

IMPACT OF MICRO-CREDITS ON NUTRITIONAL STATUS OF CHILDREN IN MALAWI

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ABSTRACT: *Almost 20 years have passed since micro-credit programs have been introduced in Malawi. Various reports had been written, but almost none has analyzed the link between micro-credit and nutritional status of children. This paper, therefore, focused at investigating the role of income obtained from micro-enterprises in improving nutritional status of children in Malawi. A comprehensive cross-sectional study collected data on current levels of knowledge, attitude and practice of health in the households, and measured levels of different health indices (anthropometry, hematology, biochemistry, and parasitology) in the rural households in 2011/12. Based on recent data, this research paper, however, focused on comparing micro-credit participants and non-participants through investigating the impact of income obtained from micro-enterprises in improving nutritional status of children in Malawi. Using stratified random sampling, a total of 630 under-five children were identified from all 471 households. Of these, 251 households ran micro-enterprises funded by rural lending institutions, and 220 did not run micro-enterprises; and 353 and 277 under-five children were identified in the households, respectively. Children under the age of 5 years constitute approximately 17.2% of the Malawian population (MDHS, 2010), and in this research under-fives constitute 15% and 11.8% of the total 2350 persons in the 471 households surveyed with and without microenterprises, respectively. Incomes obtained from micro-enterprises ran through micro-credits had positive but not significant impact on nutritional status of under-five children through additional expenditure on food items and/or medical provisions, other things being held constant. Possibly, the positive implications were through increased total income of households with micro-enterprises compared to those households without micro-enterprises, as well as, increased food and non-food expenditures per month for those households with micro-enterprises. Neither children from households with micro-enterprises nor children from households without micro-enterprises were better off on measurements of children nutrition status. However, children in households with micro-enterprises had significantly less sick days per month than those households without micro-enterprises. The difference is attributed mostly due to the extra income that was obtained from the micro-enterprises, and helped those households to buy medications for their children. Involvement of women and men in owning and managing micro-enterprises funded by micro finance institutions has positive effects on total household income, and on food and non-food expenditures. But, anthropometric measurements have shown no significant differences in nutritional status of children between rural households with and without micro-enterprises in Malawi. The continued lack of access and inadequate credit (or micro-finance) for the resource poor rural households to run meaningful business have hardly helped the household to abate the grinding poverty including malnutrition among their children in Malawi.*

KEYWORDS: Under-Five Children, Micro-Credits, Micro-Enterprise, Morbidity, NUTRITION

INTRODUCTION

It is vastly claimed that micro-enterprises funded through Rural Lending Institutions are important sources of livelihood for many low-income households in developing countries. The Grameen Bank in Bangladesh is a well-known example of these innovative micro-

finance or credit programs. The bank has a proven record in reaching the poorest and simultaneously achieving high repayment rates (Diange, 2003). Some of the achievements are that income earned by rural household is largely spent in meeting family needs, with likely benefits for child welfare, nutrition, education and health.

Like many developing countries, Malawi has seen the emerging of several such micro-finance institutions targeting the rural households. Through such innovative micro-finance schemes, it is believed that men and women's entrepreneurship are self-directed poverty reduction strategy, particularly when agriculture or formal employers cannot supply enough work, let alone enough returns. Throughout sub-Saharan Africa, households are traditionally characterized by being interdependent. Yet distinct roles and responsibilities for men and women do exist (Schrieder and Heidhues, 1995).

Within the farming household, men and women have varying but generally different labor responsibilities determined by crop and/or task. The differing labor responsibilities are important in the context of food security since women's labor is more likely to be used on food crops and women's income is more likely to be spent on household foodstuffs. This shows that additional income earned, especially by women in the households has a greater effect on food consumption than income earned by men. Some studies (Zeller et.al., 1994) have shown that when a woman has control over the use of household income, the additional income she earns is more likely to translate into high caloric intake and nutrients of the whole family. In addition, women's income is more likely to be spent on nurturing activities that have an observable nutritional benefit (Schrieder, 1995).

