DIGITAL RESOURCES AND NUTRITION KNOWLEDGE AMONG TEACHERS IN ENUGU METROPOLIS: IMPLICATION ON FAMILY’S CONSUMPTION PATTERN

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Abstract

This study sought to investigate the role of digital resources in improving teachers’ knowledge of nutrition and how such knowledge of nutrition can influence the family’s nutrition and consumption pattern. To achieve this, two research questions were raised: What is the digital device that teachers get nutrition education more from? How does the knowledge of digital nutrition education impact on their food consumption pattern? The study adopted a cross-sectional design. Accidental sampling technique was used to select a sample size of 217 female secondary school teachers from 14 randomly selected secondary schools in Enugu metropolis. A structured questionnaire that yielded 87 reliability index using Cronbach alpha was used. Data were analyzed using frequency counts, mean and standard deviation. Results showed that the highest sources of digital nutritional knowledge were YouTube (28.6%), Facebook (24.4%) and Google (15.7%), while WhatsApp was the lowest (6%). Findings also revealed that majority of the respondents apply the nutritional knowledge from these sources in planning and preparing family meals with the intention to advance proper nutrition and healthy living of their families. The study recommended that Ministry of Health in collaboration with the Ministry of Education should develop Nutrition Education materials and upload via YouTube, Facebook, and other social media platforms for teachers to access them.

Keywords: Digital Resources; Nutrition knowledge; Nutrition Education; Family consumption pattern; Teachers

Introduction

The family of orientation and the immediate environment is usually the primary source of knowledge of food and nutrition for majority of the populace. This knowledge may not be comprehensive or accurate because it may be influenced by culture, tradition, food supply, level of education and income. Generally, people’s knowledge of foods and nutrition is dependent on what they are taught by their parents or learnt from their immediate environment therefore, this knowledge may be environmentally limited. However, with the advent of digital technologies in recent years, nutrition education/knowledge can be accessible to so many people regardless of their discipline and status at relatively affordable cost. Nutrition is the basic determinant of the state of health of the individual and family. Staple nutrient-filled foods have great role to play in maintaining family health. Digital technologies can be applied in disseminating Nutrition information more effectively and efficiently.
FAC (2016) reiterated that though efforts are geared toward ensuring sustainable food production, without educating the population on food constituents, how to prepare, serve and eat the right foods, all such efforts will become futile. Studies have shown the presence of under-nutrition and over nutrition among many families in Nigeria (Nigeria Demographic and Health Survey, 2018; FAO 2016 and Oyewole, 2015). It maybe therefore safe to allude that low level of nutrition education as one of the contributing factors of this phenomenon.

Nutrition Education is a planned set of information deliberately put together and disseminated to help people make healthy food choices and acquire nutrition related habits that promote health and wellbeing. It includes the awareness of the nutrient content of foods consumed. According to Zarnowiecki, et. al., (2011), Nutrition Education is the knowledge of the rudimentary components of foods, its functions and the health benefits of consuming them in the right proportion. One of the importance of Nutrition Education is that its proper application contributes to determining the food consumption pattern of individuals and families and this invariably will reflect in their health, wellbeing and living standards. Knowledge of nutrition ensures that people become aware of how best to choose food, where to access and how much food they need to consume (Quaidoo, Ohemengm and Amankwah-Poku, 2018). Furthermore, Saaka, et. al., (2021) noted that one of the objectives of nutritional education is to increase the knowledge of nutrition among people for the sake of improving their dietary intake for healthy living. This further suggests that good nutrition knowledge is important as it is able to promote healthy living among families (Quaidoo, et. al., 2018), and ensure proper dietary practice among families.

Parents, especially mothers are mostly at the base of influencing the food habits of their children. Zarnowiecki, et. al. (2011) observed that in forming home environment food, parents are influenced by their attitude toward food and their knowledge about nutrition. Hence, what they do determines what their children learn and practice about food and nutrition. In this case, teachers who also happen to be parents have a lot of role to play in shaping the nutritional behaviour of both their students and biological children.

Digital appliances and soft wares have been deplored in transferring information and knowledge globally and is now part of our lives in Nigeria. This is what is now tagged ‘Social Media’. Knowledge about foods (both foreign and local) now trends on the various social platforms powered by data. It is therefore convenient to state that Nutrition knowledge could be disseminated via some of these digital resources. The traditional means of sharing this knowledge which used to be through books, magazines, etc is gradually been replaced with television, internet, and other digital resources (Obasola and Agunbiade 2016). The COVID-19 pandemic accelerated the use of digital resources in every sphere of the lives of individuals, families and the education system more than ever. Thus, Peytcheva-Forsyth and Aleksieva, (2021) observed that digital resources which are electronic facilities used in information dissemination have made the education system of most countries easier and accessible. According to Dukare (2020), digital resources are information dissemination devices that make information to be in electronic form and fast in transmission too. Some of these digital resources are computer, mobile phone, internet, social media, television, radio, YouTube, etc.

