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EMERGING NEED OF OBSTERIC CRITICAL CARE UNIT FOR BETTER MATERNAL OUTCOME –PERSPECTIVE OF OBSTETRICIANS

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ABSTRACT

BACKGROUND: Pregnancy, while a normal physiological state that may lead to pathological states due to the unique maternal-fetal interface and associated stressors. Critical illnesses during pregnancy arise from preexisting conditions, coincidental diseases, or pregnancy- specific complications. The increasing prevalence of severe maternal morbidities, coupled with conditions like hypertensive disorders and postpartum hemorrhage, underscores the urgent

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need for obstetric critical care units (CCUs).

MATERIALS AND METHODS: It is an cross sectional study employed an questionnaire-based design involving 200 obstetricians from government hospitals, corporate units, and nursing homes. The questionnaire, comprising 25 items, explored their experiences with obstetric critical care. Additionally, a review of literature and analysis of data from CCUs was conducted to evaluate trends, resource allocation, and protocol efficacy. Simulation-based training methods were utilized to enhance emergency response preparedness.

RESULT: In India 3-8% of parturients require CCU admission ,with two-thirds being unanticipated Findings highlighted resource gaps, inadequate staff training and inconsistent protocols as major barriers to effective care delivery.

CONCLUSION: The study highlights the need for optimized resource allocation, evidence based policies and enhanced training programs .Standardized guidelines and multidisciplinary approaches are essential for achieving better health outcomes.

KEYWORDS- Obstetric critical care unit (OCCU),Maternal outcome, Hypertensive disorders in pregnancy, Postpartum Hemorrhage, Resource allocation in obstetrics, Obstetric Emergency Management, Standardized Obstetric protocols, Maternal Mortality reduction ,High risk pregnancy care, Multidisciplinary approach in maternal care.

INTRODUCTION

- Pregnancy or the puerperium can become complicated by acute physiological derangements from various aetiological causes which are either obstetrical or non obstetrical and could result in multiple organ dysfunction with limitation of functional reserves [1] . Hemorrhagic conditions , hypertensive diseases and sepsis are considered the predominant complications that can lead to maternal death[2] Lack of clinical awareness related to various pregnancy ailments can be observed in both the literate and illiterate sections of the society [3]. Timely transportation of critically ill obstetric patient or for that matter any sick patient is also a tough task as many villages and remote areas are not properly connected with cities[4] Admission of pregnant women to an ICU is considered as an objective marker of severe maternal morbidity[5]

Caring of critically ill obstetric patient ideally requires a dedicated obstetric critical care unit which should be managed by co – ordinated efforts of a multidisciplinary team consisting of an obstetrician, anesthiologist, intensivist and transfusion specialist who can design various structural and functional aspects of obstetric critical care unit[6]

- It is imperative to state that the poor outcome of the critically ill parturients in resource limited settings has mix of risk factors involving unbooked population, presentation at secondary health facilities, late referral from non hospital delivery sites. These factors contribute to increase morbidity and mortality.[7]

- Suboptimal care and delay to recognize sudden maternal deteriorations and lack of prompt intervention and capacity to provide satisfactory organ system support even at advanced centres of care represent inherent system failures that would contribute to the burden of care[8]

AIM

- To assess the need for obstetric CCUs and challenges.
- To enhance maternal care through optimized resource allocation.

OBJECTIVES

- To analyze maternal critical conditions requiring intensive care and to evaluate obstetricians perspectives on critical care units.
- To identify gaps in resources ,infrastructure ,and training
- To assess the impact of protocols of management of obstetric emergencies and improve maternal outcomes through interventions.

MATERIALS AND METHODS

Place of study –The study was carried out in Department of Obstetrics and Gynaecology at Konaseema Institute of Medical Sciences & Research Foundation Amalapuram, Dr .B.R.A.Konaseema District ,Andhra Pradesh ,India

Type of study- Cross Sectional Study

Duration of study – 3 months (October 2024 to December 2024).

Study participants- Obstetric Consultants

Sampling Technique – Convenience Sampling

Statistical analysis-The collected data were processed using SPSS version 22

Ethical Approval – Ethical approval was obtained from the Institutional Ethics Committee (IEC) of KIMS &RF, Amalapuram ,prior to the commencement of the study.

