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**ORIGINAL ARTICLE**

# How Poverty, Malnutrition and other Socioeconomic factors affect maternal health: a quantitative study from Lahore Pakistan

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## ABSTRACT

**Background:** Low socioeconomic status can increase the risk of unhealthy pregnancy results. In Pakistan malnutrition is a leading factor affecting health of pregnant females along fetus and is one of main cause of high maternal morbidity and mortality. One child out of four is victim of malnutrition here.

**Objective:** The basic objective of this study is to determine the relationship between poverty and maternal health. There are many indicators that come under the umbrella of poverty which affects maternal heath such as socio-demographic, physical and mental wellbeing, medical and nutritional profile. Keeping these indicators under consideration, it becomes feasible to understand whether and how poverty affects maternal health.

**Methodology:** A survey was conducted from May 2020 to end of June 2020 through a questionnaire consisting of 33 items. Population size was 200. It was hypothesized that 50% of the population will be under health stress.

**Important findings:** The data collection and analysis showed 54.5% of population under study was health compromised due to poverty or low socioeconomic status. 61.8% of population specified improper diet as health issue that was the major reason behind their abortion/miscarriage/preterm labor. 57.2% of pregnant women were not satisfied with their diet plan. 48.6% of population faced psychological issues during gestation period and 59.3% of population faced financial crisis during pregnancy.

**Conclusion:** It was concluded that poverty had negative influence on maternal health and is indicated by different factors like poor diet, poor physical and mental wellbeing, which resulted in adverse maternal outcomes. This issue needs to be addressed and health care services should be made equally available for all women at least cost.

**Keywords:** poverty; low socioeconomic status; maternal health risk; pregnancy outcomes, risk-management

## INTRODUCTION

Poverty considerably exacerbates family stress and increase the risk of social and emotional problem in people especially for pregnant females. It was also found that adverse outcomes of pregnancy mainly occur due to multiple poor biological, environmental and social factors and in order to determine the health of a nation, outcomes of pregnancy can be used as a litmus test (Nagahawatte and Goldenberg, 2008)

Every year thousands of women face health challenges during their pregnancy. They go through various environmental, socio-cultural, economic, and other health issues. In developing countries, a vicious cycle of poverty exists which lead to malnutrition as a result many complications like diabetes, anemia and hypertension occur and have detrimental health effects on mothers as well as fetus and infants. Moreover, it was also shown by a study that the risk of stillbirths for pregnant females has increased about 30% mainly because of poverty (Larson, 2007). In developed and developing countries, though the leading factors of maternal stress during pregnancy are different but they ultimately cause maternal or fetus death or ailment in them. Various studies show that about 99% deaths of children, maternal and newborn were mostly observed in middle as well as low income countries (M.A. Zelka and A. W. Yalew, 2019)

Most of the pregnant women face gender inequality in the job sectors along with other problems during their pregnancy. For instance, low middle-income countries follow the fault line of gender inequality according to which income in male-headed houses is double as compare to the women-headed houses. They also face sexual division in houses, workplace, and society, which cause psychosocial issues in them during their pregnancy. In South Africa 66.9% national resided in household receiving a social grant with quarter living in household had experience food insufficiency. While in USA, poverty and food insecurity were seen during the time of pregnancy (Scorgie, 2015). One major problem that is closely related to poverty and has harmful effect on maternal and fetal health during pregnancy is malnutrition. Different studies show that the pregnant females and their infants suffer greatly throughout the world due to deficiencies of micronutrients along macronutrients (Vida et al. 2019).

Moreover, studies also show that low protein diet during pregnancy results in decreasing size of brain, decreasing in body weight, cause changes in energy metabolism along distribution of fats and increases the chances of obesity in mothers (R. I. Lowensohn et al. 2016)

As the body weight of females before pregnancy is the main determinant of the low body weight of the infants (A. Imdad and Z. A. Bhutta). Studies show that the mothers who are under-weight during the pregnancy time are more prone to have child with poor health or with some sort of disability. Inadequate diets have been related to clinical problems during pregnancy (Scorgie, 2015).

