

Open and Distance Learning, a Tool for Eradicating Malnutrition

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Abstract

Malnutrition is a global public health problem especially among pre-school children, adolescents, pregnant and lactating mothers. Some of the major causes of obvious and hidden hungers are lack of nutritional knowledge, poor caring practices, poor healthy eating lifestyles, lack of exercise, and poor consumption of micronutrient dense foods. Open and distance learning (ODL) could be a tool to close these nutritional gaps. Through ODL, nutritional education can be brought to the households with the use of interactive computer-based nutrition animation using computer games, gadgets, toys, jingles, gizmos, belly-buds and Compact discs/Digital Versatile/video discs (CD/DVDs) etc. Semi-literate and illiterate socially disadvantaged groups and communities, adolescents, house wives and career women will be given the opportunity to improve their nutritional knowledge even in the comfort of their sitting rooms, kitchens, bedrooms and at leisure hours. Children's time, what they hear, see and watch will be managed and controlled better while parents are at work or away from home. These interactive computer-based nutritional tools will expose and give pre-school children nutritional sense at early stage of life which will lead them all through life to adult stage thereby cushioning the effects of poor caring practices and preventing obesity, cardiovascular diseases and micronutrient deficiencies in their future lives. Better nutrition knowledge will reduce childhood and maternal morbidity and mortality due to preventable malnutrition. This paper therefore aims at discussing, exploring and bringing to limelight this interesting and innovative area of open and distance learning.

Key words: open learning, malnutrition, nutrition animation, children, women

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1.0 INTRODUCTION

Malnutrition is a public health problem in many countries especially among children, pregnant and lactating mothers. It includes macro- and micro- nutrient deficiencies such as protein energy malnutrition (PEM), vitamin A deficiency (VAD), Iodine deficiency disorders (IDD), Iron deficiency anemia (IDA), zinc deficiency, vitamin D and Folate deficiencies, etc. Other nutritional diseases include obesity, dental caries, and cardiovascular diseases (CDVs) such as hypertension, stroke, and heart attack. Prevalence of micronutrient deficiencies is more in Sub-Sahara African and Asian countries. Some of the major causes of malnutrition are poor nutritional knowledge, low nutrient diversity, cultural beliefs, food taboos, and low nutrient dietary intake. Formal nutrition education is mainly in tertiary institutions and limited to few universities, polytechnics and higher schools and it is not a general course but for only those that are admitted into it. Mothers who are interested to learn might be restricted in time and space by JAMB cut off marks, house chores, child bearing and rearing, poor economic status, etc. Conventional efforts are being made to eradicate malnutrition in various countries such as food fortification, biofortification, food supplementation, food diversification, nutrition education, etc. However, these deficiencies still persist in many countries.

Distance education (sometimes referred to as 'distributed learning' or 'distance learning') is any educational process in which all or most of the teaching is conducted by someone geographically removed from the learner, with all or most of the communication between teachers and learners being conducted through electronic or print mediums (UNESCO, 2013). It also refers to approaches to learning that focus on opening access to education and training provision, freeing learners from constraints of time and place while offering flexible learning opportunities to individuals and groups of learners (UNESCO, 2013). The openness of distance education is also seen in the relatively flexible organizational structures, delivery and communication patterns, and use of various technologies in supporting learning (UNESCO, 2002). Some of such technologies include audiovisual means (television, radio, CDs/DVDs), multimedia (audio and text files), video and computer-based materials and the internet.

Research has suggested the need to introduce during school age, nutrition education programs focused on mother and children to improve the population life quality (Ivanovic, 1995). Sometimes open and distance learning is used for school-age children and youth that are unable to attend ordinary schools, or to support teaching in schools, both at primary and secondary levels (UNESCO, 2002). Mothers, housewives, children, illiterate women, career women, can access nutrition information through open and distance learning tools anywhere and anytime in different local languages to make it reader friendly. Mothers can improve their nutritional knowledge even in their kitchens using ODL tools.