In light of promotion of micro-enterprises through micro-credits in Malawi since 1994, rural households are beginning to have some additional earnings from micro enterprises. Hence, this study assessed the direct or indirect impact of micro-enterprises on health and nutritional status of children in rural Malawi. To also put it into clear perspective, the nutritional status results from this research were compared to the national Demographic and Health Survey results of 2010 (NSO, 2011).

MATERIALS AND METHODS

This section describes sampling frame, design, sampling method and anthropometric indicators and estimation procedures applied in the study

Sampling frame and design

The sample frame comprised of two categories, micro-credit programme participants and non-participants in rural areas of Malawi. The sampling frame was compiled by drawing together lists of names of households who owned micro-enterprises¹ for at least two years through credit programmes or institutions, which formally gave small loans for rural

¹ Microenterprises mainly constitute, among male owners of micro-enterprises, selling of farm produce, fishing, grocery or hawking, vending foods, and weaving were the most common enterprises. In comparison, women had higher share of selling of produce, in beer brewing (36% compared to 4% in males), and bakery (20% compared to 3% males)

households to run micro-enterprises. For non-participants names were obtained from the village headmen and committee in the areas using village census reports.

Sampling method

Using stratified random sampling, the comprehensive cross-sectional study collected data on current levels of knowledge, attitude and practice of health in the households, and measured levels of different health indices (anthropometry, haematology, biochemistry, and parasitology) in the rural households. However, this research paper focused on 'nutritional status, socio-demographic and health' data only. A total of 630 under-five children were identified from all 471 households interviewed in the 2011/2012 survey. Of these, 251 households ran micro-enterprises funded by rural lending institutions, and 220 did not run micro-enterprises; and 353 and 277 under-five children were in the households, respectively. Children under the age of 5 years constitute approximately 17.2% of the Malawian population (MDHS, 2010), and in this research under-fives constitute 15% and 11.8% of the total 2350 persons in the 471 households surveyed with and without microenterprises, respectively.

In order to control regional effects that might influence some investment and business opportunities, all the three regions (northern, central and southern) of Malawi were proportional represented in the household survey.

Anthropometric indicators and estimation procedures

The under-five children of those households with micro-enterprises run using micro-credits are compared with those households without micro-enterprises. Many studies have shown that the causes of malnutrition are multi-dimensional and include both food and non-food factors (Daniels and Fisseha, 1992; Zeller, Schrieder, Braun and Heidhues, 1997). Some of the factors include genetic endowment, maternal nutritional status, distribution of food within the family, availability of food to the family, individual's nutrient intake, seasonal variations in food availability and catastrophic weather conditions.

Likewise, availability and type of health and social services, nutrient wastage due to infection and parasitic infestation and other causes of morbidity also lead to malnutrition. In Malawi, as in many other developing countries, other factors including lack of financial and human resources, poverty, cultural factors, lack of proper dietary and hygienic practices are essential to good nutrition (Chipande, Mkwezalamba, Mwaisango and Mhango, 1986).

After the mothers were interviewed, anthropometric measurements - weight in kilograms (using scale) and Height in centimeters (lying down or standing up) of children born in 2007 or later were taken. All specimens and measurements were taken at a central location where the qualified lab staffs were stationed. Having done these, the anthropometrics data were assessed using three indices of height-for-age (stunting), weight-for-age (under weight) and weight-for-height (wasting). These indices were expressed in Z-scores. A Z-score below -2 indicates that the measure is more than -2 standard deviations below the cut-off point of normal population. Stunting includes children below -2 standard deviation of the reference median height-for-age. Wasting is also defined as those children below a cut-off point of -2 standard deviation of the reference median weight-for-height. If height for age Z-score

(HAZ) is greater or equal to -2 is considered as normal, HAZ less than -2 is considered as moderate and less than -3 is considered as severe malnutrition (WHO, 2006). The same classification applies to weight-for-age and weight-for-height.

