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Risk Profile of Pregnant Women at Community level In Western Region of Nepal.

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ABSTRACT

Adopting a risk care approach in a low resource country like Nepal is ideal in lowering maternal mortality and morbidity. Risk profile of pregnant women at community level can be obtained by present risk scoring system by the risk factors present in them. Timely intervention can reduce the risk and have an impact on reducing maternal mortality rate.187 antenatal cases in Western Region of Nepal were screened with a scoring system and followed up by the outreach medical team of Manipal Teaching Hospital. Most of the cases were from upper lower class socioeconomic scale. With appropriate care conversion of high risk to low risk was 36(78.3%) While 136 (96.5%) low risk cases remained as such. The Relative Risk of unwanted outcome in high risk cases was 5.1, while Attributable Risk was 80.4 and Population Attributable Risk Proportion was 62.5.The study suggests that it is possible to identify at risk mothers with the present risk scoring system during prenatal period at community level. Imparting timely appropriate care with available resources can reduce maternal morbidity and mortality rate.

Keywords: Risk Profile, Antenatal Cases, Nepal

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INTRODUCTION

Global evidence shows no pregnancy is without risk and complications may arise anytime during pregnancy, intrapartum period and puerperium. It is very difficult to predict when the complications might occur.

Maternal Mortality is still high compared to the statistics of developed countries in many under developed and developing countries [1-4].

Since 1997 Nepal, a developing country, started the Safe Motherhood Program and made significant progress in organizing the health care infrastructure, policy and protocol development and training of health care providers [5].

The National Safe Motherhood Plan (2002-2017) and the revised Safe Motherhood and Neonatal Health Long Term Plan (SMNHLTP 2006-2017) incorporates birth by skilled attendants, the neonatal health, , legalization of abortion, gender equity and related issues. Due to effective coordinated efforts by the government sector along with donor agencies, maternal mortality was reduced from 850 maternal deaths per 100,000 live births in 1990 to just 281 in 2006.The targeted millennium development goal (MDG 5) of 213 maternal deaths per 100,000 live births by 2015 is a hard task ahead [5-8].

Experience shows that three key delays in obstetric emergency have impact on the outcome of pregnancy. They are delays in taking a decision, delay in reaching the health care institution for appropriate care and even if the patient reached in time either the protocol is not available or appropriate facilities like caesarean section or blood transfusion are not available to the patients(delay in receiving care) [5,6-9].

To address all these factors, government of Nepal is trying to promote birth preparedness and complication readiness, encouraging institutional delivery, provide 24 hours emergency obstetric care services (both basic and comprehensive) in all the districts. Government is also trying to make available, funds, transport and blood supplies to the needy [5].

It is well experienced that in most of the antenatal cohorts usually (20-30%) mothers develop complications at some stage of pregnancy process. These mothers can be identified with the risk factors present in them. Unfortunately more than 80% of complications, morbidity and mortality happen in this small group of cases. If with the available resource this group is taken care of, there will be an impact on their condition and on the newborn [10-17].

In a low resource country like Nepal, those mothers having risk factors can be easily identified with the use of some simple risk score card. Those having risk can be given special care in time by pulled in resources. The extra timely attention and care could avert complications and mortality, thereby will have a definite impact on the morbidity and mortality indices.

This risk approach can be very easily adopted in a community set up where the resources are scarce to take care of all the antenatal cases; caring for everyone but a little more for those who are in need.

The study was to identify at risk antenatal cases with a simple score card, care more for the needy and observe the impact on status of mothers on their delivery and newborn.

MATERIALS AND METHODS

Setting and design

Antenatal cases at Khairenitar Health Post in Western Region of Nepal from August 2011 to July 2012 were under clinical surveillance throughout the period of pregnancy in the MTH outreach care program and the outcome assessed.

A scoring system was used with 28 prenatal and 16 intrapartum factors categorizing mothers in low and high risk groups. Follow up of both the mother and newborn was done after delivery.

Approval of Ethical committee

Manipal Teaching Hospital ethical committee's approval was taken. The Research protocol as per the latest version of the Declaration of Helsinki was followed.

Inclusion exclusion criteria

Only the cases registered and regularly followed up till six weeks after delivery were included in the study.

Outcome variable

Total 187 antenatal cases who full filled the criteria were in the final cohort.

Sample size calculation

Sample size calculation showed for 95% confidence interval and significance level α=5%, P=70%, Q= 30%, allowable error=10%, required sample size was 165. P=percentage of in high risk group while 7 (70%) were converted to low risk group. In the pilot study done prior to the original study with 10 ANC cases.

Data management and statistical analysis

Excel 2003, R 2.8.0 Statistical Package for the Social Sciences (SPSS) for Windows Version 16.0 (SPSS Inc; Chicago, IL, USA) and EPI Info 3.5.1 Windows Version were used to analyze the DATA.

RESULTS

The study comprised of 187 antenatal cases.

