the study by Dalal et al. (2022) where it is noted that lack of regular training and ambiguity of the referral process pose a challenge to frontline health workers in rural areas. Regarding clinical practice, albeit over half of the nurses expressed confidence in being able to administer Magnesium Sulphate, regardless of eclampsia cases independently, a certain number showed that they have only administered such cases when under direct supervision. This tendency indicates both the clinical reluctance to action or advice-seeking even when the intervention is applicably within the nursing scope of practice. Similar patterns have been reported by Ramadurg et al. (2016) in Karnataka, where the community health workers had also reported a feeling of uncertainty in dealing with hypertensive complications based on the lack of adequate hands-on experience.

In addition, more than half of the participants noted they experience challenges in handling the cases of HRP, and explained that this is caused by systemic limitations, including the lack of resources, lack of updated

knowledge and patient loads. These issues indicate more health system problems that could be negatively affecting moving knowledge to effective practice. Other data, such as Bihar (2019) support the idea that structured simulation-based training should yield significant increases in the competence and confidence of the nurses in managing high-risk obstetric situations, which points to the possible usefulness of capacity-building programs.

Overall, the article finds the existence of the concrete discrepancy between theoretical knowledge and real practice governed by both personal and structural aspects. These gaps must be mediated by frequent hands-on training and transparent clinical guidelines and positive supervision. By reinforcing these points, nurse performance can be boosted, early detection can be made more effective and timely management of high-risk pregnancies will be able to achieve satisfactory maternal and neonatal health outcomes in the area.

Recommendations

Upgrade Frequent and Systematic Training:

Regular, practical and simulation exercises on the recent guidelines and to handle complicated cases of gestation e.g. pre-eclampsia, eclampsia, and gestational diabetes. Nursing staff is to be trained on/off the job (refresher training included) and be required to update their knowledge.

Establish/Use Open Clinical Practices and Checklists:

Offer standard clinical guidelines and easy to use checklists in early identification and treatment of HRPs. This could assist in the minimising of practice-to-practice variability and aiding nurses to adhere to evidence-based care pathways.

Facilitate Self-Opinionated Clinical Decision Making:

Promote confidence-building interventions, like supervised practice and mentorship, the nurses being able to handle HRP issues through their own means like dispensing of Magnesium Sulphate to eclampsia patients without being over-dependent on physician supervision.

Increase the Supply of Resources:

Where health facilities are concerned, make sure that the necessary resources (i.e. drugs (Magnesium Sulphate), diagnostic tools, patient monitoring devices, and others are present).

Enhance Rehabilitative Supervision and Supervision:

Institute or appoint regular supervisory visits and create a helping environment and support system that will guide, provide feedback, and encouragement to the nurses to effectively use their knowledge and skills.

Support the concept of Continuous Professional Development:

Participation in the discussion of cases, updates and transfer of knowledge to support prenatal care with high-risk pregnancies should be encouraged to encourage education through real clinical cases.

Target on Management of Workload:

Overcome the aspects of staff shortages and high patient load to minimize burnout and allow nurses to pay proper attention to high-risk cases.

Implementation Strategies**Partnership with the Training Institutes and Masters:**

Collaborate with nursing colleges, maternal health experts and simulation training-focused organizations to develop and provide quality HRP management programs.

Technology/E-Learning:

Implement e-learning, mobile applications that grant non-stopped access to educational resources, protocols, and decision-making aids to nurses.

National and state health programs integration:

Training and capacity building efforts to existing maternal health programs at the governmental level in order to capitalize on resources, monitoring systems and funding.

Data-driven Quality Improvement:

It is important to develop data management systems to regularly collect data on HRP cases, nurse performance and patient outcomes so that they can be aware of gaps and measure the effects of interventions over time.

Rewards and Praise:

Incentive programs and recognition programs should be introduced among the nurses who have excelled in the management of HRP, to motivate them to behave best.

With the following recommendations and strategies, the competence of nurses within these Karauli public health facilities can be improved and the quality of care thus provided to high-risk pregnancies enhanced, finally contributing to the reduction of maternal and newborn morbidity and mortality

APPENDIX

INSTRUMENTATION

CONSENT FORM

Title of the Study:

**Knowledge and Practices of Health Care Providers Regarding
Management of High-Risk Pregnancies in selected Public Health care
facilities in Karauli, Rajasthan.**

Investigator: Vanshika Awasthi

Post Graduate Student, IIHMR Delhi

Dear Participant,

You are invited to participate in a research study that aims to assess the knowledge and practices of staff nurses regarding the management of high-risk pregnancies in selected public health facilities.