These three indices were used to determine the prevalence of malnutrition among children under-five years of age in households with micro-enterprises and those without micro-enterprises. Also comparisons were made between male and female headed households. Female headed households are defined as households headed by single, separated, widowed women and women whose husband were away from home over 1 year at the time of the survey.

Estimation methods of cross-sectional comparisons of participants' outcomes versus non-participants were made throughout. They involved using data on a comparison group of non-participants to impute the counterfactual outcomes of micro-credit participants, and where necessary proportional and means difference tests were applied.

RESULTS AND DISCUSSIONS

In this section, various results are reported and discussions are made related to demographic characteristics, household assets, literacy levels, contributions of income from micro-enterprises, monthly expenditure and average budget allocation, morbidity of children and nutritional status children in both households who ran micro-enterprises and not.

Demographic characteristics

Demographic characteristics of the households with and without micro-enterprises are shown in Table 3.1. Mean household size in both male and female headed households, as well as, households with or without microenterprises is about 5.

According to NSO (2011), 28.1% of households were female headed, and this research reports similar results, that is, 68% and 32% households were headed by male and female, respectively. Mean age in all households is 41 years regardless of microenterprises ownership and sex of household head, which is close to the life expectancy (45 years) in Malawi (UNDP, 2010).

Regardless of owning microenterprises, there is no significant difference between male and female headed households in terms of their literacy level. However, it is important to note that education of mothers in particular is, arguably, the most important determination of health of children in households. Usually mothers who are educated are likely to be conversant with health issues, able to read health materials for the benefit of their families.

Table 3.1: Demographic characteristics of households with and without micro-enterprises²

Household Characteristics	HH with micro enterprises n=251	HH without Micro enterprises n=220	All HH n=471	National MDHS 2010
Mean HH size				
Male HH (n=321)	5.0	4.7	4.9	4.6
Female HH (n=150)	5.1	4.9	5.0	
	$\rho=0.8799 > 0.05$ (male; with and without micro enterprises) $\rho=0.9606 > 0.05$ (female; with and without micro enterprises)		$\rho=0.9628 > 0.05$ (male and female)	-
Mean age HH head (years)				
Male HH	41.3	41	41.2	Life expectancy
Female HH	40.7	42	41.3	45
	$\rho=0.53 > 0.05$ (male; with and without micro enterprises) $\rho=0.0071 < 0.05$ (female; with and without micro enterprises)		$\rho=0.85 > 0.05$ (male and female)	-
Sex of HH head (%)				
Male	68.5	68.2	68.2	71.9
Female	31.5	31.8	31.8	28.1
	$\rho=0.948 > 0.05$ (female or male with and without micro)		-	-
Male household head (%)				
Literate (read and write)				
Illiterate	73.1	72.7	72.9	81
Others	23.5	22.8	23.1	-
	3.4	4.5	4.0	-
Female HH (%)				
Literate	71.3	74.3	72.7	68
Illiterate	26.1	23.5	24.6	-
Others	2.6	3.2	2.7	-
	$\rho=0.000 < 0.05$ (all literate and illiterate)		-	-

Notes: MK=Malawi Kwacha (local currency); 1US\$ = MK152.25 in 2011. HH= household head; Illiterate = person with no formal school attendance; MDHS stands for Malawi Demographic Health Survey 2010, which is an official research report done by Malawi National Statistical Office, Zomba, Malawi

Generally, for the households with or without micro-enterprises, there are no significant ($\rho > 0.05$) differences in the mean household sizes, mean age of household heads and literacy levels. These results suggest that the socio-economic characteristics illustrated here would not be confounding factors in determining the differences in health and nutritional status of children in the households with and without micro-enterprises.

