

Individual, Contextual and Programmatic Factors Influencing Utilization of Emergency Obstetric Care Services in Rural Varanasi

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Abstract:

Background: Emergency Obstetrics care is an integrated strategy developed by the WHO, UNFPA and UNICEF that aims to equip health facilities with the capacity to provide evidence based, cost effective interventions to attend to the leading causes of maternal mortality.

Methods: A community based cross sectional study design was conducted during April 2019 to July 2020. Total 201 women who delivered in last 6 month and had complications were included in the study. Facility assessment was done at two facilities of Chiragaon block of Varanasi for the availability of EmOC services.

Results: Overall utilisation of govt health facility for EmOC was 42%. Findings shows that utilisation of EmOC from govt. health facility was more among lower age groups as compared to higher age group and statistically significant association was observed between education of respondents and utilization of EmOC services. Respondents who were aware of danger signs/complications during pregnancy were more utilized EmOC Services at Govt. health facility. Utilization was more among respondents with first childbirth order. There was statistically significant association was found between time taken to reach health facility and utilization of EmOC services. Respondents who belong to Lower class were more utilized EmOC services at Govt. health facility. The study has given adequate insights into the gaps and lacunae existing at health facilities. More than half of the respondents expressed negative images of health care provider at health facility.

Conclusion: In this study, more than half respondents were not aware about danger signs/complications in pregnancy. Programmatic factors more influence utilization of EmOC services at Govt. health facility.

Keywords: EmOC services, Quality of health care

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Introduction

Pregnancy and childbirth are although natural phenomenon and it is often an eventful process. Reducing maternal mortality and morbidity globally remains a priority for health and development agenda. The United Nations (UN) has set a new global strategy, the Sustainable Development Goals (SDGs) that is aimed at reducing the global MMR to less than 70 per 100,000 live births and having no country with more than twice the global target by 2030. Emergency Obstetrics care is an integrated strategy developed by the WHO, UNFPA and UNICEF that

aims to equip health facilities with the capacity to provide evidence based, cost effective interventions to attend to the leading causes of maternal mortality. In most of developing countries, the major causes of maternal morbidity and mortality are postpartum hemorrhage, obstructed labor, hypertensive diseases with eclampsia, infections, ruptured uterus and unsafe abortion. For preventing and managing the above –mentioned complications emergency obstetric care is inevitable. There are two complementary types of EmOC

Components of Emergency Obstetric Care

Basic EmOC Services

1. Parenteral antibiotics
2. Parenteral anticonvulsants
3. Parenteral uterotonics
4. Manual removal of placenta
5. Removal of retained products of conception
6. Assisted vaginal delivery
7. Resuscitation of the newborn baby using bag and mask

Source

World Health Organization et al., 2009: Managing emergency obstetric care: a handbook.

Neither effective antenatal care nor identifying risk will help to reduce the maternal mortality if emergency obstetric care is unavailable or inaccessible or not utilized.

Materials and Methods

The study adopted this cross-sectional study was conducted in rural areas of Varanasi district from 15th April 2019 to 31st July 2020.

Sample Size

To determine the sample size, it is necessary to know the proportion of pregnant females having complications. This proportion is considered as the key variable in sample size determination. Considering that about 15% (MOHFW, 2010) of the delivered mothers have complications requiring EmOC and 5% as non-response error, sample size obtained was 206.

The required number of delivered mothers would be $n = \{p (1-p) (z^2 / e^2)\}$ where, n = required sample size for delivered mothers having complication

Comprehensive EmOC services

- Include basic EmOC(1-7)plus
8. Caesarean Section
 9. Blood Transfusion

p = proportion of delivered mothers having complication

z = 1.96 (z value at 5 per cent level of significance)

e = 0.05 (amount of admissible error)

Thus, as an approximation, suppose that about 15 per cent of the delivered mothers having complications then $n = p (1-p) (z^2 / e^2) = 196$

Considering 5% as non-response error, the final sample size would be $n = 196 * 1.05 = 206$

Inclusion Criteria

- Women who delivered during last 6 months.
- Those who gave the consent

Exclusion Criteria

- Severely ill women
- Those who didn't give consent
- Assessment of two facilities was done to assess programmatic factors [As per modified IPHS 2012 standards]

