

Community Based Magnitude of Obstetric Emergencies in Rural Women with Low Resources

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Abstract

Background: Rural women with low resources do not get timely and appropriate care for obstetric emergencies. Awareness in women, communities about emergencies, action needed, helps in getting quick, right therapy for prevention of maternal, perinatal morbidity, mortality.

Objective: To know community based numbers, types of emergencies for which rural women sought care during pregnancy, labour, postpartum.

Methodology: Present article is based on analysis of records of women who sought referral care for emergencies during pregnancy, labour, postpartum from communities of 53 villages with low resources, being served through nurse midwives.

Results: Of 10117 births in 53 villages during analysis period, 656 (6.48 %) women sought emergency care. 458 (7.52% of 6087 births) were from nearby villages, being served since more than two and half decades (called old), 198 (4.91% of 4030 births) from far off villages, being served since around one and half decade (called new). Emergency services were for placental abruption, hypertensive disorders, obstructed labour (due to cephalopelvic disproportion or abnormal presentation), non-progress of labour or postpartum haemorrhage, with no significant change over years. Maternal deaths due to pregnancy, labour, post-partum complications have been almost eliminated. Perinatal mortality has reduced, though it is still high. No woman reported with septic abortion or rupture uterus in last decade. In old villages, 44% were home births between 1987-1990, 6.2% between 2011-2014. In new 38.2% were home births between 1996 to 1999 and 12.40% between 2011-2014.

Conclusion: Nurse midwives can do a lot for prevention of fatal emergencies, maternal, perinatal deaths with some limitations. About some disorders more information is needed for best of health of women. Research needs to continue.

Keywords: Rural women; Obstetric emergencies; Deaths; Prevention; Nurse midwives

Introduction

Pacagnella et al. [1] reported that, Thaddeus and Maine were the ones who recognized that timely and appropriate management of obstetric complications are major factors in reducing maternal deaths. Efforts continue to be made to strengthen health systems' ability to prevent complications, if they occur, timely identification, timely transfer and timely, appropriate management for prevention of severity of complications and deaths. Arsenaault et al. [2] reported poor accessibility and affordability of emergency obstetric care with consequences. It has been reported that globally 80% of maternal deaths occur due to disorders which can be either prevented or treated at a well-staffed and well equipped health facility. For this it is essential that the women reach such facilities in time. They need to be aware of possibilities and action needed. Critical look into the multiple delays with their multiple prongs is essential.

Some obstetric disorders are preventable some not, so emergencies are going to be there. In spite of disorders, severity can be reduced and mortality prevented, even for rural women with low resources by providing community based care, awareness and advocacy by skilled midwives with appropriate knowledge and referral backup available. Timely diagnosis and therapy are the keys for prevention of severity of illnesses and deaths.

Objective

Present rural community based analytical study was done to know the magnitude and type of emergencies during pregnancy, labour and postpartum and the maternal/perinatal outcome in rural women with low resources.

Materials and Methods

Community based services are being provided to the rural women, by retrained nurse midwives based at the institution, where the study has been done after ethics committee's approval. Nurse midwives provide basic prenatal care, advocacy about labour, postpartum and

create awareness amongst women and their families about likely emergencies during pregnancy, labour and postpartum and the importance of timely, essential appropriate emergency care. These nurse midwives are supervised by the team at referral, including postgraduate medical students of obstetrics-gynaecology, under the guidance of the author. Postgraduates check the records of events about each visit by nurse midwives to the village. Most of the women with disorders during pregnancy, birth, seek services at the referral institute, where the analysis has been done, however some women do seek services from other places, but they are also part of the present analysis. Nurse midwives visit each village 5 times a year, through an inbuilt system of local help for identifying the pregnant, delivered and postpartum women. However, some women are available for care and advice only three times or even twice during pregnancy, because of various problems of their everyday life. Though guidance is provided to all the pregnant women and all women are advised hospital delivery, the place of delivery is decided by the family. Some women still deliver at home. The present article is based on the analysis of records of the women who sought care for various obstetric disorders, which needed

therapy in emergency during pregnancy, labour and postpartum, over last 27 years (1987-2014) in 25 villages around 25-35 km from the institute (called old villages) and over 18 years (1996-2014) in 28 other villages, 75-85 km from the institute (called new villages). Some villages are small, others large with population of 300 to 1500 in each village. It is not old or new village, but according to services initiation.

Results

In these 53 villages there were 10117 births, (6087 in 25 old and 4030 in 28 new villages) during the period of analysis. In villages being served since 1987 (old), 44% women had home births, between 1987 to 1990 (base data). Home births decreased to 6.2% between 2011-2014. In villages being served since 1996 (new), there were 38.2% home births between 1996 to 1999 (base data) which decreased to 12.40% between 2011-2014. Over all there has been increase in births at the health facilities (place of study, primary health centres/private hospitals) (Table 1).