Household Assets and Amount Borrowed

Table 3.2 displays the distribution of assets and amount of loans. Both male (MK13,344.41, approx. US\$87.64 and female (MK11,905.27, approx. US\$78.20) households without micro-

² In this research paper, a household with micro-enterprises means that households who ran micro-enterprises with micro-credits obtained from rural lending institutions only.

enterprises have significantly low mean value of assets compared to households with micro-enterprises.

Table 3.2 also displays that among households who own micro-enterprises, the male-headed households had mean value of assets owned (MK25119.09, approx. US\$164.98) almost twice as much as the female-headed households (MK14389.50, approx. US\$94.51).

Table 3.2: Distribution of household assets and amount of loans

Household heads	Mean value assets owned in MK		Total
Male HH	25119.09 (n=171)	13344.41 (n=150)	19670.29 (n=321)
Female HH	14389.50 (n=80)	11905.27 (n=70)	13230.19 (n=150)
Both HH	21699.31 (n=251)	12886.50 (n=220)	11619.31
	$\rho=0.0000 < 0.05$ (male; with and without microenterprises) $\rho=0.0000 < 0.05$ (female; with and without microenterprises) $\rho=0.0000 < 0.05$ (male and female with microenterprises) $\rho=0.0000 < 0.05$ (HHs with and without microenterprises)		$\rho=0.0000 < 0.05$ (male and female)
	Mean amount of loan (MK)		
Male HH	15100.90(US\$99.20)	0.0	-
Female HH	10200.00(US\$67)	0.0	-
Both HH	13539.49(US\$88.93)	0.0	-
Region	Mean amount of loan (MK)		
North	10089.20	0.0	-
Central	8947.04	0.0	-
South	10469.94	0.0	-
All regions	9980.05 (US\$65.56)	0.0	-

Note: US\$1=MK152.25 (year 2011)

Of those micro-enterprises funded by lending institutions, 68.1% and 31.8% were owned by male and female-headed households, respectively. This is an indication that the lending institutions were targeting households with more assets (as collateral), which happened to be the male headed households.

With respect to the sex of the household heads, the difference between mean assets owned by male and female headed households who owned microenterprises was significant ($p < 0.05$), as well as, there was significant difference between households (both female and male) who did run microenterprises and did not.

Also based on the high mean amount of loan, the results imply that the lending institutions were mainly targeting households with more assets (used as collateral) and especially male-headed households in rural areas.

Generally, the households also indicated that since the loan or credit they had received was low (on average MK13539.49), they could run only petty business such beer-brewing, vending foods, selling vegetables, other farm products. Consequently running such

businesses with limited capital investment and inadequate loans had constrained the households to earn significant profits from their micro-enterprises and remained impoverished as a whole. The regional borrowing differences are not statistically significant and we do not expect the results to influence anthropometric indicators for children.

Table 3.3 reports distribution of main occupations of household heads. Farming was considered as the main occupation for most households regardless of running micro-enterprises or not.

Table 3.3: Proportion of main occupation of the household heads by micro-enterprise

Main Occupation	HH with Micro-enterprises n=251	HH with No enterprises micro n=220	All Households n=471
<u>Male Headed HH</u>	n=171	n=150	n=321
Farming	68.1	84.5	75.8
Wage Laborer	18.4	18.7	18.5
Household work	2.4	6.0	4.1
Microenterprises	56.7	0.0	30.2
Others	8.6	13.6	10.9
<u>Female Headed HH</u>	n=80	n=70	n=150
Farming	70.3	87.3	78.2
Wage laborer	12.3	4.5	8.7
Household work	31.9	41.4	36.3
Microenterprises	51.3	4.0	29.2
Others	9.1	6.8	8.0

Note that numbers add to over 100% because of multiple responses

Over all over 75% of households ran farming as their main occupation and this complies with the national figure of 80% farming households (Ministry of Agriculture, 2010). Among households who run micro-enterprises, 56.7% male and 51.3% female engaged in micro-businesses, while none of the males and 4% of the female involved in trading among households who own no micro-enterprises.

