



Original Article:

Impact of Prenatal Checkups of Mothers and Immunization of Children on the Health Status of Children (0-3 years) - A Study in Rural areas of Aligarh District, Uttar Pradesh.

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Abstract:

Background and objectives: A survey based study on rural areas of Aligarh District was conducted to assess the prenatal checkups pregnant women and its effects on health status of children between the age of (0-3 years), and immunization received by children and its effects on their health status. **Methods:** Five hundred children from five villages of rural areas of Aligarh District were randomly selected. For the purpose of the study, a self prepared structured interview schedule was used. To get the qualitative information of the study anthropometric measures include height weight were used for assessing growth pattern of the child. The stepwise analysis of two variables height for age and weight for age was done on the basis of Water low's and Gomez' classification. To examine the relationship between Health Status of the child and selected variable that affects Health Status of children, Chi-square test was employed. **Results:** Based on Gomez' classification out of 88% mothers who did not go for prenatal ups majority 80% of children were underweight, and 80% of children who did not receive immunization majority 60% were underweight. Based on Waterlow's classification majority 68% of children were stunted whose mother did not go for prenatal checkups and 50% of their children were stunted who did not receive immunization. **Conclusion:** Majority of children were stunted whose mother did not go for prenatal checkup and the children who did not receive immunization.

Key Words: Prenatal checkups; Stunted growth; Underweight; Immunization

Introduction:

Prenatal testing can provide valuable information about the baby's health. Blood tests and imaging studies to screen for common conditions are routine in most pregnancies. Simple screening tests and ultrasound tests do not pose any threat to the mother or the unborn child. Prenatal care is essential in ensuring the overall health and wellness of both the mother and child. The first prenatal care visit can be stressful for women because the doctors generally gather a lot of information, in order to make sure that the pregnancy can be as problem free as possible. A change in the demographic scenario is being witnessed in developing countries like India. There are indications that family size is declining. Accordingly, the profile of pregnant women also seems to be changing. It is important to

document such changes in order to give feedback to the planners. Recently, Government of India has launched Reproductive and Child Health-II (RCH-II) programme.¹ Reproductive and Child Health (RCH) Programme aims at reducing maternal mortality to less than 100 by 2010. The major interventions include essential obstetric care and the RCH Programme aims at providing at least 3 antenatal checkups during which weight and blood pressure check, abdominal examination, immunization against tetanus, iron and folic acid prophylaxis as well as anemia management are provided to the pregnant women. Under the RCH programme, emergency obstetric care, 24-hour delivery services at primary health centers and safe abortion services are also provided. The government has launched a Janani Suraksha Yojana (JSY) to deal with the issues involved in pregnancy and child care. It is a centrally sponsored scheme aimed at reducing maternal and infant mortality rates, and increase institutional deliveries in below poverty line (BPL) families. The JSY, which falls under the overall umbrella of National Rural Health Mission, covers all pregnant women belonging to households below the poverty line, above 19 years of age and up to two live births. One of its main focuses is on the quality of prenatal care. It is also vital to document the existing quality of prenatal care in various parts of India. Such information helps in indirectly gauging the progress and impact of the program. Children being the pillar of the nation are primary victims of malnutrition. The convention on the right of the child, adopted by the General Assembly on 20 November 1989, brought together, for the first time, all rights that were related to the survival, development, protection and participation of the children. It states that countries "shall ensure to the maximum extent possible the survival and development of the child". Against this background this study was done with an objective to establish a relationship between health status of children to the prenatal checkups of their mother and immunization received by the children.

Objectives:

1. To assess the prenatal checkups pregnant women and its effects on health status of children.
2. Immunization received by children and its effects on their health status.

Material and Methods:

This survey based study was conducted in five villages of Jawan block of Aligarh district. A total of 500 children were selected on the basis of study purposive random sampling. The study was conducted during January 2008-May2008. A self prepared structured interview schedule was used to get the qualitative information. For the purpose of the study women were interviewed to know the type of prenatal checkups used during pregnancies; for assessing growth pattern of the child anthropometric measures including height and weight were used. The stepwise analysis of two variables height for age and weight for age was done on the basis of Waterlow's and Gomez's classification. To examine the relationship between health status of the child and selected variable that affects health status of children, Chi-square test was employed.

