# COMPARISION OF NUTRITIONAL STATUS OF INFANTS IN SLUM AREAS: IMPACT OF NUTRITION EDUCATION

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Knowledge of nutrition is important for all weather young or old; illiterate or literate; boy or girl; and those living in rural or slums. It helps to choose right food, i.e. develop right attitudes towards food and build good eating habits.

"*Nutrition education is the process by which people gain knowledge of nutrition and are persuaded to bring about required changes in their food habits*."

Nutrition knowledge, Good selection followed by correct cooking practices and hygienic consumption of food promotes nutritional status.

Assessment of nutritional status by can be done by anthropometric data. If infants and children do not get sufficient food they fail to grow properly. Weighing machine is a useful and accurate tool for assessing body weight. Measurements of weight of children at various ages have been used as an index of nutritional status and have proved very valuable when correctly interpreted.

Body weight is the most widely used and the simplest reproducible anthropometric measurements for the evaluation of nutritional status of young infants and children. It indicates the body mass and is a composite of all body constituents like water, minerals, fat, protein, bone etc. Its potential is perceived not only by the health personnel, but also by the community both the educated and illiterate alike. Serial measurements of weight, as in growth monitoring, are more sensitive indicators of changes in nutritional status than a single measurement

## METHODOLOGY

Multistage sampling technique was used for the selection of the sample. Five

urban slums of Kurukshetra District of Haryana were selected on random basis. Total 286 mothers of infants (0-24 months) were selected purposively on random basis.

Data was collected using a pretested interview schedule

**Nutritional Education Intervention Programme**

The mothers of infants received nutrition education over a period of 8 months. The nutrition education intervention programme covered five lesson and each topic was presented twice. Two related topics were presented on the same day with a break of five minutes in between presentations. The care givers and mothers assembled in group of 2-8 respondents or as per suitability of respondents at nearby areas on the day of nutrition education, as per the appointment made during the prior visit.

**Six lesson plans were used**

1. Keeping food safe and clean
2. Low cost nutrious foods.
3. Balanced diet
4. Guidelines for mothers at the time of weaning.
5. Some Do's and Don'ts for mothers.
6. Imparting nutrition education through picture.

**BODY WEIGHT**

It is sensitive even to small changes in nutritional status due to childhood morbidities like diarrhoea etc. Rapid loss of body weight in infants and children should be considered an indicator of potential malnutrition.

**Technique**

The weight was taken by beam balance (platform scale) for small infants and ordinary weighing balance (bathroom scale) for infants above 12 months.

Body weights of the children were recorded to the nearest 0.1kgm

The per cent level of weight for age was calculated by comparing with WHO (World

Health Organisation) standard (2007), before and after imparting nutrition education.

**STATISTICAL ANALYSIS**

**Per centage,Arithmetic mean,standard deviation, paired t-test were used**

# RESULTS AND DISCUSSION :

TABLE :1

**Distribution of Female Infants according to Weight before and after imparting nutrition education as compared with WHO standards.**

| Before Imparting Nutrition Education | | | | | After Imparting Nutrition Education | | | | Correlation | t | df | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age (months) | No. | Mean ±SD | WHO Std | Mean Weight | Age (months) | Mean ±SD | WHO Std | Mean Weight | | | | |
| 1 | 4 | 3.25 ±0.65 | 4.2 | 77.38 | 9 | 7.5 ±1.08 | 7.9 | 94.93 | .837 | 13.168 | 3 | .001** |
| 2 | 6 | 3.87 ±0.83* | 5.1 | 75.88 | 10 | 9 ±0.54 | 8.2 | 109.7 | .855 | 27.139 | 5 | .000** |
| 3 | 8 | 4.55 ±1.27 | 5.8 | 78.44 | 11 | 9.53 ±0.76 | 8.5 | 112.11 | .882 | 20.029 | 7 | .000** |
| 4 | 5 | 4.8 ±0.21* | 6.4 | 75.00 | 12 | 10.02 ±0.32 | 8.7 | 115.17 | -.849 | 22.804 | 4 | .000** |
| 5 | 5 | 4.3 ±0.27* | 6.9 | 62.31 | 13 | 9.24 ±0.25 | 8.9 | 103.82 | .873 | 82.333 | 4 | .000** |
| 6 | 7 | 5.04 | 7. | 69.04 | 14 | 10.4 ±0.9 | 9.2 | 113.0 | .365 | 14.01 | 6 | .000 |