Contribution of income from micro-enterprises

The main objective of this study was to find out the impact of micro-enterprises on nutritional status of the children. This was examined through the total household income realized from running micro-enterprises, and spent on household food items.

The mean gross incomes per month of households with and without micro-enterprises are reported in Table 3.3. Running micro-enterprises (MK3710) contributed to significantly higher gross income per month than wage work (MK2328.52); however, farm activities fetched more incomes in both female-headed and male-headed households, regardless whether they participated in micro-enterprises or not.

Table 3.3: Mean gross income per month of households with micro-enterprises compared to those households without micro-enterprises

Household Structure	Mean Non-farm Business Gross Income (MK)	Mean Wage Gross Income (MK)	Mean Farm Gross Income (MK)	Mean Total (MK)
<u>With micro-enterprises</u>				
Male (n=171)	3710.00	2448.66	4675.19	3611.28
Female (n=80)	3451.87	2071.74	4286.85	3270.15
All households (n=251)	3627.73	2328.52	4551.42	3502.56
<u>With no micro-enterprises</u>				
Male (n=150)	1666.74	2050.80	3646.23	2454.33
Female (n=70)	1665.10	1930.00	3140.45	2245.18
All households (n=220)	1666.22	2012.37	3485.30	2387.96

Note: US\$1=MK152.25 (year 2011)

As noted previously, the mean total monthly household income; households with micro-enterprises have significantly higher incomes, MK3710 in male-headed and MK3451.87 in female-headed as compared with households with no micro-enterprises. In fact, micro-enterprises contribute about 25.5% and 35.2% of the mean total gross income in male-headed households and female-headed households, respectively. Also, households with micro-enterprises have higher income by about 37.1% compared to the income of those households with no micro-enterprises.

On the other hand, the households with no micro-enterprises have much lower income and derive a much higher share of their income from farm and wage work. These results indicate that micro-enterprises had contributed to higher gross income and perhaps made some contribution in spending on food items, whereby improving food security situation in the rural households.

Monthly expenditure and average budget allocation

Table 3.4 presents breakdown of monthly expenditure and average budget shares devoted to food and non-food items for both male-headed and female-headed households with and without micro-enterprises. Households with micro-enterprises have average total expenditures (MK2511.05, which 71.7% of the total monthly income) compared to households without micro-enterprises (MK1665.38, which 70.9% of their total monthly income).

Table 3.4: Mean monthly food and non-food expenditures in rural Malawi

Group	Food Items		Non-food Items		Mean Total expenditure (MK)	Budget share of total income (%)
	Mean Food Purchased/ Expenditure (MK)	Budget share of total income (%)	Mean Expenditure (MK)	Budget share of total income (%)		
<u>With Micro-enterprises</u>						
Male (n=171)	3135.28	86.8	1938.45	53.7	2538.87	70.3
Female (n=80)	3181.71	97.3	1721.47	52.6	2451.59	74.9
All households	3166.62	90.4	1555.57	44.4	2511.05	71.7
<u>With no Micro-enterprises</u>						
Male (n=150)	2265.50	92.3	1134.67	46.2	1700.09	69.3
Female (n=70)	2038.78	90.8	1143.23	50.9	1591.01	70.9
All households	1930.16	80.8	1136.94	47.6	1665.38	69.7

Note: US\$1=MK152.25 (year 2011)

Households with micro-enterprises have significantly ($p=0.000$) higher expenditures (MK3166.62, which 90.4% of their total monthly income) on food items compared to households without micro-enterprises (MK1930.16, which is 80.8% of their total monthly income). As expected, income is one of the major factors affecting households' food consumption, and as income increases at least part of incremental earnings is used to buy food items, especially the type of food that the households cannot produce. All households with or without micro-enterprises spent most of their income on food items, generally.

