

A Descriptive Study to Assess the Protein Intake of Antenatal Mother and Anthropometric Measurement of her Neonate after Delivery at Selected Hospitals of Puducherry

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Abstract

Introduction: During pregnancy, a baby developing inside the womb receives all its nutrition from its mother. Inadequate dietary intake during pregnancy can lead to malnutrition and poor outcomes for the baby. Therefore, advising women on their diet and providing food supplements in pregnancy may help babies to grow and thrive. Protein (and the amino acids within) is an important building block of human cells. And given the rapid cell development of your baby-to-be, it is an essential part of the Pregnancy Diet.

Objective: To recall the protein intake of postnatal mother during antenatal period, To measure the anthropometric measurement of neonate, To correlate the protein intake of mother during antenatal period and her neonatal growth after birth.

Methods: The study was conducted on 30 postnatal mothers admitted in selected hospitals at Pondicherry. Study design was descriptive, convenient sampling technique was used. The instrument used for data collection was interview schedule and checklist. Women who were asked to recall their protein intake during antenatal period especially milk and egg then measured the anthropometric assessment of the newborn. Further these two parameters were correlated that's protein intake of mother with the baby's growth.

Results: Pearson's correlation formula was used to find out the correlation between protein intake and birth weight of the newborn, in that $r = 0.1$ so there is weak positive correlation between protein intake of mother with neonates growth.

Conclusions: There is a weakly positive correlation between the mothers' protein intake with baby's growth. The weak positive result might be due to small sample size and recall bias by mothers. This study may be very effective if conducted during antenatal period considering the all variety of protein intake and monitoring the growth also considering the factor to take large sample size to strengthen the result.

Keywords: Protein Intake; Antenatal Mother; Anthropometric Measurement; Neonate

Introduction

Pregnancy, also known as gravidity or gestation, is the time during which one or more offspring develops inside a woman. A multiple pregnancy involves more than one offspring, such as with twins. Childbirth typically occurs around 40 weeks from the last menstrual period (LMP). During pregnancy, a baby developing inside the womb receives all its nutrition from its mother [1-4]. Inadequate dietary intake during pregnancy can lead to malnutrition and poor outcomes for the baby. Therefore, advising women on their diet and providing food supplements in pregnancy may help babies to grow and thrive. Protein (and the amino acids within) is an important building block of human cells.

And given the rapid cell development of your baby-to-be, it is an essential part of the Pregnancy Diet [5-8]. Aim for three servings of protein daily (which adds up to about 75 grams), and try to spread it out during the day. A woman's diet in early life has more impact on her baby's birth weight than the food she eats as an adult, researchers say [9,10].

Objectives

- To recall the protein intake of postnatal mother during antenatal period.
- To measure the anthropometric measurement of neonate.
- To correlate the protein intake of mother during antenatal period and her neonatal growth after birth.

Assumption

There may be a significant relationship between the protein intake of antenatal mother and her baby's growth.

Methodology

The study was conducted on 30 postnatal mothers admitted in selected hospitals at Pondicherry. Study design was descriptive, convenient sampling technique was used. The instrument used for data collection was interview schedule and checklist. Women who were asked to recall their protein intake during antenatal period especially milk and egg then measured the anthropometric assessment of the newborn. Further these two parameters were correlated that's protein intake of mother with the baby's growth [11-13].

Inclusion criteria

- All mother admitted to postnatal ward with normal delivery.
- Mother those who are willing to participate in the study.
- Mother who are present during the period of data collection period.

Exclusion criteria

- Mother who are physically or mentally unwell.

Data collection procedure

Data was collected after obtaining the permission from the concerned authority and oral consent was obtained from each mother. Mothers were explained the purpose of data collection and also mothers were informed about confidentiality.

Nutritional intake of mother was collected with the prior validated checklist based on the recall of the individual mother. The researcher individually collected the data from each mother. It took around 10 - 15 minutes for each mother to get the information. All mothers' were co-operated well [14,15].

Result and Findings

The demographic variable of mothers highlights that the majority of 17 (56.7%) were in the age group of 23- 27yrs and 7 (23.7%) mothers were in 18 -22 yrs. In relation to their education around 16 (56.7) mothers had high school education and only 4 (13.3%) mothers were graduate. Around 16 (66.7%) mothers from rural area and most of them were from joint family 22 (73.3%). 20 (66.7%) mothers family monthly income was Rs. 5000 - 10,000. Around 27 (76.7%) were primi mothers.

Anthropometric measurement of neonate shows that around 23 (76.7%) of neonates had 33 - 35 cm as their Head Circumference and 18 (60%) neonates had 31 - 33 cm as their chest circumference. The length of the neonates highlights that 16 (53.4%) babies had 46 - 49 cm and the birth weight depicts that around 11 (3.7%) of neonates had weight between 2.6 - 3 kg and 10 (33.3%) neonates had weight 2.1 - 2.5 kg and only 2 (6.7%) neonates were more than 3.5 kg.

With regards to the protein intake of mothers’ during antenatal period especially egg and milk shows that around 9 (30%) mothers had taken 4 eggs/wk and 7 (23.3%) mothers had taken 3 eggs/wk and only 5 (16.7%) mothers had taken 6 eggs/wk. In relation to milk intake 12 (40%) mothers had taken 400 ml of milk/day and 9 (30%) mothers had taken around 600 ml of milk/day.

Comparison of protein intake by the mother and growth of the newborn

Variables	Mean	S.D	‘r’ Value
Protein intake	53.39	2.74	r = 0.1
Newborn growth	18.26	0.40	P = 0.001**

***p < 0.01, S- significant*

The above table highlights that there is a positive relationship between the protein intake of the mother and growth of the newborn. It shows weak positive relationship may be due to the small sample size also the protein intake considered only for milk and egg intake that too by recall of the mother.

But the same study could be repeated for larger sample and all the variety of protein intake to be considered and to be monitored throughout pregnancy so it will strengthen the study result.

Discussion

The major findings of the study through different analysis revealed that growth parameters of Neonates are affected by milk and daily total protein intake by mothers. The study findings shows that 30% of mother had taken 49.8 calorie of milk and 16.7% had taken 36 calorie of egg per week and baby weight shows that 33.3% had 2.1 - 2.5 kg growth and 6.7% babies had more than 3.5kg growth. The Mean protein intake of postnatal mother was 53.39 ± 2.74 and the Mean newborn growth was 18.26 ± 0.40 then the r = 0.1 which shows that there is weakly positive correlation between protein intake and newborn weight.

Study conducted by Fatemeh Borazjani, *et al.* 2013, explored the impact of maternal protein intake and the neonatal growth, they presented that there is a significant growth for those mother who had taken more protein during antenatal period [16].

Conclusions

There is a weakly positive correlation between the mothers’ protein intake with baby’s growth. The weak positive result might be due to small sample size and recall bias by mothers. This study may be very effective if conducted during antenatal period considering the all variety of protein intake and monitoring the growth also considering the factor to take large sample size to strengthen the result.

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