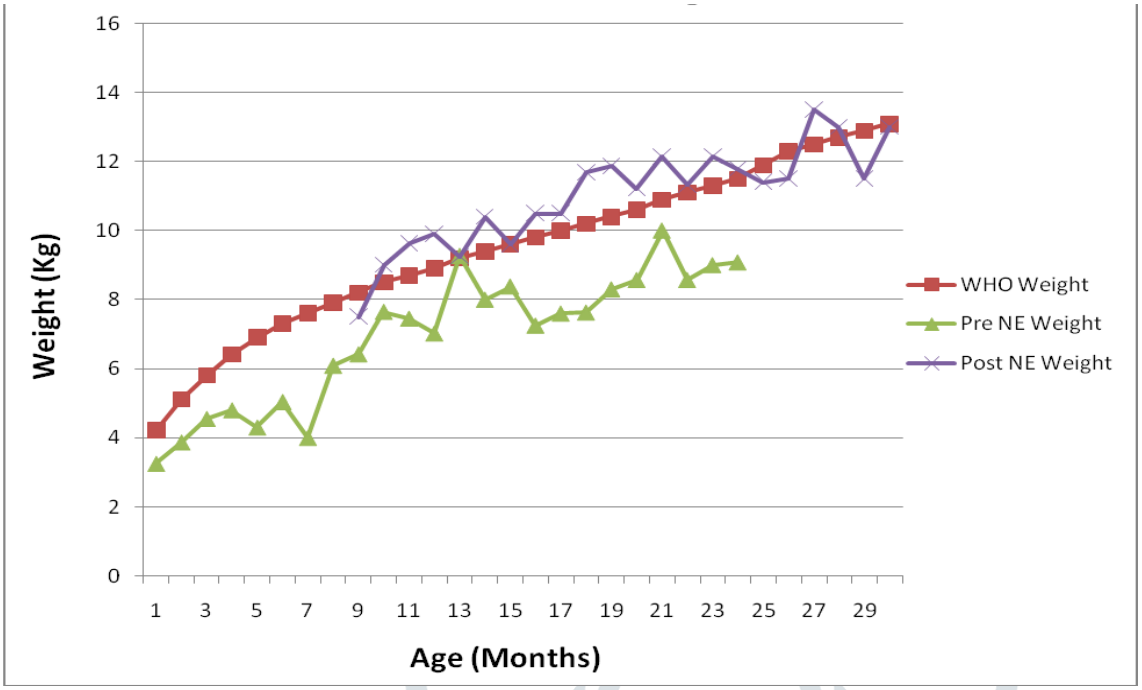
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ±0.77* | 3 | | | 9 | | 4 | | 4 | | ** |
| 7 | 1 | | 7.6 | 72 | 15 | | 9.4 | 80 | | | | |
| 8 | 9 | 6.09 ±1.35* | 7.9 | 77.08 | 16 | 10.5 ±1.28 | 9.6 | 109.37 | .485 | 9.930 | 8 | .000** |
| 9 | 5 | 6.42 ±0.64* | 8.2 | 78.29 | 17 | 10.5 ±1.46 | 9.8 | 107.14 | .470 | 7.087 | 4 | .002** |
| 10 | 6 | 7.65 ±1.78 | 8.5 | 90 | 18 | 11.68 ±0.85 | 10 | 116.80 | .840 | 8.539 | 5 | .000** |
| 11 | 11 | 7.45 ±0.9* | 8.7 | 85.63 | 19 | 11.86 ±0.63 | 10.2 | 116.27 | .500 | 18.265 | 10 | .000** |
| 12 | 5 | 7.02 ±0.71* | 8.9 | 78.87 | 20 | 11.22 ±0.77 | 10.4 | 107.88 | .476 | 12.385 | 4 | .000** |
| 13 | 3 | 9.27 ±2.37 | 9.2 | 100 | 21 | 12.13 ±1.62 | 10.6 | 114.43 | .999 | 6.557 | 2 | .022* |
| 14 | 4 | 8 ±1.83 | 9.4 | 85.10 | 22 | 11.33 ±1.46 | 10.9 | 103.94 | .790 | 5.934 | 3 | .010* |
| 15 | 8 | 8.38 ±1.3 | 9.6 | 87.29 | 23 | 12.15 ±1.11 | 11.1 | 109.45 | .903 | 18.896 | 7 | .000** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 4 | 7.25 ±0.87* | 9.8 | 73.97 | 24 | 11.78 ±0.26 | 11.3 | 104.24 | .329 | 11.063 | 3 | .002** |
| 18 | 6 | 7.63 ±1.28* | 10.2 | 74.80 | 26 | 11.4 ±1.06 | 11.5 | 99.13 | .563 | 8.330 | 5 | .000** |
| 20 | 3 | 8.57 ±1.69* | 10.6 | 80.84 | 28 | 11.5 ±1.8 | 11.9 | 96.63 | 1.000 | 44.000 | 2 | .001** |
| 21 | 2 | 13.5 ±2.12 | 10.9 | 123.85 | 29 | 10 ±2.83 | 12.3 | 81.30 | 1.000 | -7.000 | 1 | .090 |
| 22 | 3 | 13 ±1.73 | 11.1 | 117.11 | 30 | 8.57 ±1.27 | 12.5 | 68.56 | .980 | -13.942 | 2 | .005** |
| 23 | 1 | | 11.3 | 99 | 31 | | 12.7 | 101 | | | | |
| 24 | 6 | 13 ±0.84 | 11.5 | 113.04 | 32 | 9.08 ±0.8 | 12.9 | 70.38 | .522 | -11.977 | 5 | .000** |