It is important to note that households with microenterprises have the opportunity of getting higher income, and therefore they manage to spend more on food items; however, regardless of owning microenterprises all households spent over 80% of their total monthly income on food items. This leaves little room for saving and re-investing in their businesses and unable to get out of the vicious cycle of poverty.

Nutritional Status of Children

As noted previously, a total of 630 under-five children were identified from all 471 households interviewed in the 2011/2012 survey. Of these, 251 households ran micro-enterprises funded by rural lending institutions, and 220 did not run micro-enterprises; and 353 and 277 under-five children were in the households, respectively. Children under the age of 5 years constitute approximately 17.2% of the Malawian population (MDHS, 2010), and in this research under-fives constitute 15% and 11.8% of the total 2350 persons in the 471 households surveyed with and without microenterprises, respectively.

Table 3.5: Nutritional status of children in households with and without micro-enterprises by household heads

Household structure	Nutritional Status		
	Normal % Above (+2SD)	Moderate % Below (-2SD)	Severe % Below (-3SD)
<i>Male headed HH with micro-enterprises</i> (n=221)			
Height-for-age(stunting)	35.3	40.4	24.2
Weight-for-age(under weight)	79.1	15.4	5.1
Weight-for-height(wasting)	96.5	2.3	1.2
<i>Female headed HH with micro-enterprises</i> (n=132)			
Height-for-age	35.3	41.0	23.7
Weight-for-age	80.3	13.5	6.2
Weight-for-height	95.3	1.7	2.8
<i>Male headed HH without micro-enterprises</i> (n=168)			
Height-for-age	29.1	44.2	26.6
Weight-for-age	73.9	17.1	8.0
Weight-for-height	94.8	2.7	2.5
<i>Female headed HH without micro-enterprises</i> (n=109)			
Height-for-age	31.4	42.4	26.1
Weight-for-age	75.7	17.1	7.1
Weight-for-height	95.7	2.9	1.4

For both households with and without micro-enterprises, results on nutritional status children are summarized in Table 3.5 by household type and Table 3.6 by microenterprise participants. The tables report detailed anthropometric results: height-for-age (stunting), weight-for-age (under weight) and weight-for-height (wasting). Each anthropometric index is expressed in standard deviations units (-SD) from the median of the WHO child growth standards adopted in 2006.

About 65% of children in all households (male and female-headed households) with or without micro-enterprises were stunted (not normal height-for-age); showing over 40% are stunted and over 20% are severely stunted, indicating high level of malnourishment in all households. Regardless the income level of micro-enterprising households, there is no statistically significant differences ($p > 0.05$) between the level of stunting in male and female headed household, whether the households ran microenterprises or not.

Though, children in both male and female headed households without micro-enterprises were slightly more stunted, underweight and wasted in comparison to their counterpart households with micro-enterprises, there are no significant differences in nutritional status of children among these households at $p > 0.05$.

Table 3.6: Nutritional status of children in households with and without micro-enterprises versus National Status

Household structure	Nutritional Status		
	Normal % Above (+2SD)	Moderate % Below (-2SD)	Severe % Below (-3SD)
<i>All households with micro-enterprises (n=353)</i>			
Height-for-age (stunting)	35.6	40.3	24.2
Weight-for-age (under-weight)	80.1	14.3	5.8
Weight-for-height (wasting).	96.5	1.9	1.7
<i>All households without micro-enterprises (n=277)</i>			
Height-for-age	29.3	43.7	26.9
Weight-for-age	74.7	17.6	7.6
Weight-for-height	95.5	2.8	1.8
<i>All households (n=630)</i>			
Height-for-age	32.5	42.0	25.5
Weight-for-age	77.5	15.9	6.6
Weight-for-height	96.2	2.1	1.7
<i>National Nutritional Status 2010 (n=4849)**</i>			
Height-for-age (stunted)	47.2	33.4	19.3
Weight-for-age (under weight)	84.2	6.1	5.3
Weight-for-height (wasted)	94.5	3.3	2.2

** indicates nutritional status of under-five children based on Malawi Demographic and Health Survey (MDHS) 2010 done by Malawi National Statistical Office (NSO, 2011).

