Determinants in provision of optimal nutrition care for orphans and vulnerable children in Kisumu, Kenya

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The impact of Human Immune Deficiency/Acquired Immuno-Deficiency Syndrome is evident in the rising numbers of those orphaned by HIV/AIDS. These Orphans and Vulnerable Children affected by HIV/AIDS are stigmatized and often deprived of basic education and care. This study was carried out in Kadibo, Kisumu District. Systematic random sampling was used. 111 households were interviewed and nutritional assessment for 322 children done. Data collection applied both quantitative and qualitative methods. The study found out that among the 322 children who were nutritionally assessed, 26.1% were underweight and 12.7% were wasted. Stunting was also prevalent in the under two years with 12.5%. Pearson’s product coefficient correlation showed the existence of relationships between age of household head and wasting (r= -0.236, p= 0.013). The case was similar with ITN ownership, treatment and food taboos such as restricted intake of some foods during illness, (r=0.213, p= 0.025). Probit regression model indicated significant strength of association, between use of leaky tins, latrines, age of household head and main water source with the respective magnitudes of underweight and wasting. The study recommendations include moderation of market food prices and food aid, development of Information, Education and Communication materials with nutrition messages and health promotion.

Key words: Food, malnutrition, orphans, vulnerable, children

INTRODUCTION

The HIV/AIDS impact is seen most dramatically in the rising numbers of those orphaned by HIV/AIDS. To date, there are 14 million children under 15 years who have lost one or both parents to the epidemic, and approximately 80% of them live in Sub-Saharan Africa (UNICEF, 2005). Apart from death, millions of children live in households with sick and dying members. Though not yet orphaned, these children suffer from the pernicious effects of HIV/AIDS. Hence, these OVCs affected by HIV/AIDS are stigmatized, isolated, discriminated against, disinherit and often deprived of basic education, care and finances. These children end up being exposed to serious illness, malnutrition, mental suffering, poverty and abuse.

In Kadibo division, HIV/AIDS prevalence is 24.6% and is high compared to the national prevalence of 6.7% (NASCOP, 2004, CBS, 2003). Several integrated interventions which incorporate the Essential Elements of Dignified Livelihood (EEDL) have been put in place. These activities are food security, Water and Sanitation (WATSAN), functional education, nutritional support and health care. Situation analysis showed that despite all these interventions, 58% of the OVC were found to be severely wasted and 30% severely underweight which is far much higher than the national malnutrition prevalence of 30% and 22% respectively (CBS, 2003. Hence the great need of determining the extent of nutritional problems and investigate the causal factors influencing nutritional care and support.

The objective of the study was to analyze the factors that influence nutritional care and support of OVCs in Kadibo Division. The study adopted the Conceptual framework for understanding the causes of malnutrition in
Figure 1. The conceptual framework for understanding the causes of malnutrition

Figure 1 (UNICEF (1990). The studies ‘operational framework included several variables as indicated in figure 2.

METHODOLOGY

Study design

This was cross sectional study that applied both qualitative and quantitative research methods. The study population was all OVCs in Kadibo Division, Kisumu District, who were under care and support of CBOs with integrated care models.

Sampling methods

Systematic random sampling was used to identify the 111 households and 322 OVC in the study (Mugenda and, Mugenda, 1999).

Data Collection

Quantitative data collection was done through semi structured questionnaires on demographic information, economic information, food security status, environmental status, health and nutrition information, KAP on nutritional care and support of OVCs, dietary assessment through 24hr recall and Food Frequency Questionnaire (FFQ). Anthropometric nutrition assessment was also conducted. Qualitative data was collected using three Focus Group Discussions (FGDs) and six Key Informant Interviews (KIIs). All the enumerators were trained and pretested on administration of the data collection tools.

Data Analysis

Data was cleaned, coded mutually exclusively and entered into SPSS 11.0, Epi-Info, and Ms excel for analysis. Weight for Age Z scores (WAZ), Weight for Height Z scores (WHZ), Height for Age Z scores (HAZ),
computation of Odds Ratio (OR) and Relative Risk (RR) were done by Epi-Info 2004. The degree of malnutrition was determined by use of the World Health Organization (WHO) Z-scores standards (< -1 to > -2, mild, < -2 to > -3 Moderate and < -3 severe malnutrition). Pearson’s product moment correlation coefficient was
applied to determine existence of a relationship between independent and dependent variables, direction and magnitude of the relationship. Probit regression model was developed to prove the null hypotheses of the study. OR and RR were used to determine the strength of association between the independent and dependent dichotomous variables. The OR and p-value (<0.05) were used as measures of significance. Variables with p-value less than 0.05 were entered into the Probit regression model to assess the interaction of the variables with the occurrence of specific nutritional care and support of OVCs. Data from the 24hr recall and FFQ were coded and analyzed.

