



MALNUTRITION AND CHILDREN'S LEARNING IN PRIMARY SCHOOL IN ZARIA LOCAL GOVERNMENT AREA, KADUNA STATE: AN INTEGRATED STRATEGY FOR DEVELOPMENT FROM THE VIEWPOINT OF EDUCATIONAL PSYCHOLOGY

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Abstract

This research study is about the influence of malnutrition on children's learning among primary school pupils in Zaria Local Government Area, Kaduna State. The main objective of the study is to investigate the problems associated with nutritional deficiency and its consequence on learning. From the onset, malnutrition is regarded as an act of omission from food intake; a situation which usually leads to nutritional deficiency problem in individual, of which infants and children who are expected to grow up into healthy productive adults are the greatest sufferers. To achieve that, a survey design was conducted with a questionnaire as a data collection instrument with three hundred (300) respondents chosen as sample based on the guidance of Krejcie and Morgan table of sample size determination. Statistical package of IBM 23 was used to determine the influence of malnutrition on children's learning. The hypothesis was tested using independent sample chi-square test at 0.05 level of significance. A number of nutritional deficiency problems were highlighted during the course of the investigation. One major finding was made of the fact that malnutrition has significant influence on children's learning at the level of primary school. As a strategy for development, a recommendation made is that parents should ensure that their children are well fed with balanced diet before, during and after school hours in order to support learning at this crucial stage of child growth and development.

Keywords: *Malnutrition, Children's Learning, Development, Nutrition and Health*

INTRODUCTION

Background to the Study

Good nutrition which implies eating food that makes the body to be healthy is very important for the growth and development of human being especially the

growing child. People that take good nutrition are usually healthy and are generally well built physically and in terms of weights. Malnutrition results if the body cannot get adequate quantity and right quality of food. According to the health experts, malnutrition usually affect the general being of an individual and leads to majority of diseases such as kwashiorkor, marasmus, rickets, tooth decay etc. Nutritional health problems are generally considered as a problem of all and sundry but it is a situation of which infants and children are the greatest sufferers. As contained in Tiamiyu (2011) as reported by Aliyu (2019), malnourished children are usually attributed with the signs such as thin arms and legs, scanty hair and dry skin, as well as being mentally dull and usually aggressive. The World Health Organization (WHO) defines "Health" as a state of complete physical, mental and social well-being of an individual and not merely the absence of disease or infinity. Certainly health is much more than being not sick, therefore, it is the intention of the study to find out the influence of malnutrition on learning among primary school children and also find solution to them for the purpose of ensuring optimal development of the child.

Statement of the Problem

As stated earlier, the purpose of this study is to investigate the influence of malnutrition on children`s learning among primary school pupils in Zaria Local Government Area, Kaduna state. One of the notable short comings of teachers and parents is that they lack the necessary knowledge on what type of appropriate diet used in feeding the children is considered adequate due to relatively shortage of literature. Inadequate supply of quality food due to socio economic reasons on the part of the parents could be one factor that affects the health of the child, hence negative influence on school learning. There are no much researches conducted on the role, influence or impact of malnutrition on learning except on the academic performance which could have given the teachers and parents an opportunity to really understand the extent to which nutrition is not only important on growth and development but also useful to learning.

Objective of the Study

The main objective of the study is to determine the influence of malnutrition on children`s learning at the level of primary school.

Research Question

The research question raised for the study states that: is there any significant influence of malnutrition on children`s learning at the level of primary school?

Research Hypothesis

H₀ Malnutrition has no significant influence on children's learning at primary school.

Basic Assumptions

Based on the available information and the experience of the researchers, they are guided by the following assumption.

It is assumed that based on experiences regarding its notable consequences, malnutrition could have adverse influences on children's learning at primary school level.

Significance of the Study

This study is significant to both the parents and teachers because it will enable them to understand the benefits of nutrition in the growth and development of their children which have an impact on their learning. The study is also of great significance to the government officials as well as to the curriculum planners because of the social economic development

Scope and Delimitation

The scope of the study is the entire primary schools within Zaria Local Government Area. The study was delimited to perceived influence of malnutrition on learning among primary school children. Malnutrition on the other hand refers to the act of omission in food intake resorting to deliberate or inability to have a balanced diet which is required by the body for optimum development.

