

STRENGTHENING HOME ECONOMICS EDUCATION IN NIGERIA

A BOOK OF READINGS



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CHAPTER 6

ROLE OF HOME ECONOMICS IN NUTRITIONAL MANAGEMENT OF FAMILIES DURING COVID-19 ERA

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Introduction

Coronavirus disease is an infectious disease caused by a newly discovered virus. This coronavirus disease also referred to as covid-19 which is known as 2019 novel coronavirus. The virus spreads between people of close contact with each other within a short space. People can be affected when droplets containing the virus are inhaled and come directly into contact with the eyes, nose or mouth and its fast spreading.

A series of pneumonia cases of unknown cause emerged in Wuhan at the end of 2019. A few weeks later, January 2020, profound sequencing analysis from lower respiratory tract samples recognized a novel virus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) as causative agent for that was observed pneumonia cluster. February 11th, 2020, World Health Organization (WHO) Director-General, Dr. Tedros Adhanom Ghebreyesus, named the disease instigated by the SARS-CoV-2 as "COVID-19". The COVID-19 pandemic is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which sets the whole world in unprecedented encounters (Greenberg Docherty, Gnanapragasam and Wessely 2020; (Hubei, China) Lu, Stratton, Tang, (2020). Huang, Wang, Ren, Zhao, Hu, Zhang, Fan, Xu, Gu, (2019).

The COVID-19-brought lockdown or home quarantine measure which was applied in many countries as well as Nigeria. This measure is a

required public health approach to protect people and families from virus contamination. However, it has undesirable consequences, (Lippi, Henry, Bovo, Sanchis-Gomar, 2020), e.g., negative impacts on psychological consequences, (Ozamiz-Etxebaria, Idoiaga Mondragon, Dosil Santamaria, PicazaGorrotxategi, 2020), eating behavior, and changes in dietary habits of families (Sidor, Rzymiski, 2020; Ammar, Brach, Trabelsi, Chtourou, Boukhris, Masmoudi, 2020). Luckily, healthy diet has potential benefit to reduce the risk of complications of COVID-19 (Butler Barrientos 2020). People with a healthier diet quality and proper nutrition intake had a lower risk of the virus.

Good nutrition is very important in our daily life and this helps before, during and after an infection of the virus. The virus takes a toll on the body especially when these cause fever, the body needs extra energy and nutrients. This makes it important that families and individual maintain a healthy diet and proper nutrition during the COVID-19 pandemic. While foods or dietary supplements can prevent COVID-19 infection, maintaining a healthy diet and self-hygiene is an important part of supporting a strong immune system (Gasmi, Tippairrote, Mujawdiya, Peana, Menzel, Dadar, 2020). Proper nutrition has been identified to play a pivotal role in our lives especially during this COVID-19 era. James (2003). The provision of healthy diet is fundamental to human experience and human culture. Home Economics is a field of study that is mainly concerned with strengthening family life and growing productivity of individuals in the social economy. It is also covering food, nutrition, hygiene and healthy diet which is very crucial in the management of COVID-19 pandemic.

Among home economic management strategies during the COVID-19 era was healthy diet and nutrition knowledge which show potential impacts on immune system and health outcomes of the families. Some food groups (e.g., fruits and vegetables, fish and fish oils) and key nutrients (e.g., fiber, vitamins A, B, C, D, and E, selenium, iron, copper, zinc) have shown the benefit for protecting against viral infection (Bavel, Baicker, Boggio, Capraro, Cichocka, Cikara, 2020; Calder, Carr, Gombard, Eggersdorfer, 2020). Adequate intake of relevant nutrients such as antioxidants that can help to reduce inflammation and oxidative stress, which further strengthens the immune system of families during the COVID-19.

Impacts of COVID-19 on Nutrition Outcomes

Conferring to the 2020 Joint Malnutrition Estimates, released prior to the pandemic, there are presently more than 26 million stunted children, and an estimated 10.7 million wasted children in the 21 countries of Eastern and Southern Africa UNICEF GLOBAL (2020). it is predicted that the biggest toll on the most exposed will not come from the pathology of COVID-19 itself, but from the surety impact on food production and access, provision of health services and changes in practices and behavior. At global level, scenarios developed by UNICEF indicate that the impact of COVID-19 on nutrition could lead to an increase in wasting by about 15% (7 million children) over the first 12 months of the pandemic, with higher increases in Africa (20-25%) over the remainder of 2020 and into 2021.

