

Impact of Dietary Choices Among Pregnant Ladies Attending Sir Ganga Ram Hospital, Lahore

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Abstract:

Pregnancy is the time period when maternal dietary selection of food items impacts the developing fetus as well as health of mother.

Objective:

To assess the impact of dietary choices among pregnant ladies.

Methods:

This was a cross-sectional study conducted at Sir Ganga Ram Hospital, Lahore. A sample size of 100 pregnant ladies aged above 20 years were selected. Data were collected through a pre-tested questionnaire

Results:

Findings showed that 40% ladies were overweight. Pregnant ladies took foods from vegetable group (51%) while fewer intakes were observed from meat group. Mean neonatal birth weight was 2.8 Kg. Most of the neonates (77%) were having normal birth weight.

Conclusions:

Although dietary intake of food items was insufficient, positive neonatal outcome was observed. Majority of the dietary food items were used from vegetable group.

Keywords:

Pregnancy, balanced diet, malnutrition, dietary choices, neonatal birth weight.

Introduction:

Pregnancy is a crucial period because a whole new body is being formed.¹ All body tissues of infant are made from nutrients in the food the mother eats.² It is a time to adopt healthy lifestyle, habits and diets that will be beneficial to mother and baby both.³ Adequate nutritious diet before and during pregnancy has greater potential for growth and development of fetus with long-term

health impact.⁴ Impaired maternal dietary intake interferes with the outcome of pregnancy. Inadequate nutrition intake results in low-birth weight infant, infections and anemia.⁵ On the other side, over-nutrition may link with metabolic and obstetric labour complications for mothers as well as increased the risk of caesarean section.⁶ In the South Asian region, malnutrition is a prevalent health issue. Pakistan, India and Bangladesh are the countries with high prevalence of malnourished women and children.⁷ In Pakistan, most pregnant ladies have lack of awareness about the significance of antenatal care and have limited access to health care facilities.⁸ According to WHO report, maternal mortality rate is 178 per 100,000 live births and neonatal mortality rate is 45.5 per 1000 live births.⁹ To maximize the possibility of positive outcomes, pregnant women need Antenatal Care (ANC) including dietary advice.¹⁰ ANC can be defined as the care provided by health care professionals to pregnant women in order to ensure healthy pregnancy, safe child birth and postnatal recovery.¹¹

A number of dietary recommendations have been developed to encourage individuals to eat healthier. The Food Guide Pyramid for pregnancy, is an excellent tool to understand how to make food choices that are healthy during pregnancy. The pyramid consists of five food groups that are essential to attain the daily maximum need of nutrients during pregnancy.¹² Annie S Anderson (2001) described that pregnancy may be considered as best moment for maintaining good dietary selections and to establish knowledge for future action, and

should not be considered as the only opportunity for promoting dietary change within the life course.¹³ Study conducted by Callaway LK (2006) in an Australian obstetric maternity hospital revealed that about 34% women were overweight that had increased risk of adverse outcomes: hypertensive disorders of pregnancy, gestational diabetes and caesarean section. Study concluded that increased Body Mass Index (BMI) results in increased cost of obstetric care.¹⁴ A cross sectional study was performed in Zahedan city by Fahimeh Khoushabi(2010). Findings showed that the mean age of selected pregnant women was 25 years and range from 16 to 40 years. Most of the women were expecting their first child. Majority belonged to middle income group. The author investigated the impact of nutritional status of pregnant women on neonatal birth weight. Results showed that majority of neonates had normal birth weight. It was also observed that women who gave birth to normal neonates had significantly higher consumption of energy than who gave birth to neonates with Low Birth Weight (LBW).¹⁵ In another study, overweight and obese women had an increased risk of gestational diabetes, hypertension and iatrogenic preterm-birth and also increased the risk of caesarean section. The risk increased with increasing maternal BMI¹⁶. From the period of pre-conception, the intake of balanced diet with variations is essential to ensure maternal health and favorable outcomes of pregnancy.¹⁷ A cross-sectional study assessed the eight domains related to knowledge of nutrition and statistic characterizing of pregnant ladies. A thorough enquiry of knowledge related to information of nutrition revealed the fact that pregnant ladies were not aware of importance of essential nutrients.¹⁸ The pregnant ladies who stick to vegetarian form of diets for approximately three years, have an increased risk of vitamin B12 deficiency. Although during pregnancy a well-organized vegetarian diet has been considered to be requisite. But vegan diet may require supplementation with vitamin B12,

