Wasting in Children and Participation in the Pre-school Education in the Urban / Rural Kenyan set up

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Abstract

This study sought to determine the relationship between wasting and children's participation in pre-school education. The sample size for this study was 390 children. The findings indicate that statistically there is a significant relationship between nutritional status in terms of wasting and participation in pre-school (p= 0.000< 0.05). This means that more of the children who were wasted did not attend pre-school. The study recommends that children be fed with adequate food that is balanced and served in the right propotions.

Background

An important issue in this paper is to examine the nutritional status in terms of wasting in pre-school age going children. Several studies done on wasting in children focused on iron deficiency anemia and children. Some of these studies are by: Gustavo, Edward, and Charu, (2004) who examined the impact of iron supplementation on school attendance. They also investigated the relationship between iron supplementation and cognitive ability among children by surveying experimental studies and most of those works found positive impacts on iron supplementation and cognitive ability among children. Similarly, Soo-Hyang, (2007) conducted a randomized trial of iron supplementation on 614 children aged 6-59 months, and found that iron supplementation significantly improved language and motor development among severely anemic children. Gorman (1985) estimated the impact of iron supplementation on educational achievement by examining what children learnt in school and found that it improved educational achievement among Indonesian school children.

Establishing children's nutritional status was essential since through studies, it is now evident that children who are undernourished have low school performance, and are more likely to drop out of school (Alderman, Behrman, Lavy & Menon, 2004). Works on Instant Nutrition by Shepherd (2008), indicate that indices of nutritional status at pre-natal and early childhood years have different impacts on muscle, brain development, cognitive and behavioral abilities linked to learning, and on school absenteeism and learning outcomes. This paper examines children's nutritional status in terms of Low weight for height (wasting) in relation to participation in pre-school. Wasting indicates current under nutrition (Schumacher, 1995).

METHODOLOGY

This study was a correlation study employing a survey method. The independent variable was children's nutrition status in terms of wasting and the dependent variable was children's participation in the pre-school education. The variable wasting in pre-school age going children was measured by taking the measurements of children's nutritional status. Indices weight for height was used to measure wasting. To establish nutrition status of the pre-school age going children in terms of wasting, the cut of point used in the study were; >-3 S.D for severe, < -3.0 & < -2.0 S.D for moderate and > -2.0 S.D for normal. The nutritional status in terms of wasting for children participating in pre-school education and children not participating in pre-school education was correlated to establish the relationship between stunting and attendance in Early Childhood Education.

The null hypothesis was tested at a significance level of 0.05:

H_{01}. There is no significant relationship between wasting and participation in pre-school.

Results

To establish children's nutritional status; their sex was taken, age, weight and height as indicated in table 1; 2; 3 and 4

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Table 1: Sex of the Children

Sex of the child	Frequency	Percentage
Male	184	47.2
Female	206	52.8
Total	390	100

Table 1 shows that among the 390 pre-school ages going children who participated in the study in the sex of children and participation in pre-school is indicated in Table 2.

Table 2: Sex of Children and Participation in Pre-School

Sex of the child			**Total**
Children's participation in pre-school	Boys	Girls	
Attending	96	99	195
Percentages	49.2%	50.8%	100.0%
Not attending	88	107	195
Percentages	45.1%	54.9%	100.0%
Total	184	206	390
Percentages	47.2%	52.8%	100.0%

Table 2 shows that 96 (49.2%) of children attending pre-school were boys and 99 (50.8%) of them were girls. This means that more girls than boys participated in pre-school even though the difference is minimal. The table also indicates that among the children not attending pre-school the number of girls was higher 107 (54.9%) than that of boys, 88 (45.1%). There were more girls 206 (52.8%) than boys 184 (47.2%) among pre-school age going children Children's age in months is indicated in Table 3.

Table 3: Children's Age in Months

Mean	60.469
Median	60.000
Mode	72.0
Std. Deviation	10.7585
Range	48.0
Maximum	72.0

According to table 3, children's age average was five years (60.5 months); many children were 72 months old (6years) and were also the oldest. Children's weight and height are indicated in table 4.

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Table 4:   Children's Weight and Height (N= 390)

	Childs Weight (Kg)	Childs Height (Inches)
Mean	17.781	42.412
Median	18.000	42.750
Mode	16.0	42.0
Std. Deviation	3.0778	4.4353
Range	26.0	51.7
Maximum	28.0	55.1

Table 4 shows that children's average weight was 17.8 kilograms and the average height was 42.4 inches or 107.7 centimetres. Most children were 16 kg's, 42 inches or 107 centimetres. The children's maximum weight was 28kgs and maximum height was 55 inches or 139.9 centimetres. To get the height in centimetres, the inches were converted. Using the information derived from tables; 3 and 4 on children's age, weight and height. This information is also categorized and summarized into nutritional status in terms of wasting using the cut-off points that are used to establish nutritional status in tables 5; 6 and 7. The same information is further clarified in Figures 1. Children's nutritional status in terms of wasting is further characterized into three groups; the normal, the moderate and the severe as indicated in table 5

Table 5: Nutritional status (Weight for Height Z Scores) (Wasting)

		Frequency	Percent
Valid	Normal (Z ≥ -2)	336	86.2
	Moderate (-3 ≤ Z ≤ -2)	30	7.7
	Severe (Z ≥-3)	24	6.2
	Total	390	100.0

< Means less than, ≥ Means greater than or equal to, ≤ Means less than or equal to.

