

Maternal Health Care in a rural area of Pakistan

S. Safdar, S.N.B. Inam, A. Omair (Department of Community Health Sciences, Ziauddin Medical University, 42-A, Sindhi Muslim Housing Society, Karachi.)

S.T. Ahmed (Health and Nutrition Development Society (HANDS), 42-A, Sindhi Muslim Housing Society, Karachi.)

Abstract

Objective: The need for effective strategies for delivery of healthcare to rural women is paramount and requires a study of maternal perceptions and experiences of the healthcare system.

Method: This article describes knowledge, attitudes and practices regarding obstetric healthcare in a rural area of Pakistan. This is a cross sectional survey of a rural area of district Hyderabad, Pakistan. A multistage sample of 1,150 households was drawn from a population of 247,257 living in 30,653 households. Structured KAP questionnaires regarding maternal health were administered to male and female respondents in study household.

Results: A total of 1,178 married women and 1,146 married men were interviewed. The mean age of female respondents was 29 ± 6 years. At the time of the interview 20% women were pregnant. Sixty-one percent women received antenatal care during their last pregnancy. The most frequent antenatal care providers were female doctors (55%). Majority (67%) of women had delivered at home with the assistance of traditional birth attendants (TBAs). Overall less than 40% of respondents could correctly identify signs of obstetric complications. Thirty-eight percent women experienced obstetric complications during their last pregnancy. Estimated annual maternal mortality ratio (MMR) was 689/100,000 live births.

Conclusion: Women have inadequate access to obstetric care due to limited healthcare options and poor knowledge of obstetric complications. This can be corrected by improving services and increasing overall maternal health awareness in the community (JPMA 52:308;2002).

Introduction

Pakistan is a developing country with a population of 130 million. Low literacy and high fertility coupled with poor economy translates into high morbidity and mortality. Women and children are the most vulnerable segments in terms of health. The infant mortality rate is 86/1000 live births and maternal mortality ratio (MMR) is 340/100,000 live births. These statistics are among the worst in the world^{1,2}.

In this age of scientific and medical advancement, most of the causes of maternal mortality and morbidity are avoidable. A life time risk of dying due to pregnancy related causes for a Pakistani woman is 1 in 80 compared to 1 in 61 in developing countries as a whole and 1 in 4,085 in industrialized countries³. High maternal mortality in Pakistan is indicative of neglect of women's health, however, in the absence of accurate maternal health data, the magnitude of problem in rural areas of the country is difficult to gauge.

Sindh is the second most populous province of Pakistan. The majority of the people are settled in rural areas⁴. High total fertility rate (4.4) and unacceptably high maternal mortality paints a dismal picture of

women's health in the province⁵. Population based maternal health surveys of urban squatter settlements of Karachi report a maternal mortality ratio between 276-310 per 100,000 live births. This survey identified hemorrhage to be the leading cause of maternal mortality⁶.

Pregnant women suffering from any illness are more prone to adverse consequences of childbirth⁷.

Forty percent women suffer from anemia⁸, which when coupled with hemorrhagic complications of pregnancy and childbirth increases risk of fatal outcome for the mother. Any delays in seeking care for obstetric complications can endanger maternal life^{9,10}.

The need for effective strategies for delivery of healthcare to rural women is paramount and requires a study of maternal perceptions and experiences of the healthcare system. This article describes knowledge, attitudes and practices regarding obstetric healthcare in a rural area of Sindh.

Subjects and Methods

Setting

The study was conducted in year 2000 in the rural areas of Taluka Hala, District Hyderabad. Hala is located on the main national highway. The population of the Taluka Hala is 247,257 living in 30,653 households. The majority of the people are Sindhi speaking Muslims¹¹. The public healthcare system in the Taluka includes one 30-bedded hospital and 12 first-level care facilities. In addition there are private healthcare providers including general practitioners, small hospitals and maternity homes. The available list of study population contained the names of villages, number of households and population in the ten union councils; no other household or individual list was available. So villages were proportionally sampled according to the number of households and population size in all union councils.

Subjects and Data Collection

A sample of 1,150 households was selected from 47 villages in all ten union councils of Taluka Hala, through multi-stage sampling¹². All married women in the sample households, who were between 15-45 years of age, were interviewed. Women who had not been pregnant in the last three years were excluded from the study in order to minimize recall bias. It was assumed that husbands have a significant impact on the decision to seek care in the event of an obstetric emergency therefore they were also included in the survey to assess their knowledge of obstetric complications.

Individual households were systematically sampled by first identifying a landmark in the village. The landmarks included a shop, mosque, hand-pump or community center. The fourth house from the identified landmark was considered the first house and from thereon every fourth house was included in the sample.

A pre-tested structured questionnaire was administered through personal interviews to a total of 1,178 women and their husbands. The questionnaire had five sections. The first pertained to personal and demographic information. The second section was related to experience of last pregnancy and the third assessed the knowledge of obstetric complications. The fourth section was related to contraceptive use and fifth section was on child health. As women cannot identify medical diagnosis, knowledge was assessed on perceptions of danger signs during pregnancy and labor. The questionnaire administered to husbands focused on assessment of knowledge of obstetric complications and contraceptive use. The findings on contraception and child health have been reported elsewhere.

