Assessment of Factors Contributing to Third Delay In Obstetric Care In Lady Willington Hospital, Lahore

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Abstract

Objective: Study was designed to assess the underlying factors causing third delay in getting obstetric care after reaching tertiary care hospital. **Study Design:** This was a descriptive study conducted through cross sectional approach, employing non-probability convenience sampling technique. **Place and Duration of Study:** The study was carried out from 08th July to 15th July 2008 in Lady Willingdon Hospital, Lahore, a tertiary care obstetrics institution affiliated with King Edward Medical University, Lahore. **Subjects and Methods**: A study sample of **50** obstetric cases (pregnant women) was selected: half (25) were interviewed from 08.00 am to 08.00 pm during first four days and next half (25) from 08.00 pm to 08.00 am during the next four days to observe the situation / condition round the clock. As such, every pregnant woman coming to the emergency with any presenting complaint requiring immediate intervention during study period was followed till the outcome of pregnancy. A precise, pre-tested questionnaire was used for the purpose of data collection including demographic information. The record of subjects was consulted for any useful information. Physical verification for all drugs and equipments was also carried out. Data was cleaned, analyzed manually and partially on computer for applying test of significance. Data of timings was entered on SPSS computer programme. Students "t"

test was employed for calculating the significance of time difference during day & night. P value <0.05 was considered significant. **Results:** Out of study sample of 50, 28 (56%) subjects presented with some complications, while 22 (44%) with normal pregnancy. 15 (54%) subjects from amongst those who presented with some complication had low educational status / were illiterate –whereas- 16 (74%) subjects from amongst those who presented with normal pregnancy had high education. It was due to the fact that educated couples utilize health care services, which eventually have positive impact on the pregnancy outcome. There was delay in transferring the subjects to operation theatre. Moreover, the subjects presenting with some complications were not evaluated urgently. **Conclusion:** The socio-demographic factors like educational status of subjects / both spouses have been found impacting the third delay. There was no appreciable delay in providing services with insignificant difference of day & night. Third delay is avoidable, if functional healthcare delivery system is in place and through rational solutions, improvement can be brought in the quality of care. The results of study underline a need to vigorously implement well planned supervision and monitoring system to provide training for quality service delivery. **Key Words:** Comprehensive Emergency Obstetric Care, Tertiary Care Hospital, Third Delay

INTRODUCTION

Worldwide, nearly 600,000 women between the ages of 15-49 years die every year as a result of complications emanating from pregnancy and childbirth[1]. A woman is at a higher risk to acquire illness than a man. Moreover, she endures the risk of pregnancy, described in the Quran as "weakness upon weakness" i.e. debilitating process and childbirth

which is hard as well as energy consuming. Both affect her health, hence it is imperative that good care of her should be taken to ensure that she regains health fully and is able to resume her normal life and fulfil her tasks and duties[2]. The obstacles, which lead to maternal death, are largely social, cultural and economic. A woman's lifetime risk of maternal death

is 100 times higher in a developing country as compared to woman in developed country. More than half of these deaths occur in Asia[1]. In Pakistan, the major causes of death during pregnancy are manifold: haemorrhage (21%), sepsis (13.3%), unsafe abortion (11%), hypertension of pregnancy (18%) and others (36.1%)[3]. This is a grave situation because of the magnitude of its direct and related implications, which not only affect the women, but also the new born child, other children, the family and therefore, the community at large is also affected[1]. Essential obstetric care (EOC) is the term used to describe the elements of obstetric care needed for the management of normal or complicated pregnancy, delivery and postpartum period. In addition to basic essential obstetric care, comprehensive essential obstetric care services provide the services of anaesthesia, surgery and blood transfusion. Without essential obstetric intervention, 15% of the mothers, babies or both will die or will be seriously affected. In addition to having facilities capable of providing essential obstetric care, there must be means of communication and transportation between facilities that provide basic and comprehensive obstetric care[4]. The three delays of emergency obstetric care (EmOC), if prevented from occurring can facilitate the access to professional care for expectant mothers[5]. The "three delays model" identifies individual decision making, access to affordable services, and the provision of skilled personnel as the main factors which can delay access to effective interventions to prevent maternal mortality. Phase -I delay pertains to delay in care seeking decision due to failure to recognise complications, acceptance of maternal death & low status of women. Phase-II delay means a delay in reaching care due to poor roads, mountains, island, rivers, poor organisation. Phase-III delay (or third delay) is regarding a delay in receiving care due to inadequate facilities, poor training & demotivation of personnel and lack of fitness[6]. The "third delay" is the delay in receiving care at health facility due to the absence of support staff, lack of expertise and non-functioning equipment [7,8]. The improvement of institutional healthcare may have a significant impact on the decision to attend health institutions and, thereby, reduce the first delays[9].