Data Collection Procedure –Data collected from obstetric consultants using google forms

Inclusion Criteria

- Obstetricians actively involved in maternal care (those working in government hospitals, medical colleges, corporate health care units or private nursing home).
- Participants who gave consent
- Hospitals with CCU/ICU facilities for Obstetric patients.

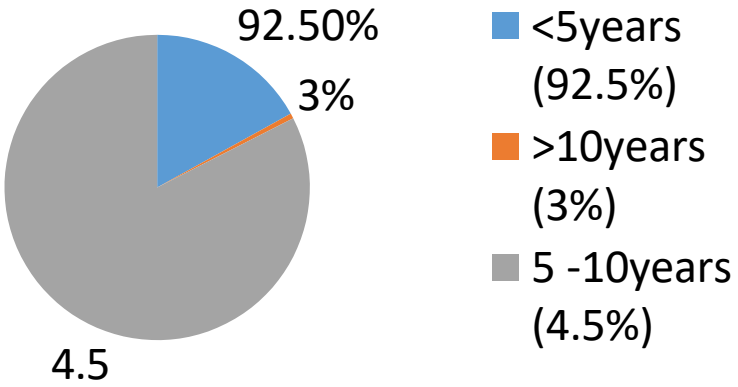
Exclusion Criteria

- Obstetricians not directly managing critical maternal cases (those exclusively involved in outpatient services or antenatal care.
- Participants who didn’t gave consent.
- Hospitals without CCU/ICU facilities
- Other specialist consultants.

RESULTS AND DISCUSSION

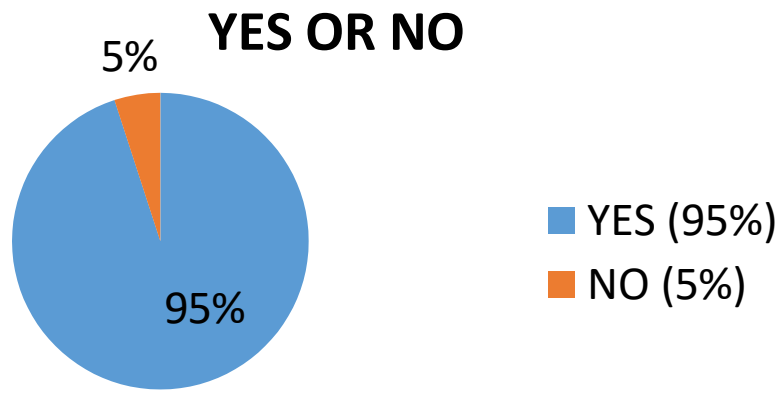
YEARS OF EXPERIENCE AS A PRACTICE AS OBSTETRICIAN

PARAMETER	FREQUENCY	%
<5years	185	92.5%
>10years	6	3%
5-10years	9	4.5%
TOTAL	200	100%