In lower-income countries, women faced iron deficiency anemia during pregnancy. The surge in anemia cases at global level reported to be 55.9 per cent among the expectant mothers. Data collected from different surveys proved that 30% of child under five are stunned while 19% are acutely or severely under-weight (Nabiha Khalid, 2017). In lower-income countries most of the people lived below poverty line due this woman do not have proper access to resources during pregnancy which leads to ‘’33% children under-weight,44% stunned,15% aborted, 33% are victim of anemia’’. Malnutrition becomes leading factor among pregnant women in countries like Pakistan. Proper hygiene not practiced there due to this child and women become infected with the infectious ailments. This type of situation can be improved like by spreading awareness among expecting women (Mudasir Maqbool, 2019). Lower body weight birth has dire consequences not only on the health of the mother but also on the health of the child also (Mudasir Maqbool, 2019). 60-80% neonatal deaths are from the malnutrition in expecting women. Ill health of mother is a major contributor in this regard. It is estimated that children who born underweight and have some sort of ailment during first five years of their age are more likely to attain poor education and livelihood in their adulthood. For almost, two decades this grieving situation continued in America like in 1990 it was 7% and in 2016 it is 8% the child born with lower body weight (Min Kyoung Kim, 2018). In, Pakistan almost every year 5 million women got pregnant 15% of

these is likely to face any sort of medical obstruction. In rural, far-flanged areas and in slums almost every year 30,000 women die because of lack of health facilities, which mean 1 woman die in every 20 minutes there. Despite of, advancement almost 20% women still face pregnancy complications in Pakistan. That is quite alarming. All these issues are prevailing and common in the women with age below 20 or women with age above 40.

## METHODOLOGY

**Study design:** Basically it was a descriptive study. Literature was studied to understand the past trends of maternal health with respect to poverty and implications all around the globe. Based upon the maternal health indicators extracted from literature, an online survey alongwith face to face interviews was conducted. The population size of the study was 200 persons. It was hypothesized that 50% of the population in our study would be health-compromised or under health stress due to poverty, illiteracy, and malnutrition. The interview (face to face) were carried out from the Punjab Rangers Teaching Hospital by the pregnant women in a specific timeframe. The collected data of the participants was entered on SPSS 21.

**Study tool:** A questionnaire was designed as study tool to collect data relevant to the research. The timeframe was kept from May 2020 to June 2020 between which data was collected. The language of questionnaire was urdu. There were total 33 questions that were interviewed or made in interview to the participants. The study questionnaire was comprised of five sections; first section was Socio-demographic profile, consisted of 10 questions. Second section was Medical profile, consisted of 8 questions. Third section was Nutritional profile, consisted of 4 questions. Fourth section was Physical and mental wellbeing profile, consisted of 7 questions. And the fifth section was financial profile, consisted of 5 questions. Data related to potential risk factors that could be linked with the health of pregnant women were considered such as; socio-economic status, monthly household income, qualification level, marital status, age at the time of marriage, number of children, employment status, previous miscarriages or abortions, health issues, daily food plan, psychosocial issues and domestic violence. Health issue triggered due to economic instability during pregnancy was the main variable of interest.

## RESULTS

**Socio-Demographic Profile:** Results showed that the age range of participants who filled the online questionnaire was between ages 18 to 55. While mean age was found to be 33 years. 64% of the population belonged to middle economic class and 31% belonged to lower economic class. About 21.5% of population had monthly income more than 40,000. The family size of 43% of population size was about 5-10 and 48% of population lived in a joint family system headed by 1 earning person with percentage of 44%. Qualification level of 40.5% of population was more than secondary education. The age at the time of marriage of 42.5 participants was between the ranges 19-22 and about 62.5% of the population had 1 to 3 numbers of children.

**Disease Profile of respondents:** Medial profile is basically a system that represent the medical suitability of people. The survey that we conducted showed that 64% of population had suffered Abortion /miscarriage/preterm labor and about 28.5% of population had faced only 1 Abortion /miscarriage/preterm labor. We observed that about 67.5% population gave the reason for Abortion /miscarriage/preterm labor as health issues and about 59% of population had a child under health stress due to their poor maternal health. We also found that 46.5% of the population specified improper diet as the cause of their Abortion /miscarriage/preterm labor and about 30% of population further specified under nutrition as a reason of improper diet. We also observed that about 52.7% of population rarely took health supplements or prescribed medicines. While 43.5% of population took these supplements and medicines during their pregnancy but about 15.5% did not take any medicines during this period and about 48% of population do not seem to be satisfied with their diet plan or meal routine and it is depicted by Fig I

**Nutrition Profile:** Through nutritional profile we determine the essential nutrient intake of people which play a key role in promoting health conditions and in preventing different maladies. According to the collected data 28.5% of population rarely ate fruits during pregnancy. While 13% ate fruits on daily basis and about 28% of the population rarely ate meat or dairy products during gestation. Only 9.5% ate these on daily basis and it is represented by Fig II.