Possible Pathways Leading to Increase of Under Nutrition Through the Impact of COVID-19

Reduced Access to Health and Nutrition Services

While children and adolescents are less directly affected by COVID-19 related complications and mortality, they are the most vulnerable when essential health services become less available due to health systems being stunned or when health systems solely focus on the needed COVID-19 response. Many Countries have put in place early measures to curtail the pandemic with varying degrees of success, but managing to reduce the impact of COVID-19 relative to other regions in the world. Cuts, lockdown measures and diverted funds will have a dramatic impact on health and nutritional status particularly in families who are more likely to suffer and die from common diseases such as malaria, diarrhea, and measles. (The World Bank. Food security 2020)

Food Insecurity and Poor-Quality Diets

Food supply chains (FSCs) are of particular interest, since 80% of all foods consumed in Africa now dependent on these markets (Reardon Echeverria Berdegú Minten Liverpool-Tasie Tschirley Zilberman, 2019). Despite being nominally "exempt" from lockdowns, COVID can have direct and indirect impacts on Food supply chains and food pricing. While direct impacts, through closures of restaurants and restrictions on vendors, represent a small share of the total food economy in urban settings, the impact on rural markets could be much

greater, additionally; indirect impacts due to unemployment and falling incomes of daily wage laborers and industry workers have taken a heavy toll on families (Thurlow 2020). Loss of household income exposes vulnerable families to price spikes and food shortages, while low agricultural productivity and breaks in the food import-export system disrupts local food markets and small businesses (The World Bank. Food security 2020). The home economics at this level advocates for home garden for different vegetables, small poultry farming, farming, menu planning and food preparation to retain maximum and adequate nutrients.

Limited Care and Restricted Health Services

Given overburdened health systems, restricted travel and changing priorities at the primary care level, access to routine health services for women and children has suffered tremendously, while quality of care was an ongoing challenge prior to COVID-19 (Thapa Jhalani García-Saisó Malata Roder-DeWan Leslie 2019. It has been reported by United Nations Population Fund (UNFPA) (UNFPA 2020), reduced access to family-planning services and enforced confinement of families is projected to lead to 7 million unintended births in some of the poorest countries of the world.

Unhealthy Household Environment

Given diverted funds and priorities, building safe and healthy household and community environments, particularly as related to clean water, appropriate sanitation, and hygiene (WASH), may fall behind on country agendas. The home economics took it upon themselves in every platform to advocate for personal hygiene of individual and families.

The Role of Specific Dietary Nutrients on Immune System Function and COVID-19 Disease

The influence of nutrition in the immune system has been widely reported. In addition, recent studies have also highlighted the influence of both on adequate nutritional status and the appropriate intake of specific nutrients in COVID-19 era.

Protein deficiency is linked to impaired immune system function, mainly due to its negative effects on both the number of functional immunoglobulins and gut-associated lymphoid tissue (GALT).

Besides quantity, the quality of proteins is also an important factor with regard to the relationship of this macronutrient with immune system. Proteins of high biological value (those present in eggs, lean meat, fish, and dairy) containing all the essential amino acids may exert an anti-inflammatory effect. (Iddir, Brito, Dingao, Fernandez De Campo, Samouda, La Frano, Bahr, 2020).

Carbohydrates and dietary fiber have also been reported to be related to immune system function. As far as carbohydrates is concerned, the consumption of those with higher glycemic indexes (highly processed carbohydrates) can result in mitochondrial overload and subsequent free radical synthesis. Due to the aforementioned inflammatory status that usually occurs in respiratory infections such as COVID-19, limiting the consumption of foods rich in these carbohydrates may be advisable.

With regard to fiber, its importance for a correct metabolic functioning has been widely reported. Several studies have revealed that an adequate fiber intake (25-35 g/day) may help reducing both systemic and gut inflammation. Indeed, the consumption of foods that are rich in fiber has been related to lower levels of inflammation as well as enhanced levels of short chain fatty acids (SCFAs) Carlson, Erickson, Lloyd, Slavin, (2018). Moreover, SCFAs also play an important role in the maintenance of an adequate gut microbiota by increasing the diversity, as well as enhancing the presence of specific health-associated bacteria (Carlson, Erickson, Lloyd, Slavin, 2018). Taking into account that COVID-19 has been related to respiratory and gastrointestinal symptoms, it seems plausible that gut microbiota impairment may occur, which in turn can result in an enhanced inflammatory status.