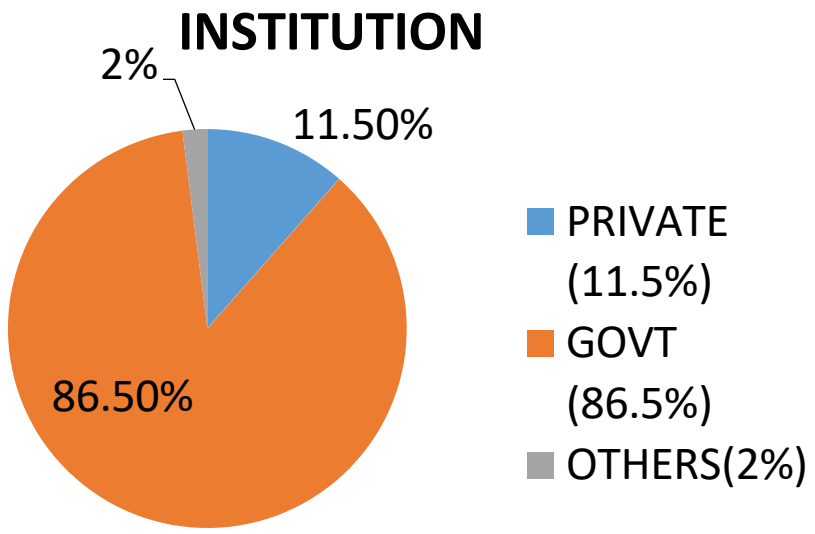
WORKING IN INSTITUTION

PARAMETER	FREQUENCY	%
YES	190	95%
NO	10	5%
TOTAL	200	100%



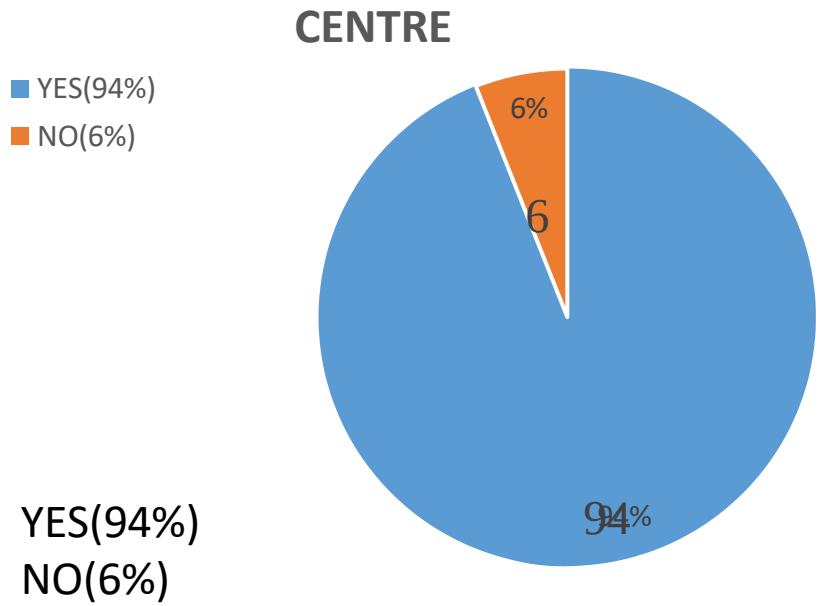
TYPE OF INSTITUTION

PARAMETER	FREQUENCY	%
GOVT	173	86.5%
PVT	23	11.5%
OTHERS	4	2%
TOTAL	200	100%

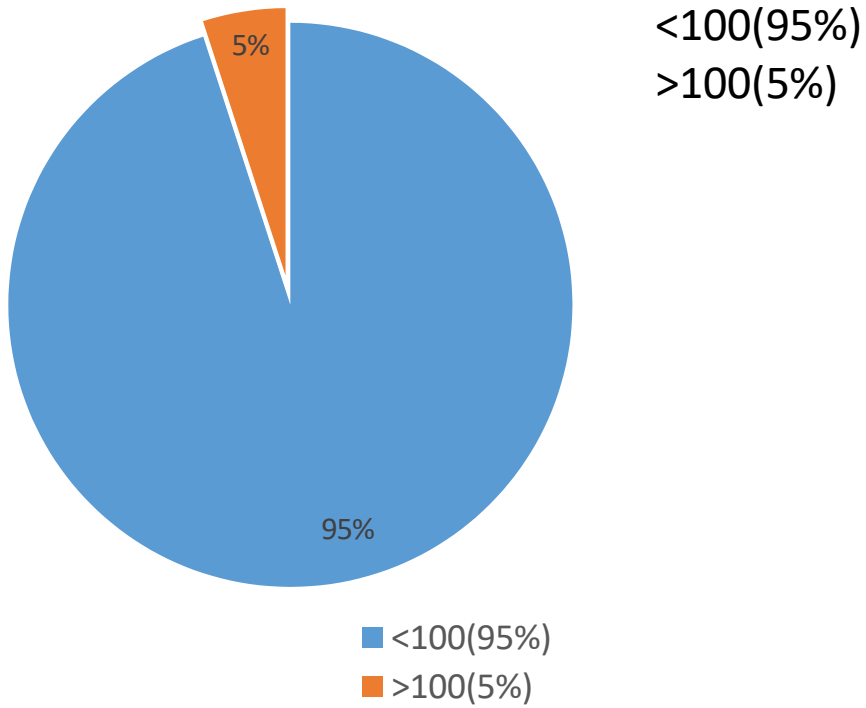


TERITARY CARE CENTRE

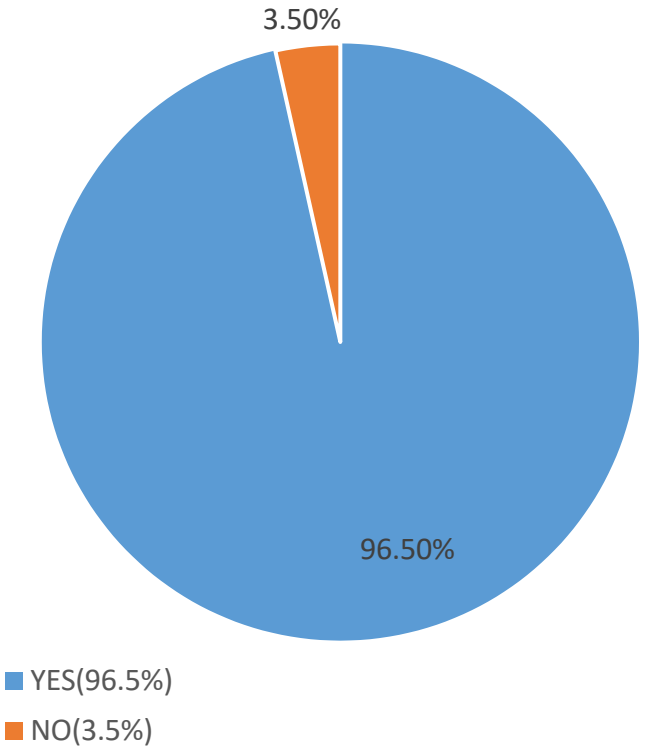
PARAMETER	FREQUENCY	%
YES	188	94%
NO	12	6%
TOTAL	200	100%



TOTAL NUMBER OF OBSTETRIC BEDS



.ICU BEDS AVAILABLE FOR OBSTETRIC CASES IN YOUR HOSPITAL



- INCIDENCE OF OPERATIVE DELIVERY

PARAMETER	FREQUENCY	%
<50%	181	90.5 %
>50%	19	9.5%
TOTAL	200	100

- DELAY IN AVAILABILITY OF ICU BEDS

PARAMETER	FREQUENCY	%
YES	15	7.5%
NO	185	92.5%
TOTAL	200	100%