calcium and vitamin D. Infants of vegan parents may suffer from damaged spinal cord and develop severe psychomotor retardation due to lack of vitamin B12.¹⁹ Inadequate nutrition, excess of nutrition, and composition of diet have negative impact on fetal growth in placenta and metabolic patterns, having adverse metabolic effects on future life for the offspring.²⁰ This study aims to identify the impact of dietary choices on health status of pregnant ladies.

Methods:

It was a cross-sectional study with sample size of 100 post-natal females conducted from April 2017 to July 2017 at Sir Ganga Ram Hospital, Lahore. All the post-natal females above 20 years of age were included. A pre-tested questionnaire was used to collect information regarding demographic data of pregnant female such as age, education, income, socioeconomic status etc. Dietary intake of food items was obtained through recall method. The information about quantity of food was recorded in household measures (cups, plates, tsp, tbsp).

Anthropometric measurements of neonate like weight, length, head circumference were taken within 24 hours after birth of baby. The outcome measure was neonate birth weight. Data were analyzed by using Microsoft Excel and SPSS version 21.0.

Results:

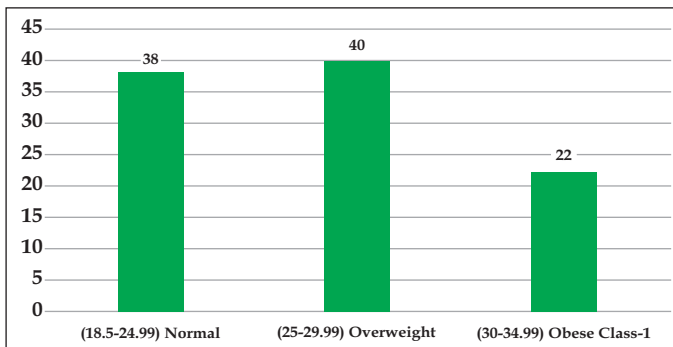
A total of 100 pregnant females above twenty years of age were taken in this study. Majority (84%) of females were in age group of 21 to 30 years. About 29% pregnant females were uneducated. About 59% belonged to middle class. Highest percentage (46%) of females had first baby.

Variables	Description	Percentage%
Agr group (year)	21-30	84
Education	Un-educated	29
Socio-Economic Status	Middle	59

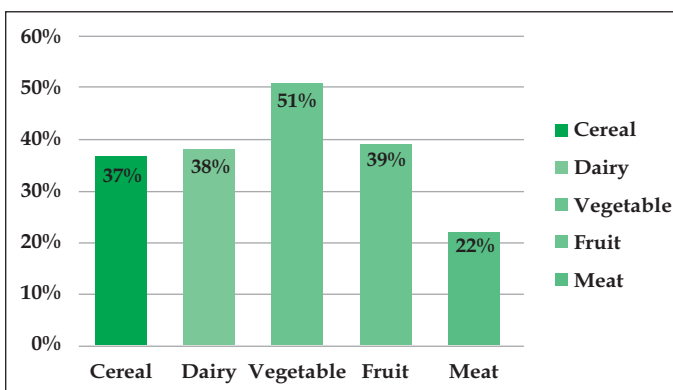
Number of Children	One	46
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Table-1: Distribution of demographic profile

Analysis revealed that according to BMI distribution 38% females were having normal BMI, 40% were overweight and 22% females were obese as shown in Figure 1.