Studies have shown that both parents and teachers believe that digital resources are instrumental to adolescent healthy habit and living as it makes information reception fun (Alcantara, Silva, Pinheiro, and Queiroz, 2019). Moreover, Quaidoo, et. al., (2018) added that digital resources enhance knowledge gain and nutrition education. Also, Kundu, et. al., (2020) reported that online sources have been beneficial in changing the food intake pattern of adolescents in many parts of the world. This shows that the usage of online sources for nutrition education could be of high benefits to teachers in ensuring a healthy family living in their homes. Meanwhile, digital resources that could be used for nutrition education by teachers might have differences in the extent of their usage among the teachers. Therefore, among the afore-listed digital
resources, teachers may likely use some of them more than the others in getting the Nutrition Education they need.

The rate at which different cultural cuisines penetrate into different localities in Nigeria shows the extent at which cultural diffusion takes place in recent time. This might have been facilitated by the use of digital resources. Moreover, the use of digital resources in gaining Nutrition Knowledge of food from other societies and cultures maybe attributed to the increase in the consumption of foreign snacks like Shawama, pizza, taco, etc. This nonetheless show that there is a link between the use of digital resources and the level of people’s nutrition knowledge as has been reported by Alcantara, et al (2019) and Saaka, et al (2021).

There are however, some discrepancies in research findings concerning the highest means through which people get nutrition information and knowledge. Kundu, et al. (2020) reported that in Bangladesh, the family remained the highest source of nutrition knowledge among adolescent school children. While Gavgani, Qeisari, and Jafarabadi, (2013) stated that television was the highest digital source of nutrition information among adolescents in Iran. In Ghana, Quaidoo, et al (2018) reported that online resources remained the highest source of information of nutrition among adolescents, but health practitioners remained more reliable source for nutrition education. In USA, Zhang (2012) reported that adults aligned more with online resources for nutrition education even though they do not see online sources as very reliable. In another study, Saaka, et al (2021) reported that most of the teachers and parents got more nutrition knowledge with the help of radio in Ghana. Therefore, empirical evidence shows that the source of Nutrition Knowledge for people across the globe is tilted mainly towards digital resources. Yet empirical evidence reviewed could not identify the most used digital resource for nutrition knowledge among teachers.

The major objective of this study was to determine the online/digital resources that teachers in Enugu metropolis use more in obtaining nutrition knowledge. The significance of this study is that findings will help Nutrition Educators to ascertain which digital resources they could explore more to disseminate useful nutrition information that will promote health and wellbeing of families in the society.

The frame work of the study was based on the theory of planned behaviour by Ajzen (1991), which states that individuals usually make a decision to engage in specific behaviours by evaluating information available to them. Such information could be the perceived to be useful and easy to apply when the need arises. Again the value placed on the information will influence the individuals’ intention to engage in behaviour change. In other words, the value the individuals placed on the information that changed the behaviour, the ease with which it could be performed and the views of significant others (people) are important factors. The theory posits that a person’s behaviour to engage in an event is determined by his/her intention to perform such behavior. This is typically exemplified in the context of this study in way that the intention of secondary school teachers to use digital resources to seek and acquire nutrition knowledge and determines the extent at which they apply such knowledge in preparing their family meals. This theory will help to predict how secondary school teachers react (behave) towards using digital resources to get nutrition knowledge and how such affect their food choices for meal preparation in their homes.

Research Questions

Two research questions were formulated to guide the study:

1. What is the digital device that teachers get nutrition education more from?
2. How does the knowledge of digital nutrition education impact on the food consumption pattern of their families?

Methodology

The design of the study was descriptive cross-sectional design. The study was conducted in Enugu metropolis. Enugu metropolis is made up of three local government areas (LGAs) namely
Enugu south, Enugu North and Enugu East LGAs. The total population was 2291 teachers in the 33 public schools in Enugu metropolis with 1564 female and 727 male teachers. Accidental sampling technique was used to sample 217 female secondary school teachers from 14 randomly selected secondary schools in Enugu metropolis.

The instrument for data collection was a structured questionnaire. It was graded on a four-point scale. The instrument was face validated by three experts and it also yielded reliability index of .87 using Cronbach alpha reliability. The researchers made use of three research assistants who collected the data by sharing questionnaires to teachers that are present in the schools at the time of their arrival and they collected the filled questionnaire at that spot. The collected data was analyzed using percentage count, mean and standard deviation.