Village	Year	Total Deliveries	Place of Delivery		
			Home (%)	KH (%)	Others (%)
Old 25 Villages	1987-1990	499	44	37.2	19.8
	1990-1993	636	42.1	38.5	19.4
	1993-1996	761	36.4	40.2	23.4
	1996-1999	784	32.8	46.4	20.8
	1999-2002	864	25.4	55.2	19.4
	2002-2005	820	14.6	65.8	19.6
	2005-2008	928	10.2	72.2	17.6
	2008-2011	525	9.1	84.8	6.1
	2011-2014	990	6.2	88.5	5.3
	TOTAL	6087	24.53	58.75	16.82
New 28 Villages	1996-1999	580	38.2	7.1	54.7
	1999-2002	684	32.6	6	61.5
	2002-2005	702	31.7	6	62.3
	2005-2008	789	28.2	10.1	61.7
	2008-2011	465	21.8	15.9	62.3
	2011-2014	810	12.4	25.8	61.8
	TOTAL	4030	27.48	11.81	60.71
	GRAND TOTAL	10117	26	35.28	38.76

Table 1: Place of birth.

Of the 10117 women, 656 (6.48%) reported with obstetric emergencies, 458 (7.52%) of 6087 births in women of old villages and 198 (4.91%) of 4030 births in women of new villages. There has not been significant change in the numbers and types of emergencies over the years, but there were no cases of septic abortion or rupture uterus. Also there has been no case of eclampsia in old villages since last one

and a half decade and since one decade in new villages. Some women did report with obstructed labour due to delay in getting transport in emergency.

Of 656 women who sought care for emergencies, 443 (67.53%) had caesarean sections (CS). Indications of CS were, placental abruption,

malpresentations, non-progress of labour with or without cephalopelvic disproportion (CPD) and some diagnosed as fetal distress (FD) too.

From old villages, of 458 women, 93 (20.30%) had hypertensive disorders of pregnancy, 58 (12.66%) previous CS, 58 (12.66%) abnormal presentations, [7 transverse lie with cord prolapse and 5

hand prolapse], 48(10.48%) prolonged labour due to cephalopelvic disproportion, 10 (2.18%) obstructed labour, 33 (7.20%) non-progress of labor, 23(5.02%) placental abruption, 19 (4.14%) with postpartum haemorrhage (PPH), 3 (0.65%) eclampsia, and 38 (8.29%) had medical disorders (23 severe anaemia, 8 cardiac disorders, 7 infections) (Table 2).

	Year	Total	EM. ADM.	EC	PL AB	PPH	FD	Obst.	Cord	Hand		MDS	NPOL	Prev CS	CPD	Ab	
		Births	Who had CS						Labor	PR	PR						
												HTN				P	
Old Villages	1987	499	18	1	3	4	-	2	2	1		5	3	1	1	4	5
	1990																
	1990	636	22	1	4	2	-	2	1	1		7	3	3	3	5	3
	1993																
	1993	761	32	1	3	3	-	2	1	1		6	4	1	5	6	5
	1996																
	1996	784	42	-	2	1	-	3	-	-		7	4	5	9	6	6
	1999																
	1999	864	42	-	2	2	-	1	1	-		8	6	4	9	8	8
	2002																
	2002-2005	820	47	-	2	1	-	-	-	-		17	7	4	10	7	8
	2005-2008	928	54	-	1	1	-	-	-	-		23	9	5	15	5	9
	2008-2011	525	19	-	3	3	-	-	1	1		2	-	-	1	1	5
	2011-2014	990	52	-	3	2	10	-	1	1		18	2	10	5	6	9
	TOTAL	####	328	3	23	19	10	10	7	5		93	38	33	58	48	58
New villages	1996-1999	580	6	-	3	1	-	1	-	-		3	1	1	1	1	2
	1999-2002	684	16	-	3	2	-	1	-	-		4	1	3	4	3	3
	2002-2005	702	22	-	1	1	-	-	-	-		4	1	1	6	3	4
	2005-2008	789	30	-	2	1	-	-	1	-		7	2	4	8	4	5
	2008-2011	465	10	-	1	1	-	-	-	-		2	1	-	-	1	2
	2011-2014	810	31	-	2	1	11	-	1	-		15	2	13	4	5	7
	TOTAL	####	115	-	12	7	11	2	2	-	35	8	22	23	18	23	
GRAND TOTAL		####	443	3	35	26	21	12	9	5	128	46	55	81	66	81	

Table 2: Obstetric emergencies (EM ADM: Emergency Admission; CS: Caesarean Section; EC: Eclampsia; PL AB: Placental Abruption; FD: Fetal Distress; PR: Prolapse; HTN: Hypertensive Disorders of Pregnancy; MDS: Medical diseases; NPOL: Non Progress of Labor; Prev CS: Previous Caesarean Section; CPD: Cephalo-Pelvic Disproportion; AbP: Abnormal Presentation).