Results

Demographic and socio-economic profiles of the respondent

Table 1: Demographic & socio-economic characteristics

Variables	Category	Frequency (N=201)	Percentage (%)
Age (in years)	15-19	6	3.0
	20-24	100	49.8
	25-29	75	37.3
	≥30	20	10.0
Age at first pregnancy (years)	15-19	34	16.9
	20-24	146	72.6
	25-29	17	8.5
	≥30	4	2.0
Education of Respondent	Illiterate	21	10.4
	Upto middle class	36	17.9
	Upto Intermediate	81	40.3
	Graduation and above	63	31.3
Husband's Educational-status	Illiterate	14	7.0
	Upto middle class	43	21.6
	Up to Intermediate	74	37.2
	Graduation and above	68	34.2

Occupationstatusof Re-spondent	Home maker	197	98.0
	Working	4	2.0
Husband’s Occupation	Unemployed	12	6.0
	Unskilled	120	59.7
	Semi-skilled	28	13.9
	Skilled	41	20.4
Religion	Hindu	193	96.0
	Muslim	8	4.0
Caste	SC/ST	33	16.4
	OBC	159	79.1
	General	9	4.5
Type of Family	Nuclear	19	9.5
	Joint	182	90.5
Socio-economic status	Class I	11	5.5
	Class II	22	10.9
	Class III	67	33.3
	Class IV	84	41.8
	Class V	17	8.5
Childbirth order	1 st	101	50.2
	2 nd	64	31.8
	3 rd	24	13.4
	≥4 th	9	4.5

Table 1 shows the demographic and socio-economic characteristics of the respondents. Almost half (49.8%) of respondents were aged between 20-24 years and 37.3 % were aged between 25-29 years, 10% were 30 years& above and 3% were 19 years& below. In addition, a total of 72.6% respondents were 20-24 years old at their first pregnancy while 16.9% were age 19 years and below.

About 41.8% of respondents were from socio-economic class IV according to modified B G Prasad

classification (May 2019), followed by 33.3% were from social class III, 10.9% were from social class II, 8.5% were in social class V and 5.5% were from social class I. Around half (50.2%) of respondents had complications during first childbirth followed by one third (31.8%) during second childbirth.

Utilisation of government health facility for EmOC Services

Overall utilisation of govt. health facility for EmOC was 42%.

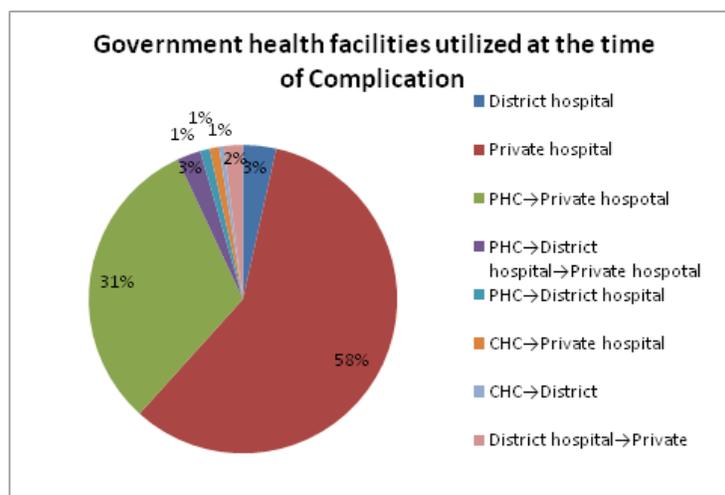


Figure 1: Health facilities utilized at the time of complication.

Figure 1 shows that out of the total respondents experienced complications, more than half (58%) went

directly to private clinics for management, while rest 42% respondents first visited the Govt. health facili-

ty, and then referred to other places. Among them, one third (31%) visited block PHC but they were referred to CHC/District hospitals due to non-

availability of EmOC services, but they went to private clinics for management.