Results

Research question 1: What is the digital resource that teachers get Nutrition Education more from?

Table One: Frequency count of the highest digital resource that teachers get Nutrition Knowledge more from (n=217)

<table>
<thead>
<tr>
<th>S/N</th>
<th>Item statement</th>
<th>Frequency</th>
<th>%</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>YouTube</td>
<td>62</td>
<td>28.6</td>
<td>1st</td>
</tr>
<tr>
<td>2</td>
<td>Facebook</td>
<td>53</td>
<td>24.4</td>
<td>2nd</td>
</tr>
<tr>
<td>3</td>
<td>Google</td>
<td>34</td>
<td>15.7</td>
<td>3rd</td>
</tr>
<tr>
<td>4</td>
<td>Television</td>
<td>24</td>
<td>11.1</td>
<td>4th</td>
</tr>
<tr>
<td>5</td>
<td>Instagram</td>
<td>16</td>
<td>7.4</td>
<td>5th</td>
</tr>
<tr>
<td>6</td>
<td>Radio</td>
<td>15</td>
<td>6.9</td>
<td>6th</td>
</tr>
<tr>
<td>7</td>
<td>WhatsApp</td>
<td>13</td>
<td>6.0</td>
<td>7th</td>
</tr>
</tbody>
</table>

The results in Table 1 show the Frequency and percentage count of the highest digital resource that teachers get nutrition education more from. From the Table, 62 (28.6%) of the teacher get nutrition education more from YouTube. This is followed up by Facebook with 53 (24.4%) of them pointing out that they get more nutrition knowledge from Facebook. Another 34 (15.7%) of the respondents get nutrition education more from Google while 24(11.1%) of them get nutrition education from television. The result further revealed that 16(7.4%) of the teachers get nutrition education from Instagram. This is followed up by radio resource which only 15 (6.9%) of the teachers use in getting Nutrition Education more. The least resource that is used by only 13 (6.0%) is WhatsApp.

Therefore, it is evident from the results in the table that the teachers get nutrition education from numerous digital resources. Yet, the mostly used digital resource in this regard among teachers remained YouTube followed by Facebook, Google, television, Instagram, radio and finally WhatsApp.

Research Question 2: How Nutrition Knowledge gained from digital resource impact on the food consumption pattern of teachers’ family?

Table Two: Mean analysis of How Nutrition Knowledge gained from digital resource impact on the food consumption pattern of teachers’ family (n=217).

<table>
<thead>
<tr>
<th>S/N</th>
<th>Item Statement</th>
<th>X</th>
<th>S.D.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The knowledge I have gained from digital nutrition education has shaped my meal preparation styles in my family.</td>
<td>3.02</td>
<td>1.20</td>
<td>A</td>
</tr>
<tr>
<td>3</td>
<td>I usually prepare meals I learnt online for my family. I usually try out new nutrition-based food combination I learnt from television for my family.</td>
<td>3.24</td>
<td>1.06</td>
<td>A</td>
</tr>
</tbody>
</table>

150
The results in Table 2 show the Mean and standard deviation analysis of the how the knowledge of digital nutrition education impact on the food consumption pattern of teachers’ family. The results in the table showed that the respondents agreed with all the items in the table which indicate that the use of digital resources for Nutrition Education has strong influence on the consumption pattern of teachers. This because the respondents agreed that the knowledge they have gained from digital nutrition education has shaped their meal preparation styles in their families ($M = 3.02, SD = 1.20$). Usually, they prepare meals they learnt online for their families ($M = 3.24, SD = 1.06$) and even try out new nutrition-based food combination they learnt from television for their families ($M = 3.18, SD = 1.08$). The results in Table 2 further showed that the use of YouTube has really helped the teachers to plan their food menu to reflect the 7 classes of food weekly ($M = 3.48, SD = .85$), (see other details in Table 2). The grand mean and standard deviation score of ($M = 3.04, SD = .50$) suggests that the use of digital resources has really helped to improve the nutrition knowledge of the teachers in Enugu metropolis. Such knowledge gained, has a great influence in positively shaping the food consumption pattern of the teachers in their different houses.

**Discussion**

The study revealed that teachers in Enugu metropolis use different digital resources to get nutrition education in different occasions. However, their usage of these resources differs by the extent of their use. The study revealed therefore, that the teachers make use of YouTube and Facebook more in getting nutrition education. Although other digital resources also had a number of teacher’s percentage that use them such as Google, Television, and radio, yet larger percentage of teachers make use of YouTube and Facebook. This could be because YouTube shows more of video form of any teaching and learning session. So using it to learn about nutrition would be easier for teachers due to the practical simulation of the videos. Moreover, Facebook which has a wider global coverage and information dissemination platforms might have been used too because of its ability to share both solicited and non-solicited information and videos through which the teachers must have gained nutrition education from. The low use of television and radio as digital sources of nutrition education might have steamed up from the fact that many residents of Enugu metropolis as not used to listening to radio always and watching the television always.

