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PREVALENCE AND CORRELATES OF HIGH RISK PREGNANCY IN RURAL HARYANA: A COMMUNITY BASED STUDY

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ABSTRACT

Pregnancy is usually a serene time of unparalleled joy and expectation in a women's life. However, sometimes it can be complicated by illnesses or medical conditions. Although only 10-30% of the mothers seen in antenatal period can be classified as high risk they account for 70-80% of perinatal mortality and morbidity. The objectives of this study were to determine prevalence and correlates of high risk pregnancy in a rural block of Haryana. The present cross-sectional study was carried out in all the 20 sub-centers under Community Health Centre (CHC) Chiri (Block Lakhanmajra), the rural field practice area of Department of Community Medicine, PGIMS, Rohtak during July 2011 to June 2012. Assuming prevalence of high risk pregnancy as 10%, a sample of 900 eligible subjects was taken into consideration. All registered pregnant women at the particular sub-center at that point of time were included. A pre-tested semi-structured interview schedule was used for interviewing the study subjects. Data so collected were compiled & analysed using statistical software (SPSS version 20.0). The prevalence of high risk pregnancy was found to be 31.4 %. Prevalence of high risk pregnancy was found significantly more in lower education group (36.7%) as compared to higher education group (24.9%). In the lower socio-economic group, prevalence of high risk pregnancy (33.4%) was found significantly higher than the upper socio-economic group (19.7%). Early identification and prompt treatment of high risk pregnancy can prevent the development of both maternal and fetal morbidity and mortality. Education of female along with the motivation and efforts of the health professionals is essential for safe motherhood.

Key Words: *High Risk Pregnancy, Prevalence, Correlates, Rural Haryana*

INTRODUCTION

High-risk pregnancy is defined as one which is complicated by factor or factors that adversely affects the pregnancy outcome-maternal or perinatal or both (Dutta, 2006). Although only 10-30% of the mothers seen in antenatal period can be classified as high risk they account for 70-80% of perinatal mortality and morbidity (Mufti and Mufti, 2008). Despite recent advances in modern obstetrics and neonatal care, India is still facing a high perinatal mortality rate (33/1000) (Registrar General India, 2012). Perinatal outcome can be changed significantly by early detection followed by special intensive care of high risk pregnancies. Age, parity, social class and past obstetric history and medical history are only some of the factors that should be taken into account while assessing the risk for any pregnant woman (Dangal, 2007). Identifying a pregnancy as high risk helps ensure that it receives extra attention and proper care, thereby significantly decreasing maternal and neonatal morbidity and mortality rates. All pregnancies should therefore be evaluated to know whether there are or will be risk factors. The objectives of this study were to determine prevalence and correlates of high risk pregnancy in a rural block of Haryana.

MATERIAL AND METHODS

Study Area and study period

The present cross-sectional study was carried out in all the 20 sub-centers under Community Health Centre (CHC) Chiri (Block Lakhanmajra), the rural field practice area of Department of Community Medicine, PGIMS, Rohtak during July 2011 to June 2012. These centers are used for the purpose of teaching, training and research activities.

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Sample Size

Assuming prevalence of high risk pregnancy as 10% (Mufti and Mufti, 2008) and allowable errors of 20% at level of significance of 95%, using formula for sample size $(N)=Z^2 \cdot p(1-p)/d^2$, a sample of 900 eligible subjects were taken into consideration.

Study Population

All pregnant women who were residing in the study area since 6 months and registered at the particular sub-center at that point of time were included. All participants provided written informed consent.

Data Collection Method

A pre-tested semi-structured interview schedule was used for interviewing the study subjects. The interview schedule included information on socio-demographic profile, relevant obstetric & medical history. Physical examination of pregnant women was done and parameters like weight, height and blood pressure were recorded.

A few days prior to the first visit to each sub-center, the health worker was contacted and was asked to prepare a list of all pregnant women from their records at that point of time. She was told to inform the pregnant women to come to the sub-center on a pre-fixed date and time for the check-up. Three to four visits were made at each sub-center in two consecutive weeks around two sub-centers were covered in one month and all 20 sub-centers were covered in one year period. The pregnant women who did not come to sub-center were contacted by home visits. The females who could not be contacted even after two home visits were excluded from the study. Those having any serious illness were referred to nearby CHC, General Hospital or PGIMS, Rohtak as per treatment required.

Criteria for High Risk Pregnancy

Age > 35 years, Height <145 cm, parity beyond 4, obstetric history poor such as two or more previous abortions, previous still birth, previous preterm birth, previous history of birth with congenital anomaly, previous caesarian section, hypertension in pregnancy and history of chronic medical disorders like severe anemia, diabetes, thyroid disorders (Dutta, 2006). In present study, a pregnancy was considered as high risk if any of the above criterions was met.

Statistical Analysis

Data so collected were compiled & analysed using statistical software (SPSS version 20.0). Categorical data was presented as percentage (%). Pearson's chi square test was used to evaluate differences between groups for categorized variables.

