

ORIGINAL ARTICLE

EVALUATION OF AVAILABILITY, READINESS AND SATISFACTION TOWARDS BASIC EMERGENCY OBSTETRIC AND NEWBORN CARE SERVICES OF MOTHERS OF REPRODUCTIVE AGE AT PRIMARY HEALTH FACILITIES: A CROSS SECTIONAL STUDY

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ABSTRACT

Background: Pakistan has the highest maternal mortality and neonatal mortality rate. Despite global efforts to reduce these rates, Pakistan still faces significant challenges, especially in rural areas where healthcare access is limited. Emergency obstetric and neonatal care (EmONC) services are crucial for reducing maternal and neonatal mortality. This study evaluated the availability and readiness of basic emergency obstetric and newborn care services at primary health care facilities and assessed clients' satisfaction.

Materials & Methods: A cross-sectional study was conducted at two randomly selected health facilities in District Jamshoro, Sindh from September 2023 to March 2024. The 285 female participants of reproductive age were selected through convenient sampling and sample size calculated via OpenEpi. Data were collected using the WHO's Service Availability and Readiness Assessment (SARA) tool and a structured questionnaire, followed by statistical analysis.

Results: Both facilities showed high readiness, offering all seven BEmONC functions. Client satisfaction was high: 83.2% for healthcare practitioners, 95.8% for lab services, and 96.1% for hygiene. Positive feedback was also given for free delivery services, privacy, breastfeeding support, and consultation time.

Conclusion: Primary healthcare facilities effectively deliver BEmONC services, with adequate resources, infrastructure, and skilled staff to manage obstetric and neonatal emergencies. High satisfaction rates reflect quality care, professional conduct, and clean environments.

KEY WORDS: BEmONC; Health facilities; Newborn care; Primary care provider; Readiness

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INTRODUCTION

Asia, particularly Pakistan, has the highest maternal mortality rates worldwide, making maternal mortality a leading cause of death among women of reproductive age.¹ Despite a global decline in maternal and

neonatal deaths between 2000 and 2020, pregnancy-related complications still claim the lives of over 800 women and 6,700 newborns daily. In 2020 alone, there were 287,000 maternal deaths and 2.4 million neonatal deaths globally.²⁻³

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Nearly 99% of maternal deaths occur in low- and lower-middle-income countries, including Pakistan, contributing to 70% of the global maternal mortality burden.⁴ In 2019, Pakistan recorded 186 maternal deaths per 100,000 live births and a neonatal mortality rate of 42 per 1,000 live births, with rural areas experiencing higher rates than urban regions.⁵⁻⁶ Sindh province has an even higher maternal mortality ratio of 345 per 100,000 live births, reflecting significant disparities in healthcare access across different

regions.⁷ Pakistan’s neonatal mortality rate (42/1,000) is among the highest in the world, far exceeding rates in neighboring countries such as Sri Lanka (5/1,000), Nepal (20/1,000), and India (23/1,000).³ The Sustainable Development Goals (SDGs) aim to reduce global maternal mortality to fewer than 70 deaths per 100,000 live births by 2030. Pakistan is working toward this goal by striving to lower maternal mortality to 70 per 100,000 and neonatal mortality to 12 per 1,000 live births by 2030.⁸ Leading causes of maternal deaths in Pakistan include obstetric complications such as hemorrhage, pre-eclampsia, infections, and unsafe abortions, with anemia also being a contributing factor. Prematurity, asphyxia, and infections are the primary causes of neonatal deaths.⁹

Ensuring high-quality care during pregnancy, childbirth, and the postpartum period is critical for improving maternal and neonatal health outcomes. Skilled healthcare providers equipped to detect complications, provide timely interventions, and perform life-saving procedures or referrals are essential for reducing maternal and neonatal mortality.¹⁰ Safe delivery environments and the presence of trained birth attendants significantly improve health outcomes for both mothers and newborns.¹¹ This study assessed the availability and preparedness of primary health-care facilities to provide basic emergency obstetric and newborn care (BEmONC) services, along with evaluating client satisfaction among mothers who gave birth at these facilities.