DELAY IN AVAILABILITY OF INTENSIVIST/ANAESTHESIOLOGIST

PARAMETER	FREQUENCY	%
YES	9	4.5%
NO	191	95.5%
TOTAL	200	100%

REQUIRING VENTILATOR / NIV SUPPORT

PARAMETER	FREQUENCY	%
YES	24	12%
NO	176	88%
TOTAL	200	100%

REQUIRING BLOOD PRODUCTS TRANSFUSION

PARAMETER	FREQUENCY	%
YES	196	98%
NO	4	2%
TOTAL	200	100%

REQUIRING VASOPRESSORS

PARAMETER	FREQUENCY	%
YES	188	94%
NO	12	6%
TOTAL	200	100%

OBSTETRIC COMPLICATIONS

INCLUDING DEATHS IN PREVIOUS YEARS

PARAMETER	FREQUENCY	%
<10	192	96%
>20	1	0.5%
10-20	7	3.5%
TOTAL	200	100

WHAT ARE THE MOST COMMON CRITICAL CONDITIONS YOU ENCOUNTER IN OBSTETRIC CARE

PARAMETER	FREQUENCY	%
HYPERTENSIVE DISORDERS (Eg eclampsia,pre-eclampsia)	188	94%
AMNIOTIC FLUID EMBOLISM	2	1%
POST PARTUM HAEMORRHAGE	10	5%
TOTAL	200	100%