RESULTS AND DISCUSSION

During the study period, a total of 1104 antenatal women were registered at the sub-centers. Out of them, 804 antenatal women attended the sub-centres and 127 pregnant women were contacted & examined by home visits. 173 pregnant women, who could not be contacted even after two home visits were excluded from the study. Therefore, a total of 931 pregnant women were included in the present study. So, the overall response rate was 84.3% (931/1104) (Figure 1).

Table 1 shows socio-demographic characteristics of the study participants. Majority of study participants (64.6%) belonged to age group 20- 24 years. Less than 1 percent of study participants were in the age group of >35 years. Around one third (33.3%) of the study participants were educated up to senior secondary class. Out of the total, ~14% of study participants were illiterate. Most of the study participants were housewives (92.6%). Majority of the study subjects belonged to lower middle class (44.1%) and middle class (34.8%).

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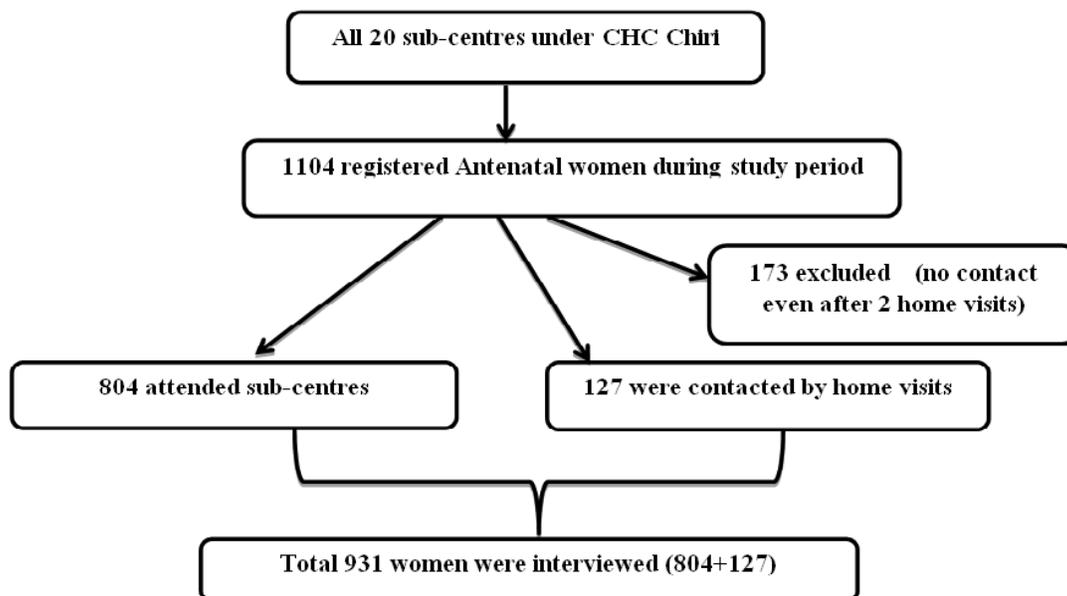


Figure 1: Flowchart showing details of study subjects

Table 1: Distribution of the study participants by socio-demographic characteristics (N=931)

Socio-demographic characteristics	No. of study participants (%) (N=931)
Age (years)	
≤ 19	98 (10.5)
20-25	601 (64.6)
25-30	193 (20.7)
30-35	32 (3.4)
> 35	7 (0.8)
Education	
Illiterate	129 (13.9)
Primary	172 (18.5)
Middle	208 (22.3)
Senior secondary	310 (33.3)
Graduate and above	112 (12.0)
Occupation	
Housewife	862 (92.6)
Labourer	41 (4.4)
Business	10 (1.1)
Agriculture	16 (1.7)
Service	2 (0.2)
Socioeconomic status (udai pareekh scale)	
Upper class	4 (0.4)
Upper-middle class	133 (14.3)
Middle class	324 (34.8)
Lower-middle class	411 (44.1)
Lower class	59 (6.4)

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Table 2: Quantitative parameters of study participants (N= 931)

Parameters	Mean (SD)
Age	22.8 years (± 3.2)
Height	152.8 cm (± 6.2)
Weight	52.5 kg (± 9.1)
Systolic blood pressure	111.5 mm Hg (± 14.2)
Diastolic blood pressure	71.5 mm Hg (± 10.6)

Mean age, height & weight of study participants were 22.8 years (± 3.2), 152.8 cm (± 6.2) & 52.5 kg (± 9.1) respectively. Mean systolic & diastolic blood pressure were 111.5 mmHg (± 14.2) & 71.5 mm Hg (± 10.6) respectively (Table 2).

Table 3: Distribution of study participants by presence of high risk pregnancy (N=931)

Category	No. of study participants (%)
High risk pregnancy	292 (31.4)
Non high risk pregnancy	639 (68.6)

In present study, the prevalence of high risk pregnancy was found to be 31.4 % (292/931) (Table 3). In the developing countries over 50% pregnant women in high- risk pregnancies lived in rural area. A hospital based study conducted by Akthar *et al.*, (2009) in Bangladesh, found incidence of high risk pregnancy as 4.52%. Among these patients there were 69.5% from rural area (Akthar *et al.*, 2009). In another hospital based study conducted by Mufti *et al.*, (2008) in Kashmir, the incidence of high risk pregnancy was reported 15% (Mufti *et al.*, 2008). Variable prevalence is contributed to difference in regions, populations, methodologies, diagnostic criteria and definitions used so the true comparison between them is not actually feasible on the practical grounds and may not give a very clear picture of the actual situation.