RESULTS

Prevalence of malnutrition among the OVCs

In description of malnutrition prevalence, WHO reference standards were applied (Cogills, 2003). Among the OVC assessed, 56.2% were males and 43.8% females, of which 16.5% of the males and 13.5% females were below five years. There were also OVCs aged between 11-14 years, being 36.9% and 33.3% males and females respectively. The findings on different types of malnutrition found the prevalence of stunting was 12.5% and 12.7% for the wasted children. Underweight had the highest prevalence of 26.1% as in Table 1. The males are at more risk of malnutrition than the females. This applies for both the underweight and wasting, 67.9% and 68.3% for males as compared with 32.1% and 31.7% for females respectively as in Table 2.

Demography factors

According to Pearson’s product moment correlation coefficient for the age of household head and wasting of OVCs there is a significant difference (r = -0.236, p=0.013). In Table 3, households with five or four members had majority of the wasted and underweight OVCs respectively. Households with five members had 26.9% wasted and 22.6% underweight. On the contrary, households with between 10 and 12 members had less than two percent for both underweight and wasted OVCs.

Socio-Cultural factors

Households, which did not belong to any group, had the highest percentage of wasted and underweight OVC, 46.7% and 40.4% respectively. According to the respondents, some commonly practiced food taboos determined the feeding patterns of children. Comments from one of the discussants were:

"Eggs are not given to children when the hen is still laying

This is because the child will end up being a stammerer and at times can even be deaf.”

When asked what were the socio-cultural practices that could affect the nutritional care of OVCs, some respondents from the FGDs had the following comments.

"Mothers give ugali (maize meal) and soup only to their children. They think if you give the child ugali and fish, the child will love sweet and delicious foods only.”

Another respondent said:

“It is a sign of respect that the chicken pieces such as thigh are eaten by adults while the children eat the legs and head of the hen.”

Socio economic factors

In the FGDs, one of the OVC caretakers (grandmother) had these to say:

“I am weak to do anything. I only depend on others for support of my grandchildren. When they give, I am lucky. Therefore, I cannot say I can fully support my grandchildren and ensure they have proper nutrition.”

Another caretaker (Older child in the family) said:

“Poverty due to lack of parenthood is a great constraint. The parent may have used the money the family had during their sickness for treatment. The remaining members then have nothing to keep them going.”

Environmental and health factors.

Presence or absence of a latrine was analyzed to determine environmental hygiene that affects nutritional care and support of the OVCs. Households with latrines in good condition had 43.6% underweight and 46.7% wasted. The percentage of wasted and underweight OVCs was 26.7% and 29.5% respectively in households with latrines in bad condition. However, for households with no latrines there were 26.6% wasted and 26.9% underweight.

Investigations on leaky tins ascertained that households, which did not have leaky tins accounted for the highest percentages of underweight and wasted OVCs, which are 96.1% and 96.7% respectively. Those with leaky tins without water had 3.3% wasted and 1.9% underweight OVCs. There were households with functional leaky tins and these had 2.0% underweight children and 0% wasted children. There exists an association among those who own Insecticide Treated Nets (ITNs) and underweight, of which r = 0.235 and p=0.013. The study ascertained an existing association between ITN treatment and underweight, (r=0.221,
Table 1: Distribution of nutritional indicators

<table>
<thead>
<tr>
<th>No. Examined</th>
<th>HAZ (Stunting) for OVCs &lt; 24 months</th>
<th>WAZ (Underweight)</th>
<th>WHZ (Wasting)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>322</td>
<td>322</td>
</tr>
<tr>
<td>No. Below –1 S.D</td>
<td>2</td>
<td>84</td>
<td>41</td>
</tr>
<tr>
<td>% Below – 1 S.D</td>
<td>12.5</td>
<td>26.1</td>
<td>12.7</td>
</tr>
</tbody>
</table>

Table 2: Prevalence of malnutrition by sex

<table>
<thead>
<tr>
<th>Sex of child</th>
<th>WAZ (Underweight)</th>
<th>WHZ (Wasted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females (%)</td>
<td>32.1</td>
<td>31.7</td>
</tr>
<tr>
<td>Males (%)</td>
<td>67.9</td>
<td>68.3</td>
</tr>
<tr>
<td>Totals</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3: Household size vs. number of wasted and underweight children.

