

Effect of Nutrition on Learning among Preschool Children in Chemoge Zone

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Abstract-Nutrition is an important element in children's growth and development which includes: physical, cognitive and emotional development. The problem of the malnutrition and its effect on brain development, physical and intellectual functioning has tremendous implications. However, owing to the fact that there are limited studies on nutrition and learning, various studies indicate divergent views on the effect of nutrition on learning among preschool children. For this reason, it is not clear whether or not nutrition affects learning in chemoge zone. The main purpose of the study was to find out the effect of nutrition on learning among preschool children in Chemoge Zone. Thirteen public schools and seven private schools, a total of twenty were sampled out in the study. The study findings on the status of nutrition on learning among preschool children revealed that 25% of children took their meals in the kitchen, 50 % of the children took their meals in the makeshift structure and 25 % in the classrooms. Results on extent of nutrition on learning indicated that zero was being financed by the school and NGO, a quarter by parents and NGO, a half by parents and a quarter by the school. Also, the figure indicated that 25% of the school feeding program was financed by the school, parents 50 %, parents and NGO 25 % and school and NGO zero percent. The study concluded that when food is balanced, served in appropriate quantity and within the recommended intervals or frequency children are able to grow, develop well and attain their potential. The study thus recommended that parents should be sensitized on the importance of feeding programs so that they would pay for the meals especially for those in schools that do not provide feeding program.

Keywords: Nutrition, Learning, Chemoge zone, Kenya.

I. INTRODUCTION

The food and agricultural organization (FAO) stated that almost 1025 million people globally were chronically hungry (FAO, 2006) most of them being from developing countries and about 60% are children. According to millennium development goals in relation to hunger and malnutrition, the goals had not been met by 2015. The Jomtien declaration in (1990) and Dakar Framework for Action in 2000 clearly spells out that it is a fundamental right for every person this includes children to access educational opportunities to satisfy their basic learning needs.

The Jomtien world declaration on education for all (EFA), in article v, indicated that the children at early childhood can access initial education and learning begins at birth. Meanwhile emphasis was placed in the Dakar Framework for Action on expanding and involving comprehensive early

childhood and care education especially for the disadvantaged in the first of six EFA goals. Since the declaration of EFA and in line with millennium development goals (MDG'S) many programs aimed at increasing enrolment of children for early childhood education has increased (Mukudi, 2004; UNICEF, 2012) leading to the expansion of early childhood development education (ECDE).

Sadly, among the social-economic disadvantaged families mostly there is not enough food at home; leave alone enough to carry to school. Currently, 26 million pre-primary school-age children attending ECDE(s) classes have no access to food across the developing world, with 11 million in Africa alone (WFP, 2003). For this reason, children in less developed countries suffer hunger since they are from low social-economic status. Lack of food among children has a negative impact on their education attainment and programs (Mukundiet al, 2017). The government and non-governmental organization (NGO) employed some strategies that were used in targeted areas where a large population faced with poverty and chronic hunger, this strategy was food for education (FFE). The main aim for (FFE) was exchanged for enrolment and attendance in school which would provide food to the school children and their families. This directly links to the first MDG(s) which are to eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women by 2015 (WFP, 2013b). As a social safety net, FFE programs have also gained popularity among political leaders and Latin America (World Bank 2012, (Akoth, 2017).

According to Akoth (2017) the nutrition programs have been implemented in Kenya since 1980s with varying degrees of success used primarily to incentives the enrolment and retention of rural children and girls, subsidized meals programs have played an integral part in realizing country's goal of universal primary education. Historically, involvement of large foreign players has greatly limited the Kenya's government role in the direction and stewardship of those programs. In 2009, the government of Kenya introduced the Home-Grown School Feeding Programs (HGSFP) with an aim of transiting a sustainable and nationally intergraded alternative. Together these programs are recognized as to have a major contribution in the education sector over the last decade that is in terms of attendance achievement and increasing involvement. In Kenya, school feeding programs include mid-morning snack, which mostly is porridge and mid-

day food, which can take the form of rice, maize, beans and vegetables. Food provided by the WFP are usually fortified to ensure that children get the vitamins and minerals they need to grow and develop well. The organization (WFP) has developed ways to work with government to allow them to continue the programs, themselves and create and run their own school feeding programs by working with community to establish schools' gardens provide school children with direct access to nutritious food among others among others (WFP 2013c).

II. LITERATURE REVIEW

2.1 Empirical literature

2.1.1 Status of Nutrition on Learning

Sukla and Borkar (2018) examined the nutrition status of preschool children 1-5 years in rural areas of Chhattisgarh state in India. The aims and objectives of the study were to assess prevalence of underweight, stunting and wasting among preschool children in rural areas of Chhattisgarh state. A community based, cross-sectional study was conducted among 400 preschool children in rural areas during January – May 2017. Anthropometric measurement was taken. The indicators of nutritional status of children like underweight, stunting and wasting were expressed using WHO conducted Multicentric Growth Reference Study (MGRS). Results revealed that, out of 400 children studied, 36% were underweight, 35.5% were stunted and 28.5% were having wasting. Also, more than 50 % of girl children were underweight and stunted. Nutritional indicators became worse as age advances.

