

Double Burden of Malnutrition and Chronic Disease Risk Among Mother-Child Dyads within the Same Household in Urban Poor Settings in India

Introduction

Under-nutrition and over- nutrition have long been treated as distinct public health problems, each with its own underlying factors. However, with urbanization, changing lifestyle and dietary patterns of populations in developing countries, the co-existence of under-nutrition and over-nutrition within countries, communities and households has become inevitable especially in context with poor segments of the population. Developing countries, including India, has primarily focused on the high prevalence of undernutrition and no national policies/programmes are there to address overnutrition/obesity. The purpose of the study was to find out the prevalence of different forms of malnutrition within the same households in urban poor settings in India and their potential determinants.

Methods

A cross-sectional study of 350 mother-child dyads (children aged 3-5 years) from urban poor settings of Delhi, India. Anthropometric measurements (weight, height, waist-circumference, hip circumference in mothers and weight, height, MUAC in children) were taken from a stratified random sample of mothers aged >18 years with children aged 3-5 years. Households were categorised into different forms of malnutrition based on prevalence of underweight, stunting, wasting and overweight/obesity in children, with corresponding proportions of underweight and overweight/obesity in mothers, based on BMI, waist circumference and waist-hip ratio.

Results

Of the 350 mother-child dyads, the prevalence of underweight child-overweight mother (UC/OM) defining double malnutrition was found to be 20% compared to 23% normal child and normal mother (NC/NM) which was taken as the reference group, corresponding households were UC/UM 3%; UC/NM 5%; NC/OM 30%; NC/UM 7%; OC/NM 3 %; OC/OM 7%; OC/UM 2%. A large proportion (40%) of overweight/obese mothers respectively had stunted (21%) and severely stunted children (14%). Among, all dual malnutrition households, the odds of being at chronic disease risk among mothers as assessed from waist circumference and waist height ratio was 3.1 (95% CI 2.2-4.5). Significant predictors of dual burden households ($p<0.05$) includes maternal short stature, mother's and father's low level of education, reduced physical activity and ease to junk food availability.

Conclusion

We documented the existence of double burden of malnutrition characterized by a high prevalence of under-nutrition in early in life, with high levels of overweight/obesity in adulthood, particularly among mothers in the same households. Undernutrition and overnutrition are coexisting within the same household wherein members have a similar exposure to environmental contributors such as poor nutrition, infection, poverty etc. Therefore, it is imperative to understand the pathways for this concurrent situation and redirect present policy and programs to meet this emerging challenge.

*Households represents: UC-Underweight child; NC- Normal weight child; OC- Overweight child; UM-Underweight mother; NM- Normal weight mother; OM- Overweight mother

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