<table>
<thead>
<tr>
<th>Hh size</th>
<th>Hh size frequency (n)</th>
<th>% Of population size</th>
<th>Wasted WHZ (n)</th>
<th>Wasted WHZ (%)</th>
<th>Underweight WAZ (n)</th>
<th>Underweight WAZ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8</td>
<td>7.2</td>
<td>1</td>
<td>1.9</td>
<td>3</td>
<td>9.7</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>12.6</td>
<td>6</td>
<td>11.5</td>
<td>4</td>
<td>12.9</td>
</tr>
<tr>
<td>4</td>
<td>26</td>
<td>23.4</td>
<td>14</td>
<td>26.9</td>
<td>5</td>
<td>16.1</td>
</tr>
<tr>
<td>5</td>
<td>28</td>
<td>25.2</td>
<td>14</td>
<td>26.9</td>
<td>7</td>
<td>22.6</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>9.0</td>
<td>6</td>
<td>11.5</td>
<td>4</td>
<td>12.9</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>6.3</td>
<td>3</td>
<td>5.8</td>
<td>4</td>
<td>12.9</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>6.3</td>
<td>3</td>
<td>5.8</td>
<td>1</td>
<td>3.2</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>2.7</td>
<td>2</td>
<td>3.8</td>
<td>3</td>
<td>9.7</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>4.5</td>
<td>2</td>
<td>3.8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>0.9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>1.8</td>
<td>1</td>
<td>1.9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>111</td>
<td>100</td>
<td>52</td>
<td>100</td>
<td>31</td>
<td>100</td>
</tr>
</tbody>
</table>

p=0.02) as well as when the ITN was last treated and underweight (r= 0.259, p= 0.006).

The association between main water source and wasting of OVCs was r = 0.188 and p= 0.049. Among the proximate variables r = -0.189 and p=0.047 for hygienic condition of food preparation area versus underweight. Pearson’s coefficient, r = 0.213 and p = 0.025 for food types not consumed in sickness and wasting.

On the theme of influence of health on nutritional care and support, response from a discussant in an FGD was:

“During the rainy season, all the toilets are broken down. Children then play around and drink the water. This is the major cause of diarrhea.”

Issues were different with aspects on water treatment. Many methods are used and the following is an example that was given:

“We put water in a bottle, shake it thoroughly and leave it on top of the mabati (roof). This is left there to be hit by the sun directly for a long time. We then take the water and drink it.”

Food security status

The study went further to cross-tabulate livestock ownership with the nutritional status of the OVCs as in Figure 3. According to the findings, households that owned chicken had 77% of the OVCs as underweight, as compared to households that did not have chicken and had 23% of the underweight and wasted.

In assessment of nutritional security for household members, food frequency and 24 hr recall technique were applied. The results were assessed using the food pyramid principle. Among these households, food consumption for the majority (44.1%) was based on maize meal (ugali) and vegetables, while 27.1% consumed ugali, vegetables and dried fish (omena), as 18% consumed ugali, vegetables and occasionally, beans. Lastly were the 10.8%, whose consumption was composed of ugali, milk, fish and vegetables. Therefore, in reference to the food pyramid principle, 91.2% of the households are not able to get their full nutritional value.
as compared to the 10.8 % who are achieving the food pyramid principle.

**KAP of nutritional care of OVCs**

In one of the KIIIs, the study found out that:

“Inadequate food production due to climatic conditions and financial constraints are the major causes of malnutrition.”

One of the discussant’s responses on the theme of practices in nutritional care and support of OVCs in FGD was:

“You will find one has milk, chicken etc, but will sell these to go back to mandazi and black tea for her children. The mother can be taught on how to cook eggs with vegetables for a balanced diet and malnutrition can be reduced.”

