

# ASSESSMENT OF RISK FACTORS FOR HIGH RISK PREGNANCY

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## ABSTRACT

**Objective:** To determine the most prevalent causes/factors of high-risk pregnancy among women of reproductive age group.

**Materials and Methods:** This is a descriptive study of 100 adult females of reproductive age and was conducted in 3 Teaching Hospitals of Peshawar, Pakistan from January 2015 to December 2015. A semi-structured questionnaire was used to collect relevant information regarding different modifiable and non-modifiable risk factors.

**Results:** This study found that among the systemic diseases, anemia(37%) is the most common risk factor followed by hypertension (20%). The top complication of the previous pregnancy (as a risk factor) is caesarian section. Obstetrical hemorrhage (p/v bleeding) is the most prevalent complication of existing pregnancy, which contributes to the pregnancy being high risk. The percentage of teenage pregnancies was 14% and that of elderly pregnancies was 18%. The illiteracy rate was 85%.

**Conclusion:** The prevalence of high-risk pregnancy was on the upper side in the study population. The study showed anemia, hypertension, p/v bleeding, caesarian section and illiteracy as the most prevalent risk factors leading to high-risk pregnancy and eventually maternal mortality and long term morbidity.

**Key Words:** High-risk pregnancy, risk factors, anemia, hypertension.

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## INTRODUCTION

The Tenth Revision of the International Classification of Diseases (ICD-10) defines a maternal death as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental cause”.<sup>1</sup>

Reproductive health has improved quite a lot throughout different regions of the world, even maternal mortality has fallen over the past decade. But still an estimated global total of 10.7 million women have died in the 25 years between 1990 and 2015 due to maternal causes.<sup>2</sup> In Pakistan maternal mortality has improved 58.7 % over the last fifteen years from MMR

of 431 per 100,000 live births to 178 per 100,000 live births according to WHO.<sup>3</sup>

There are many medical and obstetrical problems, which place the mother and fetus at risk. The first step in identifying the problems is to obtain a detailed medical and obstetric history. Early and aggressive intervention is an important step in the management of high risk patients to ensure best possible outcome for both mother and baby<sup>4</sup>. High risk pregnancy is defined as “the one in which the mother, fetus or newborn is at or may possibly be at risk of morbidity or mortality before, during or after delivery”. A careful history is required to identify high risk factors that can have an adverse effect on maternal or foetal outcomes. Up till now different studies suggest different causes.<sup>5</sup>

The factors that place a pregnancy at risk are: Existing Health conditions and complications of previous pregnancies such as Hypertension, Diabetes Mellitus, Thyroid disease, Anemia, Obesity, Infectious diseases like Hepatitis and HIV, Previous miscarriage/s, abortion/s caesarian/s and IUD, Age, Teen pregnancy, Pregnancy after 35 years age, Lifestyle Factors, Cigarette smoking, Daily activity, Working status, Education, Conditions/

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complications of Pregnancy, Breech presentation, Polyhydramnios, Menorrhagia/polymenorrhea, Kidney disease, Cord around the neck, Oligohydramnios, Pelvic abnormality, Ectopic pregnancy, P/V bleed<sup>6</sup>. The purpose of conducting this study is to find out the most common prevalent causes of high-risk pregnancy in tertiary level hospitals of Peshawar.

### MATERIAL AND METHODS

This study was basically a descriptive type of epidemiological study based on the concept of active surveillance. Three tertiary care hospitals of district Peshawar were selected to carry out the data collection. The hospitals chosen were; Khyber Teaching Hospital, Lady Reading Hospital, Hayatabad Medical Complex.

A sample of 100 pregnant women was selected. The sampling technique was purposive non-probability sampling. All the subjects included in the study were cases of high risk pregnancy, cases of normal pregnancy were excluded from the study. A semi-structured questionnaire was used. Measurements of age, height and weight were done. Occupation, education smoking status, daily activity status and obstetrical history were taken via the questionnaire. Microsoft Word 2008 and SPSS version 16 were used for statistical analysis. Mendeley was used to manage references.

### RESULTS

There were 100 ladies with high-risk pregnancy included in the study. They were divided into various age groups among them most of the cases admitted to hospitals were having the ages of 21-25(32%), 26-30(23%), 16-20(14%), 31-35(13%), 36-40(10%), 41-45(5%), 46 and above(03%). Teenage pregnancy, which is 14% of our sample size, is high. Systemic diseases attributable as risk factor in pregnancy:

Among the 3% of sample having infectious diseases 2% had HIV and 1% had Hepatitis. The number of women having one risk factor was 48% and those having two risk factor at once was 16% and so on.

Complications of previous pregnancies:

Illiteracy was as high as 85%, women educated upto primary class were 10%, secondary class were 4% and graduates were 1%. Majority of women were housewives (96%). Smoking status was recorded as nil among the sample population.