Furthermore, Table 3.6 displays nutritional status of children in all households with and without micro-enterprises versus National Status (MDHS 2010). In all households with micro-enterprises, moderate stunting and severe stunting are 40.3% and 24.2%, respectively. This means about 65% of the children are malnourished in microenterprise households, while this proportion is even higher, about 70% in all households without micro-enterprises.

In fact, given the exchange rate of 1US\$ = MK152.25, inflation rate at 25%, relative poverty line of US\$1 per day, and rural wage rate of MK51.25/day in 2011 (MEPD, Annual Economic Reports, 2010-2012), this study has also found that for households who owned micro-enterprises the average monthly expenditure on food items for average national household of size 5 was MK3166.63 (US\$20.80/month or US\$0.69/day, which is by far less than the poverty line of US\$1/per day for Malawi); this scenarios is worse for households with no micro-enterprises. With these results, it is obvious that households could not spend much money on food items with more nutritional values, which are more expensive than the staple food (maize), and hence no significant improvement on the nutritional status of children, as a whole.

Furthermore, these results perhaps reflect that the extra cash income earned from micro-enterprise was used to buy food for the family in time of need, but not enough food with nutritional values regularly. Or, it may be that the households spent the extra income on food items with inadequate micronutrients that did not make difference on the nutritional status of children in the households. It is therefore possible to conclude that running petty micro-enterprises with insufficient credit could not uplift the rural households from poverty, let alone helping their malnourished children.

Figure 3.1 also displays nutritional status of under-five children of households with and without microenterprises, as well as, results from Malawi National Statistics offices for comparisons.

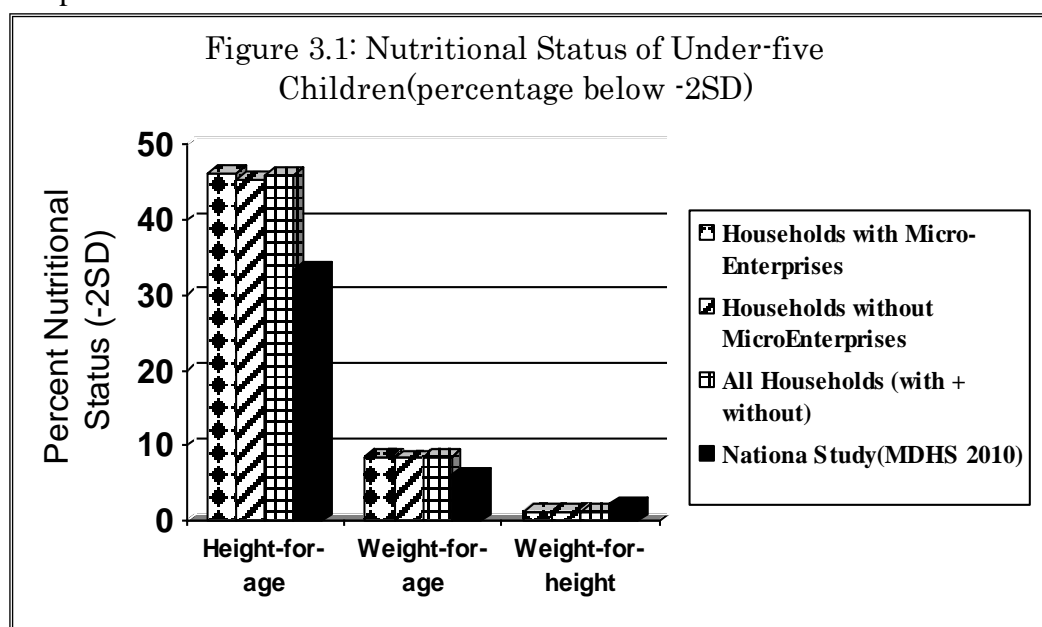


Figure 1 and Table 3.6 confirm the fact that nutritional status of children remains almost the same regardless of owning micro-enterprises as compared to the national survey results obtained from the National Statistical Office in 2010 (NSO, 2011), and hence owing micro-enterprises through micro-credits did not have significant impact on the nutritional status of children in the country, as a whole.

