SOURCES OF CHILD MALNUTRITION IN RADELLA ESTATE: A COMPARATIVE ANALYSIS OF SELECTED DETERMINANTS AS REVEALED BY NATIONAL STUDIES

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Introduction

Malnutrition is a significant health issue for children under five in developing countries today. United Nations (2007) revealed that half of the world's 150 million malnourished children live in the South Asian region and over 50 percent of all under five deaths are caused by malnutrition. Sri Lanka's Demographic and Health Survey (2006/07) confirmed that the prevalence rate of stunting is 18% while wasting and underweight are 15% and 22%, respectively. Further, the estate sector reported the highest stunting and underweight prevalence rates compared to the other sectors.

The objective of the study is to identify the most prevalent sources of child malnutrition in the estate sector. It seeks to examine the relevance of what have been identified as 'socio-economic determinants' of child malnutrition in national level surveys (DHS 2006/07; NFSA 2009; UNICEF 2011) for under-five malnutrition in the estate sector.

Methodology

The Nuwara Eliya district of the Central Province in Sri Lanka was selected as the research area where the highest prevalence rate of child malnutrition is reported (DHS 2006/07; NFSA 2009). The baseline

survey conducted by *Child Fund Sri Lanka*[1] on the levels of malnutrition among children below five years in Nuwara Eliya was used in this study as its sampling frame. According to the survey results, Radella Estate recorded the highest prevalence rate (44%) and was therefore selected as the study area. The study utilized a comparative research design to compare and contrast the malnourished and non-malnourished groups of children. All the malnourished children (40) in the estate, who were reported to be growth retardates for an observation period of three months, were purposively selected for the malnourished group. Another 40 children were selected for the non-malnourished group through simple random sampling. The study utilized a mixed method of survey, observation and focus group discussions to obtain data.

The Kolmogorov - Smirnov Test and the Shapiro-Wilk Tests were used to test the normality of the dataset. For statistical comparison between the malnourished and non-malnourished datasets, the Mann-Whitney U test was used when the dependent variable was not normally distributed, while the Paired sample t-test was used to compare the differences between two normally distributed independent groups. SPSS 21 software package was used for quantitative data analysis.

Findings and Discussion

'Determinants' or sources[2] identified by national and regional level research were re-tested in the current research to assess their relevance and applicability. Therefore, eleven key sources and another eleven specific sources; all together twenty two were examined in the study. All key sources were statistically tested and other specific sources were

[1]*Child Fund Sri Lanka* is one of the leading non-government organizations, which has been working in 14 districts in Sri Lanka over two decades articulating child centered development as the main service approach. The baseline survey was conducted by Prof. S.A. Karunatissa and officers of the particular organization in order to gather data through household surveys in four tea estates in Nuwara Eliya District and to provide information for the indicators of ENHANCE project in 2013.

[2] Since the methodology adopted in the current study cannot establish causality, we hereafter refer to factors associated with malnutrition as 'sources', both within the study and at national level, in order to avoid confusion.

tested by using a mixed method, including quantitative analysis and qualitative analysis using in-depth data gathered by Focus Group Discussions and individual interviews. The Mann-Whitney U test and the paired sample t-test were carried out to test the significance of each source in differentiating between the malnourished and the non-malnourished groups, at 0.05% significance level. Table 1 presents the applicability and relevance of the eleven key sources identified in understanding child malnutrition in the estate sector. A significant difference indicates that a greater emphasis has to be laid upon the corresponding source as it has a potential impact on child malnutrition.

Table 1.Sources of Child Malnutrition in Radella Estate

No	Source	p-value	Significance of source (5% level)
1	Age of the Children	0.898	Not Significant
2	Gender of the Children	0.012	Significant
3	Birth Weight of the Children	0.000	Significant
4	Impact of Childhood Diseases		
	Diarrhea	0.001	Significant
	Short term and Chronic Fever	0.872	Not Significant
5	Mother's Age at the Child Birth	0.5	Not Significant
6	Family Size	0.001	Significant
7	Education level of Parents		
	Mother	0.023	Significant
	Father	0.041	Significant
8	Duration of Exclusive Breast-feeding	0.978	Not significant
9	Weaning Period	0.000	Significant
10	Income of the Household	0.201	Not Significant
11	Household Expenditure for Basic Foods	0.359	Not Significant

Source: Field Research, 2014.

In addition to the above key sources, the applicability of the following were also investigated quantitatively and qualitatively through the survey conducted in Radella Estate. Table 2 reports results of the significance of

specific sources of malnutrition based on qualitative data gathered from focus group discussions, observation and the case study method.

Table 2.Qualitative Identification of Significant Sources of Child Malnutrition

No	Source	Impact of the determinant
1	Livelihood opportunities of the household	Yes
2	Occupation of mother and father	No
3	Access to safe drinking water	No
4	Access to toilet facility/ types of toilet	No
5	Housing Facility and space	No
6	Hygienic practices and habits	Yes (moderately)
7	Vaccination coverage of the children	No
8	Mothers' participation of Prenatal and Antenatal care	No
9	Birth intervals of mothers	Yes
10	Breast feeding durations, frequency and practices	No
11	Age of complementary food introduction	No

Source: Field Research, 2014.

According to the above results, among eleven key sources which were tested under the national level, only six were statistically proven to be significant and relevant. Further, it is observed that, among eleven specific sources tested, only two are significant.

Conclusion

The results imply the possibility that some of the factors identified as determinants at the national level may no longer be valid in understanding under-five malnutrition in the estate sector. Most of the studies carried out in the national level seem to be surveys and, thus, important in-depth causal factors have been somewhat neglected. Hence, further identification and confirmation of specific determinants is called for.

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