# NUTRITIONAL IMPACT STUDY OF THE INCOME GENERATION FOR VULNERABLE GROUP DEVELOPMENT PROGRAM: REPORT OF JULY 1995

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## SUMMARY

BRAC through its collaborative effort with the Government of Bangladesh has been implementing the Income Generation for Vulnerable Group Development Programme (IGVGDP) with the aim of improving the destitute rural women's life through involving them into income generating and other development activities. The participating women receive 31.25 kg wheat per month as food aid for a set period of two years along with other development inputs from BRAC and the GOB. Nutrition and other health messages are imparted in the regularly held issue based meetings and through home visits by the para-professionals and programme field staff.

Nutritional status indicators have been considered as a proxy of overall development of the programme participating households. The aim of this study is to see if the programme after about a year of post-implementation has made any impact on the nutritional status of the pre-school children.

This study is based on data collected in July 1995 on 202 Households participated in the IGVGD programme from Tangail Sadar thana, 172 non-programme control households from within the programme area and 164 non-programme control households from outside the programme area (Kalihati thana). The study children's anthropometric and household's socioeconomic data were collected by the RED interviewers through home visits using structured pre-tested questionnaire.

The data suggest positive changes for some selected socioeconomic indicators of the households participated in the IGVGD programme compared to the control households. Sanitary and hygiene practice were also found to be better among the IGVGD households.

A decreased trend was found in the proportion of severely malnourished children (according to Gomez classification) in the programme households. Wasting as defined by reduced weight for height was significantly lower in the IGVGD households (7.8%) compared to the non-programme households from within (12.1%) and outside (18.9%) the programme area. The proportion of the underweight children was also lower in the programme children (63.8%) than both the non-programme children (69.6% and 78.1% respectively).

Examining the results of this study it may be concluded that the IGVGD programme in addition to socioeconomic upliftment of the rural destitute women is able to improve nutritional status of the vulnerable groups such as the pre-school children.

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## INTRODUCTION

Bangladesh since its independence in 1971 has been known as one of the worst victims of poverty and malnutrition where about 94% of the children aged less than 5 years suffering from mild to severe degrees of malnutrition. Many development programmes are being carried out particularly by the NGOs targeted to the rural poor to improve the poverty and nutritional situation of this country. But the development challenge being faced by the programme planners and implementors is how to include the poorest of the poor in such development efforts to improve their nutritional status.

The Income Generation for the Vulnerable Group Development (IGVGD) Programme is being implemented jointly by BRAC and GOB involving the rural destitute women as the programme participants to improve their living conditions[1]. The programme uses food aid, 31.25 kg wheat per person per month for a period of two years, to initially attract the women into the development activities. The programme participants receive training on poultry rearing, credit, poultry vaccine and other supports in relation to poultry rearing and marketing. Nutrition and health messages are imparted through the regularly held issue based meetings. The programme field staff monitor activities on a regular basis and provide refresher training to the participants.

The Research and Evaluation Division (RED) of BRAC has been conducting a prospective study on the IGVGD programme in Tangail Sadar and Kalihati thana to assess impact of the programme on nutritional status of the vulnerable groups particularly of the

pre-school children. The data are being collected every six months on the same population[2].

The IGVGD programme had been implemented in the study area from October 1992 to September 1994. The survey was done about 10 months post-programme implementation that is July 1995.

## AIM

The aim of this study is to examine the impact of the IGVGD programme on nutritional status of the pre-school children which might occure after about a year of the post-implementation.

## METHODOLOGY

The analysis is cross sectional in nature. The data were collected in July 1995 on a total of 702 children aged 0-8 years from 538 households in Tangail Sadar and Kalihati thana (Table 1). Of the total children, 293 were taken from 202 households in Tangail Sadar thana who participated in the programme (cases) and 207 were taken from 172 households who never participated in the programme but were located within the programme villages (case-controls). Moreover, 196 children from 164 households were also included in the analysis who never participated in the programme and were located outside the programme area (controls). All control children were matched against the cases for some selected socio-economic and demographic characterstics[2]. The RED interviewers collected anthropometric, health and socio-economic data through the home visits using pre-tested and structured questionnaires. The interviewers are trained in conducting the field surveys and collecting anthropometric data.

RESULTS

Some important socio-economic and demographic characterstics of the study households desegregated by the programme participation and area is given in Table 2 & 3. About 11% of the IGVGDP households were headed by the female compared to 3.4% and 3.1% in the non-programme households within and outside the programme area respectively. About 28% of the programme households were rearing high yielding variety (HYV) poultry compared to 3.4% in the non-programme households within the programme area and 1.5% in the non-programme households outside the programme area. On average the programme households earned Tk. 29.00 from selling poultry birds and eggs per week. In comparison, the non-programme households from within and outside the programme area earned Tk. 4.70 and Tk. 3.60 respectively (Table 2).