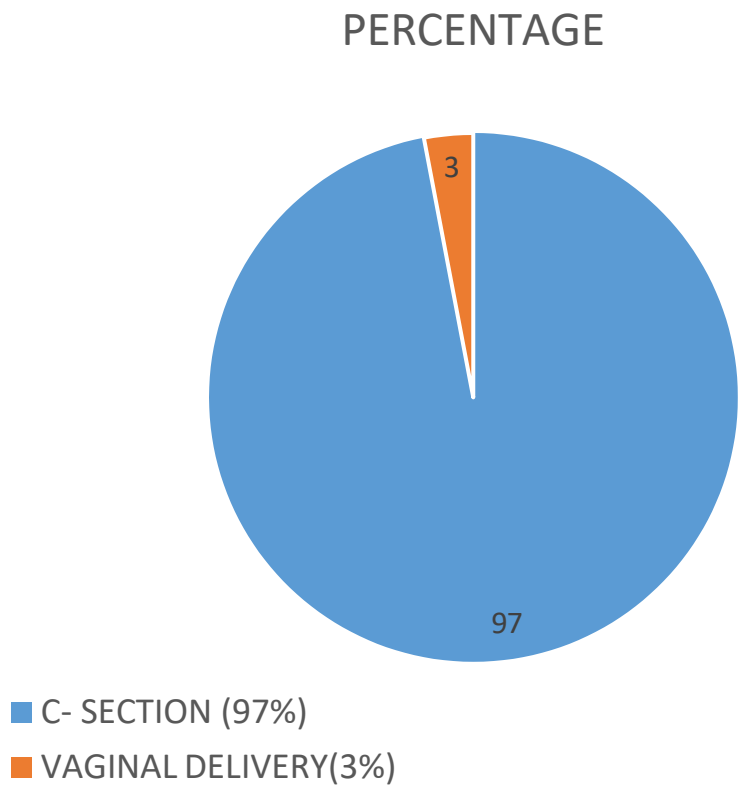
	VALUE	DF	
PEIRSON CHI SQUARE	13.280	4	0.010
RATIO	4.888	4	0.299
NUMBER OF VALID CASES	200		

CHI SQUARE VALUE – 13.280

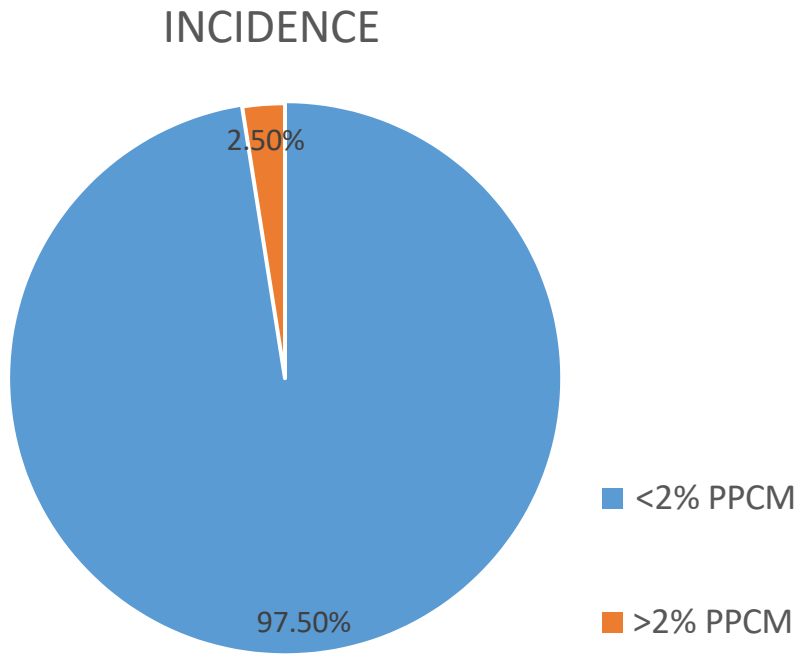
P VALUE – 0.010

SO P< 0.05 SIGNIFICANT

Q15. MORE COMPLICATIONS FOLLOWING



Q16.INCIDENCE OF PPCM IN YOUR INSTITUTION



In your opinion how does the lack of a dedicated Obstetric critical care unit impact maternal outcomes.

PARAMETER	FREQUENCY	%
SIGNIFICANTLY WORSENS OUTCOMES	93	46.5%
SLIGHTLY WORSENS OUTCOMES	102	51%
IMPROVES OUTCOMES	4	2%
NO IMPACT	1	0.5%
TOTAL	200	100%

CHI SQUARE VALUE = 17.217
P VALUE =0.045
SO P <0.05 SIGNIFICANT

Do you believe there is a need for dedicated OCCU in your facility?