Children have been associated with double burden of malnutrition. Using ODL tools such as interactive computer-based animated gadgets, nutrition knowledge and education can be imparted on children early enough in life. Children sit for a long time playing with these tools and these have been associated with obesity. These gadgets can be converted to nutrition education tools. Instead of watching or playing games all the time for a long time and getting obese, some of the tools could carry nutrition information. They can be used to teach children the nutritional implication of sitting at one place for a long time, eating sugary and sweet foods which cause dental caries in children. Children do not eat some foods such as vegetables. Importance and consequences of not eating vegetables could be demonstrated using ODL animated games. Causes of protein energy malnutrition (PEM), stunting, wasting, and underweight and micronutrient deficiencies can be formulated as games using the same computer games they are familiar with. Healthy eating habits could be inculcated in children early enough in life to minimize CVDs. Even if obesity is a genetic factor in a family, children who were monitored early enough from childhood would not be obese. Early childhood nutritional training will cushion the effects of food beliefs, taboos and poor caring practices from illiterate, poor, busy and career parents and caregivers. The aim of this paper therefore is to discuss means of eradicating malnutrition among children and women using open and distance learning as an alternative strategy.

2.0 GLOBAL INCIDENCE OF MALNUTRITION

The aim of the 13-year plan (2012-2025) to address maternal, infant and child nutrition is to alleviate the double burden of malnutrition in children, starting from the earliest ages of development. One of several global targets in the plan is a 40% reduction of the global number of children under five years of age who are stunted by 2025, compared to the baseline of 2010 (WHO-UNICEF-WORLD BANK, 2011). Malnutrition manifests in form of protein energy malnutrition (PEM), obesity or over weight, hidden hunger and cardiovascular diseases (CVDs). Overweight and obesity are the result of “caloric imbalance”—too few calories expended for the amount of calories consumed—and are affected by various genetic, behavioural, and environmental factors (Daniels et al. 2004, Office of the Surgeon General, 2010). Globally, an estimated 43 million preschool children (under age 5) were overweight or obese in 2010, a 60 percent increase since 1990 (de Onis, 2010).

In England, most people are overweight or obese. This includes 61.3% of adults and 30% of children aged between 2 and 15 years. People who are overweight have a higher risk of getting type 2 diabetes, heart disease and certain cancers. Actions expected include helping people to make healthier choices by eating and drinking more healthily and being more active (UK Department of Health, 2013). This is where ODL comes in to bridge the information gap. Obese people cannot make healthier choices if they lack nutrition knowledge. You cannot give what you do not have. Nutrition counselling on how to prevent obesity can be put in CD/DVDs, video games and computer games and other toys in ODL interactive modules, mass produced and put on sale. As a component of ordinary games, this will achieve two purposes: first educate the viewers and then entertain them.

Obesity is one of the largest health problems facing Americans. Figures produced by the National Center for Health Statistics show that in 1999-2002, 15.8% of 6-11-year-olds were overweight as were 16.1% of adolescents aged 12-19 years (Boon and Clydesdale, 2005). The worldwide estimated prevalence of overweight and obesity among pre-school children in 2010 was 43 million (35 million in developing countries) while 92 million were at risk of overweight. The worldwide prevalence of childhood overweight and obesity increased from 4.2% in 1990 to 6.7% in 2010. This trend is expected to reach 9.1%, or 60 million, in 2020 (de Onis et al. 2010). The estimated prevalence of childhood overweight and obesity in Africa in 2010 was 8.5% and is expected to reach 12.7% in 2020. The prevalence is lower in Asia than in Africa (4.9% in 2010), but the number of affected children (18 million) is higher in Asia. Even though much of this can be blamed on diet, a sedentary lifestyle is a contributing factor (Clark, 2012).

In USA, childhood obesity has more than doubled in children and tripled in adolescents in the past 30 years (Ogden, et al. 2012, NCHS, 2011). The percentage of children aged 6–11 years in the United States who were obese increased from 7% in 1980 to nearly 18% in 2010. Similarly, the percentage of adolescents aged 12–19 years who were obese increased from 5% to 18% over the same period (Ogden, et al. 2012, NCHS, 2011). In 2010, more than one third of children and adolescents were overweight or obese (Ogden, et al. 2012, NIH, 2010). These findings confirm the need for effective interventions starting as early as infancy to reverse anticipated trends.

It is possible to use ODL video and computer games and other gadgets carrying nutrition information to eradicate malnutrition. Video and computer games are some of the most popular activities for children. In fact not only children but adults of all ages play these games. There is a definite link between video games and obesity (Qazalbash, 2013). Playing video games is a sedentary activity. It does not require much physical activity. This means children are taking far less exercise and burning less calories. Computer games are now designed to last longer and be more challenging so this implies a long sitting time and no exercise. Computer and video games encourage snacking because gamers get engrossed in the game they find it hard to break away and eat meals. This results in more snacking, usually on junk food and sodas. Because of this more calories are being taken in and less burned which results in weight gain (Qazalbash, 2013). You cannot prevent children from playing computer and video games but as a parent you could probably want to keep a close eye on what your children are up to – and for how long – on the computer or games consoles (Clark, 2012). But parents do not have all time in this world to become computer and video games time keepers.