** Significant at p<.01

* Significant at p<.05

**Fig.1 Distribution of Female infants according to Weight before and after imparting nutrition education.**




Pre NE: Before Imparting Nutrition Education

Post NE: After Imparting Nutrition Education

Table 1 & fig. 1 indicate the weight of female infants. In all age group except 1, 3, 7, 10, 14, 15, 21, 22, 24 months differ significantly from WHO standards according to their weight. A positive change in mean weight was analyzed while comparing them with WHO standards.

All this data was statistically analyzed for paired t-test the results indicated there was significant difference between weight of female infants before and after imparting nutrition education.

**TABLE- 2 Distribution of Male Infants according to Weight before and after imparting nutrition education as compared with WHO standards.**

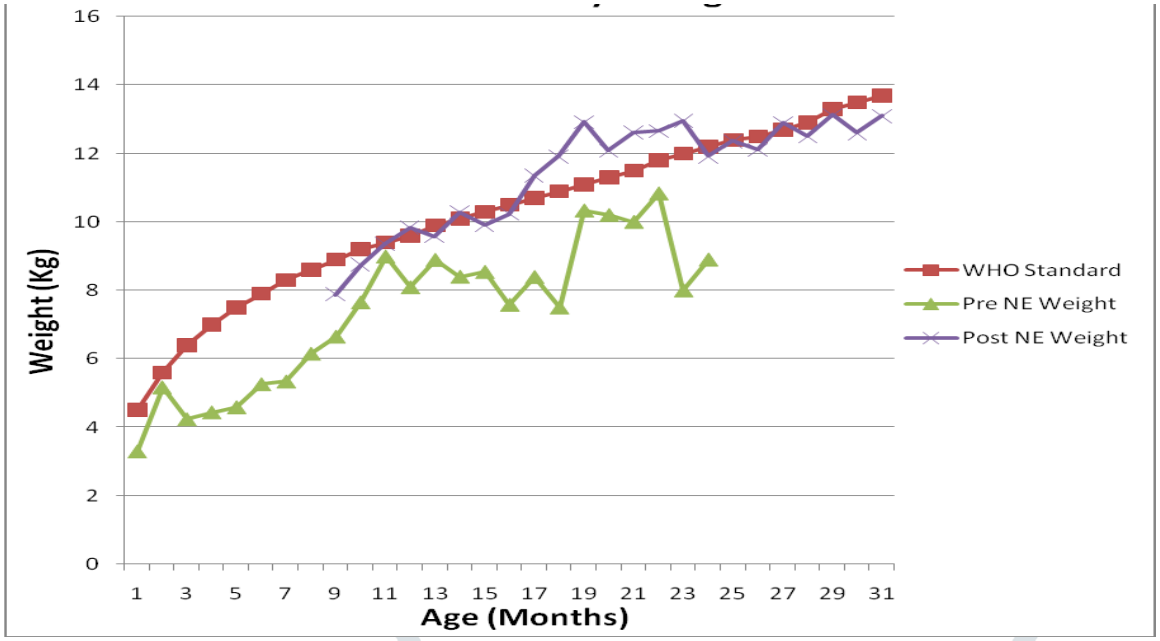
| Before Imparting Nutrition Education | | | | | After Imparting Nutrition Education | | | | Correlation | t | df | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age (months) | No. | Mean ±SD | WHO Std | Mean Weight | Age (months) | Mean ±SD | WHO Std | Mean Weight | | | | |
| 1 | 4 | 3.3 ±0.6* | 4.5 | 73.33 | 9 | 7.6 ±1.29 | 8.9 | 85.39 | 0.722 | 8.999 | 3 | 0.003** |
| 2 | 5 | 4 ±0.87* | 5.6 | 71.42 | 10 | 8.8 ±0.69 | 9.2 | 95.65 | 0.958 | 37.947 | 4 | 0.000** |
| 3 | 7 | 4.24 ±0.68* | 6.4 | 66.25 | 11 | 9.36 ±1.29 | 9.4 | 99.57 | 0.075 | 9.613 | 6 | 0.000** |
| 4 | 8 | 4.44 ±0.38* | 7 | 63.42 | 12 | 9.84 ±0.67 | 9.6 | 102.5 | -0.200 | 18.445 | 7 | 0.000** |
| 5 | 9 | 4.59 ±0.74* | 7.5 | 61.20 | 13 | 9.58 ±1.2 | 9.9 | 96.76 | 0.270 | 12.175 | 8 | 0.000** |
| 6 | 14 | 5.26 ±0.94* | 7.9 | 66.58 | 14 | 10.29 ±1.31 | 10.1 | 101.80 | 0.795 | 23.452 | 13 | 0.000** |
| 7 | 8 | 5.34 ±0.95* | 8.3 | 64.33 | 15 | 9.91 ±0.77 | 10.3 | 96.21 | 0.793 | 22.405 | 7 | 0.000** |
| 8 | 11 | 6.15 ±1.15* | 8.6 | 64.33 | 16 | 10.24 ±1.65 | 10.5 | 97.52 | 0.553 | 9.716 | 10 | 0.000** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 11 | 6.65 ±0.53* | 8.9 | 74.71 | 17 | 11.36 ±0.84 | 10.7 | 106.16 | -0.114 | 14.995 | 10 | 0.000** |
| 10 | 13 | 7.65 ±1.66* | 9.2 | 83.15 | 18 | 11.92 ±1.09 | 10.9 | 109.35 | 0.787 | 14.728 | 12 | 0.000** |