PARAMETER	FREQUENCY	%
STRONGLY AGREE	175	87.5%
AGREE	18	9%
NEUTRAL	5	2.5%
DISAGREE	2	1%
TOTAL	200	100%

	VALUE	DF	
CHI SQUARE	17.217	9	0.045
RATIO	12.638	9	0.180
NUMBER OF VALID CASES	200		

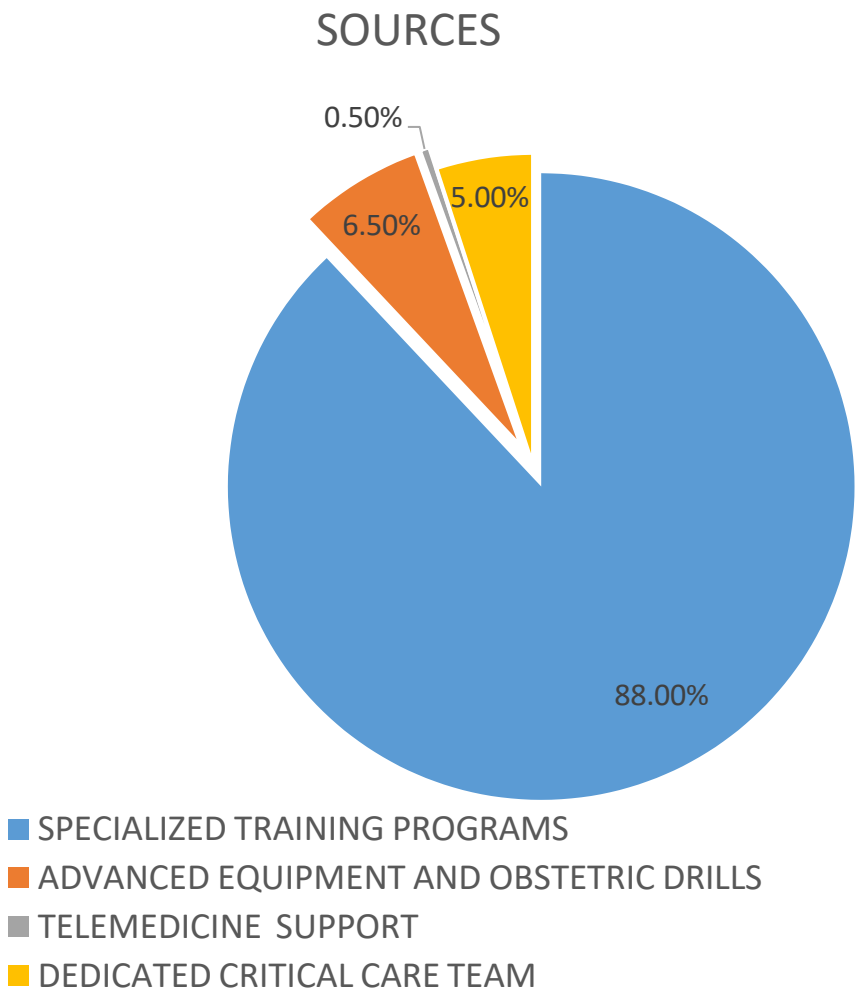
DO YOU THINK THAT THE CURRENT RESOURCES IN YOUR FACILITY ARE ADEQUATE TO MANAGE CRITICALLY ILL OBSTETRIC PATIENTS