The study had a power of 80% and an acceptable

error of 0.05. To minimize errors in data entry, questionnaires were double entered and validated¹⁴. Data analysis and management was done on EpiInfo-6 software of the Center for Disease Control, Atlanta.

Results

Baseline characteristics

Data was collected from 1,150 households. Eight incomplete questionnaires were not included in the final analysis (n=1142). A total of 1,178 married women and 1,146 married men were interviewed. The mean age of female respondents was 29 ± 6 years, whereas the mean number of pregnancies experienced by them was 5 ± 3 . Twenty percent women in the sample were pregnant at the time of the interview (Table 1).

Table 1. Demographic characteristics of the study population.

Age group	Male	Female	Total	%
Adults >45 years	438	508	946	11
Adults 15 - 45 years	1641	1642	3265	38
Children 6-14 years	1173	1056	2229	26
Children <5 years	1151	1021	2172	25
Average household size	7.5 persons		-	-
Male: female ratio	1 : 1		-	-
Maternal mortality ratio per 100,000 live births	689		-	-
Female's age at first pregnancy	18±2.5 years		-	-

Experience of last pregnancy

Sixty-one percent women received antenatal care during their last pregnancy. The mean number of antenatal visits were 3 ± 2 . Most women went for their first antenatal visit during the second trimester. The most frequent antenatal care providers were female doctors (Table 2).

Table 2. Percentage distribution of type of healthcare provider indifferent stages of pregnancy.

Provider	Antenatal (n=716) %	Natal (n=1176) %	Postnatal (n=352) %
Doctor	55	21	38
Nurse	15	12	16
Lady health visitor	20	2	18
Lady health worker	1	0	7
Traditional birth attendant	7	61	19
Others	2	4	2

As an indicator of the quality of antenatal care (ANC) women were asked if their blood pressure had been measured at least once during their pregnancy, 80% gave a positive response. Seventy-one percent women had received atleast one dose of tetanus toxiod during their reproductive age (15-45 years). Sixty-five percent deliveries were home based and 20% took place in a government hospital, the remaining deliveries took place at other facilities; including private clinics. Traditional birth attendants (TBAs) assisted 61% of all home-based deliveries. The incidence of obstetric complications was 38%. The most common obstetric complications were prolonged labor and hemorrhage (Table 3).

Table 3. Complications experienced during last delivery (n=443).

Complications	%
Prolonged labor	28
Hemorrhage	25
Swelling of face	15
High blood pressure	13
High fever after delivery	11
Any other complication	4
Don't know	4

Of all the 443 women who experienced complications, only 37% were referred to an appropriate emergency obstetric care (EOC) facility and 30% were referred to facilities where EOC was not available. Thirty-three percent of women were not referred at all.

The 296 women who were referred for EOC, 79% used a car or a taxi to reach the referred facility. Animal driven carts were used by 9% and 1% had to walk to get to a EOC facility. The remaining (11%) used some other form of transportation; including motorcycles, cycles, public buses, etc. None of them had used an ambulance.

Knowledge of Obstetric Complications

Multiple response questions were asked from all respondents to assess their knowledge of obstetric complications and their consequences. These complications included ante-partum hemorrhage, prolonged labor (lasting for over 12 hours), retained placenta, post-partum hemorrhage, puerperal fever and seizures. Overall less than 40% respondents could correctly identify signs of obstetric

complications (Table 4).

Table 4. Knowledge of complications that warrant emergency obstetric care.

Complication	Male (n=1146) %	Female (n1178) %	P-value
Ante-partum hemorrhage	24	38	0.001*
Prolonged labor for over 12 hours	44	47	0.073
Retained placenta	15	30	0.001*
Post-partum hemorrhage	59	58	0.312
Puerperal fever	44	49	0.008*
Seizures	16	47	0.001*
Overall	34	45	0.001*

*Significant at $p < 0.05$

Note: because of multiple response the total exceeds 100%

Females had significantly better knowledge ($p < 0.001$) than their male counterparts. A high proportion of men (86%) and women (88%) correctly knew the location of healthcare facility where EOC was available.

Maternal Mortality

Women were asked whether there were any deaths due to obstetric complications in the household in the last three years. From the 1150 households, 24 maternal deaths were reported in the last three years. Out of the 1178 women interviewed 1159 reported a live birth at the conclusion of the pregnancy. Computed on the basis of the above figures the estimated annual maternal mortality ratio (MMR) was 689/100,000 live births, which translates into 324 maternal deaths per year.¹¹

Discussion

Global reappraisals of program strategies to reduce maternal mortality clearly indicate that all pregnant women are at risk of obstetric complications. A high maternal mortality reflects the need for addressing women's health in Pakistan. The role of the health sector in improving maternal health is to ensure availability of quality essential obstetric services to all women during pregnancy and childbirth⁹. The combinations of medical and social factors culminating in maternal deaths are intertwined and

complex. Jafarey and Karejo suggest that economic, social and cultural factors play a more defining role in maternal deaths than medical causes¹⁰. It is noteworthy that the majority of women in Hala have access to a doctor or a trained health professional during the antenatal phase, but at the time of delivery they are assisted by TBAs (Table 2). Hence, the TBAs ability to identify complications early during childbirth and subsequent referral can be crucial to maternal survival.