Individual & Contextual factors influencing utilization of EmOC services

Table 2: Association of Individual factors with utilization of EmOC services

Variables	Utilization of EmOC Services		Total N=201	Test of Significance
	At Private health facility N (%)	At Govt. health facility N (%)		
Age of Respondent				
15-19	2 (33.3)	4 (66.7)	6	Fisher exact test=7.011 df=3 p=0.072
20-24	51 (51.0)	49 (49.0)	100	
25-29	50 (66.70)	25 (33.3)	75	
≥30	14 (70.0)	6 (30.0)	20	
Education of Respondent				
Illiterate	10 (47.6)	11 (52.4)	21	$\chi^2=8.428$ df=3 p=0.038
Up to middle class	19 (52.8)	17 (47.2)	36	
Up to Intermediate	42 (51.9)	39 (48.1)	81	
Graduation & above	46 (73.0)	17 (27.0)	63	
Awareness of Respondent about danger signs/complications				
Yes	23 (48.9)	24 (51.1)	47	$\chi^2=2.168$ df=1 p=0.097
No	94 (61.0)	60 (39.0)	154	
Awareness of Respondent about EmOC Services available				
Yes	37 (45.1)	45 (54.9)	82	$\chi^2=9.751$ df=1 p=0.001
No	80 (67.2)	39 (32.8)	119	
Person taking decision taken to seek EmOC Services				
Respondent	10 (66.7)	5 (33.3)	15	$\chi^2=8.104$ df=4 p=0.088
Respondent & husband	22 (62.9)	13 (37.3)	35	
Mother in law & other family Members	57 (61.3)	36 (38.7)	93	
Husband only	19 (61.3)	12 (38.7)	31	
Health worker	9 (33.3)	18 (66.7)	27	
Childbirth order				
1	52 (51.5)	49 (48.5)	101	Fisher exact test=4.275 df=3 P=0.233
2	43 (67.2)	21 (32.8)	64	
3	61 (59.3)	11 (40.7)	72	
≥4	6 (66.7)	3 (33.3)	9	

Table 2 shows that there was decreasing trend with age in utilization of EmOC services at Govt. health facility. Lower age groups were more utilized EmOC services at Govt. health facility as compared to higher age group but there was no significant association between age of respondent and utilization of EmOC services.

There was statistically significant association between education of respondents and utilization of EmOC services. Respondents who were more educated, more utilized EmOC services at private health facility and there was decreasing trend with education of respondents and utilization of EmOC services at Govt. health facility.

Programmatic factors

Blood grouping and Rh typing was not functional at block PHC Chiraigaon. Both facilities block PHC Chiraigaon and Choolapur CHC did not have adequate facilities to manage female with abortion-related complications. Use of partograph was not in practice at Block PHC. Assisted vaginal delivery was not conducted at both facilities. Post-natal care was found to lag behind the guidelines of IPHS at both facilities. Clinical management of all maternal emergencies such as PPH, sepsis, shock & Rh incompatibility not done at Choolapur FRU. Surgical intervention such as caesarean section was conducted only in morning hours till 2.00 pm at Choolapur FRU. There was no training of staff nurses on EmOC services at both facilities within 3 month. It was found that post of general surgeon, Physician were vacant. At the same time, post public health

specialist and public health nurse were also found vacant. Further, Anaesthesiologist was available only in morning hour (up to 2.00 pm) at Cholapur CHC (FRU).

Discussion

In this study, the mean age of respondent was 24.7 ± 3.54 years. Similar finding was seen in the study done by Gopalakrishnan S et al., 2015[3] in which mean age of respondent was 24.33 years. The mean age of respondent at first pregnancy was 21.57 ± 2.69 years and around three fourth (72.6%) respondents were age between 20-24 years at their first pregnancy while 16.9% belong to 15-19 years age group. The perception of poor delivery of health care services (i.e. lack of attention or proper treatment) at government establishments was cited as one of the key factors behind underutilization of government facilities in India (Vora et al)[6]. Among those who gave response about attitude of health worker described 26.2% health worker were unhelpful. This study revealed that majority of the respondents haven't accessed First Referral Unit (FRU) and they went directly to private clinic for management of complications.

Limitation of the Study

Among the study's limitations there may have been some recall bias. In order to reduce this bias, information was also cross checked from other family members who accompanied the respondent at the time of complications.

Relevance of the Study

Our study's results are valuable for sensitization of program to reassure the quality and programmatic factors of EmOC to improve the utilisation of EmOC services. Emergency obstetric care is one of the preventable measures in controlling maternal morbidity and mortality in developing countries like India that is focused in our study.

Conclusion

Overall utilisation of govt. health facility for EmOC was less. The study has given adequate insights into gaps and lacunae existing at health facilities. Programmatic factors more influence utilization of EmOC services at Govt. health facility.

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