REVIEW OF RELATED LITERATURE

This section discusses the reviews of the related literature as follows:

Concept of Nutrition

Nutrition according to UNESCO (2000) is the science of food as it relates to optimal health and performance. On the other hand, Iroegbu (2006) in Aliyu (2019), states that it is the sum of all the processes by which the body takes in and utilizes food" He further explained that "Nutrition deals with the process of ingestion, digestion, absorption and utilization of food by the process of metabolism". He is of the opinion that "Adequate nutrition implies that the food is adequate both in quality and quantity to the need of the body cells and that the cells are able to utilize the nutrition in physiological way".

Concept of Learning

Learning according to Awoyemi (2005) as in Aliyu (2019) is the process of acquiring new or modifying existing knowledge, behavior, skills, values or preferences. The ability to learn is possessed by humans, animals and some machines, there is also evidence for some kind of learning in some plants. Some of the learning are immediate that is induced by a single event (e.g being beaten by an insect) but much skill and knowledge accumulates from experiences. The changes induced by learning often last a lifetime and it is hard to distinguish learned material that seems to be lost from that which cannot be retrieved. The nature and processes involved in learning as reported by Eve (2000) by Aliyu (2019) are studied in many fields, including educational psychology, neuropsychology, experimental psychology, and pedagogy.

Nutritional Needs of Primary School Child

It is necessary that balance diet for the primary school pupil should be given high importance; this is because proper nutrition of young children ensures the ability for better development of the brain and general health improvement. Most of the primary school children up to the age of about 12 years need less food than adults but they need more in proportion to their body weight.

World Health Organization's report (2013) states that the child's nutritional need differs in several important respects from those of the adults. The first of these is the large requirement for growth so that every food eaten carries some proteins, minerals and vitamins. Secondly, the activities of children of all ages are proportionally higher so that the daily calories allowances per unit of body weight must increase. Thirdly the selection of food often requires some modifications especially in terms of ability and digestibility.

Finally, childhood represent a period of rapidly changing attitude and emotional development when food habit can most favorably be channeled. Paoleman (1996) as contained in Aliyu (2019) reported that "the growing child needs food to supply the materials for the functions of these tissues and to furnish energy for many activities including based metabolism, growth and voluntary muscular activities.

According to Martin et al (2001) as in Aliyu (2019), "two chief factors determine the rate at which a person grows and the size that he attains, his inborn capacity to grow and various environmental conditions important among which is nutrition'.

Fundamental Need of Primary School Children

The fundamental needs of a child were clearly stated in a work book on “Nigeria and the convention on the right of the children” prepared by UNICEF. Some of these rights are as follows.

1. That a fundamental part of good health is the child’s right to good nutrition. It was further explained that, the right to enough good food is one of the basic aspects of the growth and development of a child. Good food is the key to healthy physical development.
2. That, “Every child is entitled to enjoy good health, protection from diseases and proper medical care for survival, personal growth and development”. It was further explained that young children are largely dependent upon their parents their parents for good health care and survival. It is the parent responsibility to ensure that the children live in a clean environment and eat nourishing foods.
3. That, “Every child has a right to rest and reaction, children who do not get adequate rest may not grow well. In addition a child who does not get enough sleep at night will be tire and unable to concentrate in school. This will certainly affect his or her academic performance. Physical activity stimulates mental dexterity.

In another articles of “THE CONVENTION ON THE RIGHTS OF THE CHILD” It was stated that, “Disabled children have the right to special care, education and training that will help them to enjoy a full and decent life with the greatest degree of self-reliance and social integration possible”.

Theory of Nutrition

Nutrition is the science that interprets the interaction of nutrients and other substances in food in relation to maintenance, growth, reproduction, health and disease of an organism. It includes food intake, absorption, assimilation, biosynthesis, catabolism, and excretion. The diet of an organism is what it eats, which is largely determined by the availability and palatability of foods. For humans, a healthy diet includes preparation of food and storage methods that preserve nutrients from oxidation, heat or leaching, and that reduce risk of foodborne illnesses. (Chinklin, 2003 as reported by Aliyu 2019). In humans, an unhealthy diet can cause deficiency-related diseases such as blindness, anemia, scurvy, preterm birth, stillbirth and cretinism or nutrient excess health-threatening conditions such as obesity and metabolic syndrome and such common chronic systemic diseases as cardiovascular disease, diabetes, and

osteoporosis. Under nutrition can lead to wasting in acute cases, and the stunting of marasmus in chronic cases of malnutrition. (Attoh, 2011 in Aliyu, 2019).