**Figure-1:** Distribution of BMI among pregnant ladies

The average intake of different food items from five food groups that were taken by pregnant females were assessed by recalling the diet routine throughout the pregnancy duration. Intake from Cereal group (chapatti, Naan, Rice), dairy group (milk, yogurt), vegetable (any kind), fruit (all) and meat (chicken, mutton, beef, fish, egg) were 37%, 38%, 51%, 39% and 22% respectively.

**Figure 2:** Average intake of dietary foods across five food groups

Majority (77%) of neonates had normal birth weight, (20%) had low birth weight, while (3%) had high birth weight as shown in Table 2.

Birth Weight of Neonate	Frequency	Percentage%
<2.5kg (LBW)	20	20.0
2.5_3.5kg (NBW)	77	77.0
4_4.5kg (HBW)	3	3.0
Total	100	100.0

Table 2: Distribution of neonatal birth weight

Mean of weight, height and head circumference of neonates was 2.8kg, 47cm, 33cm respectively as shown in Table 3.

Parameters	N	Min.	Max.	Mean	SD
Weight of Neonate	100	1.8	4.0	2.86kg	0.4124
Length of Neonate	100	39	54	47.3cm	3.356
Head Circumference	100	30	37	33.3cm	1.568

Table-3: Anthropometric measurements of neonates

Discussion:

Maternal nutritional status is the important regulator of human fetus growth. It is known to influence the quality and health of neonates. Birthweight is the strongest indicator of health of an infant. In current study 77 newborns had normal birth weight, while 20 newborns were classified as low birthweight, whose birthweight was less than 2.5 kg. Similarly, findings of a study conducted by Fahimeh Khoushab showed that the highest number of infants had normal birthweight while mother's nutritional status indicates that the majority of pregnant ladies were overweight¹⁵. In current study nutritional status of pregnant ladies was assessed through BMI classification. The results showed that out of 100, 38 pregnant ladies had normal BMI, while 40 ladies interpreted as overweight. Overweight and obese women had an increased risk of gestational diabetes, hypertension and iatrogenic preterm-birth and also increased the risk of caesarean section. The risk increased with increasing maternal BMI.¹⁶ In another study performed by Callaway LK in an Australian obstetric maternity hospital, revealed that about 34% women were overweight that had increased

risk of adverse outcomes.¹⁴

The results of the current study indicated that most of the females were uneducated, and were not visiting health-care center for antenatal care. In current study pregnant ladies made food choices that were insufficient according to the requirement of pregnancy. Low education level and low to middle socioeconomic status were the major determinants. They were unaware of how to make healthy food choices and also had less access to buy food items that were healthy for both of them, (the mother and child). Women usually have lack of knowledge regarding food choices that are nutritionally adequate for healthy pregnancy.¹⁸ Most pregnant ladies in current study preferred to take vegetables across all food groups, which may increase risk of many nutrient deficiencies in infant and also had substantial effects on later life. Another study concluded that pregnant ladies who stick to vegetarian form of diets for approximately three years, had an increased risk of vitamin B12 deficiency. Although during pregnancy a well-organized vegetarian diet has been considered to be requisite. But vegan diet may require supplementation with vitamin B12, calcium and vitamin D. Infants of vegan parents may suffer from damaged spinal cord and develop severe psychomotor retardation due to lack of vitamin B12.¹⁹

Conclusions:

Dietary intake was insufficient according to the increased requirement of pregnancy. Most preferred dietary food items were from the food group of vegetables. Most of the females belonged low-middle socioeconomic status and were unaware of importance of making healthy food choices during pregnancy.

Neonatal outcome was predicted through birth weight. Despite the fact that positive neonatal outcome was observed, majority of neonate had normal birth weight, but there is risk of nutritional deficiencies in the future life of both mother and child.

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