The table 5 shows that among the 390 pre-school age going children many of them 336 (86%) were normal, 30 (8%) of them were moderately wasted and 24 (6%) were severely wasted. The information from in table 5 is portrayed in figure 1.

Figure 1: Distribution of Weight for Height Z Scores

WHZ Scores

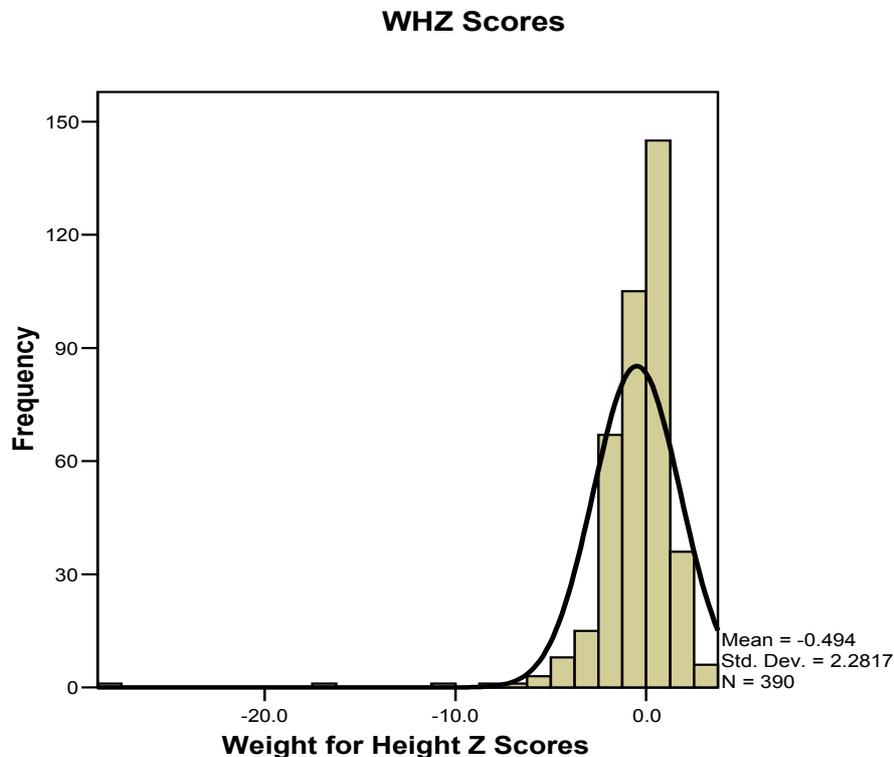
Figure 1, shows a normal distribution, with long left tail. Generally, it is a normal distribution
The objective sought to establish the relationship between nutritional status in terms of wasting and participation in pre-school. The null hypothesis stated was: H_{01}. *There is no significant relationship between wasting and participation in Pre-school.*
Pearson Chi-square (χ^2) was used to test this hypothesis. The variable wasting was measured by taking indices weight for height and the results are presented for each of the indices measured.

Nutritional Status Measured by Taking Indices of Weight for Height (Wasting)

Pearson Chi-square (χ^2) was used to determine the relationship between the independent variable nutritional status in terms wasting and participation in pre-school. The results are presented below. Nutritional status in terms of weight for height (wasting-WHZ) is indicated in table 6**.**

Table 6: Nutritional Status in Terms of Weight for Height (Wasting-WHZ)

		Nutritional status (Wasting-WHZ)			Total
		Normal (Z ≥ -2)	Moderate (-3 ≤ Z ≤ -2)	Severe (Z ≥-3)	
Children's participation in pre-school	Children Attending pre-school	148	26	21	195
	Percentages	75.9%	13.3%	10.8%	100.0%
	Children Not attending pre-school	188	4	3	195
	Percentages	96.4%	2.1%	1.5%	100.0%
	Total	336	30	24	390
		86.2%	7.7%	6.2%	100.0%

Table 6 shows that among the 195 pre-school age going children that participated pre-school,   many of them 148 (76%) were normal, 26 (13%) of them were moderately wasted and 21 (11%) were severely wasted. Among the 195 children who did not attend pre-school, many of them 188 (96%) were normal, 4 (2%) of them were moderately wasted and 3 (2%) of them were severely wasted. In totality among the 390 pre-school age going children, 336 (86%) of them were normal, 30 (8%) of them were moderately wasted and 24 (6%) were severely wasted. Chi-square test for wasting and participation in pre-school is presented in table 7.

Table 7: Chi-square Test for Wasting and Participation in Pre-school

	Calculated (χ^2) Value	Critical (χ^2) Value	df	Sig.level (2-sided)
Pearson Chi-Square (χ^2)	34.395	5.991	2	0.000

The results for the nutritional status measured by taking the indices weight for height (wasting) indicate that statistically, there is a significant relationship between nutritional status in terms of wasting and participation in pre-school (p= 0.000< 0.05). The null hypothesis is therefore rejected. This means that more of the children who were wasted did not attend pre-school.

Discussion

The findings of this study agree with the findings closely related to this work by Moock, & Leslie, (1986) did research on wasting among the elementary school age children in southern Nepal and found that wasting was significantly related to the probability of not attending school.

This finding is closely related to the findings by Alderman *et al.,* (2004) who indicated that there was no significant relationship between wasting and education of parents. The finding also agrees with closely related findings to this study by Shepherd (2008) that there is a relationship between wasting cognitive impairment and lowered educational achievement. This finding agrees with closely related findings of a study carried out by Maria (2002) to determine cognitive abilities of Kenyan children in relation to nutrition, family characteristics and education; who found that wasting had significant relationship to performance

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