Theory of Learning

Learning Theory describes how students absorb, process, and retains knowledge during learning. Cognitive, emotional, and environmental influences, as well as prior experience, all play a part in how understanding, or a world view, is acquired or changed and knowledge and skills retained. (Chinyere, 2013 in Aliyu 2019). Behaviorists look at learning as an aspect of conditioning and advocate a system of rewards and targets in education. Educators who embrace cognitive theory believe that the definition of learning as a change in behaviour is too narrow, and study the learner rather than their environment and in particular the complexities of human memory. Those who advocate constructivism believe that a learner's ability to learn relies largely on what they already know and understand, and the acquisition of knowledge should be an individually tailored process of construction. Transformative learning theory focuses on the often-necessary change required in a learner's preconceptions and world view. Geographical learning theory focuses on the ways that contexts and environments shape the learning process. (Chinyere, 2013 in Aliyu, 2019)

Outside the realm of educational psychology, techniques to directly observe the functioning of the brain during the learning process, such as event-related potential and functional magnetic resonance imaging, are used in educational neuroscience. The theory of multiple intelligences, where learning is seen as the interaction between dozens of different functional areas in the brain each with their own individual strengths and weaknesses in any particular human learner, has also been proposed, but empirical research has found the theory to be unsupported by evidence. (Falana, 2003 as in Aliyu, 2019)

Feeding Habit of School Children

Wilson et al., (2008) as reported by Aliyu (2019) mentioned that it is natural for children of primary school age to vary their eating habit from day to day as well as meal. Their important for the kind and amount of food may be quite unpredictable. Children usually develop a definite food like and dislike during their early school period. There are certain characteristics of food which influence a child's reaction to them. Loulenburing et al, (2002) as contained in Aliyu (2019) stated that school children preferred mid-flavoured foods, those with soft jelly like texture and those that are warm in temperature. Finger foods are popular with them and colourful foods hold a special appeal. Foods are more

acceptable to children if served in amount suitable to them with an awareness of their food preference, appetite and physical and emotional well-being. The atmosphere during meal-time should also be pleasant.

Orutheric (2001) as in Aliyu (2019) said that studies to determine food preference of children have all led to similar conclusion. Only 37% to 14% like vegetable whereas over two third like fruit, milk and bread ranked next to fruit in population.

Fleck (2006) and Donald (2009) as reported by Aliyu (2019) opined that a child in the school period from 4-6 years continue to build food performance and prejudices that may have a great influence upon his eating habits. By this time his senses has developed to the extent of influencing his behavior. In other wards if there are foods whose colors, taste, texture, odour do not appeal to him, he will respond accordingly.

Snack once or twice a day is desirable for children because some of them find it difficult to eat sufficient quantity of food at time. This should be part of the whole day`s food plan and should make a real nutritional contribution.

In pre-adolescence stage during which children develop likeness for food, they need to be introduced to wide variety of food. A variety of new food presented at this time forms a lasting food habit.

Review of Related Studies

Malnutrition according to UNESCO (2015) article, could be regarded as under nutrition which is usually due to too little food intake or shortage of required nutrients in the diet. This in turn causes loss of body weight and strength, nervousness, irritability, fatigue, etc. it is against this reason and others that Brooks (2009) as in Aliyu (2019) says that “lack of folic acid leads to anemia of infancy and pregnancy as well as retarded growth and body development especially in children”. He also maintain that “when vitamin C (ascorbic acid) is absent from the diet over period of time scurvy result.

World Health Organization (2013) observed that “Marasmus usually is inadequate intake of calories and protein in the diet”. Marasmus usually develops in the children under one year of age when breast feeding fails. According to “WHO”, Marasmus differs from kwashiorkor in various ways. The Marasmus child is wasted not swollen, the hair is dull and dry but not disclosed. The skin is thin and wrinkled and has lost its elasticity but does not show the same resentful apathy as in kwashiorkor.