Results and Discussion:

Health status was assessed on the basis of height and weight, measured through anthropometric techniques. Weight for age and height for age was calculated and children were classified into different grades of malnutrition according to Gomez's and Waterlow's classification.

Classification by Gomez et al:

- Normal : >90% of standard weight for age.
- Grade I malnutrition: 89%-75% of standard weight for age.
- Grade II malnutrition: 74%-60% of standard weight for age.
- Grade III malnutrition: <60% of standard weight for age.²

Classification by Waterlow:

- Normal: >95% of height for age.
- Mildly impaired: 87.5%-95% height for age.
- Moderately impaired: 80%-87.5% height for age.
- Severely impaired: <80% height for age.²

Prenatal checkups: These include the antenatal care of women during pregnancy. The primary aim of prenatal checkups is to achieve at the end of the pregnancy, a healthy baby. Ideally this should begin after the conception and continue throughout pregnancy. Prenatal checkups comprise of variety of preventive measures during pregnancy including regular checkups, tetanus toxoid (TT) injections, and delivery care. Child health is correlated with the birth weight and birth weight is correlated with weight gain of mother during pregnancy. On an average, normal healthy woman gains about 12 Kg of weight during pregnancy. Through prenatal checkups expected mother has been advised to take balanced and adequate diet during pregnancy for herself and for foetus.³ The NFHS-2 (1998-1999) shows that antenatal care, TT and IFA supplementation have a bearing on the birth of a normal child.⁴

Table 1: Percentage distribution of mothers who went/ did not go for prenatal checkups

Prenatal checkups	Number	Percentage
Went for prenatal checkups	60	12
Did not go	440	88
Total	500	100

The present study revealed that a majority (88%) of women did not avail or access prenatal checkups during pregnancy and only small percentage (12%) went for prenatal check-ups. It has been observed that antenatal check-ups are much more common among more literate and educated mothers. A study by NFHS-2 (1998-1999) revealed that in rural Bihar and Jharkhand, where the proportion of illiterate mothers in the population is high, only about one in four in Bihar and one in three in Jharkhand reported receiving any antenatal check-up

in either survey; in contrast, between 73 and 90 percent of mothers who have completed high school or above reported at least one antenatal check-up visit.⁴ In Maharashtra, more than three-fourths of illiterate mothers reported receiving antenatal care, this percentage declined somewhat in the follow-up survey. In Tamil Nadu, differentials in antenatal care by education were negligible and antenatal care has become almost universal for all population subgroups. Similarly, antenatal care is essentially universal among mothers with a high school education or higher in Maharashtra, and among all educational subgroups in Tamil Nadu. Similar differentials were evident by state when caste/tribe differentials in antenatal care were considered. In a study by Gangadharan K (2005) in urban sample, ANC coverage was 100% and in slum it was 95.9%.⁵ Another study by Singh et al (2007) in North India reported that the coverage of 3 ANC was 35% only.⁶

Table 2: Percentage distribution of health status (weight) of children according to mother who went/ did not go for prenatal checkups (Gomez's classification weight for age) N=500

Prenatal checkups	Health status of children					
	Normal		Under-weight		Total	
	No	(%)	No	(%)	No	(%)
Went for checkups	35	7	25	5	60	12
Did not go	40	8	400	80	440	88
Total	75	15	425	85	500	100

$\chi^2=20.08$ at d.f 1; $P>0.05$

Based on Gomez's classification, of 88% mothers who did not go for prenatal checkups, majority (80%) of their children were underweight. On the other hand, out of 12% mothers who went for prenatal checkups, majority (35/60) of children were having normal weight for age, suggesting that children were under weight whose mothers did not go for prenatal check-ups (Table 2).