### DISCUSSION

Pregnancy and the changes that occur in the body of the mother during this process, can, result in ill health of mother and fetus. Maternal morbidity is a complex entity and its presentation and severity are

on a spectrum. Maternal morbidity is defined as "any health condition attributed to and/or complicating pregnancy and childbirth that has a negative impact on the woman's wellbeing and/or functioning." A group of 121 conditions was documented through expert meetings, review of the International Classification of Diseases and studying the related health problems and literature reviews.<sup>7</sup> A study conducted in Peshawar showed Hemorrhage (38.89%) as the most common cause of maternal mortality followed by Eclampsia, pulmonary embolism & sepsis, each contributing 27%, 9.7% & 7% respectively<sup>7-9</sup>.

Every day, approximately 830 women die from preventable causes related to pregnancy and childbirth. 99% of all maternal deaths occur in developing countries. The highest rate of maternal mortality is among the rural areas, especially those with poor financial situation. Adolescents face a higher risk of complications and death as a result of pregnancy than other women<sup>10</sup>. Skilled health care services and proper guidance to the mother before, during and after childbirth can save hundreds of lives of women and newborns<sup>11</sup>.

Owing to these circumstances this study documents the causes of high-risk pregnancy among women of reproductive age group admitted in teaching hospitals.

The study was done on different age group distribution among which teenage pregnancy was 14% of the sample size, which was on the high side. And pregnancy among 35 years of age and above was 18% in the study. Pregnant teens are more likely to develop complications of pregnancy like high blood pressure and anemia and go into early labour as compared to older women<sup>12,13</sup>. Increased prevalence of teenage pregnancies can be decreased by promoting awareness about complications of teenage pregnancy<sup>14</sup>.

Anemia was present in about 40% cases, which can be caused by a multitude of factors, of which iron deficiency anemia is the most common type among expecting mothers.<sup>10</sup> The prevalent risk factor in the sample was per vaginal bleeding. Obstetric haemorrhage is the major cause of maternal morbidity and mortality. Its contribution is as high as 50% among the causes of maternal mortality in certain developing countries.<sup>11</sup> Massive obstetric haemorrhage is variably defined as: "blood loss > 1500 ml; a decrease in haemoglobin > 4 g dl<sup>-1</sup>; or acute transfusion requirement > 4 units".<sup>15,16</sup>

Parity was high in the sample and so was abortion and miscarriage. About 60% patients had conceived more than 4 times previously. A study conducted in Karachi, Pakistan showed that 35% of women who underwent induced abortions in first trimester, were

due to their husband's influence and due to the lack of awareness among the society regarding issues of childbirth, especially gender of the child<sup>17</sup> descriptive study was conducted in Department of Obstetrics and Gynaecology, Unit III, Dow Medical College and Civil Hospital Karachi from January 2005 to December 2009. Data regarding the sociodemographic characteristics, reasons and methods of abortion, nature of provider, complications and treatment were collected for 43 women, who were admitted with complications of unsafe abortion, and an analysis was done. The frequency of unsafe abortion was 1.35% and the case fatality rate was 34.9%. Most of the women belonged to a very poor socioeconomic group (22/43; 51.2%). In this study 52% patients presented to emergency. This shows the lack of knowledge of women towards safe pregnancy. Most of the patients admitted were uneducated or only had received primary education.

Hypertension complicated 20% of the sample. Most cases were of pregnancy-induced hypertension, among these most patients were of more than 35 years of age. Very few of the patients had their records available for blood pressure. High blood pressure during pregnancy is again a leading cause of maternal morbidity and mortality. Pre-eclampsia is a condition depicting high blood pressure and protein in urine usually during the second half of pregnancy. According to NHS Mild pre-eclampsia affects up to 6% of pregnancies, and severe cases develop in about 1-2% of pregnancies<sup>18,19</sup>.

According to a case control study conducted in Pakistan the risk factors for preeclampsia are gestational diabetes, pre-gestational diabetes, family history of hypertension and mental stress during pregnancy. Diabetes, thyroid diseases, anemia and infectious diseases complicated 3%, 4%, 37%, and 3% cases respectively.

In this study, the number of risk factors present in individual patients were also investigated. Presence of more than one risk factors puts a pregnancy at a higher risk. 48 patients had only one risk factor, 16 of them had two risk factors and so on. The working status of patients was also analyzed. Majority of patients avoided heavy work in last trimester. None of the patients smoked.

### CONCLUSION

Great emphasis regarding the early diagnosis and timely management of high risk pregnancies need to be applied, so that long term morbidity and mortality can be prevented among pregnant women.

### RECOMMENDATIONS

This health situation can be amended by increasing awareness and education among women of reproductive age. This can be achieved by improving our

country's educational setup as well as health services provision at primary, secondary and tertiary care levels.

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## Assessment of risk factors for high risk pregnancy

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### **AUTHOR'S CONTRIBUTION**

Following authors have made substantial contributions to the manuscript as under:

<b>Ahsan J:</b>	Concept and idea.
<b>Ayub R:</b>	Data collection.
<b>Gul R:</b>	Bibliography.
<b>Khan UA:</b>	Critical review.
<b>Zafar U:</b>	Follow-up.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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