According to Table 3 about 60% of the IGVGDP women became BRAC Village Organisation (VO) member compared to about 39% and 37% of the non-programme women. Average monthly cash earnings from cow rearing, goat rearing, vegetable gardening and small trading in the IGVGDP households were Tk. 3.80, Tk. 15.60, Tk. 19.40 and Tk. 601.80 respectively. Cash earnings from goat rearing, vegetable gardening and small trading was higher in the IGVGDP households than both the control groups (Table 3).

The respondents were asked if they had sold any of the household assets because of any crisis in the preceding six months of the survey. It is revealed from the table that 6.5% of the IGVGDP households sold their assets compared to about 4% in the non-programme households from within the programme area and about 3% in the non-programme households from outside the programme area (Table 3).

In case of purchase of the new household assets, 23.5% of the IGVGDP households had bought new assets compared to 12.6% and 14.3% in the control households from within and outside the programme areas respectively (Table 3).

Almost 99% of the IGVGDP households had access to safe drinking water (tubewell water) compared to about 97% and 95% from within and outside the programme areas respectively. More than 22% of the IGVGDP households had access to safe latrine (pit and slab latrines) compared to 14% and 18% in both types of the non-programme households (Table 4).

According to Table 5 about 40% of the IGVGDP mothers had practiced using soap to wash hands after defecation. In contrast 15% of the non-IGVGDP mothers from within the programme area and 28% of the non-IGVGDP mothers from outside the programme area had practiced the same.

About 2% of the study children had suffered from diarrhoea during the time of interview and this proportion was more or less equal between the population groups. The prevalence of nightblindness was found to be higher in the IGVGDP households (1.7%) compared to its prevalence in the total population (1.4%) which was not statistically significant ($p<0.001$) (Table 5). Figures of vitamin A capsule and immunization coverage are also illustrated in the same table which also do not vary much between the groups.

It is revealed from Table 6 that only about 22% of the study children were exclusively breastfed in the IGVGDP households. More than two thirds of the children were mixed-fed in all types of the study population. About 15% of the IGVGDP children were given eggs in preceding 24 hours of the survey compared to about 10% and 6% in non-programme households within and outside the programme areas. The mean frequency of household food intake was 2.9 in all three types of the households (Table 6).

Table 7 presents anthropometric data of the study children desegregated by household's involvement in the IGVGD programme and area. The table shows that average age of the IGVGDP children was higher (63.3 months) than the non-programme children from within the programme area (58.8 months) and from outside the programme area (60.9 months). Mean weight, height and mid-upper arm circumference (MUAC) of all the study children were 13 kg, 95.6 cm and 139.4 mm which were almost equal in all three types of the study population. About 5.8% of the IGVGDP children had suffered from severe malnutrition (defined by MUAC <125 mm) compared to 5.8% in the non-programme households from within the programme area and 7.1% in the non-programme households from outside the programme area. The proportion of wasting (lesser weight than height: weight for height <80%) was lowest in the IGVGDP households (4.1%) compared to both the non-programme households (4.8% and 9.2% respectively). The proportion of severely under-weight children expressed by weight for age <60% of the NCHS median was 5.1% in the IGVGDP households compared to its average figure of 7.3% in the total study population. Other anthropometric indices using -2 standard deviation scores (z-scores) as cut-off points show better situation in the IGVGDP children than both types of the non-programme children (Table 7).

## CONCLUSION

This study attempts to examine the impact of the IGVGD programme after about a year of post-programme implementation on nutritional status of the pre-school children. The IGVGD programme intends to bring the poorest of the poor in the development efforts to up-lift their life on a sustainable basis. Nutritional status indicators of the pre-school children have been taken as a proxy of household well-being which might occur as a result of development interventions. The study suggests that the IGVGD programme could reduce household vulnerability as reflected in some socioeconomic indicators mentioned in Table 2, 3 & 4. A higher proportion of the

post-IGVGDP participants were rearing HYV poultry compared to the non-programme households. But, the coverage of HYV poultry rearing seems not to be at a satisfactory level which needs to be in proper consideration by the programme. Sustainability of this programme in terms of improving the living conditions of the rural destitute women would largely depend on to what extent they are involved in poultry rearing activities. However, this figure may has been diluted by the effects of BRAC's Rural Development Programme interventions. Cash earnings from poultry rearing and other income earning activities was higher in the IGVGDP households. It is interesting to observe that higher proportion of the IGVGDP households sold assets due to household crisis but, on the other hand, higher proportion of the IGVGDP households bought new assets. This could be partly explained by the seasonal vulnerability and coping mechanisms of the rural poor. The indicators of hygiene and sanitary situation show better situation in the IGVGDP households. However, further attention needs to increase sanitary latrine coverage of the BRAC group members to improve their health status through reducing infections.