**Probit regression analysis**

Probit regression model refers to parametrical inferential statistics that determine whether a group of variables together predict given set of dichotomous dependent variable. The dependent variables were the standardized wasting (WHZ) and underweight (WAZ), which were generated from the WHO/NCHS standards (-1s.d, -2s.d and -3s.d). Using these two sets of dichotomous dependent variables, regressions were run. Each child was assigned a dichotomous variable depending on its Z score (Paknawin-Mock et al., 2000). In addition, the probit regression model is an appropriate statistical technique of analyzing dichotomous outcomes (Greene, 1990). The analogous equation then is $p_1=Pr(y_1=1)=F(XB)$, where $x$ is a vector of the respective regression coefficients, $B_1$. The probit model in this study was uses the standard normal cumulative density function to map $XB$ into the (0, 1) interval to ensure that the value of $p_1$ lies between 0-1. These regressions are based on the econometric views. The equation for the model was chosen so that wasting or underweight of the OVCs is a function of the KAP on nutritional care and support (the proximate variable of this study). Demographic, environmental, health and socio-cultural factors represented the independent variables in the probit regression model of this study as in Table 4. The probit model for age of household head was -9.710, -9.046 and -1.179 for underweight at -1, -2 and -3 S.D. This indicates there is a significant strength of association as the constant (expected outcome) were 0.529, 0.225 and 3.421 for the –1, -2 and -3 S.D respectively. In the case of leaky tins, the probit model was 9.112, 5.428 and 2.014 for underweight at the respective S.D. whereas for wasted OVC the probit model was 5.453, 2.948 and –0.116, respectively. In comparison with the constant (expected), 0.529, 0.225 and 3.421 for the respective S.D, there exists a significant difference, as the unit change is 3.659, 2.480 and 3.130 as in Table 4.

**Odds Ratio and Relative risk**

As ascertained by Kuzma, OR is used to determine the strength of association of two binomial variables obtained from a study (Kuzma, 1984). It gives an indication that exposure carries a greater risk of illness than non-
exposure and that there is a greater likelihood of falling ill among those exposed (Mugenda and Mugenda, 1999).

As an aspect of the causes of malnutrition, KAP was considered as determinants to malnutrition and practices in nutritional care of OVCs. Among the household respondents, the OR and RR of those who considered a baby being fat as well nourished against wasting was OR= 3.43, I.E = 1.00-12.94 and RR= 2.63, I.E= 1.00-6.94 respectively. There was no significant difference (p=0.05). Several household respondents identified early weaning as a cause of malnutrition. The OR and RR of those who did not was OR=8.89, I.E = 0.77 – 231.85 and RR=2.97, I.E= 1.55 – 5.71. However, there was no significant difference in this.

The OR and RR of underweight as a dependant variable for those who knew food as a contributing factor to body development were OR= 2.17, I.E=0.93-5.12 and RR= 1.53, I.E= 0.98-2.41. In this, there was a significant difference (p=0.04).

DISCUSSION

In the prevalence of malnutrition for both underweight and wasted, there are differentials in the children’s sex.

Malnutrition among the males is 67.9% and 68.3% for underweight and wasting, as compared to females 32.1% and 31.7 % respectively. According to a Kenyan health survey report, the prevalence on underweight is 22.0% among the males and 17.7% among the females, while wasting is 6.4% for the males and 4.8% for the females (CBS, 2003). Age of household head indicates a strong relationship with prevalence of wasting among the OVCs, (r= - 0.236, p= 0.013). Interpretation of this can be done from several perspectives. First, household heads as young as below 18 years of age do not have the adequate capacity for provision of appropriate care to their young ones. They are limited in terms of resources and skills in provision of nutritional care. Accessing finances are just among the many challenges, which incapacitate their efforts. Secondly, these children are supposed to be in school. But due to resources, they often drop out as a result of financial constraints and these places them at a higher risk of not acquiring ample knowledge to be able to balance the nutritional care and support. Of these children, 90% drop out of school due to lack of school fees, ending up in child labor, where they are exploited and even succumb to malnutrition due to the high workload. Thirdly, these children are orphaned, and at times when the parent(s) die, they do not leave