RATIONALE OF STUDY

Ideally speaking, there should be no delay (s) in providing comprehensive emergency obstetric care

after a subject reaches a teaching hospital. The rationale for carrying out this study was to assess the factors contributing to the third delays in obstetric care including current situation of obstetric services provided at tertiary care hospitals.

SUBJECTS AND METHODS

This cross sectional descriptive study was carried out in Lady Willingdon Hospital, Lahore over a period of eight days from 08th July 2005 by employing non-probability convenience sampling technique. This tertiary care teaching hospital is affiliated with King Edward Medical University –and- has three units I, II & III, and each unit, headed by a professor provides obstetric and gynaecological services round the clock. Fifty (50) pregnant women of any gestational age coming to the emergency of the hospital were included in the study. Every pregnant woman coming to the emergency with any presenting complaint requiring immediate intervention during study period was followed till the outcome of pregnancy. A precise and pre-tested questionnaire was used for data collection. Out of sample size of 50 subjects, half (25) were studied from 08.00 am to 08.00 pm during first half of four days, and half (25) from 08.00 pm to 08.00 am during next four days. The record of the subjects was also consulted for any useful and relevant information for the purpose of this study. Physical verification of all drugs and equipments was carried out to ascertain the facilities available for tertiary care. Data was cleaned and analyzed manually. Student "t" test was employed for calculating the significance of time interval between two activities during day and night. Data of timings was entered on SPSS computer programme. P value <0.05 was conducted significant.

RESULTS

Study sample of 50 subjects (pregnant women) was followed till the outcome of pregnancy. 28 (56%) subjects presented with some complications and 22 (44%) with normal pregnancy. 15 (54%) subjects from amongst those who presented with some complication had low educational status / were illiterate –whereas- 16 (74%) subjects from amongst those who presented with normal pregnancy had high education to their credit. 05 (10%) of illiterate women conceived about 06-09 times and had previous history of multiple abortions and neonatal deaths. Only 09 (18%) of subjects reached hospital after consulting Dais. 23

(46%) subjects belonged to low income group, while 27 (54%) hailed from high income group. 28 [56%] subjects had complications like bleeding, leaking membranes, hypertension and absent or sluggish foetal movements. 22 (44%) of subjects in the study delivered babies normally, while 16 (32%) through C-section. For 10 (20%) of subjects with gestational amenorrhoea of 08-12 weeks, evacuation was carried out. 02 (04%) subjects presented with shock in COPD due to ruptured uterus, wherefore laprotomy was conducted after initial management of shock. The pregnancy outcome in 37 (74%) cases was live births, in 03 (06%) stillbirths. As presented in the following Table, the doctors in labour rooms provided initial care to the subject in 38 minutes during day time & 46 minutes at night. Ideally, it should have been within 15 minutes (according to quality standards R=26). So, there was a delay of about 15-30 minutes in providing initial care. There was apparent difference of time during the day & at night. It was, however, statistically insignificant (P=0.64). The time interval between arrival to emergency of hospital and initial treatment was 96 minutes during the day & 163 minutes at night. Statistically, the difference in time during the day & night was not significant (P=0.35). Time from initial care to initial treatment in this study was 35 minutes during the day & 48 minutes at night. Ideally, it should have been within 30 minutes. So there was no appreciable delay in service provision. Similarly, the observed difference of day & night was statistically insignificant (P=0.65). The time interval between taking decisions for C-section to the beginning of procedure was 97 minutes during the day and 93 minutes at night. Statistically, this difference was insignificant (p=0.94). In case, where surgical procedures were carried out, it was about 312 minutes (05 hours) during the day and 335 minutes (about 06 hours) at night, which was also statistically insignificant (p=0.78). In normal deliveries, this time ranged from 183 minutes (about 3 hours) for day to 620 minutes (10 hours) for night, which is statistically significant (P<0.01). Ideally, this time should have been within two hours, which was seen neither in normal deliveries nor in surgical procedures. The subjects, who presented with some complications, took about 256 minutes (04 hours) during the day & 410 minutes (07 hours) at night. The observed difference was near to significant (P=0.07). The subjects who presented with normal pregnancy took 258 minutes (04

hours) during the day time and 420 minutes (07 hours) at night which is statistically significant [P=0.01], so the subjects presenting with normal labour were usually lingered on for several hours at night. The services available in the hospital were satisfactory and hospital was found equipped for comprehensive obstetric care during the day with certain inadequacies / shortcomings during night. The personnel providing care at COPD was nurse in 80% cases. 41 [82%] subjects were transported from COPD to labour room on wheelchairs. Essential laboratory investigation took 05-06 hours. In case of emergency request, results were available within 01-02 hours. Most of the drugs & equipments were available in labour rooms. Some drugs Dopamine & Doubtamine that are essential in emergency situation were out of stock. Blood transfusion arrangement was not a major problem in this hospital. However, in case of Rh-ve blood group, the blood bank was unable to provide blood.