Nutritional status of the pre-school children in the IGVGDP households seems to have improved as reflected in different anthropometric indices in table 7. The programme could reduce both acute (defined as weight for height) and chronic (defined as height for age) malnutrition. However, the effect of the programme in terms of reducing the acute forms of malnutrition (i.e., wasting) seems to be greater than reducing the chronic forms of malnutrition (stunting).

LIST OF TABLES

Table 1: Area and Household profile of The Study Children

| Household Type | *IGVGDP Households* | *Non-IGVGDP Households Within Programme Area* | *Non-IGVGDP Households Outside Programme Area* | *All* |
|---|---|---|---|---|
| Thana | Tangail Sadar | Tangail Sadar | Kalihati | Tangail Sadar Kalihati |
| Union | Karatia Gala Gharinda Selimpur Porabari Dainna | Karatia Gala Gharinda Selimpur Porabari Dainna | Elenga | Karatia Gala Gharinda Selimpur Porabari Dainna Elenga |
| No. of Villages | 51 | 27 | 11 | 65 |
| No. of Households | 202 | 172 | 164 | 538 |
| No. of Children | 293 | 207 | 196 | 702 |

Table 2: Socioeconomic and Demographic Profile of the Study Households

| Indicators | IGVGDP Household (n=202) | Non-IGVGDP Households within Programme Area n=(172) | Non-IGVGDP Households Outside Programme Area (n=164) | All (N=538) |
|---|---|---|---|---|
| Woman headed household (%) | 10.9 | 3.4 | 3.1 | 5.7 |
| Family size (mean±sd) | 5.6±1.6 | 5.1±1.8 | 5.0±1.5 | 5.4±1.8 |
| No. of children <6 yrs. old (mean±sd) | 1.7±0.7 | 1.5±0.6 | 1.5±0.6 | 1.6±0.6 |
| Households with kacha house (%) | 89.1 | 88.9 | 92.9 | 90.3 |
| Households with irregular occupation (%) | 49.8 | 51.2 | 60.2 | 53.8 |
| Illiterate mothers(%) | 36.2 | 42.5 | 30.1 | 36.2 |
| Landless households (%) | 78.8 | 83.6 | 78.6 | 81.8 |
| HYV poultry rearer (%) | 27.6 | 4.3 | 1.5 | 16.2 |
| Weekly cash earnings from: poultry birds Eggs (mean±sd) | 10.4±47.7 18.5±34.7 | 2.2±22.3 2.5±8.0 | 1.4±15.9 2.2±8.5 | 5.5±34.7 9.2±24.8 |

Table 3: Economic Profile of the Study Households

| Indicators | IGVGDP Household (n=202) | Non-IGVGDP Households Within Programme Area (n=172) | Non-IGVGDP Households Outside Programme Area (N=164) | All (N=538) |
|---|---|---|---|---|
| Proportion of HHs with BRAC | 60.1 | 39.1 | 36.7 | 38.0 |
| Use of 2nd Loan (%): | | | | |
| Cow Rearing | 8.5 | 2.5 | 8.3 | 7.9 |
| Goat Rearing | 9.1 | 1.2 | -- | 4.1 |
| Veg. Gardening | 1.7 | -- | -- | 1.1 |
| Small Trading | 39.8 | 24.7 | 26.4 | 31.5 |
| Others | 40.9 | 71.6 | 65.3 | 55.4 |
| One Month's Average Cash Earnings: | | | | |
| Cow Rearing | 3.8 | 11.7 | 10.7 | 8.0 |
| Goat Rearing | 15.6 | 0.0 | 2.6 | 7.4 |
| Veg. Gardening | 19.4 | 7.4 | 1.2 | 10.8 |
| Small Trading | 601.8 | 520.3 | 322.7 | 499.9 |
| Proportion of HHs Engaged in Distress Sale | 6.5 | 3.9 | 3.1 | 6.1 |
| Proportion of HHs Bought New Assets: All Assets | 23.5 | 12.6 | 14.3 | 15.0 |
| Breakdown of Assets Bought by the HHs: | | | | |
| Land | 2.0 | 5.3 | 2.6 | 4.7 |
| HH Equipments | 5.5 | 1.0 | -- | 0.6 |
| Cow/Goat | 8.9 | 1.4 | 2.6 | 3.4 |
| Roof Tin | -- | 2.4 | 7.7 | 4.0 |
| Ornaments | 0.3 | 1.0 | 1.0 | 1.4 |
| Others | 7.5 | 2.4 | 1.0 | 2.4 |