Table 3 Percentage distribution of health (height) of children according to prenatal checkups of mothers (Waterlow's classification) N=500

Prenatal checkups	Health Status of children					
	Normal		Stunted		Total	
	No	(%)	No	(%)	No	(%)
Went for checkups	30	6	30	6	60	12
Did not go	100	20	340	68	440	88
Total	130	26	370	74	500	100

$\chi^2=5.31$ at d.f 1; $P>0.05$

Based on Waterlow's classification Out of 88% mothers who did not go for prenatal checkups majority 68% children were stunted. Out of 12% mothers who went for prenatal checkups majority 6% of the children were normal height for age, suggesting that more children were stunted whose mothers did not go for prenatal check-ups. (Table 3)

Immunization of children: Regarding the Immunization of children below 3 years, the respondents were asked about the type of vaccination given to the children before attaining one year of age, including BCG+ Oral polio, DPT, Polio three doses, and measles. The NFHS-2(1998-1999) reveals that for Kerala 96.2% of children had taken BCG and 84.6% had taken measles vaccines, but the full dose was taken only by 79.7% of the children.⁴

Table 4: Percentage distribution of Children who receive/ did not receive immunization.

Immunization of children	No	Percentage
Received	100	20
Did not receive	400	80
Total	500	100

The data from our study shows that only 20% of children had received all the vaccination and 80% of children did not re-

ceive vaccination. When the respondents were asked the reason for non vaccination of their children, respondents in the lower socioeconomic status revealed that they were not aware about the doses. Some of the women informed that the child was ill during the due period of vaccination and in certain cases they deliberately avoided the vaccination. Certain women avoided polio vaccination for their children by fearing its side effects. A study by Gangadharan shows that only 80% of the urban and 77% of slum respondents had given all the vaccination to the children.⁵

Table 5: Percentage distribution of health status (weight) of children according to immunization they received /not receive (Gomez's classification weight for age). N=500

Immunization of mother during pregnancy	Health Status of children					
	Normal		Under-weight		Total	
	No	(%)	No	(%)	No	(%)
Received	30	6	70	14	100	20
Did not receive	100	20	300	60	400	80
Total	130	26	370	74	500	100

$\chi^2=0.49$ at d.f 1; $P<0.05$

Based on Gomez's classification, out of 20% of children who received immunization, majority of children were underweight. Out of 80% children who did not receive immunization during pregnancy only 20% of them were having normal weight for age, suggesting that immunization of children has no effect on their health status (weight),(Table 5)

Table 6: Percentage distribution of health status (Height) of children according to Immunization they received /not receive (Waterlow's classification) N=500

Immunization Status of children	Health Status of children					
	Normal		Stunted		Total	
	No	(%)	No	(%)	No	(%)
Received	35	7	65	13	100	20
Did not received	150	30	200	50	400	80
Total	185	37	315	63	500	100

$\chi^2=0.04$ at d.f 1; $P<0.05$

Based on Waterlow's classification, out of 20% children who received immunization, majority were having low weight for age. Out of 80% children who did not receive immunization, 30% were having normal weight for age, suggesting that immunization status of children has no effect on their health status.(Table 6)

Further, according to Gomez' classification, majority of the children were underweight with most falling on Grade III malnutrition category. This means that malnutrition was very prominent on the basis of weight for age. According to Waterlow's classification, majority of children were stunted.

Conclusions:

The study brings out salient findings that could be help to improve health of children. This is because although malnutrition manifests itself on an individual level, it has a bearing on the development of the nation. Awareness of women assumes especial significance in the Indian context because the problem of malnutrition in Indians is mainly due to ignorance, poverty and lack of knowledge regarding the issue. The mother who has a knowledge regarding the prenatal diagnosis has a positive effect on the health status of the children whereas immunization of children has no impact on their health status. It is therefore very important to first know the awareness level of the mother than to communicate the message regarding the improvement of the health status of children. The various approaches suitable for reaching the mothers are:

- Individual contacts through home visits.
- Group contacts through simple talks, demonstrations and discussion.

- Nukkad drama and use of traditional song for imparting relevant education more to older group who influence the young age group.

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