Findings from this study is in tandem with Quaidoo, et al (2018) who reported the highest use of digital resources for nutrition education than any other digital resource. The study is also in agreement with Zarnowski, et al (2022) who found out that website is the highest source of nutrition knowledge among adult citizens in Poland. However, the study is in disagreement with the findings of Saaka, et al (2021) which reported that many of the teachers gained nutrition knowledge more from radio in Ghana. The study also differed from Gavagni, et al (2013) who reported that in Iran, the highest digital source of nutrition information was the television.
The study also revealed that the respondents’ food consumption pattern was influenced by the nutrition knowledge acquired from digital resources. This was established by the fact that they planned their family meals to ensure that they included all the food nutrients. They also prepared food they learnt from digital resources (YouTube & others). The study further showed that the knowledge gained shaped their style of preparing different foods.

Further, the study revealed that the respondents’ application of this knowledge is an indication that digital resources have a lot of roles to play in determining their consumption pattern. This corroborates with Alcantara, et al. (2018) who opined that digital technology is instrumental to adolescent healthy eating habit. It also corroborates with Quaidoo, et al. (2018) who maintained that the use of digital resources among adolescents in Accra metropolis makes them to know the need to practice healthy nutritional behavior. The study also corroborates with Michel & Burbidge (2019) who found out that computer-based tool has tendency of increasing the level of nutrition education of adolescents in schools. The study also agrees with Chung and Fong (2018) who revealed that the use of digital resource in exposing adolescents to nutritional education increased their nutritional knowledge more than the traditional means of teaching them. Also, the study is in line with Tallon, et al (2019) who reported that the use of technology-based programs have a greater influence in enhancing nutrition education and change in dietary of adults and adolescents. This is largely because, digital resources make learning more attractive, fun and enjoyable to adolescents as opined by (Casazza and Ciccazzo, 2007).

Therefore, the use of digital resources, as revealed in this study, has higher tendency of increasing cultural diffusion and even enhancing the nutritional intake of families of teachers in Enugu Metropolis.

Implication Of The Findings To Family Health

All things been equal, the health of the family in most cases is determined on the kind of food they consume. A healthy family has link with healthy food consumption and vice versa. According to Ehinomen, et al (2021), when families consume foods with adequate nutrients that meets the recommended dietary requirement for the day on a regular basis, it has a high tendency of increasing the overall wellbeing (social, physical, emotional) and learning ability of the children. On the other hand, the absence of adequate nutrition may lead to mental and physical frustration and poor learning abilities. This is an indication that adequate nutritional intake could enhance better family health and the absence of some nutrient related diseases caused by under-nutrition. It could also save the family of frequent visits to the health Care facilities and thereby preserve limited family income for more productive use. According to Ehinomen, et al (2021), good nutrition and health status is an indication of regular adequate food intake. This implies that, when teachers replicate the knowledge gained from digital resources in their family’s dietary intake, it would lead to improved family health.

Findings from this study revealed that the respondents use numerous digital resources in getting nutritional knowledge namely; You tube, Facebook, Google, Television, etc. The ideas they gained from these resources were applied in their family feeding pattern. There is therefore a clear relationship between the knowledge gained from digital resources concerning nutrition information and the health and wellbeing of the respondents. The family being the primary unit of the society also is the primary health post of the society. Thus, Tallon, et al (2019) argued that the eating behavioral patterns learnt by children from their families in the childhood stage are often reflected in their eating behaviour in their adulthood.

Conclusion

The study concludes that teachers in Enugu metropolis make use of digital resources in
obtaining nutrition knowledge. Majority of the knowledge acquired was more from YouTube, Facebook and Google than any other digital resource. The knowledge they gain via these digital resources influenced their family’s food consumption pattern.

**Recommendations**

Based on the findings from this study, the following recommendations are made:

1. The State Ministry of health (MOH) should collaborate with the Ministry of Education (MOE) to develop Nutrition Education messages on social media for teachers to access them.
2. The MOH together with the MOE should organize workshop for teachers to deliberately expose them on how to access and disseminate the nutrition knowledge gained to their students.
3. Finally, the Ministry of Education should encourage more teachers in the state to seek and acquire digital skills so that they could easily access other forms of education that promotes health and wellbeing through many other forms of digital resources.

**References**