### Table 4: Probit regression model for underweight and wasted OVCs.

<table>
<thead>
<tr>
<th>Equation</th>
<th>1.1</th>
<th>1.2</th>
<th>1.3</th>
<th>1.4</th>
<th>1.5</th>
<th>1.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependant variable</td>
<td>-1s.d WAZ</td>
<td>-2s.d WAZ</td>
<td>-3s.d WAZ</td>
<td>-1s.d WHZ</td>
<td>-2s.d WHZ</td>
<td>-3s.d WHZ</td>
</tr>
<tr>
<td>No. At or below</td>
<td>66</td>
<td>15</td>
<td>3</td>
<td>28</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Independent variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.529</td>
<td>(0.605)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age of household head</td>
<td>-9.710</td>
<td>(0.641)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of household head</td>
<td>-2.247</td>
<td>(0.033)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITN ownership</td>
<td>-0.109</td>
<td>(1.465)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment of ITN</td>
<td>0.517</td>
<td>(1.465)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITN last treated</td>
<td>0.289</td>
<td>(0.215)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latrine</td>
<td>-4.183</td>
<td>(0.731)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaky tin</td>
<td>6.824</td>
<td>(2.790)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main water source</td>
<td>3.278</td>
<td>(1.018)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hygienic condition</td>
<td>9.112</td>
<td>(0.136)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compound cleanliness</td>
<td>0.392</td>
<td>(0.583)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foods not eaten in sickness</td>
<td>-6.76</td>
<td>(0.563)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the males and 17.7% among the females, while wasting is 6.4% for the males and 4.8% for the females (CBS, 2003). Age of household head indicates a strong relationship with prevalence of wasting among the OVCs, (r= - 0.236, p= 0.013). Interpretation of this can be done from several perspectives. First, household heads as young as below 18 years of age do not have the adequate capacity for provision of appropriate care to their young ones. They are limited in terms of resources and skills in provision of nutritional care. Accessing finances are just among the many challenges, which incapacitate their efforts. Secondly, these children are supposed to be in school. But due to resources, they often drop out as a result of financial constraints and these places them at a higher risk of not acquiring ample knowledge to be able to balance the nutritional care and support. Of these children, 90% drop out of school due to lack of school fees, ending up in child labor, where they are exploited and even succumb to malnutrition due to the high workload. Thirdly, these children are orphaned, and at times when the parent(s) die, they do not leave
material benefits to sustain the children during their growth and development.

In similarity to social support groups, some widows (ers) who may be members of church or women groups also get some help from the respective groups. This reduces the infant and child deaths, and probably, prevalence of malnutrition (Cogills, 2003). Practice of food taboos among the households is a key factor that can affect the nutritional status of the OVCs. OVCs in households that practice food taboos are more susceptible to malnutrition due to the fact that they end up being deprived of meeting their nutritional needs, only because of their age. Studies show that food taboos for young children may limit the types of foods that can be offered (Greene, 1990). The introduction of variety of foods is often delayed, based on the perception that young children cannot digest the foods availed in the family or that some foods cause stammering and delayed speech such as eggs.

Restriction of food consumption during illness had some significant association with the nutritional care and support of OVCs, in which the r = 0.213 and p = 0.025. For instance, foods that are commonly restricted are the protein foods such as milk and mudfish, yet the sick OVC needs more proteins for the replenishment of the worn out body tissues.

Associating environmental and health hygiene practices with nutritional status of OVCs is very relevant. However, they do not cause malnutrition directly. These are considered as basic causes of malnutrition [4]. Prevalence of underweight and wasting was highest among those who did not have the leaky tins (96.1% and 96.7% respectively). As research shows that when food is handled under unhygienic conditions and the environment is unhealthy, young children are more exposed to intestinal parasites, which are another cause of poor growth and malnutrition (Anderson et al., 2001). Latrine use as an indicator for proper human waste disposal is very relevant on the nutritional care and support of the OVCs. Findings from the Probit model of the study indicate that the expected beta coefficient was 0.529, 0.225 and 3.421 for the mild, moderate and severe malnutrition. On the contrary, the study revealed negative values (-3.389, -3.278 and −7.466 respectively). This shows that with decrease in latrine use, there is an increase in cases of underweight and wasting. The unit change (difference between the expected value and the actual value) is varied with the different degrees of underweight. According to the findings, it is clear that lack of latrine use will result to severe underweight (-7.466) faster than the mild and moderate underweight.

Use of ITNs can determine the nutritional care and support of OVCs. Malaria cases were common among the interviewed households. The study showed a significant difference between ownership and treatment of ITN against underweight. Pearson’s product coefficient correlation was r = 0.236 and p = 0.013 (for ownership of ITN) and r=0.221 and p= 0.02 (for ITN treatment). This is so, since in reference to the causal model of malnutrition by UNICEF, hygiene is a health care practice that affects the nutritional care indirectly (UNICEF, 1990). When one is exposed to poor hygienic conditions, he is more susceptible to frequent infections, which end up diminishing the body’s nutritional stores. This can be explained in relation to the findings by Waudo, whereby a synergistic relationship between malnutrition and infection occur (Van, 1985).