Incidence in risk groups

Out of the total cohort, 141(5.4%) cases were in low risk group and in high risk group were 46 (24.6%). Subsequently of the total 141 low risk cases 135 (96.5%) cases remained low while 6 (4.3%) were converted to high risk group.

There was reversal of this proportion in high risk group while 36 (78.3%) were converted to low risk group, 10 (21.7%) remained in high risk group despite intervention measures.

Socio economic status

Modified Kuppuswamy's scale was used for classification of socioeconomic status.

Major representation of cases was from upper lower socio economic class from both the high and low risk groups, while upper middle class had 4 (2.84%) cases only, in low risk group lower class had 5 (10.87%) cases, all of them were in high risk group. The observation is substantiated by X2 test (x2=14.47 d, f=3 p ←.01)

Pattern of risk factors in ante partum period

The average number of risk factors per woman were 0.46 in low risk and 2.89 in high risk group. 11.8% factors in low risk and 23.1% in high risk group belonged to the categories of bad obstetric history in previous pregnancy. The frequency of anaemia was quite high in both low and high risk groups. Other preventable factors were poor weight gain, pre-eclampsia, multiparty, etc.

Pattern of risk factors during intrapartum period

Medical induction of labor was greater in high risk 3 (6.5%) than low risk group 5 (3.5%). In high risk group 5(10.9%) of cases underwent primary caesarean section and 4 (8.7%) repeat caesarean section whereas

no case from low risk group had a caesarean section. In low risk group, 3 (2.1%) had traumatic delivery whereas the corresponding figure in high risk category was 2 (4.3%). In high risk group 3(6.5%) had breech presentation, 1(2.2%) multiple pregnancy and 3(6.5%) premature delivery. However in low risk group the incidence was nil.

Outcome of mothers

5 (10.9%) of mothers had unwanted outcomes like infection, hemorrhage, etc. Out of low risk mothers, 3 (2.1%) had unwanted outcomes. The difference is statistically significant (X^2 =4.51; d; f = 1; P ←.03).

The relative risk of unwanted outcome in mothers having high risk is 5.1 greater that of mothers with low risk. The risk attributable to high risk status is 80.43 and Population attributable risk proportion is 62.5.

Table 1: Risk Status and Outcome of Mothers

Risk Status	Unwanted Outcome				Total	
	Present		Absent			
	No	%	No	%	No	%
High	5	10.9	41	89.1	46	100
Low	3	2.1	138	97.9	141	100
Total	8	4.3	179	95.7	187	100

DISCUSSION

In a low resource country like Nepal, risk approach for management of antenatal cases will be a cost effective option to be incorporated in the health care delivery system. The target of millennium development goal (MDG5) in maternal mortality for Nepal is 213 maternal, deaths per 100,000 live births by 2015. The statistics vary from the mountain region, hilly area and plains (Terai) of Nepal. It also varies from urban and rural areas as well [8].

In the new national health policy, the government of Nepal has targeted for 66% reduction in maternal mortality between 1990 to 2015 [7]. The health services have undertaken Birth Preparedness Package and mother and neonatal health (MNH) activities at community level, rural ultra sound program ,emergency referral fund to provide the referral services to women from economically disadvantage communities, safe abortion services and Aama Program.

The Aama program incorporates four components: i. a cash incentive scheme for the Safe Delivery Incentive Program (SDIP), ii.free institutional delivery care, iii. Incentive to health worker for home delivery and iv. cash incentive to women for four antenatal visits [5].

But the available resources provided at the peripheral levels are not adequate to cope up with the need. If the available resources are equitably distributed on need based requirement and adopt a risk care approach, the overall impact on maternal mortality and morbidity could be encouraging in lowering both.

There are many studies carried out trying to associate the impact of risk factors present in the antenatal cases on the mother themselves and also on their newborns.

Many of the studies linked socioeconomic factors, parity, care during antenatal period and in emergency situation, domiciliary or institutional delivery either by traditional birth attendant or the skilled birth attendant or by professional experts like obstetricians [15-22].

It is obvious that appropriate care during prenatal, during delivery and afterwards has a positive impact on the mother and the newborn.

It is also not very difficult to identify mothers with risk factors and initiate additional care for them.

More or less in most of the studies either hospital based, in family or domiciliary environment, it was revealed that 20-30% mothers within the same cohort possess risk factors, usually they belong to the lower socioeconomic status with various limitations to have access to appropriate health care in time.

Whenever these cases with risk factors were managed properly, impact of risk was reduced and there was change in risk status of the mother with a positive outcome.

Some of the risk factors like cephalo pelvic deformity or previous history of operative procedure could not be modified or changed despite intervention measures But overall identification of cases as per risk score and timely intervention measures had an impact on outcome which was encouraging. All these studies have similar findings and outcome after timely care similar to the present study [15-22].

CONCLUSION

The study suggests that it is possible to identify at risk expectant mothers with the present risk scoring system during prenatal period. Imparting timely appropriate care with available resources has a positive impact and can reduce maternal morbidity and mortality rate even with limited resource at community level .

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