Ireogbu (2006) as contained in Aliyu (2019) stated that “Malnutrition is common among the children a as result of poor feeding. The principal form of malnutrition

seen during pre-school period are those termed “protein” calorie malnutrition of early childhood. That one of the most common diseases which children face in Nigeria and one that can be easily and quickly controlled preventative measures. It is on this note that UNESCO (2015) stated that children in particular are victims of nutritional deficiency which can have fatal consequences and even where these deficiencies are survived they still have permanent effect on children depriving them of a fair chance in life. Great emphasis is therefore always been placed on child health in order to guide against nutritional deficiencies most especially during of growth and development. Zubairu (2016) had opined that malnutrition is common among children under the age of five years as a result of poor feeding. Carbohydrate is always given to children during weaning period with little vitamins and other nutrients. This leads to kwashiorkor, marasmus, anemia and rickets in infants’ pre-school children.

RESEARCHER METHODOLOGY

Introduction

The purpose of this research methodology is to find out the influence of malnutrition on children learning among primary school pupils in Zaria Local Government Area of Kaduna State. The research was aimed at finding out the extent of the problems and seeking solution to the problems.

Research Design

The design of the study was survey research design which according to Kothari (2012) are used to collect information about attitudes, behavior, aspirations and perceptions, by collecting and analyzing data from only a few people or items considered appropriate and suitable for the study, considered representative of the population. The data for the research is highly based on the use of questionnaire to gather necessary information for the study.

Research Population

The population for the study consists of one thousand six hundred and three (1603) according to office of research and statistics, Zaria education office (2019). They include all teachers teaching subjects such as English, Mathematics, Social Studies, Physical and Health Education, etc.

Sample and Sampling Technique

A total of three hundred (300) respondents were used as sample in this study in line with Krejcie and Morgan (1970) sample size table. The respondents for the

study were selected from primary schools within Zaria Local Government Area of Kaduna State using cluster sampling technique. The choice of sample in each school was however, based on simple random sampling technique.

Sampled Schools

The table below shows the number of teachers randomly selected and their schools.

S/N	NAME OF SCHOOLS	SAMPLE
1	Bello Aliyu L G E A K/doka,	30
2	Tudun Jukun L. G. E. A	30
3	Kaura L. G. E. A	30
4	Abdulrahman Mora L G E A	30
5	Dr. Yahaya Hamza L G E A	30
6	Dr. Muhammad Jumare L G E A	30
7	Justice Bashir Sambo L G E A	30
8	Abubakar Imam L G E A	30
9	Baba Ahmad L E G A	30
10	Waziri Lawal L G E A	30
	Total	300

Instrumentation

The instrument used in collecting data is the questionnaire which was developed by the researchers on 5-points liker scale of strongly agree, agree, undecided, disagree and strongly disagree. The questionnaire was clustered into two sections. Section (A) consists of items related to the personal data of the respondents. While section B contains information dealing with the subject matter of the investigation regarding their opinions on the influence of malnutrition on children's learning in primary school.

Validity and Reliability

Validity

According to Kothari (2012), validation by others is an effective method for content validation of research instrument. Therefore, the questionnaire was validated by the two academics in the Faculty of education, of Ahmadu Bello University, Zaria. They were requested to validate for content and face validity of the questionnaire. Their contributions were well taken care of in the final draft.

Reliability

The instrument was tested and was found with 0.79 reliability estimate through test re-test using thirty nine (39) teachers from Aminu L.E.A Primary School Sabon Garin Zaria, Kaduna State, a school outside the area for the main study. The estimated reliability was high and satisfies the criteria of research instrument according to Kothari (2012).

Procedure for Data Collection

In administration of the instrument, the researcher with the help of the head of the schools administered and collected the filled out questionnaire which were retrieved immediately. This action enable the researchers the opportunity of collecting the entire copies without loss.

Procedure for Data Analysis

The data gathered was analyzed using descriptive statistics. The demographic data was analyzed using frequency count and percentage, research questions were answer using standard/decision mean Of 3.0 and above set index score for acceptance while below was for rejection. The hypothesis was tested using independent sample chi square test at 0.05 level of significance.

RESULT AND DISCUSSION

Introduction

The study basically investigated the opinions of teachers on the perceived influence of malnutrition on children's learning among primary school pupils. A total of 300 respondents were selected to respond to the questionnaire in the study. The statistical package of IBM 23 was used for the data analysis. The first section presented the bio data variables in frequencies and percentages. The second section answers the research questions, the third section test the null hypotheses using the inferential statistics of Chi square test statistics. To determine responses on the items on effect of malnutrition, the frequencies of options for each item was computed and compared with the standard mean of 3.00 the standard/decision mean is based on the 5 Liker scale options of $5+4+3+2+1/5=3.00$ and both hypotheses were tested at 0.05 alpha level of significance.