2.1.2 Nutrition and Learning

Akoth (2017) investigated the effect of nutrition on performance of children in number work activities in preschool in Moiben Constituency and the study found out that the main type of food offered were porridge, maize, beans and vegetables and the provision of nutrients programs improved the overall performance of the children in number work. In addition, the study determined that providing the school feeding programme twice improved the performance of the children in number work compared to providing food once. Finally, majority of the parents understood what was in the school menu of which 60% indicated that the menu was balanced and good for children. Results also revealed that parents attested that school nutrition programme effectively improved the performance of the children in number work of which 100% of the parents agreed that school nutrition program improved the number work activities.

Waswa (2005) examined factors influencing nutritional status of pre-school children in Kimilili division and the findings revealed that the prevalence of the breast feeding was low with 95% of the children having received complimentary food by the fourth to fifth month. The longest breastfeeding among the mothers was between 13-18 months and most child stop breast feeding during this period and this was attributed to the

next pregnancy. Slightly, less than a quarter of the mothers have lost either on or two pre-school children. Malaria, diarrhea, measles and diseases of upper respiratory track were reported to be the major causes of death among preschool children. A strong positive relationship was found to exist between stunting and underweight, and between underweight and wasting which implied that age is a factor in weight and height gain. No significant relationship was found between nutritional status of a preschool children and the various maternal characteristic such as the mother's age, marital status, income and length of breastfeeding.

Moyo (2018) examined children practices, morbidity status and nutrition status of the preschool children (24-59 months) living in orphanage in Kwale County and the study revealed that the children who had been ill based on a two-week morbidity recall were likely to be stunted, underweight and wasted. Duration of stay of the children in the orphanage was positively associated with underweight. The results of the study can therefore be used to formulate and or strengthen strategies or systems that address the needs of children in orphanages in Kenya and other developing countries. Moyo (2018) study recommended that the government should ensure registered orphanages have adequate resources to take care of children in orphanages.

III. RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the target population of the study, research instruments, data collection procedures and data analysis and employed mixed methodology; both qualitative and quantitative techniques.

3.2 Target population and sampling

A population is a group of people, objects and indications in a particular area or place. The entire population of the study involved ECDE teachers and preschool children in all ECDE centers in Chemoge zone. There were thirteen (13) public schools and seven(7) private schools a total of nineteen (20). The study worked on a sample size of four (4) respondents who were ECDE teachers.

3.3 Data Collection Instruments

The research instruments that were used included questionnaires for ECDE teachers and observation checklist for the researcher.

3.3.1 Questionnaires for ECDE Teachers

The questionnaires used in the study comprised of written questions on the status of nutrition on learning and extent of nutrition on learning in chemoge zone, Mt. Elgon Sub-county of Bungoma County. These questionnaires were used to collect data from the study to access the views of various respondents on the subject in questions. Questionnaires contained both open and closed ended questions.

3.3.2 Observation Checklist for the Research

The observation checklist was prepared and preferred because preschool children cannot be interviewed and not given the questions to fill. Therefore, it was suitable method because the researcher accessed them in the natural way by observing preschool children. The questions were prepared basing on the objectives of the study and used by the researcher after visiting the ECDE centres and observing the health of preschool.

3.4 Data Collection Procedures

The research obtained a research permit and an inventory letter from Bungoma District Centre for Early Childhood Education to be allowed to collect data. The research presented permit to the Head teacher who introduced her to

Early Childhood Development Education (ECDE) in charge, ECDE teachers and preschool children respectively. Questionnaires were presented to ECDE centers to fill within a week. The researcher visited the sampled ECDE centers and observed the condition of learners as the observation checklist was filled. Collected data from the filled was analyzed by the use of frequency tables and figures.

IV. RESULTS AND DISCUSSION

4.1 Introduction

This chapter summarizes results and discussion which includes summary of the variables, presentation, interpretation and discussion of the results.