**Physical and Mental Wellbeing Profile:** Physical and mental well-being indicates balanced state of body, spirit and mind. Through our survey we found that about 45% of population faced psychological issues such as anger, depression, and anxiety during pregnancy. While 56%of population did not encounter any violence from husband side. We also found that about 69.5% of population was not satisfied with their physical heath and about 41.5% of population was under-weight during pregnancy and it is depicted by Fig III and IV.

**Body weight:** Through our survey we found that out of 200 observed females about 26.5% females have normal body weight, about 32% females are found to be over-weight and about 41.5% females are under-weight and this is depicted by the Fig V.

**Financial Profile:** Financial profile basically indicates the financial status of people and its impact on their lifestyles. Through our survey we observed that 50.5% of total population undergone financial crisis during pregnancy and about 60.5% of population considered their poor financial conditions as a reason their poor maternal health. While 52.5% of population was not satisfied with their financial conditions and about 73% of population thought that financial conditions have a negative influence on maternal health or Abortion /miscarriage/preterm labor and it is depicted by given Fig VI:

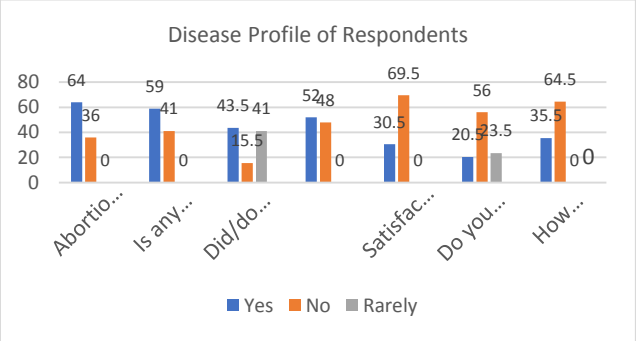


Fig I: Medical status of participants.

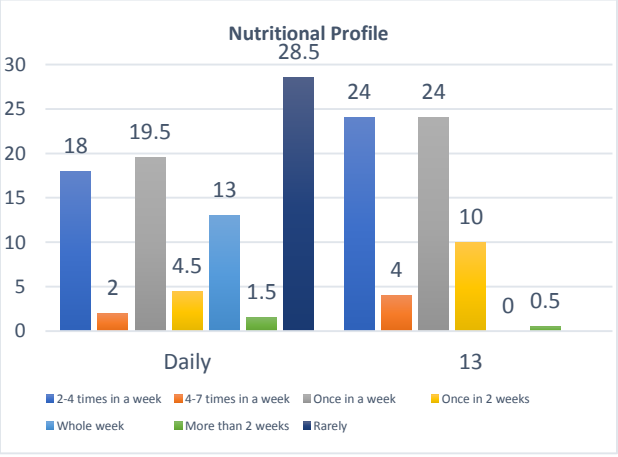


Fig II: Nutritional status of participants.

