DRAFT: STILL UNDER REVISION

DOES HOUSEHOLD STRUCTURE EFFECTS THE NUTRITIONAL STATUS OF CHILDREN: AN ASSESSEMNT OF INDIA POPULATION

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Introduction:

Health of the people is the most important indicator for the development of a nation and nutrition is an important determinant of health. India has the highest incidence of childhood malnutrition in the world. Almost 30 percent babies in India are born with low birth weight and are doomed to adverse consequences, including degenerative diseases in later life. Comparison of putative factors between regions within India (Developed and undeveloped state), child malnutrition has long been recognized as a serious problem in India, but national-level data on levels and causes of malnutrition have been scarce. Hence, a National Family Health Survey was done to examine the levels and determinants of child malnutrition in the country. More specifically, this survey estimated the levels of child malnutrition and examined the effects of mother's nutrition, mother's education and other demographic and socioeconomic factors on the nutritional status of children in India. Based on standards developed by the WHO, 48 percent of children under age 5 years are stunted, and 43 percent are underweight. The proportion of children who are severely undernourished is also notable 24 percent according to height for- age and 16 percent according to weight-for-age. Under nutrition is substantially higher in rural areas than in urban areas, however, 40 percent of children are stunted and 33 percent are underweight. Maternal education has the strongest independent influence on child malnutrition. Children whose mothers have little or no education tend to have a lower nutritional status than children of more-educated mothers, even after controlling potentially confounding demographic and socioeconomic variables. The nutrition status of children is strongly related to maternal status. The age of the child and household economic status all have independent effects on nutritional status. Considering there is a very strong impact of maternal education and household structure on child nutrition.

Why Focus on Nutrition:

Early marriage and child birth continue to be the social norm in India. These culture compulsions are more pronounced in families of lower social–economic status, though sometimes middle class families also reflect the same phenomena. Within the context of specific variables such as socio-economic like caste, religion, education and other differential such as women remain under the authority of her mother –in-law after marriage and generally have little autonomy in decision making, even regarding her own fertility. These isolation and limited freedom of movement contribute to their dependence and restrict their access to family planning information and services.

Objective:

To assess the differential impact of household structure and other socio economic status on the nutritional status of children and women in reproductive age group (15- 49 years) in India

Methodology:

The data used for this analysis is drawn from the nationally representative 2005-06 National Family Health Survey (NFHS-III) of 124385 ever-married women aged 15-49 years ,4540 and 3566 women aged 15-49 in Orissa and Kerala and 1781 and 1017 child aged 0-60 months in Orissa and Kerala for whom complete information is available with regards to health and households characteristics. We restrict our analysis to only those households who had children born in the 5 years prior to survey. We measured child nutritional status using two anthropometric measures: child's height-for-age and weight-for-height, both are expressed in standard deviations (z-scores) from the median of the reference population, this being the commonly used US National Center for Health Statistics (NCHS) standard as recommended by the World Health Organization (WHO). The height-for-age z-score measures the child's height according to age, this being an indicator that reflects the cumulative effects of growth deficiency and so is designed to measure long-term nutritional status. The weight-for-height z-score measures the child's weight according to height; this indicator has been used to monitor the growth of children and is typically regarded as a measure of short term rather than long term nutritional status. Both anthropometric measures are influenced by a number of factors including chronic insufficient women's health, women's education, household facilities and low socio-economic family status. However, these anthropometric measures are widely used by nutritionists as a reliable indicator of malnutrition. Women nutrition status is assessed using body mass index (BMI) and information on the height and weight of women. The same scales and measuring boards which were used to measure children were used for women. Women's height can be used to identify women at risk like difficult delivery, since small stature is often related to small pelvic size. The cutoff point for height, below which women can be identified as nutritionally at risk, varies among populations, but it is usually considered to be in the range of 140-150 cm. BMI is defined as weight in kilograms divided by height in meters squared (kg/m2).This index excludes women who were pregnant at the time of the survey and women who gave birth during the two months preceding the survey. A cutoff point of 18.5 is used to define thinness or acute under nutrition and a BMI of 25 or above indicate overweight or obesity. Utilizing NFHS-III data, information on background, socio-economic and health characteristics, such as women's education, wealth index, residence and caste where as the dependent variables is nutritional status of women and children. Out of several variables used in this study, besides cross tabulations, a regression analysis is also done to understand the factors influencing nutritional status of women and children in Kerala and Orissa.

Result:

According to height-for-age z-scores, 28 percent of the children belong to nuclear family in urban Kerala while 13 percent of the children belong to nuclear family in urban Orissa. In Kerala, none of the children are malnourished in 9-11 months age group but more than 11 percent children are malnourished in non-nuclear family in Kerala according to height-for-age z-scores. Along with this, 5 percent female comes under severe condition in non-nuclear family whereas 8 percent female comes under severe condition in nuclear family according to height-for-age z-scores. 33 percent of the children come under severe condition in non-nuclear family whereas only 4 percent children belong to same nutritional status in nuclear family in Kerala. Those families who used tube well for drinking purpose have less percentage of children belonging to low nutrition status rather than those using other sources as per height-for-age z-scores. According to height for age z-score, 13 percent children under 6-8 months are severely malnourished in non-nuclear family whereas in nuclear family only 1 percent children are severely malnourished. In contrast to above finding, 1 percent children are severely malnourished in non-nuclear family while 7 percent children are severely malnourished in nuclear family according to weight-for-height z-score in Kerala. Those children belonging to ST caste; they are more severely malnourished in nuclear family as compared to non-nuclear family as per weight-for-height z-score in Kerala.

The percentage values of nutritional status of women according to NFHS-III data indicates that 35 percent of the women are thin where highest percentage of all is in age groups 15-24 years and important finding is that as the age increases percentage of thin women decreases, who belong to nuclear family in Kerala. In Kerala, percentage of thin women is high in nuclear family rather than non-nuclear family among those belonging to ST category. When compared the two states of India, it was found that overall percentage of normal women is higher in non - nuclear family in Kerala. It was also found that wealth index percentage of normal women increases from rural to urban areas. In the case of overweight women, more variation in nutritional status is observed, particularly in those using different source of drinking water. Similarly, a large gap in nutritional status is indicated by education. 54 percent of illiterate women are thin whereas 25 percent of women are thin in higher education group in Orissa. The positive correlation between the wealth index and nutritional outcomes of the children and women in both of the state of India is seen. Here we also found that, relative to male children, female children were more likely to have poor weight-for-height and height-for-age z-scores and same finding was found in household structure data, comparative to non-nuclear family, nuclear family children have poor height-for-age and weight-for-height z-score in Orissa. However, when we examined the anthropometric measurement of children of at least five year age at the time of the survey, we saw that male children had better height-for-age z-scores relative to female children in both the states. Mother's, education was shown to be an important predictor of children and women nutrition, particularly for female children. Economic variables such as wealth index were shown to have a positive effect on height-for-weight z scores.

Conclusion and Recommendations:

Data indicated that household structure and economic parameters have a positive relation with the nutritional status of women in both the states. Comparison between regions within the country suggested that malnutrition has complex etiology and only balanced strategy of

development by ensuring food, nutrition, health and household facilities can help to tackle the burden of malnutrition in the community particularly among women and children. Better socio economic status of women and literacy programs could also play an important role in improving the nutritional status of children and women.