MATERIAL AND METHODS

A descriptive cross-sectional research was performed from September 2023 to March 2024 at simply randomly selected Basic health unit (BHU) Khuda ki Basti of Kotri Taluka and BHU Thana Ahmed Khan of Thana Bula Khan Taluka which were supposed to provide BEmONC services in district Jamshoro. The sample of 285 participants were calculated via OpenEpi, taking 78.5% prevalence of clients’ satisfaction¹², margin of error 0.05 and the non-probability convenient sampling was used to select respondents who delivered at these facilities. Married women of reproductive age with an abortive pregnancy or delivery in the postnatal ward, who consented to participate were included in the study while mothers who unable to communicate due to illness or referred to tertiary care after delivery were excluded. The data were collected through the WHO Health Facility Service Availability and Readiness Assessment (SARA) tool which evaluated facility availability and preparedness through yes/no questions, with BEmONC service readiness verified by direct observation and delivery record analysis for seven key functions. The second tool was assessed client satisfaction with BEmONC services through face-to-face interviews with closed-ended structured questionnaire designed by relevant literatures¹³⁻¹⁵,

divided into socio-demographic variables, obstetric history, and satisfaction level, rated on a 5-point Likert scale (0= strongly dissatisfied, 1= dissatisfied, 2= neutral, 3= satisfied, 4= strongly satisfied). The Statistical Package for Social Sciences (SPSS) 26 was used for analysis of data and expressed in frequencies and percentages. Approval was obtained from Peoples primary health care Initiative (PPHI) District Jamshoro and the Ethics Review Committee. Participants gave informed consent, and anonymity was ensured.

RESULTS

The study reveals that both of Jamshoro district’s main health care facilities provide conventional vaginal birth as well as each of the seven indicator functions of Basic Emergency Obstetric and Newborn Care as shown in Table 1.

Table 1: BEmONC Service Availability at Primary health care facilities

Availability of services at Health facilities	BHU Thana Ahmed Khan	BHU Khuda ki Basti
Delivery service	Available	Available
Parenteral administration of antibiotics for mothers	Available	Available
oxytocin drug	Available	Available
Anticonvulsants	Available	Available
Assisted vaginal birth	Available	Available
Placenta removed manually	Available	Available
Manually removing retained products of conception	Available	Available
Resuscitation of newborns	Available	Available

Table 2 shows how equipped health facilities are for BEmONC services in three areas: qualified staff with protocols, necessary supplies and equipment, and required medications and commodities.

Table.3 depicts that around 285 mothers participated in the study, whom the majority were between 21-34 years of age (53.3%), housewives (75.1%), not educated (43.5%), family income less than 25000 rupees (57.2%) and from rural areas (65.6%).

Table 4 describes that the most had desired pregnancies (71.2%), 78.9% attended ANC follow-ups; half had planned admissions (50.5%), 57.5% used private transport, 93% arrived with a companion, 88.4% of deliveries were spontaneous, with 89.1% having normal maternal health, 12.6% of newborns had post-birth problems, primarily respiratory distress (44.4%), 59.6% stayed

for one day and only 57.9% had previously used health services. Out of 285 respondents, 51.6% had 2-5 number of children, and 34.60% had the obstetric complainants of hemorrhage.

Table no.5 shows the 94.7 % of respondents were satisfied with the environment and 4.9 % were strongly satisfied with the availability of health workers at facilities. The 46.3% respondents expressed strong satisfaction, while 53% reported satisfaction with the availability of BEmONC services available 24 hours at cost-free.

The 96.5% of clients felt informed prior to procedures, 94% were satisfied with assessment time, 93% were satisfied with privacy and 97.2% of clients were satisfied with breastfeeding guidance as indicated in table.6.