From new villages 198 women (4.91% of births) sought care for emergencies due to various disorders, 12 (6.06%) placental abruption, 2 (1.01%) obstructed labour, 35 (17.67%) hypertensive disorders, 23 (11.61%) previous CS in labour, 23 (11.61%) abnormal presentations, 18 (9.09%) CPD, 22 (11.11%) unexplained NPOL, 8 (4.04%) medical

disorders (6 severe anaemia and 2 cardiac disorders), 2 (1.01%) cord prolapse and 7 (3.53%) for PPH.

Overall obstetric problems like cord prolapse, hand prolapse, eclampsia and obstructed labour had decreasing trend. In last decade no woman reported with hand prolapse or eclampsia. Major persisting

problems for which emergency care was sought, were placental abruption and PPH, even in recent past.

Overall community based perinatal mortality rate (PMR) was 31.14 between 1987–2014 in old villages, with decreasing trend from 48.9 in 1987 to 15.09 in 2014. In new villages, it was 26.47 between 1996–2014, with decreasing trend from 38.12 in 1996 to 19.85 in 2014. Overall the major causes of perinatal deaths were low birth weight (LBW) and neonatal sepsis. There was no severe maternal morbidity which could cause permanent damage like urinary or bowel fistula or hysterectomy for obstetric disorders. Deaths due to pregnancy or labour related causes in last eighteen years and thirteen years respectively in old and new villages have been almost eliminated. A woman was lost 5 years back due to retained placenta and haemorrhage. There have been deaths of pregnant and postpartum women one suicide, one murder, and a death due to sickle cell disease.

Discussion

Many life threatening complications during pregnancy, labour and postpartum are neither predictable nor preventable, however they are treatable if the knowledge, skill nor resources are available in time. However rural women experience poorer health outcomes and have less access to healthcare than urban women. While health facility deliveries are being advocated, traditional birth attendants (TBA) are disappearing except for few countries. It is essential to understand TBAs' role in providing support during pregnancy. With necessary training, providing essential supportive supervision and reward those, who comply with the standard guidelines for desired services, a lot can be done [3].

It is very well known that outcome of pregnancy and labour largely depends on emergency obstetric care (EmOC). Nyamtema et al. [4] reported that the vast majority of maternal mortalities and severe morbidities can be averted, even where resources are limited, if timely interventions are done. Moran et al. [5] reported that seeking care from a basic or comprehensive facility in response to obstetric complications needs to be the key behavior promoted in safe motherhood programmes. Honda et al. [6] also reported that timely access to EmOC is essential to save the lives of women experiencing complications at delivery, and for new-borns. In the present analysis, it was revealed that 656 (6.48% of births), women sought care for emergencies. Many of them had serious disorders like placental abruption, PPH, but deaths could be prevented, because women reported timely to the referral hospital where infrastructure,

Life-saving drugs, tools, blood transfusion and emergency surgery were available. Awareness created by nurse midwives and the system created by the villagers and the institute helped save lives. McCord et al. [7] reported obstetric complications in 11.4% with 85 % home births. The rates differ so much because of imprecise definition of an 'obstetric complication'. Even in a hospital it is hard to define when bleeding or prolonged labour becomes a real complication. Retrospective surveys generally give much higher rates of such emergencies than prospective studies [8]. It is generally believed that between 10 to 15% of pregnancies develop a complication that will need an equipped hospital [7]. In the present study, overall only 6.48% (656 out of 10117) women sought emergency care. This could also be due to the fact that some cases that were likely to develop complications were admitted electively to the hospital because of advocacy; awareness created by the nurse midwives and was managed electively. The figures of emergencies are less than reported, but it is

also possible that in some emergency situations, women neither sought care nor informed the nurse midwives and somehow did well. Some women with disorders might have stayed back because the condition was not serious, and did not cause any major problem; neither sought care from any health facility, nor reported during home visits. According to Moran et al. [5] local definitions of care seeking must be considered in intervention designs so that promotion of care seeking increases for facility-based care for life-threatening emergencies. Emergency care requires not only that the patient, caregiver, or family, recognize that a life-threatening or life-changing condition is occurring, and that there is a need to seek care, but also timely access to adequate care is available. Given the unpredictable nature of emergencies, there are few quick fixes. However, strong emergency systems can prevent delays at critical times. Such systems do not require massive resource allocation but rather a cost-effective, informed approach that emphasizes the proven life-saving interventions that are appropriate to the context. Improving access to emergency care, by minimizing the three main delays in the delivery of such care, has the potential to reduce mortality in every field, system and population [9].