Food security, in terms of livestock ownership is another determinant of malnutrition. In the case of cow ownership, there were 65% and 73% of underweight and wasted OVCs respectively. The same was the case for households that did not own rabbits. In this case, the prevalence of underweight and wasting was 100% and 97% respectively. This is a clear indication that these households suffer from food insecurity. In comparison to ownership of chicken, the prevalence of underweight and wasting was 77% for each. This can be largely attributed to food taboos within the community such as not allowing children to consume eggs when the hen is still laying with fear that the child will become dumb. To complement livestock ownership, comprehensive subsistence farming raises the food and nutrition status of households, thus improving the nutritional care and support of the OVCs (Van, 1985).

The study found out that in the poor (weekly food expenditure: Ksh 100-500) households, food availability is often translated into increased intakes of high-calorie staple foods. It is as a result of production of one type of food crop that most of the households end up surviving on a monotonous diet. This deprives them chances of accessing micronutrients such as Vitamin A, iodine, iron and calcium, yet deficiency of micronutrients often leads to hidden hunger among the population (UNICEF, 2003). In addition, a Kenyan study by Kennedy et Oniang’o shows that, as children’s food and energy intake increased, their consumption of vitamin A, for instance, actually decreased (ICN, 1992).

There exists a wide gap between the different causes of malnutrition and the interventions that can be applied to reduce malnutrition according to KAP. Findings from the OR of underweight as a dependant variable against those who know food as a contributing factor to body development was OR= 2.17, p=0.04. This shows that OVCs in the category of households who do not know that food contribute to growth and development of a child are twice more likely to suffer from underweight as compared to those who knew food as contributing factor to body development.

CONCLUSION

The study found out that the prevalence of malnutrition for both underweight and wasting is high in male than
female OVCs. The economic status of households was also proven to determine the nutritional care and support offered. Due to the high dependency ratio, it is clear that what an individual can provide to the entire household may not necessarily be adequate to the different special age groups within the households. Although the food may be accessible to the household, not all members will access due to the different cultural food taboos within the community. This does not only apply to food consumption, but to food preparation, processing and storage as well. Depending on how these processes will be done, the nutritive value of the food can either be reduced or destroyed. Environmental and health concerns, though not direct causes of malnutrition, need to be considered.

RECOMMENDATIONS

The study recommends that there is need for the government to moderate the food prices to consider even the less fortunate in the societies. Creation of linkages between CBOs and other support agencies is vital for none duplication of services and increasing the effectiveness of service delivery to the OVC. Based on study findings, continuous development and dissemination of IEC materials on child malnutrition is essential. Partnerships and health promotions is another strong recommendation to improve the EEDLs of the OVC affected by HIV/AIDS. The study also identified some gaps, which can be filled through research on psychosocial support of OVC and experimental studies for detection of micronutrient deficiencies.

REFERENCES

ICN (1992). International Conference on Nutrition, Improving household food security: Major issues for nutrition strategies. ICN.
List of Non Standard Abbreviations

AIDS: Acquired Immune Deficiency Syndrome
AnSWR: Analytical Software for Word Based Records
CBNP: Community Based Nutrition Programs
CBO: Community Based Organizations
CBS: Central Bureau of Statistics
CHW: Community Health Worker
EEDL: Essential Elements of Dignified Livelihood
EPI-INFO: Epidemiological information
FANTA: Food and Nutrition Technical Assistance
FAO: Food and Agricultural Organization.
FGD: Focused Group Discussion
HIV: Human Immune Deficiency Virus
ICN: International Conference on Nutrition
IFAD: International Fund for Agricultural Development
KAP: Knowledge, Attitude and Practice
KDHS: Kenya Demographic Health Survey
KII: Key Informant Interviews
NASCOP: National AIDS Control Program
OVC: Orphans and Vulnerable Children
PEM: Protein Energy Malnutrition
RDI: Recommended Dietary Intake
RTH: Road To Health
SPSS: Statistical Package for Social Science
TBA: Traditional Birth Attendant
TICH: Tropical Institute of community health and Development in Africa.
UNICEF: United Nations International Children’s Fund
UNAIDS: United Nations AIDS program
USAIDS: United States Agency for International Development
WHO: World Health Organization
WMS: Welfare Monitoring Survey