Table 2: BEmONC Service Readiness at primary health care facilities

Readiness of services at health facilities	BHU Thana Ahmed khan	BHU Khuda Ki Basti
Human resources		
Trained staff in essential delivery care	Available	Available
Fundamental care for newborns guidelines	Available	Available
Essential equipment and supplies		
Sterilization of equipment	Available	Available
Emergency transport	Available	Available
Delivery bed, inspection light, and suction device	Available	Available
Newborn mask and bag	Available	Available
A D&C kit and manual vacuum aspirator	Available	Available
The use of soap and running water or a hand rub containing alcohol	Available	Available
Medicine and commodities		
Medicines such as neonatal antibiotic eye ointment	Available	Available
Antibiotics and uterotonic	Available	Available
Magnesium sulphate	Available	Available
Skin disinfection	Available	Available

Table 3: Socio-demographic characteristics of respondents who utilized BEmONC services at primary health care facilities (n=285)

Age of Respondents	Frequency	%age
Below 20 years	63	22.1%
21-34 years	152	53.3%
Above 34 years	70	24.6%
Total	285	100 %
Educational Background		
Primary	102	35.8%
Matriculation	41	14.4%
Intermediate	18	6.3%
Graduation	0	0 %
Post-graduation	0	0 %
Uneducated	124	43.5%
Total	285	100 %
Occupation of Respondents		
House wife	214	75.1%
Private employ	24	8.4%
Government employ	12	4.2%
Entrepreneur	35	12.3%
Student	0	0 %
Total	285	100 %
Residence of Respondents		
Rural	187	65.6%
Urban	98	34.4%
Total	285	100 %
Family income per month		
Less than Rs.25000	163	57.2%
Rs.25000-50,000	90	31.6%
Rs.50,000-1 lac	32	11.2%
More than 1 lac	0	0 %
Total	285	100 %

Table 4: Obstetric characteristics of respondents who utilized BEmONC services at primary health care facilities (n=285)

Number of children	Frequency	Percentage
Primi gravida	85	29.8 %
2-5	147	51.6 %
More than 5	53	18.6 %
Total	285	100 %
Respondent experienced obstetric complications in previous deliveries		
Yes	52	18.2 %
No	233	81.8 %
Total	285	100 %
Obstetric complications		
Hemorrhage	18	34.6 %
Pregnancy induced hypertension	13	25 %
Prolonged labor	8	15.4 %
Puerperal sepsis	7	13.4 %
Newborn distress	4	7.7 %
Abortions	2	3.9 %
Desire of current pregnancy		
Wanted	203	71.2 %
Unwanted	82	28.8 %
Total	285	100 %
Respondent visited health facility for antenatal care (ANC) follow up		
Yes	225	78.9 %
No	60	21.1 %
Total	285	100 %
Mode of admission at Health facility		
Planned	144	50.5 %
Emergency	118	41.4 %
Referral	23	8.1 %
Total	285	100 %
Mode of transport to Health facility		
Ambulance	37	13.0 %
Public transport	58	20.4 %
By foot	26	9.1 %
Private transport	164	57.5 %
Total	285	100 %
Companion present at the time of the visit		
Yes	265	93 %
No	20	7 %
Total	285	100 %

Mode of delivery		
Abortive	18	6.3 %
Spontaneous vaginal delivery	252	88.4 %
Assisted vaginal delivery	15	5.3 %
Total	285	100 %
Health status of mother after delivery		
Normal	254	89.1 %
Complicated	31	10.9 %
Total	285	100 %
Birth outcome		
Alive	274	96.1 %
Still birth	5	1.8 %
Neonatal death	6	2.1 %
Total	285	100 %
Has the newborn experienced any health complications since birth?		
Yes	36	12.6 %
No	249	87.4 %
Total	285	100 %
Health complications		
Breathing problems	16	44.4 %
Preterm birth	9	25 %
Birth defects	4	11.1 %
Low birth weight	3	8.5 %
Birth injuries	2	5.5 %
Hypoglycemia	2	5.5 %
Stay duration at Health facility		
Few hours (6-8 hours)	113	39.7 %
One day	170	59.6 %
Two day	2	0.7 %
Total	285	100 %
Respondents have previously used the services of health facilities		
Yes	165	57.9 %
No	120	42.1 %
Total	285	100 %