The “Three Delays” model of maternal mortality by Thaddeus and Maine highlights the role of the health system and the community in maternal deaths. The three delays that result in maternal deaths are: 1) delay in deciding to seek care, 2) delay in reaching the healthcare facility where emergency obstetric care (EOC) is available and 3) delay in initiation of treatment after arrival at the EOC facility⁹. The third delay, which is at the EOC facility level, is beyond the scope of this study.

Analyzing the first two delays in the context of our data show that the first delay culminates from two factors; first is the dynamics within the family where 90% of the females essentially require permission from their husbands or some other family member to seek EOC care (Table 5).

Table 5. Person’s permission required for going to hospital in case of obstetric emergency (n=1176).

Person	%
Husband	55
Mother-in-law	25
If husband is not present, then father/brother-in-law	10
Permission is not necessary from anyone	10

The ability to make a timely decision to seek care can also be compromised due to inadequate knowledge of danger signs by women and their husbands (Table 4). As most deliveries are assisted by TBAs their knowledge and skill may also influence the decision-making process.

The second delay occurs due to lack of access to appropriate transportation and the ability to reach the nearest EOC facility. The risk of maternal death increases by 30%, if the nearest hospital is 65 or more kilometers away¹⁴. In our study majority (87%) of the respondents had knowledge of the location of an EOC facility and most had access to some form of transportation. But when an actual emergency occurred, only 37% managed to reach an appropriate EOC facility. So having a mere knowledge of location of EOC service and access to transport does not necessarily guarantee adequate utilization of that service. More qualitative and quantitative data is needed to better understand this phenomenon. The annual estimated toll of 324 maternal deaths in the small population Taluka Hala needs urgent attention. The National Health Survey of 1990-948 and the current survey shows that women continue to deliver at home, highlighting the need for trained midwives. Secondly, all adult family members must be made aware of signs of obstetric complications and have a strategy for transportation in the event of an emergency to the nearest EOC facility.

Acknowledgements

This study is a part of the baseline survey on maternal health in Taluka Hala, District Hyderabad, Pakistan, by Ziauddin Medical University for Health and Nutrition Development Society (HANDS)

and was funded by The Aga Khan Foundation, Pakistan.

The authors wish to thank Professor Sadiqua Jafarey, Mr. Yahaya Waliullah and Mr. Ejaz Alam for their contribution. We also acknowledge the staff of HANDSHala office for extending their hospitality during the course of the survey.

References

1. United Nations Children Fund, State of the World's Children-2001, New York: UNICEF, 2001.
2. United Nations Children Fund: Progress of Nations, UNICEF, New York. 1997.
3. World Health Organization, Maternal Mortality in 1995: estimates developed by WHO, UNICEF and UNFPA. WHO/RHR/01.9. Geneva: WHO, 2001.
4. Government of Pakistan, Economic survey of Pakistan-2000, Islamabad, Ministry of Finance; 2000.
5. Aga Khan University. Maternal and Infant Mortality Survey-1984-94, Karachi; AKU, 1995.
6. Fikree FF, Berendes HW, Villar J. A rapid community-based evaluation of pregnant women in low socio-economics settlements of Karachi. i. Pak. Med. Assoc., 1993;43:208-12.
7. Fikree FF, Karim MS, Midhet F, et al. Causes of reproductive age mortality in low socio-economic settlement of Karachi. J. Pak. Med. Assoc., 1993;43:208-12.
8. Pakistan Medical and Research Council. National Health Survey 1990-94: health profile of the people of Pakistan. Islamabad: PMRC., 1994.
9. Thaddeus S, Maine D. Too far to walk: maternal mortality in context. Soc. Sci. Med., 1994;38:1091-110.
10. Jafarey SN, Korejo R. Mothers brought dead: an enquiry into causes of delay. Soc. Sci. Med., 1993;36:371-72.
11. Sindh Bureau of Statistics. Household survey of District Hyderabad. Karachi. Govt. of Sindh, 1997.
12. Fowlcr FJ, Survey Research methods. London; SAGE Publication Ltd. 1998.
13. Hennekens CH, Buring Jt. Epidemiology in Medicine. Boston: Little Brown and Company, 1987.
14. Fikree FF, Midhet F, Sadruddin s, et al. Maternal mortality indifferent Pakistani Sites: ratios, clinical causes and determinants. Acta. Obstet. Gynecol. Scand., 1997;76:637-45.