PARAMETER	FREQUENCY	%
NO	7	3.5%
PARTIALLY	10	5.0%
YES	183	91.5%
TOTAL	200	100%

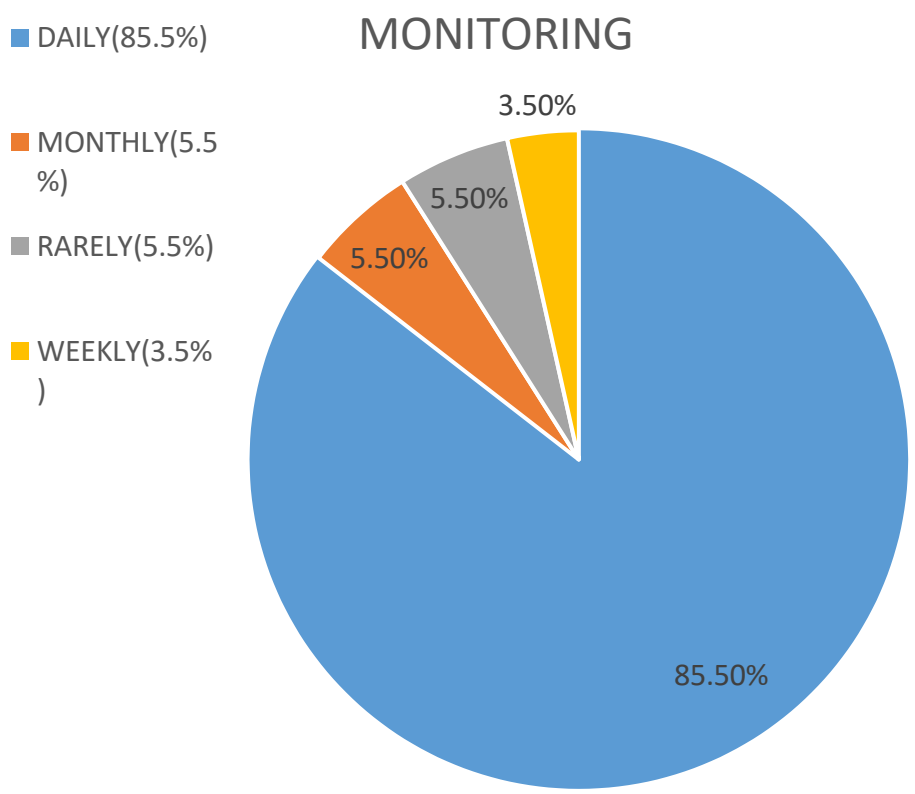
WHAT CHALLENGES DO YOU ANTICIPATE IN ESTABLISHING AN OCCU IN YOUR FACILITY

PARAMETER	FREQUENCY	%
SPACE OR INFRASTRUCTURE LIMITATIONS	169	84.5%
FINANCIAL CONSTRAINTS	13	6.5%
SHORTAGE OF TRAINED STAFF	17	8.5%
OTHERS	1	0.5%
TOTAL	200	100%