One way of solving this problem is to use the games to teach the children the causes, health implication and solution to obesity. Children can begin early from infancy to play games that show them healthy foods and foods that predispose them to obesity. It will also show them activities that pre-dispose them to obesity e.g. lack of exercise and sitting down in a place for a long time. At this age, they cannot be taught at school but they can teach themselves in the comfort of their homes at leisure times. Computer games have been linked to obesity in children because their sitting for a long time in front of a screen was tantamount to a sedentary lifestyle (Clark, 2012). Many computer-games are now being manufactured to include different forms of exercises. And this tide will continue with nutrition counselling games consoles that will make children interact with healthy foods such as fruits, vegetables, proteinous and cereal foods. Many children hate eating vegetables. Nutrition information can cue into these games. This can be done in form of animated, interactive video and computer games.

3.0 TOOLS AND GAMES FOR NUTRITION EDUCATION THROUGH ODL

Both developed and developing countries are now making tremendous effort to fight and eradicate double burden of disease, hidden hunger and poor nutritional status. ODL strategies can serve as alternatives to conventional strategies. ODL tools can be used to educate people against the major causes of malnutrition. Research has shown that children were more likely to take to exercise if the exercise also involved a video game. Children were given the choice of 'normal' exercise options and interactive games that also involved exercise. The children only spent 10% of their activity time on child-based fitness equipment, while 60% was spent on identical fitness machines which were connected to a games console (Clark, 2012). So like manner, mothers can teach their children healthy eating lifestyles using computer games and gadgets instead of telling them orally (Fig. 1). This will add fun to it.



Fig. 1. Mother and child playing computer game.
Source: footage.shutterstock.com

3.1 Children Video and Computer Games

Just as various interactive computer tools and games are used for information and communication technology and religion, they can as well be used to transmit nutrition information. Examples of these interactive Computer games are Gizmos and E-Learning Studio (Fig. 2).



Fig. 2. Gizmos and E-Learning Computer games

Other children's gadgets include Bellybuds, Fisher Price Laugh & Learn Smart Screen Laptop, LeapFrog Chat & Count Phone, Playskool Alphie, VTech V. Reader, VTech MobiGo, Hexbug Nano Bugs, Mindflex, and Compact discs (CDs) and Digital Versatile/Video Disc (DVDs) etc. (Fig. 3). These gadgets can be used by 3 months to 12 years old children.



Fig. 3. Children's interactive gadgets

Through them, animated food names, nutrients, sources, pictures and functions can come in form of sing-along songs in both English and any other local languages. What you hear often is what you tend towards. When the child gets used to the names of these foods, he/she will like to taste them as soon as he/she can speak. The gadgets can be used to describe ways of eating well to prevent sickness. These learning can also come in form of animated stories on healthy diets, junk foods, classes of foods and their functions.

A compact disc (CDs) is a thin, circular disc of metal and plastic (Fig. 4). Even though CDs and Digital Versatile/Video Disc (DVDs) have now largely been superseded by MP3 players such as iPods, which are much smaller and lighter and pack lots more music into the same space by compressing it digitally (Woodford, 2011), they are still the most commonly used in developing countries like Nigeria. All the drama series, plays, music, sports, etc. are recorded in them and sold at minimal prices. Many people buy them and watch all day especially house wives. This medium could be used to improve the nutritional knowledge of women and entire household.

They can play these gadgets in their comfort zones and at leisure times. Improving the nutritional knowledge of mothers will also affect positively the health of members of the family because women are the home makers. They plan, decide and cook what is eaten in their homes. This will reduce childhood and maternal morbidity and mortality.



Fig.4. Compact discs (CDs) and Digital Versatile/Video Disc (DVDs)

4.0 COST IMPLICATION AND ACCESSIBILITY

The question is whether these learning resources will be available for learners to access at no cost or affordable cost so that there will be equity in access by anyone regardless of location, status, or background. The average cost of the gadgets is about \$45. CDs and DVDs are cheaper. It is for the masses. In Nigeria, retail price of average CD is ₦100 (\$0.63). There are in common uses in developing countries. From the arrays of ODL tools, Learners can buy the one they can afford.

5.0 CONCLUSION

The use of open and distance learning in the eradication of malnutrition is an innovative project. The information computer technology (ICT) companies should key into it in conjunction with open and distance learning universities. This is an alternative strategy to conventional methods of eradicating malnutrition.

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