Table 4.1.1: Status of nutrition on learning among preschool children

Food preparation	Frequency	Percentage
Kitchen	1	25%
Makeshift structure	2	50%
Classroom	1	25%
Total	4	100%

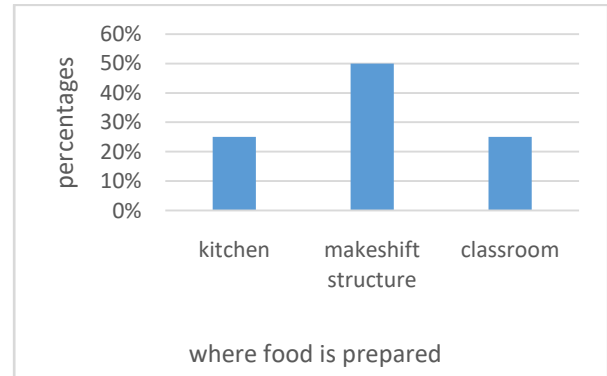
Source: Research data

The first objective of the study was to find out the status of nutrition on learning among preschool children in chemogezone, Bungoma County. The study findings revealed that 25% of children took their meals in the kitchen and 50% of the children took their meals in the makeshift structure and 25% in the classrooms.

The researcher also determined that the environment where the children take their meals when they are having their nutrition program as indicated in the table 4.1.1. Among the four sampled schools offering the school meal program. A quarter of the schools were offering the school meal in classroom, another one quarter offered the meals in the kitchen and a half in the open field. These results are in consistent with those of Bunde (2016) and Akoth (2017) who

established that most of the preprimary schools offer feeding program without adequate funding put in place and funds from the parents are not enough to run the programs that requires other facilities such as kitchen and dining room to make it more successful. Most of the children who ate in the open fields their schools did not provide the feeding program in school. Either their parents gave packed food from home which they ate cold or the children were given money to buy food from the kiosk which most of the time were snacks and did not have any nutritional value to their bodies.

Figure 4.1.1: Status of nutrition on learning among preschool children



Source: Research data

The figure 4.1.1 above indicates the respective percentages in line with the places where the food is eaten from. It can be seen that 25% of the children take their meals in the kitchen, whereas 25% in the classroom and 50% in the openfield. The pre-school teachers were asked regarding the school feeding program of the children and the response rate was 100% and they accepted that nutrition program improved children’s learning.

Table 4.1.2: Extent of nutrition on learning among preschool children

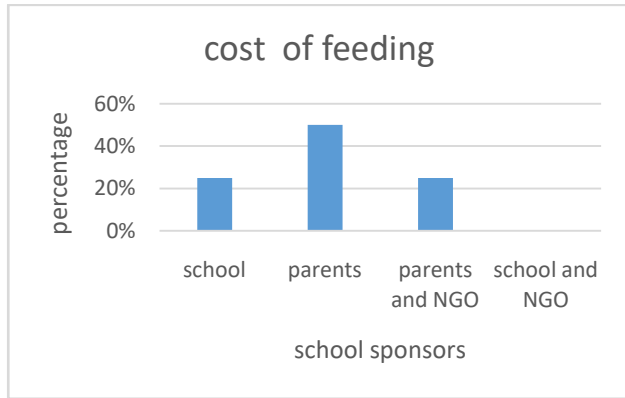
Feeding cost	Frequency	Percentage
School	1	25%
Parents	2	50%
Parents and NGO	1	25%
School and NGO	0	0%
Total	4	100%

Source: Research data

The second objective of the study was to establish extent of nutrition on learning among preschool children in Chemogezone. Information on the presence of the school nutrition program was the first information sought from the preschool teachers. Information concerning those financing the school nutrition program is shown in table 4.1.2 which indicated that zero was being financed by the school and a quarter by parents and NGO, a half by parents and a quarter by the school. This information implied that school nutrition program was not an exclusive program left to the

school alone but there are also other stakeholders who are involved in financing the program including the NGOs and parents who take their children to the school. The preschool teachers asserted the fact that running the school feeding program was an uphill task since the county government does not provide funds for the meals even though even though there were funds allocated for the program.

Figure 4.1.2: Extent of nutrition on learning among preschool children



Source: Research data

The second objective of the study was to determine the extent of nutrition on learning among preschool children in Chemoge zone. Based on the findings obtained from the four schools that offer school nutrition program, different stakeholders financed the program of the children in different percentages respectively. The figure 4.1.2 clearly indicates that 25% of the school feeding program was financed by the school, parents 50%, parents and NGO 25% and school and NGO was zero percent.

Observation Checklist Study Findings

Table 4.1.3: Social economic status of children

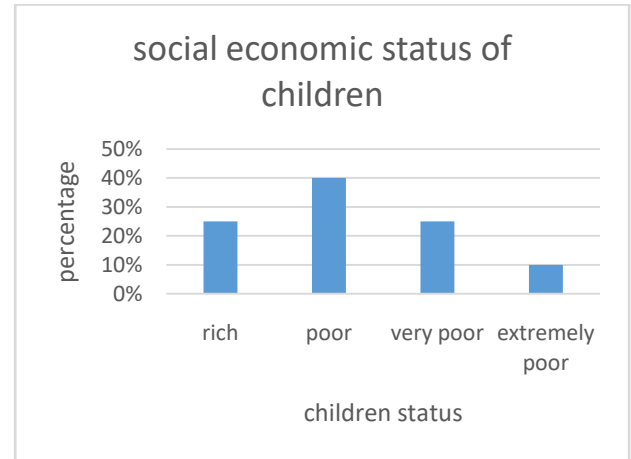
Types	Frequency	Percentage
Rich	5	25%
Poor	8	40%
very poor	5	25%
extremely poor	2	10%
Total	20	100%