Hypotheses Testing

Hypothesis: The null hypothesis state that the influence of malnutrition on children academic performance among primary school pupils is not significant

Chi square statistics table on the effect of malnutrition on children among primary school pupils

<i>Variable</i>	<i>SA</i>	<i>A</i>	<i>UD</i>	<i>D</i>	<i>SD</i>	<i>Total</i>	<i>df</i>	<i>X² computed</i>	<i>X₂ Critical</i>	<i>P</i>
<i>effect of malnutrition on children</i>	121	56	41	41	41	300	56	349.890	79.082	0.000

X² computed > X² critical at df 56. Calculate p < 0.05

Results of the chi square statistics above showed that the effect of malnutrition on children among primary school pupils is significant. This is because the computed X² value of 349.89 is higher than the X² value of 79.082 at df 56 and the calculated p value of 0.000 is lower than the 0.05 alpha level of significance. This shows that malnutrition has serious and tremendous influence on children's learning. Therefore, the null hypothesis which states that malnutrition has significant influence on children's learning among primary school pupils is not significant is hereby rejected.

Summary of the Major Finding

The findings from the study are summarized as follows:

The influence of malnutrition on children among primary school pupils is significant.

(X² computed > X² critical at df 56. Calculate p < 0.05).

This implies that learning difficulties will be noticed in malnourished children compared with those children who are well fed with balanced diet.

Discussion on Finding

From the table, it can be seen clearly that the influence of malnutrition on children's learning among primary school pupils is significant. This is because the computed X₂ value of 349.89 is higher than the X² value of 79.082 at df 56 and the calculated p value of 0.000 is lower than the 0.05 alpha level of significance. This shows that the respondents believe that malnutrition has serious and tremendous influence on children's learning. Therefore, the null hypothesis which states that malnutrition has no significant influence on children's learning among primary school pupils is hereby rejected.

This finding conformed with the findings made by Ignowski (2012), Donald et al., (2010); Lacour and Tissington (2011) in Aliyu (2019) who posit that children

who are under fed are much more prone to the health risk and safety risks associated with malnutrition, diseases, infection and injury, the result of which usually negatively affects children's ability and capacity to learn effectively. The finding is however in contrast with that of Austin (2014) in Zubairu (2016) who found out that other factors must come into play for malnutrition to have negative impact on learning having conducted an investigation on the major hindrances on learning among the children of Ndongs of the southern valley. His findings revealed that discrimination, marginalization and lack of motivation hinder learning in most cases than diet, which is secondary to the earlier mentioned variables.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents summary, conclusion, and recommendations on the influence of malnutrition on children among primary school pupils in Zaria Local Government of Kaduna State.

Summary

The purpose of the study is to look at the influence of malnutrition among primary school pupils in Zaria local government of Kaduna State. Specifically, the study intent to determine the influence of malnutrition on children learning in primary school and also to determine if there is any differences between male and female children learning base on malnutrition.

Section one presented the background to the study, statement of problem and research objectives. In line with two research objectives, two research questions were stated as well as two research hypotheses was formulated, two basic assumption, significance of the study and scope and delimitation of the study.

Section two presented the literature review that are related to this study under the concept of nutrition, primary education, learning, primary school segment etc. Similarly theoretical frames underpinning nutrition and learning were also discussed. The chapter also reviewed previous studies related to this very study and concluded with words of summary.

Section three details research methodology, research design and population of the study, sample size and sampling procedure were presented together with instrumentation, validity, pilot study and the reliability of the used instruments. The procedure for data collection and analysis was also presented.

Section four presented the bio data analysis, analysis of research questions, hypothesis testing including the discussion of results and a section on summary of major findings and discussion on findings was also emphasized.

Conclusions

The following basic conclusion is deduced from the study; Malnutrition has significant influence on children's learning at primary school level. The influence is high especially considering the fact that health is maintained with good nutrition.

Recommendations:

The following recommendation is made based on the finding of the study: Parents should ensure that their children are well fed with balanced diet before, during and after school hours as a basic strategy for optimal development.

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