Table 4: Sanitary and Hygiene Profile of the Study Households

| Indicators | IGVGDP Household (n=202) | Non-IGVGDP Households Within Programme Area (n=172) | Non-IGVGDP Households Outside Programme Area (n=164) | All (N=538) |
|---|---|---|---|---|
| Access to safe water (%) | 98.6 | 97.1 | 95.4 | 97.2 |
| Access to safe latrine (%) | 22.2 | 14.5 | 18.5 | 21.1 |

Table 5: Health Status Profile of the children

| Indicators | IGVGDP Children (n=202) | Non-IGVGDP Children Within Programme Area (n=172) | Non-IGVGDP Children Outside Programme Area (n=164) | All (N=538) |
|---|---|---|---|---|
| Proportion of mothers used ~~Shop~~ soap after defecation | 39.6 | 15.0 | 28.1 | 49.0 |
| Prevalence of diarrhoea (%) | 2.0 | 2.4 | 1.5 | 2.1 |
| Prevalence of Common Cold (%) | 32.1 | 44.4 | 43.4 | 40.7 |
| Prevalence of nightblindness (%) | 1.7 | 1.4 | 1.0 | 1.4 |
| Vitamin A capsule coverage (%) | 38.2 | 71.5 | 33.2 | 43.3 |
| Immunization coverage (%): | | | | |
| BCG | 81.6 | 82.8 | 92.1 | 84.8 |
| DPT | 76.3 | 78.4 | 80.1 | 77.9 |
| Polio | 76.3 | 78.4 | 80.1 | 77.9 |
| Measles | 71.1 | 75.5 | 75.9 | 73.9 |
| Children with immunization cards (%) | 23.9 | 27.1 | 17.3 | 22.4 |

Table 6: Food Intake Profile of the children

| Indicators | IGVGDP Children (n=293) | Non-IGVGDP Children Within Programme Area (n=207) | Non-IGVGDP Children Outside Programme Area (n=196) | All (N=702) |
|---|---|---|---|---|
| Children exclusively breastfed up to 6 months age (%) | 22.1 | 31.9 | 12.2 | 22.2 |
| Children eaten egg preceding 24 hours of interview (%) | 15.0 | 10.1 | 5.6 | 17.5 |
| Frequency of serving meals (mean±sd) | 2.9±0.3 | 2.9±0.4 | 2.9±0.4 | 2.85±0.4 |

Table 7: Nutritional Status Profile of the Children

| Indicators | IGVGDP Children (n=293) | Non-IGVGDP Children *&t Within Programme Area (n=207) | Non-IGVGDP Children Outside Programme Area (n=196) | All (N=702) |
|---|---|---|---|---|
| Age in Month (mean±sd) | 63.3±23.5 | 58.8±23.6 | 60.9±23.9 | 61.3±18.7 |
| Weight (kg) (mean±sd) | 13.3±3.2 | 12.9±3.1 | 12.7±3.0 | 13.0±0.4 |
| Height (cm) (mean±sd) | 95.1±13.2 | 94.3±14.7 | 95.7±13.7 | 95.6±14.9 |
| MUAC (mm) (mean±sd) | 143.8±11.6 | 143.7±10.3 | 140.5±10.9 | 8±11.3 |
| MUAC <125mm (%) | 5.8 | 5.8 | 7.1 | 6.1 |
| Wt/Ht <80% (%) | 4.1 | 4.8 | 9.2 | 7.3 |
| Wt/Age <60% (%) | 5.1 | 5.3 | 7.9 | 7.5 |
| Wt/Age <75% (%) | 62.5 | 60.4 | 73.5 | 65.0 |
| Ht/Age <90% (%) | 58.0 | 53.1 | 59.2 | 54.1 |
| Ht/Ag <-2 Z-Score (%) | 74.4 | 71.5 | 69.9 | 68.7 |
| Wt/Ht <-2 Z-score (%) | 7.8 | 12.1 | 18.9 | 16.0 |
| Wt/Ag <-2 Z-Score | 63.8 | 69.6 | 78.1 | 72.2 |
| Wt/Ag <-3 Z-score (%) | 23.7 | 19.3 | 26.0 | 23.1 |

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