Table-1
Showing Time Interval Between Two Activities During the Day and Night

Sr.No	Different Activities	Day Time (Min)		Night Time (Min)		Student "t" Value	"df"	"p" Value
		Mean	STD	Mean	STD			
1.	Time from starting of labour pains to arrival at COPD	412	263	605	652	1.37	48	0.176
2.	Time from COPD to Initial care	38	46	46	72	0.47	48	0.641
3.	Time from COPD to initial Treatment	96	184	163	302	0.95	48	0.348
4.	Time from initial care to initial treatment	35	102	48	100	0.46	48	0.651
5.	Time from decision of C-Section to start of procedure	97	202	93	181	0.07	48	0.941
6.	Time from initial care to definitive treatment in surgical procedure	312	159	335	259	0.29	26	0.776
7.	Time from initial care to definitive treatment in normal delivery COPD	183	94	620	184	6.79	20	<0.01*
8.	Time of arrival in C OPD to time of delivery with complications COPD	256	253	410	213	1.87	48	0.067
9.	Time of arrival in COPD to time of delivery without complications	258	198	420	252	2.53	48	0.01*

DISCUSSION

The "Three Delays Model", developed by Thaddeus & Maine, proposes that pregnancy related mortality is overwhelmingly due to delays in (1) deciding to seek appropriate medical help for an obstetric emergency (2) reaching an appropriate obstetric facility and (3) receiving adequate care when a facility is reached. In a study conducted by Barnes JD et al, this model was employed to analyze a sample of 12 maternal deaths, which occurred in a cohort of pregnant women. A delayed decision to seek medical care was noted in 08 (67%) out of 12 cases, while delays in transportation appeared to be significant in 02 only –and- in 07 cases, inadequate care at a health facility was a major factor. For 03 deaths, multiple delays were relevant[10]. In the instant study, the person initially attending the subjects in COPD was nurse, who referred them to labour room. Had a doctor been the initial attendant, then, the delay of 15-30 minutes in providing initial care to subjects could have be reduced. Moreover, most of the subjects were transferred from COPD to labour room on wheelchair for which lift was usually out of order and ramp was far away. The laboratory was not equipped for giving urgent results. The blood bank had no arrangements for Rh-negative blood groups. There was also delay in starting C-section, even after decision had been made. The delivery of services was not upto the mark during night, which may be responsible for maternal complications and mismanagement of the subjects presenting with normal pregnancy. However, there was no appreciable delay in providing services – and- the observed difference of day and night was not significant.

The first two delays reveal questions about seeking care at the family level (choice making) and community level (transportation and emergency costs). The third delay is related to healthcare providers, the facility and the health system. Data shows that while the majority of avoidable factors for stillbirths and neonatal deaths are related to poor maternal care during labour and the immediate postnatal period, about 1/3 are due to delays at home and in transportation[11]. In two case studies, examined by Mala Ramanathan, it was found that problem was neither the first delay nor was it the second delay. An urban woman does reach a centre that can provide the care she needs, but the system is not geared to prioritise an emergency. In first case study, a woman with general bleeding in third trimester was referred by healthcare provider to a nearby healthcare facility for emergency ultrasonography. It was not the absence of infrastructure which caused her death, but non-availability of exclusive ultrasound service for dealing with obstetric emergencies. He had to wait for 90 minutes before she underwent for ultrasonic examination, while there was a queue of 50 people. In the same system prompt intervention was also possible, provided the diagnosis of internal haemorrhage would have been done in time[12]. The second delay is of greatest significance in poor remote populations which tend to have poor health status and access to healthcare. The impact of improvements in the first and third delays will be reduced if the second delay remains[13]. In second case study, by Mala Ramanathan, a TBA referred a woman to the local hospital, where intrauterine death was declared. She was further referred to a tertiary care health facility for comprehensive obstetric care –and- was also provided transportation. Yet we find that she was shifted through five health facilities including two visits to the same local health unit. Nearly 24 hours after she went into labour, she died. There was indeed a trail of inadequate infrastructure to provide comprehensive obstetric care.

CONCLUSION

The results of study show that educational status plays a significant role in utilizing healthcare services and subsequently impact the natal outcome. The results of study underline the need of vigorous & zealous implementation of well-planned supervision & monitoring system to provide training for quality service delivery. The current extant data shows that our EmOC system is gradually improving and focus is on reduction in third delay. Consequently, an improvement in obstetric healthcare may greatly impact the decision making to attend the healthcare institutions, thus reducing the first delays –and- it will certainly have profound impact on reducing needless maternal deaths.

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