The association of vitamin D deficiency with respiratory tract infections and lung injury has been widely reported. Indeed, the usage of vitamin D agonists has shown effectiveness ameliorating the aforementioned conditions (Smith, Jones, Han, Alvarez, Slom, Konrad, Zughaier, Martin, Ziegler, Tangpricha, 2018). With regard to COVID-19, Ilie et al. have studied the role of vitamin D levels on the prevention of this infection and the mortality induced by this disease (Ilie, Stefanescu, Smith 2020). They also observed that vitamin D levels are severely low in the aging population, which is the most vulnerable population group for COVID-19. Vitamin E has been related to the correct function of the humoral and innate immune functions. The ability of vitamin E which is also known as antioxidant to scavenge

reactive oxygen species (ROS) plays an important role in oxidative stress reduction, exerting anti-inflammatory effects. In addition, vitamin E also protects polyunsaturated fatty acids (PUFAs) and immune cells from oxidation.

Iron is a nutrient with diverse implications in COVID-19. On the other hand, it is well known the importance of iron for the correct functioning of the immune system. However, it is also well established that iron-containing enzymes are essential for the completion of virus replication process, particularly coronaviruses (Liu, Zhang, Nekhai, Liu, 2020). Evidence also suggests that iron chelators can exhibit antiviral effect on HIV through the elevation of intracellular iron efflux and increasing iron exporter ferroportin expression (Kaufmann, McMichael, 2005).

Selenium and Zinc plays an essential role in the immune system due to its anti-inflammatory effect. Zhang et al. (2020) have identified a positive association between higher recovery rate from COVID-19 infection and adequate selenium status in 17 cities outside the region of Hubei (China). This effect is in line with the significant benefits of selenium and zinc supplementation demonstrated against other viral infections, including HIV, hepatitis B linked liver cancer linked or epidemic hemorrhagic fever (Taylor, Ruzicka, Premadasa, Zhao, 2016).

Effect of COVID-19 on Nutrition

Dynamics Unleashed by the Pandemic are Affecting Nutrition

A number of overlapping and reinforcing dynamics have emerged that are affecting food systems and nutrition thus far, including: disruptions to food supply chains; loss of income and livelihoods; a widening of inequality; disruptions to social protection programs; altered food environments; and uneven food prices in localized market (e.g. Klassen and Murphy, 2020; Clapp and Moseley, 2020; Laborde et al., 2020). Moreover, given the high degree of uncertainty around the virus and its evolution, there may be future threats to nutrition, including the potential for lower food productivity and production, depending on the severity and duration of the pandemic and measures to contain it.

Supply Chain Disruptions

There have been major disruptions to food supply chains in the wake of lockdown measures, which have affected the availability, pricing, and quality of food (Barrett, 2020). The closure of restaurants and other

food service facilities led to a sharp decline in demand for certain perishable foods, including dairy products, potatoes and fresh fruits, as well as specialty goods such as chocolate and some high value cuts of meat (Lewis, 2020). As the pandemic-related lockdowns took hold in many countries in March-May of 2020, there were widespread media reports of food items being dumped or ploughed back into the fields because of either collapsed demand or difficulties in getting these foods to markets (Yaffe-Bellany and Corkery, 2020). Farmers without adequate storage facilities, including cold storage, found themselves with food that they could not sell. The movement of food through the channels of international trade was especially affected by lockdown measures.

As borders closed and demand for certain food items dropped, food producers reliant on selling their crops via distant export markets were highly vulnerable, particularly those producers focused on perishable food and agricultural products, such as fresh fruits and vegetables or specialty crops, such as cocoa (Clapp and Moseley, 2020). In the early months of the outbreak of COVID-19, some food exporting countries also imposed export restrictions on key staple food items like rice and wheat, which led to some disruptions in the global movement of these staples as well as higher prices of these crops relative to others (Laborde et al., 2020). Certain countries, including those with high prevalence of food insecurity, are highly dependent on imported food and on commodity exports (FAO et al., 2019), which may make them particularly vulnerable to these types of supply chain disruptions. Many of these export restrictions were lifted by August 2020, although the risk remains that such restrictions might be re-imposed, depending on the severity of any future spikes in the disease and the re-imposition of lockdown measures.

Global Economic Recession and Associated Income Losses

The COVID-19 pandemic triggered a global economic recession which has resulted in a dramatic loss of livelihoods and income on a global scale (World Bank, 2020a). The resulting drop in purchasing power among those who lost income has had a major impact on nutrition, especially for those populations that were already vulnerable. Those in the informal economy are especially affected. In Latin America, for example, over 50 percent of employment is in the informal sector (FAO and CELAC, 2020). According to the International Labour Organization (ILO), more than the equivalent of 400 million full-time jobs have been lost in the second quarter of 2020 with a number of

countries enforcing lockdown measures (ILO, 2020a). Developing countries in particular have been deeply affected, as they were already entering recession by late 2019 (UNCTAD, 2020a). Global growth is expected to fall dramatically in 2020, with various estimates showing a drop in the range of 5 to 8 percent for the year (IMF, 2020; OECD, 2020). Global remittances—a major source of finance in developing countries—are expected to drop by around 20 percent (World Bank, 2020a).