WHAT ADDITIONAL SOURCES OR TRAINING DO YOU BELIEVE WOULD IMPROVE THE MANAGEMENT OF CRITICALLY ILL OBSTETRIC PATIENTS



HOW OFTEN DO YOU ENCOUNTER CRITICALLY ILL OBSTETRIC PATIENTS



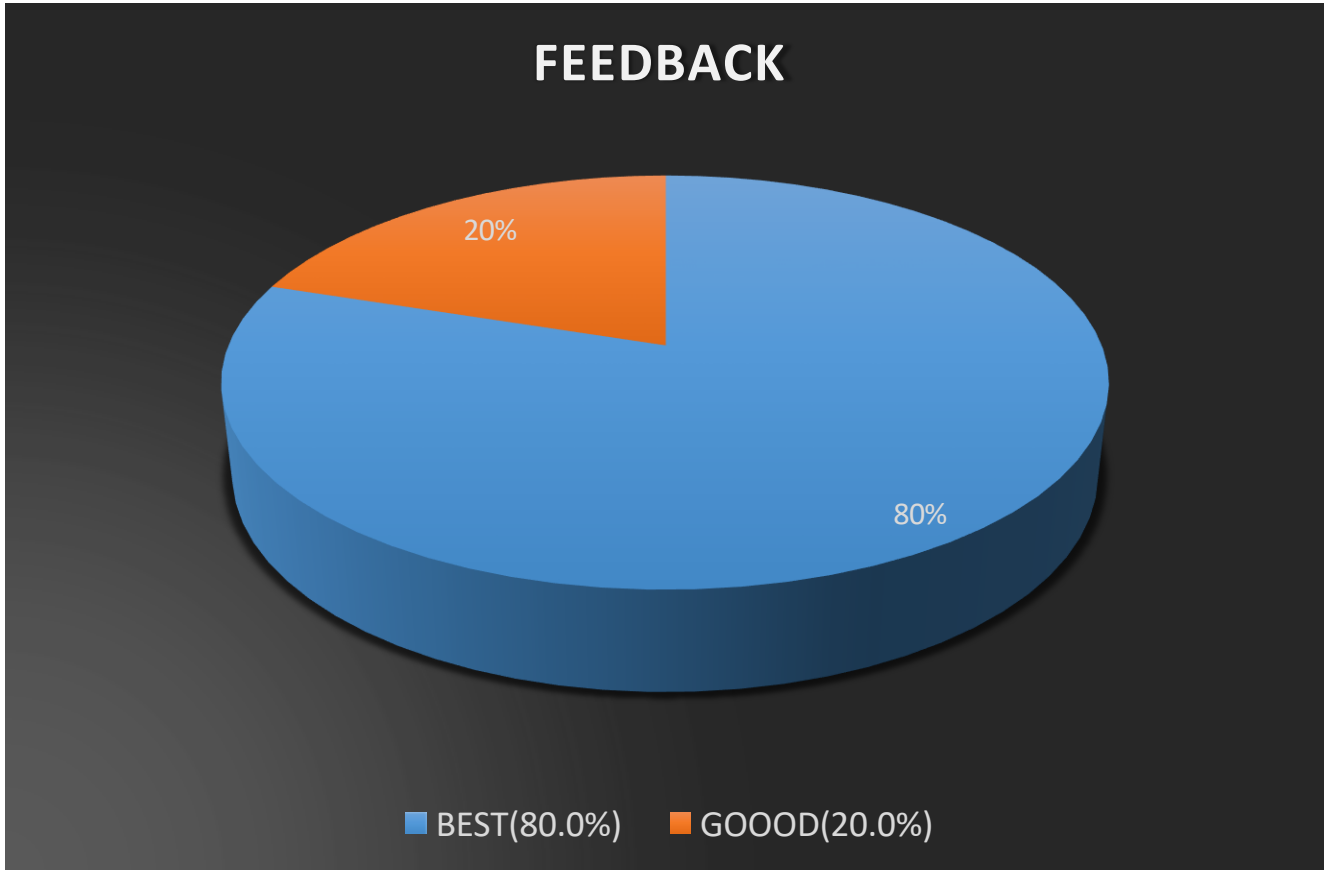
WERE THERE ANY IDENTIFIABLE ANTENATAL RISK FACTORS

PARAMETER	FREQUENCY	%
YES(MALNUTRITION ILLITERACY,NEGLIGENCE IN ANTENATAL CHECKUPS) 97%	197	97%
NO(3%)	3	3%
TOTAL	200	100

WERE THERE DELAYS IN SEEKING CARE OR REFERRAL

PARAMETER	FREQUENCY	%
YES	22	11%
NO	178	89%
TOTAL	200	100

- Q25.FEEDBACK REGARDING QUESTIONNAIRE



DISCUSSION

- This study emphasizes the critical need for obstetric critical care units(CCUs) to address severe maternal morbidities effectively as it should be managed by coordinated efforts of a multidisciplinary team consisting of an obstetrician, anesthesiologist ,intensivist and transfusion specialist who can design various structural and functional aspects of obstetric ICU.

- Recruitment of trained staff and Obstetric drills, simulation of junior specialists and implementation of rotational policy with compulsory posting in rural areas, giving higher pay scales and incentives to specialists and paramedical staff working in rural areas ,providing them accommodation and recreational facilities and monthly posting of postgraduate trainees under supervision can tide over the shortage of manpower demand to a large extent.
- Newer health policies can be formulated , funds can be relocated which aims at upgradation of the existing ICUs and high dependency units in these situations.

CONCLUSION

- This study emphasize the need for dedicated Obstetric CCUs to improve maternal outcomes. Study highlights key gaps and challenges includes resource limitations ,inadequate staff training , and inconsistent protocols which contribute to maternal care in critical situations. Obstetric and non-obstetric conditions requiring monitoring ,Hypertension and hemorrhage are leading causes of obstetric emergencies causing maternal morbidity and mortality.
- Multidisciplinary approach involving obstetricians ,intensivist, anesthesiologist and transfusion specialist is essential for comprehensive maternal and neonatal care .Diagnostic and management algorithms improve outcomes.Maternal and fetal safety remain top priorities.

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