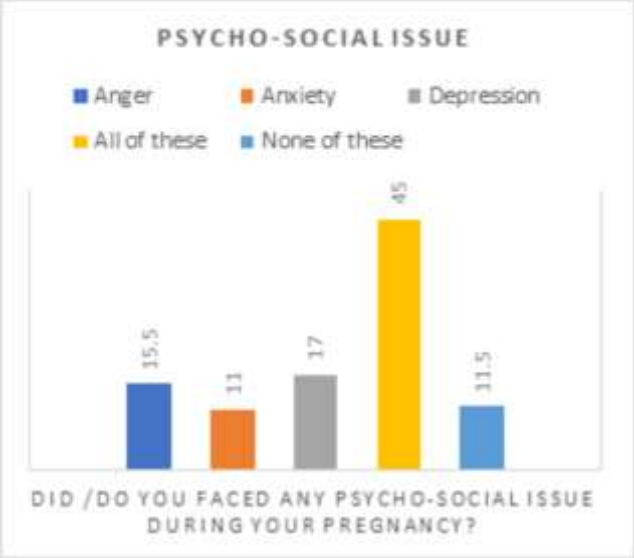


Fig III: Psychosocial issues faced by respondents

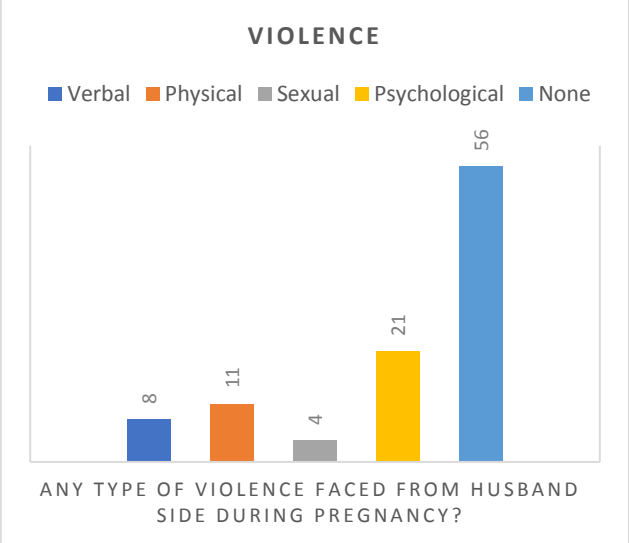


Fig IV: Violence faced by respondents

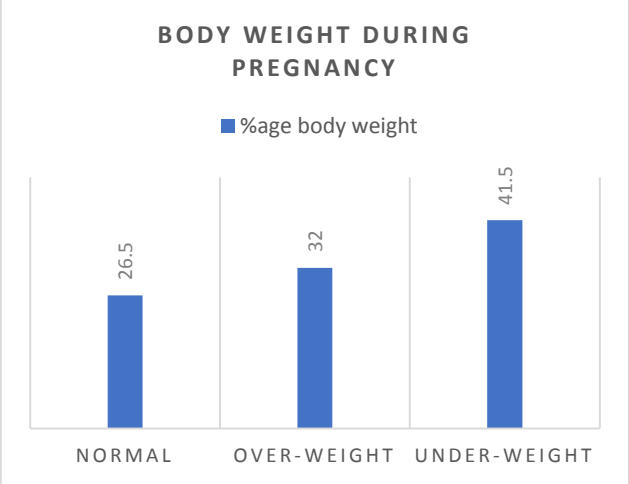


Fig V: Body weight of participants during pregnancy.

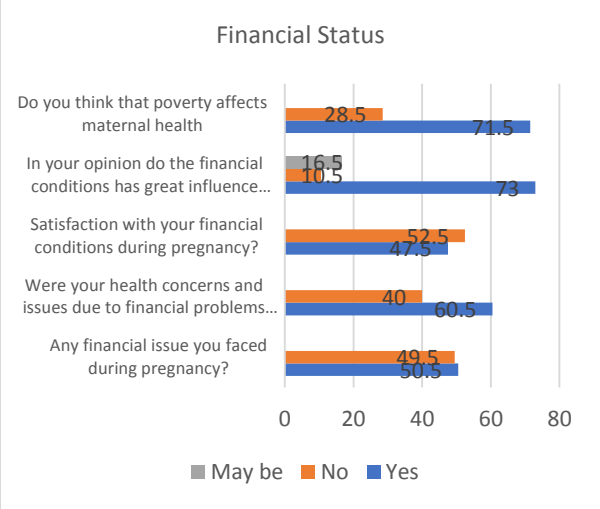


Fig VI: Financial status of participants

## DISCUSSION

Complications during pregnancy are a prime factor that contributes in the deaths of women and child during pregnancy. To estimate the accurate number of the maternal deaths is difficult because from epidemiological point of view there is not much data available about the lower income countries. Maternity health deeply affected by the poverty and cause dire consequences on mother and child. To study the prevalence of this issue on health of mother a questionnaire was designed and all such underlying problem that could become source of the abortion, miscarriage and pre-term labor were determined. The data was collected from the women who were residing in the far-flanged towns of Lahore.

The study showed that most of the women during their pregnancy faced financial obstacles. It was found that 12.9% deprived of their livelihood during their pregnancy like rest of the vast majority of almost 76.2% depended on their partner for livelihood as compared to other countries where women face financial issues, like in African city Bushbuckridge (Fiona Scorgie, 2015). Women were dependent on the public facilities. They had to visit the public health centers, where they were to wait for several hours for their turn. That caused several health problems in them like anxiety, behavior changes as well as effect on the fetus growth.