Table 5: Level of Satisfaction of clients with Environment of Primary Health care facilities (n=285)

Items	Strongly Dissatisfied (%)	Dissatisfied (%)	Neutral (%)	Satisfied (%)	Strongly Satisfied (%)
Availability of health workers	0	1 (0.4 %)	0	270 (94.7%)	14(4.9%)
Availability of examination equipment	0	2 (0.7 %)	3 (1.1%)	169 (59.3%)	111(38.9%)
Availability of medical supplies and drugs	0	2 (0.7 %)	2 (0.7%)	221 (77.6%)	60 (21%)
Availability of transportation for referral to Tertiary care	0	1 (0.4 %)	1 (0.4 %)	271 (95 %)	12 (4.2 %)
Availability of laboratory services at HF	0	0	1 (0.4 %)	273 (95.8 %)	11 (3.8 %)
Availability of water for hand washing	0	1 (0.4 %)	22 (7.7 %)	262 (91.9 %)	0
Availability of safe drinking water	0	97 (34 %)	154(54.1%)	34 (11.9 %)	0
Cleanness of wards/toilet	0	0	5 (1.8 %)	274(96.1%)	6 (2.1 %)
Availability of comfortable waiting area	0	0	3 (1.1 %)	282 (98.9%)	0
Availability of BEmONC services 24 hours free of cost	0	0	2 (0.7 %)	151 (53 %)	132 (46.3 %)

Table 6: Level of Satisfaction of clients with Health care provider (HCP) interaction and their service provision at Primary health care facilities (n=285)

Items	Strongly Dissatisfied (%)	Dissatisfied (%)	Neutral (%)	Satisfied (%)	Strongly Satisfied (%)
Polite Behavior of HCP	0	0	2 (0.7 %)	237 (83.2 %)	46 (16.1%)
HCP welcome from gate	0	0	0	269 (94.4 %)	16 (5.6 %)
Explain everything before starting of procedure	0	1 (0.4 %)	6 (2.1 %)	275 (96.5 %)	3 (1.1 %)
Maternal involvement in decision making	0	2 (0.7 %)	5 (1.8 %)	269 (94.4 %)	9 (3.2 %)
HCP provide prompt response and competent enough	0	2 (0.7 %)	3 (1.1 %)	187 (65.6 %)	93 (32.6%)
Spend enough time for examination	0	1 (0.4 %)	1 (0.4 %)	268 (94 %)	15 (5.3 %)
Encourage verbally and support during labor	0	0	4 (1.4 %)	275 (96.5 %)	6 (2.1 %)
Baby received care and support	0	4 (1.4 %)	4 (1.4 %)	273 (95.8 %)	4 (1.4 %)
Counseling about breast feeding	0	2 (0.7 %)	4 (1.4 %)	277 (97.2 %)	2 (0.7 %)
Privacy was well kept	0	0	4 (1.4 %)	265 (93.0 %)	16 (5.6 %)

DISCUSSION

The study's finding of a high accessibility to BEmONC services suggests that primary health care institutions had enough infrastructure and resources. This is consistent with the objective of making emergency care available to all pregnant women and newborn. The outcomes of this research show that both District Jamshoro BHU Thana Ahmed Khan and BHU Khuda ki Basti, which are intended to offer Basic Emergency Obstetric and Newborn Care (BEmONC), were able to perform all seven needed indicator functions. The positive findings on availability and preparation are consistent with earlier research highlighting the value of well-equipped and prepared facilities in enhancing emergency treatment outcomes -Sabita Tuladhar et al.¹⁶ In this study, the majority of respondents 53.3% were between the ages of 21 and 34 and 75.1% were housewives. In keeping with previous study by Amanuel Negash et al.¹⁵ where 56.2% were in the age category of 21 to 34, and 62% of the respondents were housewives.