In the earlier years when the services were initiated in these villages, women used to report to the referral health facility with critical condition. But by providing, information about likely emergencies during pregnancy, labour and post-partum and importance of emergency transfer through nurse midwives, the first two "delays" (delay in deciding to seek care and delay in reaching appropriate care), have been partly overcome. Though there has not been a drastic decrease in type and number of emergencies due to haemorrhage and complications of hypertensive disorders of pregnancy but women reported in time. Availability of blood transfusion, anaesthesia facilities and critical care at the referral, mortality could be reduced to almost nil, because third "delay" (delay in receiving care at health facility) was also taken care. In practice, it is crucial to address the third delay first, for it would be useless to facilitate access to health facility, if facility was not well staffed and well equipped. Bartlett et al. [10] reported a study of 2.7 million deliveries across seven developing countries which revealed that only one third of women who needed life-saving care for complications, received it and this seems the largest inequality in the world. What has been done here, is a drop in the ocean needed for saving lives in India, but is practically feasible.

In the present study there has been slow increase in the number of hospital births, including the institution, where the study has been done. In old villages 37% deliveries were at the base hospital in the year 1987-1990 and 88% between the 2011-2014, which is 138% increase from 1987-1990, highly significant difference (p value <0.001). Reasons seem to be the confidence and faith developed proximity of the villages to the institute, and better roads. The percentage of women from new villages who delivered at the base hospital has also increased from 7.1% between 1996-1999 and 26% in 2011-2014, which is 271%, increase from 1996-1999, highly significant (p value <0.001) difference. The new villages are at a distance from the base hospital, hence compared to the old villages, this change is more appreciable. Over all there has been a favorable change for hospital births, from 42.5% hospital births between 1996-1999 to 78.6 % between 2009-2011 in the new villages, an increase by 84%.

Universal access to emergency care requires that all mothers and babies with complications have access to well-functioning facilities, well in time. By supervised care, educating women and families, making communities aware of possible emergencies and directing

women with disorders to get hospitalized well in time and quick, appropriate emergency care, lives of women and their babies can be saved even with low resources. Sometimes even if the women are advised about emergencies and transfer to referral centre, they do not report due to lack of transport or resources, contributing to the severe maternal morbidity and mortality. Hofman et al. [11] reported that in resource-poor countries, motorcycle ambulances at rural health centers are a useful means of referral for emergency obstetric care and a relatively economical option for the health sector. In the villages being discussed, from bullock cart it changed to three wheelers. We believe that while accessible hospital back-up for all women is a must, great progress in reduction of morbidity, mortality can be achieved long before the target of 100% hospital births is achieved, by providing community based care by knowledgeable skilled workers. Nurse midwives can to some extent, fill the void of doctors in villages in India with support of communities, as there will probably be never enough obstetricians to provide services to rural women.

Present analysis reveals that trained nurse-midwives can significantly improve access to skilled maternal and neonatal care in rural areas [12]. Ogwang et al. [13] reported community sensitization by empowered community based resource persons, rather than health workers and improved quality of health care, contributes towards effective management of obstetric complications. Also the example of the Haiti's data suggests that improvements to the maternity care system, which focuses on reducing the third delay-that is, improving the quality and scope of care available at existing medical facilities, will have the greatest impact in reducing needless maternal deaths [14]. Midhet and Becker [15] reported providing safe motherhood education increased the probability of pregnant women having prenatal care and utilization of health services for obstetric complications. Although data of the present study is from a small geographical area, it sheds light to the often forgotten role of nurse midwives and community based care, advocacy in preventing mortality and major morbidity in low resource settings. Expanding the coverage of existing referral networks, improving community recognition of obstetric emergencies and improving the ability of existing medical institutions to deliver quality obstetric care, are all necessary. However, services will continue to be under-utilized if they are perceived negatively by pregnant women and their families.

Conclusion

Although data of this study is from a small geographical area, it sheds light to the often forgotten role of nurse midwives and community based care advocacy in preventing mortality and major morbidity in low resource settings. Expanding the coverage of existing referral networks, improving community recognition of obstetric emergencies, and improving the ability of existing medical institutions to deliver quality obstetric care, are all necessary. However, services will continue to be under-utilized if they are perceived negatively by pregnant women and their families. Though there has not been a drastic decrease in type and number of emergencies due to haemorrhage and complications of hypertensive disorders of pregnancy, women reported in time. So deaths and disabilities were

prevented. There has also been slow increase in the number of hospital births, including the institution, where the study has been done.

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