In modern world government provide grant to every pregnant woman but in Pakistan major ratio of the families were those in which male is employed only. This single hand earning and scanty resources was poor class financial indicator. Most of the women faced financial problems in pregnancy period. Most of the time pregnancy was unplanned and some of the women were having their ***"primigravida"*** (Attia Bari, 2019). So due to this most of them had to leave their job or work in part time.

Pakistan is a developing country. Increase in inflation is caused by the population explosion. Majority of the class is middle in status with meager resources. From this survey we conclude that 64% population is middle class while above 31% population belonged to the lower class. There is hefty gap between upper and lower class of the society. This graving situation indicated that most of the people were living in hand to mouth situation and were not in such a condition which can satisfy their financial needs. Pakistan is lying in the fragile income-earning index. In Pakistan 40,000 per month income was considered as a middle-class earning income but major number of populations, earning income source divided 10,00-40,000. Study shows that 26.5% population earn income above 10,000 and only 21.5% population earn income above 40,000 from this we can see income deficit is a leading cause that affect the pregnancy status. Financial problems will cause them to suffer as they cannot have sufficient nutrients to

intake during pregnancy which cause anemia and vitamin deficiency in mothers but also effect the fetus health due to which child born with some syndromes (Attia Bari, 2019).

Graphics from USA showed that according to their index two persons can live per house according to 2019 statistics. While in case of Pakistan majority of population lived in joint family system. Total family members are above 5 and it is difficult to feed them all with monthly income above 40,000. This showed that in the modern world people live independently that indicate there is no burden on one person of other because they have plenty of resources. However grim situation in Pakistan where only one person must bear expenses of bulging families that is precariously alarming. This factor also contributes in the pregnancy complications, as due to joint family system women must face mental torture or physical stress.

Although our survey shows that though 11.5% women do not face any sort of depression from husband side but about 73% women think lower or poor financial conditions can contribute in their mental and physical health disturbances like premature birth, low body weight birth, abortion etc. A study conducted in 2018 in Brussels, Belgium China showed social and economic state is an indicator and contributes in maternal well-being (Min Kyoung Kim, 2018).

Education is the key factor influencing the society in all way. Our studies showed that women of childbearing age or pregnant are of 50% population who is educated up to primary or secondary level and remaining population is uneducated in Pakistan. Moreover, marriage in younger age also becomes cause of the premature birth, abortion like situation. When we compare our studies with the other country, this situation is also seen in ‘’Niger’’ a West African country and in Bangladesh, also we see a dozen of cases in these countries where most of girls married almost at the age of 15 (WHO, 2020).

The present situation is alarming in Pakistan because poverty is exacerbating on large scale especially on those areas where females do not receive any medical care and have no access to registered doctors or clinics. The major hurdle in this is the culture practices which do not allow them to have proper health care because most people are superstitious. Therefore, it is the need of hour to deal with the issues that are associated with maternal health in Pakistan along other developing countries (S-u-N. Hassan et al. 2020). Moreover, different studies show that in Pakistan inappropriate diet is the leading cause behind abortion or miscarriage or preterm labor and our survey also depict that abortion in 61.8%. When we compare our studies, with those that were conducted in Dakar capital of Senegal in West Africa, we observe that due to improper diet abortion and miscarriages occur but when the reason studied in 2020 it showed that though they have enough financial facilities but most of the women do not take proper minerals and health supplements in their pregnancy in this way negative impacts occur on the health of fetus as well as mother (Dr, 2020). While Pakistan usually depict highest rate of abortion in the whole world and this commonly occur in the rural areas due to lack of proper diet, unsecure environment along lack of awareness about family planning.

To sum up our above studies it is proved that poverty, lack of health facilities, lack of education are main obstacles in achieving good health well-being in pregnant women. Due to which many ailments arise in mother along infants.

## CONCLUSION

The insufficient diet of females during pregnancy play negative role on the growth of infants especially in middle income countries (K. M. Hambidge and N. F. Krebs). Therefore, besides other problems, the problems related to the quality of health care during pregnancy should be dealt properly (J. C. Rivillas et al. 2020) Through our survey we observed that about 59% of population size under study was health compromised. And their responses to different aspects also reflected that their maternal health complication and outcomes were because of low socioeconomic conditions. Even though a greater number of populations had monthly income which was more than Rs.40, 000 but still they faced financial crisis during pregnancy. But there are other co-indicators which overrule financial crisis such as having joint family system with a family size of more than 5, having only one job working person running whole family. This also created economic strain and Government needs to develop policies to make maternal health care services more viable and more available to prevent adverse pregnancy outcomes.

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