| 11 | 8 | 8.99 ±1.33 | 9.4 | 95.63 | 19 | 12.93 ±0.58 | 11.1 | 116.48 | 0.737 | 11.368 | 7 | 0.000** |
| 12 | 13 | 8.09 ±1.3* | 9.6 | 84.27 | 20 | 12.09 ±0.76 | 11.3 | 106.99 | 0.708 | 15.507 | 12 | 0.000** |
| 13 | 9 | 8.89 ±1.22 | 9.9 | 89.79 | 21 | 12.69 ±0.47 | 11.5 | 110.34 | 0.739 | 12.293 | 8 | 0.000** |
| 14 | 9 | 8.4 ±1.23* | 10.1 | 83.16 | 22 | 12.59 ±0.67 | 11.8 | 106.69 | 0.294 | 10.343 | 8 | 0.000** |
| 15 | 5 | 8.54 ±2.13 | 10.3 | 82.91 | 23 | 12.96 ±0.46 | 12 | 108.00 | 0.742 | 5.423 | 4 | 0.006** |
| 16 | 6 | 7.58 ±0.9* | 10.5 | 72.19 | 24 | 11.92 ±1.22 | 12.2 | 97.70 | 0.730 | 12.735 | 5 | 0.000** |
| 17 | 7 | 8.39 ±1.02* | 10.7 | 78.41 | 25 | 12.36 ±0.8 | 12.4 | 99.67 | 0.895 | 22.800 | 6 | 0.000** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 5 | | | | | | |
| 18 | 14 | 7.5 ±0.63* | 10.9 | 68.80 | 26 | 12.11 ±0.81 | 12.5 | 96.88 | 0.213 | 18.945 | 13 | 0.000** |
| 19 | 3 | 10.33 ±1.53 | 11.1 | 93.06 | 27 | 12.9 ±0.85 | 12.7 | 101.57 | 0.958 | 5.923 | 2 | 0.027* |
| 21 | 1 | | 11.5 | 86.95 | 29 | 12.5 ±0 | 13.1 | 95.41 | | | 0 | |
| 22 | 3 | 10.83 ±2.25 | 11.8 | 91.77 | 30 | 13.13 ±1.63 | 13.3 | 98.72 | 0.894 | 3.683 | 2 | 0.066 |
| 23 | 2 | 9.5 ±2.12* | 12 | 79.16 | 31 | 12.6 ±0.85 | 13.5 | 93.33 | 1.000 | 3.444 | 1 | 0.180 |
| 24 | 4 | 8.9 ±0.84* | 12.2 | 72.95 | 32 | 13.1 ±0.2 | 13.7 | 95.62 | 0.079 | 9.899 | 3 | 0.002** |

** Significant at p<.01, * Significant at p<.05

**Fig.2 Distribution of Boys infants according to Weight before and after imparting nutrition education.**




Pre NE: Before Imparting Nutrition Education

Post NE: After Imparting Nutrition Education

Table- 2 & fig.-2 shows that male infants except 11 months, 13 months, 15 months, 19 months, 21 months and 22 months, differ significantly from WHO standards according to their weight.

Change in mean weight was analyzed for males the data indicate drastic improvement in around all age groups. While compared with WHO standards.

When the weight of male was statistically analyzed for paired t-test the results indicated there was a significant difference in almost all the age groups before and after imparting nutrition education when compared with WHO standards

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