Table 4: Distribution of high-risk pregnancies by risk factors* (N=292)

Characteristics	No. of study participants (%)
Age > 35	7 (2.4)
Parity ≥ 4	40 (13.7)
Height < 145 cm	72 (24.7)
History of ≥ 2 abortion	80 (27.4)
History of still birth	29 (9.9)
History of pre-term birth	34 (11.6)
History of caesarean section	24 (8.2)
History of birth with congenital anomaly	11 (3.8)
Hypertension in pregnancy	64 (22.0)
History of chronic medical disorders (severe anemia, diabetes, thyroid disorders)	43 (14.7)

**multiple risk factors can be there*

Among 292 high risk pregnancies, most common risk factor seen was history of ≥ 2 abortion (27.4%) followed by height < 145 cm (24.7%), hypertension in pregnancy (22.0%), History of chronic medical

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disorders (14.7%), Parity ≥ 4 (13.7%), History of pre-term birth (11.6%), History of still birth (9.9%), History of caesarean section (8.2%), History of birth with congenital anomaly (3.8%) and age > 35 (2.4%).

Women aged 35 and older are at increased risk of problems such as high blood pressure, gestational diabetes and complications during labor (Merck, 2010).

When women have had a problem in one pregnancy such as preterm birth, baby with birth defects, previous abortion(s), previous stillbirth, previous caesarean section they are more likely to have a same problem in subsequent pregnancies (Arias, 1993; Arulkumaran *et al.*, 1996; Krishna *et al.*, 2001; Beers and Berkow, 2006). In present study, among high risk pregnancies, hypertension was seen in 22% of cases as compare to 30.97% reported in a study conducted by Akthar *et al.*, (2009) in Bangladesh.

Table 5: Association of high risk pregnancy with education status of women

Education status	High risk group (N=292) (%)	Non High risk group (N=639) (%)	Total (N=931) (%)
Upto Senior Secondary	187 (36.7)	322 (63.2)	509 (100.0)
Above Senior Secondary	105 (24.9)	317 (75.1)	422 (100.0)
Total	292 (31.4)	639 (68.6)	931 (100.0)

Pearson Chi-Square -15.068, p=0.000

Table 5 shows that prevalence of high risk pregnancy was found significantly more in lower education group (upto Senior Secondary group) (36.7%) as compared to higher education group (above senior secondary group) (24.9%).

This is the universal fact that education of women plays an important role in taking nutritious diet, spacing between children, proper antenatal check-ups and early recognition of symptoms of complications and seeking medical care. And also, education probably helps the women to understand the motivational efforts of the health professional for safe motherhood. All these factors might have contributed to our findings. Grand multiparity was associated with low socioeconomic status and education (odds ratio [OR] 6.4, 95% confidence interval [CI] 4.5, 9.0) (Roman *et al.*, 2004).

Table 6: Association of high risk pregnancy with socio-economic status

Socio-economic status	High risk group (N=292) (%)	No High risk group (N=639) (%)	Total (N=931) (%)
Lower + Lower middle+ middle	265 (33.4)	529 (66.6)	794 (100.0)
Upper middle+ upper	27 (19.7)	110 (80.3)	137 (100.0)
Total	292 (31.4)	639 (68.6)	931 (100.0)

Pearson Chi-Square 10.138, p<0.001

In the lower socio-economic group, prevalence of high risk pregnancy (33.4%) was found significantly higher than the upper socio-economic group (19.7%) in present study (Table 6).

Other studies also reported similar findings (Mavalankar *et al.*, 2008). These findings suggest that lower socio-economic factors may be an independent risk factor for high risk pregnancy. Being in a lower socioeconomic group increases the risk of problems during pregnancy. These women are less likely to consume a healthy diet and access to appropriate medical care.

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Conclusion

In conclusion, our study shows that nearly one in 3 pregnant women in rural areas of Haryana had one or more risk factors which can adversely affect the maternal and fetal outcome. Prevalence of high risk pregnancy was found significantly higher in lower education group and lower socio-economic status.

Knowledge of risk factors may give tracks for prevention in this population. For reducing the high risk pregnancy prevalence the most powerful of all interventions, is education of girls. Education of female along with the motivation and efforts of the health professionals is essential for safe motherhood.

Early diagnosis and treatment through regular antenatal checkup is a key factor to prevent high risk pregnancy and its complications. There is room for improvement in ensuring that women at risk of a poor outcome deliver in hospitals where the most appropriate level of care can be provided. Therefore, it is the need of hour to devise a sound screening strategy to find out high risk pregnancy cases and comprehensive strategies to prevent maternal and child complications.

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