This investigation discovered that 83.2% participants were pleased with the behavior of health care professionals, which is similar with a previous study that revealed that individuals with average interaction with their care providers were nearly twice as likely to express discontentment. Patient-centered care relies on effective interaction between healthcare personnel and patients. Siddique AB et al.¹⁷ emphasize the importance of clear and sympathetic interaction in enhancing client satisfaction and adherence to treatment plans. Several studies, including Bangladesh, have revealed similar results- Rumi MH et al.¹⁸ According to another study a health care provider expertise, service orientation, interpersonal skills, attitudes, and interactions with patients are all factors that impact the overall satisfaction of patient- Akhtar N et al.¹⁹ This study found that 95.8% respondents were satisfied with the laboratory services they received and 96.1%, were satisfied with the cleanliness of health facilities which line up with results of researches done by Hailu HA et al.²⁰ that indicated 78.6% overall patient satisfaction with laboratory services and Weraman P et al.²¹, patient satisfaction rate of 75.5%, with the cleanliness of the health clinic, Purwandari R et al.²² A strong and favorable association between patient satisfaction and environmental cleaning service.

In this study, 34% of the clients expressed dissatisfaction, 54.1% remained neutral, and 91.9% expressed satisfaction regarding the availability of hand washing facilities which consistent with another study that found 81.8% had convenient facilities of handwashing and 96.5% were operational facilities of drinking water.²³

This study demonstrates that high client satisfaction with free delivery services includes 53% who are satisfied and 46.3% are strongly satisfied. According

to a research by Addisalem Kidane et al.,²⁴ 80% of mothers were satisfied with the delivery services they received in public hospitals in Ethiopia. On the other hand, a study by Jibril MB.et al. (2024)²⁵ on primary healthcare service satisfaction in Kaduna State, Northwest Nigeria, found a typically unsatisfactory result of 31.1%.

This research manifested that 96.5% clients were satisfied that everything was explained before the process began, 94% clients said that the HCP spent adequate time on the assessment and 93.0% clients reported being satisfied with their privacy which has almost consistent results of a study by Asamrew N et al.²⁶, in which 52.0% of clients were satisfied with information supplied by hospital personnel about available services, 48.7% with hospital admission procedures, and 2.5% and 55.0% with steps taken to ensure patient confidentiality and privacy. A similar survey found that more than 90% of women had favorable experiences with privacy, respectful treatment by obstetricians and nondiscriminatory care. However, 40% of the women reported not obtaining appropriate information or informed consent prior to a medical treatment, and 65% reported inadequate birth-related counselling- Yazdani NS et al.²⁷ The study discovered for 97.2% of the sample, expressed satisfaction with breastfeeding guidance. Prior studies repeatedly shown that prenatal breastfeeding therapy improves breastfeeding outcomes-Kehinde J. et al.²⁸

Limitations: The shortcoming of this research is its cross-sectional design, which provides a snapshot of the condition but does not take into consideration changes over time. Furthermore, when interviewed in the health facilities, the mothers expressed hesitation and offered comments that supported the care providers. This resulted in higher levels of satisfaction.

CONCLUSION

The study reveals that primary care facilities are widely accessible and well-equipped to provide BEmONC services, with sufficient infrastructure, expertise, and resources. Clients expressed their satisfaction and valued professional and high-quality care. The results reflect how well-performing the current BEmONC services are, highlighting the necessity of sustained dedication to preserving and raising the standard of treatment.

Recommendations:

1. Expand BEmONC primary health care facilities in rural and underserved regions.
2. Enhancing referral System aims to enhance the referral network by facilitating the timely transfer of patients who require care beyond the expertise of primary healthcare providers.
3. Enhance community awareness and engagement regarding BEmONC services to ensure

timely utilization. Enhance maternal and neonatal health through collaboration with community leaders.

4. Formulate and execute policies designed to improve primary health care BEmONC services.
5. Conduct regular audits of facilities to evaluate the readiness of BEmONC services. Improvements in service delivery, training programs, and community involvement with non-profit organizations are essential.

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CONFLICT OF INTEREST

Authors declare no conflict of interest.
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AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	FJ, FM
Acquisition, Analysis or Interpretation of Data:	FJ, FM, KNA, MIS, RC
Manuscript Writing & Approval:	FJ, FM, KNA, MIS, HSS

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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