Morbidity of children

In order to complement the nutritional status of children, the research had also investigated on the some related health issues, morbidity of children. This study examined the time when under-five children were ill in a month in all households with and without micro-enterprises. The results are presented in Table 3.7.

Regardless of micro-enterprising, in all the households, under-five children were about 38% of the time ill (10-11 days/month). Children from female-headed households with micro-enterprises were ill for a shorter period in a month (33.3% of the time in a month, 9-10day/month) compared to their counterparts, male-headed households with micro-enterprises (36%), as well as, in both female and male households without micro-enterprises

Table 3.7: Percentage of total time ill (days) per month for under five children and mean expenditure on medications

Household Structure and Group	Under-five years of age		% share of total non-food items on medications	% share total expenditure on medications
	Total Number n	% Total time ill (n)		
Male headed HH with micro-enterprises	206	36.0 (74)	9.8	7.5
Female headed HH with micro-enterprises	123	33.3 (41)	7.8	5.5
Male headed HH without micro-enterprises	183	42.1 (77)	7.3	4.9
Female headed HH without micro-enterprises	118	38.8 (46)	6.3	4.5
All households with micro-enterprises (male + female)	329	35.0 (115)	20.9	13
All households without micro-enterprises (male + female)	301	40.8 (123)	13.2	9.3
All Households (with + without)	630	37.8 (238)	17.7	11.38

HH = Households; MK = Malawi Kwacha (1US\$ = MK152.25 in 2011)

There is no statistically significant difference ($p=0.2058 > 0.05$) in the total time of illness between under-five children in male-headed households with micro-enterprises and their counterpart (male-headed households without micro-enterprises). Similarly, no significant difference ($p=0.0701 > 0.05$) exists between under-five children in female-headed households with micro-enterprises and their counterpart (female headed households without micro-enterprises).

The majority of the household heads with micro-enterprises in both male and female households indicated that they had often bought and given medications to their children when there were sick. As reported in Table 3.4, households with micro-enterprises had higher non-food expenditure, which might suggest that they had spend part of their income for emergency cases such as medications. On the other hand, about half of the male and female-headed households without micro-enterprises indicated that they so often could not afford to buy medication for their sick children. All the results in Table 3.7 suggest that regardless of household structure and group, 11% of their total expenditure and about 18% of their total non-food item expenditures were on medication alone, as well as, the morbidity level of children was high (35 to 40%) and micro-enterprising did not significantly reduce the incidences of illness among the children.

CONCLUSION

Based on the findings of the study, micro-enterprises had positive but not significant impact on nutritional status of under-five children. Possibly, the positive implications were through increased total income, food and non-food expenditures per month for those households with micro-enterprise.

It is therefore possible to conclude that micro-enterprising through micro-credit facilities did not make any significant difference as far as alleviating malnutrition in all household structures and micro-enterprising groups.

Generally, the results revealed that insufficient micro-credits had limited the households to run only petty businesses. Micro-enterprises could not generate sufficient profits could not help in alleviating poverty among the rural households, and their children continue to be malnourished. The high budget share for expenditure showed that profit and income generated from micro-credits were mostly spent on food items, and therefore were not suffice for savings and re-investment. The households were just struggling to survive. The involvement of households in micro-enterprises with very small capital alone cannot guarantee generating sufficient income and profit in a long-run.

It is highly recommended that availability and accessibility of sufficient loans with low interest rate to the resource poor rural households to run micro-businesses could help to uplift their living standards significantly and alleviate their malnourished children in Malawi.

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