Source: Research data

Table 4.1.3 shows social economic status indicated that a quarter of the children were from the rich families, 40% from poor families, a quarter from very poor and 10% from extremely poor background. Implying that majority of the parents were on casual employment constituting. In addition, the study findings therefore reveals that the representative sample majority comprised parents from low social economic background most of whom could be the single mothers or casual labourers with no source of steady income. Such a group of people do not comprehend the value of feeding their children with a balanced diet due to poverty and illiteracy

(Mbunje, (2018). Most of the parents in such caliber also send their children to school without any food which again points to their dire status with regards to social economic ability as UNESCO (2010). The findings are consistent with the results of Mbunje (2018).

Figure 4.1.3: Social economic status of children



Source: Research data

The Figure 4.1.3 above shows the results of parents social economics status in regards to children learning in Chemoge Zone. The study reveals that 25% of the parents were rich, 40% were poor 25% very poor and 10% extremely poor.

Table 4.1.4: Health of children in relation to learning

Types	Frequency	Percentage
poor	1	5%
good	8	38%
excellent	3	14%
fair	5	24%
very good	4	19%
total	21	100%

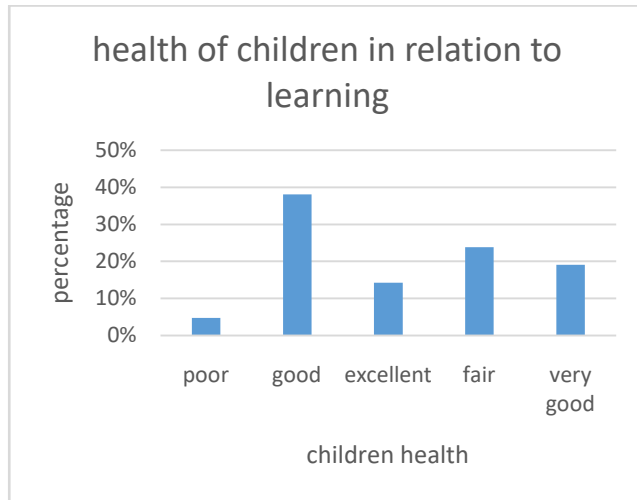
Source: Research data

From Table 4.1.4 indicates the health of children in relation to learning in chemoge zone and findings were that 5% had poor health, 38% good health, 14% excellent health, 24% had fair health and 19% had very good health. This clearly indicates that some of the preschool going children were not fed on balanced diet and were therefore severely underweight. This finding corroborates with findings of Bellsle(2004) which concluded that growth retardation observed among school aged children in East Africa sub-region is striking and their feeding status is at risk hence the importance of this study. Also consistent with results of Nduku, (2006), Wangui, (2013), Akoth, (2017) and Muthomi, (2018).

They were further asked if they believed that the menu is balanced in terms of food quality and good for the children. Parents have to suggest that more protein should be included

in the menu. Information on the type of food that children are being provided also sought from the parents.

Figure 4.1.4: Health of children in relation to learning



Source: Research data

The above figure 4.1.4 indicates the health of children in relation to learning in chemoge zone and results revealed that 5% had poor health, 38% good, excellent 14%, 24% fair and very good 19%. parents were asked if they believed that school nutrition program effectively improved learning of the children and the parents agreed that indeed school nutrition program improved learning of the preschool children.

V. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The study showed that the school feeding program is a vital intervention that has tremendous benefit to education. Initially, all schools did not have feeding program but through support of parents and NGOs feeding program was established. The study revealed that the meals provided in schools were balanced and majority of the parents were happy with the programs since their children got balanced meals at school.

The study established that the provision of the school feeding program improved overall learning of the preschool children. In addition, the parents level of knowledge on the school feeding program was good and they attested that school feeding program improved the performance of the children. From the findings, the researcher concluded that when food is balanced, served in appropriate quantity and within the recommended intervals or frequency children are able to grow and develop well attain their potential.

5.2 Recommendations

Several recommendations were derived from the study. The researcher found out that most of the schools providing school feeding programs were founded by the NGOs which after some time would pool out from the program. First, it was

recommended that parents should be sensitized on the importance of feeding programs so that they would pay for the meals especially for those in schools that do not provide feeding program. It was also recommended that the preschool administration should be sensitized on the need to ensure that food supplied to the preschools are adequate and contain all nutrients crucial for the growth and development of the preschool children that would improve learning.

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