Your participation in this study is voluntary. You may choose not to answer any question or withdraw from the study at any point without facing any negative consequences.

The information collected through this questionnaire will be used only for academic and research purposes. Your identity and responses will be kept strictly confidential, and no personal details will be published or disclosed.

There are no known risks associated with your participation. Your input will help identify areas for improvement in nursing practices and contribute to better maternal healthcare.

Consent Statement:

By proceeding to fill out the questionnaire, you confirm that:

- You have read and understood the purpose of the study.
- You voluntarily agree to participate in the study.
- You are aware that your participation is confidential, and you can withdraw at any time.

Do you agree to participate in this study?

☐ Yes

☐ No

TOOL FOR DATA COLLECTION

Questionnaire: Knowledge and Practices of Health care providers regarding Management of High-Risk Pregnancies.

Section A: Demographic Profile

1. **Age:** _____ years

2. **Gender:**

- a. Female
- b. Male
- c. Other

3. Qualification:

- a. ANM
- b. GNM
- c. B.Sc. Nursing
- d. M.Sc. Nursing

4. Years of Experience: _____ years

5. Current Place of Posting:

- a. District Hospital (DH)
- b. Community Health Centre (CHC)

6. Area of Work:

- a. Labor Room
- b. ANC Clinic
- c. Maternity Ward
- d. Others: _____

7. Have you attended any training on high-risk pregnancy in the last year

- a. Yes
- b. No

If yes, mention the name/duration: _____

Section B: Knowledge of High-Risk Pregnancy Conditions

1) Which of the following is considered a high-risk condition during pregnancy?

- a. Gestational Diabetes
- b. Normal BP
- c. Mild Anaemia
- d. All the above

2) Pre-eclampsia is characterized by:

- a. High blood pressure and protein in urine
- b. Low blood sugar
- c. Nausea and vomiting
- d. Bleeding during pregnancy

3) What is the normal haemoglobin level in pregnancy?

- a. <7 g/dl
- b. 7-10 g/dl
- c. ≥ 11 g/dl
- d. ≥ 13 g/dl

4) Which investigation is important for identifying GDM (Gestational Diabetes Mellitus)?

- a. CBC
- b. RBS
- c. OGTT

d. Urine Culture

5) Twin pregnancy is considered high-risk due to:

- a. Preterm labor risk
- b. Nutritional deficiency
- c. Risk of fetal growth restriction
- d. All of the above

6) How frequently should BP be monitored in a high-risk pregnant woman?

- a. Once a week
- b. Once a month
- c. As per clinical condition
- d. Every 3 days

7) A pregnant woman with seizures should be suspected of:

- a. Anaemia
- b. Eclampsia
- c. Infection
- d. Preterm labor

8) Which drug is commonly used to prevent seizures in eclampsia?

- a. Oxytocin
- b. Magnesium Sulphate
- c. Nifedipine
- d. Paracetamol

9) Antenatal visits are important for:

- a. Screening high-risk conditions
 - b. Giving TT
 - c. Counselling
 - d. All of the above
- 10) **Anaemia in pregnancy is most commonly due to:**
- a. Iron deficiency
 - b. Vitamin A deficiency
 - c. Dehydration
 - d. None of the above

Section C: Practices in Management of High-Risk Pregnancies

1. **Do you screen all pregnant women for high-risk conditions during ANC?**
- a. Always
 - b. Sometimes
 - c. Never
2. **Do you follow any checklist or guidelines for identifying high-risk pregnancies?**
- a. Yes
 - b. No
3. **How do you manage a case of pre-eclampsia in the labor room?**
- a. Refer to higher facility
 - b. Administer antihypertensives

- c. Monitor BP and urine output
- d. Inform doctor and follow instructions
- e. Administer Magnesium Sulphate
- f. Others: _____

4. What steps do you take when a pregnant woman reports blurred vision or severe headache?

- a. Check BP immediately
- b. Inform doctor immediately
- c. Ask the woman to take rest and monitor
- d. Administer prescribed medication
- e. Refer to emergency/obstetrician
- f. Others: _____

5. Do you report high-risk pregnancy cases to your supervisor or doctor?

- a. Yes
- b. No
- c. Sometimes

6. Do you administer Magnesium Sulphate in eclampsia cases?

- a. Yes
- b. No
- c. Only under doctor's supervision

7. Do you maintain records of HRP cases?

- a. Yes

b. No

8. Have you ever faced difficulty in managing an HRP due to lack of resources or training?

a. Yes

b. No

If yes, please mention briefly: _____

8. Do you participate in case discussions or updates related to HRPs?

a. Yes

b. No

c. Occasionally

9. Suggestions to improve care for high-risk pregnancies in your facility:

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