Widening Societal Inequities

The global economic slowdown triggered by the pandemic, as well as the spread of the disease itself, has exacerbated existing societal inequities in most countries (Ashford et al., 2020). These inequities are affecting rights as well as access to basic needs such as food, water, and health care, and access to jobs and livelihoods, all of which have implications for nutrition. Food insecurity already disproportionately affects those people experiencing poverty and who face societal discrimination, and it is these very people who are at higher risk of contracting COVID-19 and who have less access to health care services (Klassen and Murphy, 2020). COVID-19 has also exacerbated inequities in access to safe sources of water and basic sanitation. According to the WHO, one in three people lack access to safe drinking water and basic handwashing facilities (WHO, 2020b). People without access to these services, which are vital for health and safe food preparation, are more likely to contract the disease, compounding existing inequities (Ekumah et al., 2020).

Disruptions to Social Protection Programs

Social protection programs have been disrupted by the pandemic which in turn are affecting nutrition. When the lockdowns began, most schools were closed resulting in the loss of school meal programs in both high-and low-income countries. The WFP estimates that 370 million children have lost access to school meals due to school closures in the wake of the pandemic (WFP, 2020a). In some countries, governments and the WFP are developing alternative means by which to reach school-aged children with food assistance, including take-home rations, vouchers, and cash transfers (WFP, 2020b). While alternative school lunch arrangements (such as in Cameroon (WFP, 2020c) may close the gap in some instances, in other cases such options are not in place, adding to the financial burden of poor households struggling to feed their families (Moseley and Battersby, 2020)

Nutrition Surveillance and Assessment in the Context of COVID-19

In the fluid context of COVID-19 pandemic, the timely collection and update of food security and nutrition information is highly critical not only to identify population at risk but also to monitor and thereby influence factors likely to have a negative impact on the nutrition status of people. It will be important to put in place a tailored food security and nutrition surveillance system using remote mobile phone or web-based surveys to monitor the areas outlined below. Relevant nutrition data and information should be easily accessible to all stakeholders.

1. **Market Functionality:** this informs the functionality of the food market, food availability (possibly including commercially available complementary foods) and price fluctuation through interviews with retailers. Tracking food prices for basic food commodities, especially those of high nutritional value is fundamental to understand food affordability and project overall food security outlook on household and individual levels WFP (2017).
2. **Coping mechanisms:** this informs what coping mechanisms people are adopting to meet their daily nutritious needs and possible changes overtime WFP (2015).
3. **Food consumption patterns and trends:** this informs what people eat and their sources of foods and possible changes overtime. This can be tracked by using several standardized indicators at the household level. Food Consumption Score for nutrition (FCS-N) and Household dietary diversity Score (HDDS) and at individual level: Minimum Diversity for Women (MDD-W) and Minimum Acceptable Diets (MAD) for children under 2 years of age, as well as breastfeeding practices using the latest standard definitions for these indicators.
4. **Multi-dimension poverty (deprivation):** this provides information on the access by households to key services, including health, education, food, due to either limitation to physical access or due to loss of income WFP (2018).
5. **Additional considerations:** this could include issues of cost of diet, interruption of health and nutrition services, interruption of school meals, protection, gender-based violence that may further impact nutrition

4. There is no evidence to date that the coronavirus causing COVID-19 can be transmitted through food or food packaging. It is safe to consume staples, fruits, vegetables, dairy products, pulses, meat, fish and eggs while practicing usual food safety measures and implementing food hygiene principles.
5. Promote and communicate the key lifestyle factors that are critical for maintaining well-being and a healthy immune system.

Recap

The study assessed the role of Home Economics in the nutritional management of families during COVID-19 Era. The emergence of covid-19 from Wuhan at the end of 2019 till date has caused families to loosed their loved one and many people lost their lives and likelihood. The COVID-19 pandemic is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which sets the whole world in unprecedented encounters. The COVID-19-brought lockdown and home quarantine measures which was applied in many countries as well as Nigeria to protect people and families from virus contamination. This scenario brought about the significant role of Home Economics in nutritional management of families in diverse ways in planning and monitoring the diet of the family. The study concluded that good nutrition is very important in our daily life and this help before, during and after an infection of the virus. The study recommended that the body needs extra energy and nutrients. Therefore, families and individual maintaining a healthy diet and proper nutrition is very important during the COVID-19 pandemic.

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