

ASSESSMENT OF HOMEMAKERS' NUTRITIONAL KNOWLEDGE ON MANAGEMENT OF DIABETIC PATIENTS IN POST COVID-19 PANDEMIC IN ASABA

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Abstract

The main purpose of this study was to assess homemakers' nutritional knowledge of the management of diabetic patients in post Covid-19 pandemic. Three specific objectives and research questions guided the study. Descriptive survey was adopted. The population of the study is infinite. The purposive sampling technique was used to select 100 homemakers with their client visiting the Asaba Specialist Hospital. The instrument used for data collection was a structure questionnaire. The data collected from the field were analyzed using mean (\bar{x}) and Standard Deviation (SD) statistics for the research questions. The study revealed that the sources of homemakers knowledge include through observation, from mother, from home economics and food and nutrition studies, from local food vendors, friends, caterer and watching TV or listening to radio programs on meal preparation ($X=2.91$). Homemakers utilize bitter leave juice utilization of bitter leave juice to control or manage type 2 diabetic patients ($X=2.86$). They do not utilize vegetable from tender leaves of mango in the management of diabetes ($X=2.21$). The study concluded that homemakers nutritional knowledge sources is high even as they utilize bitter leave but not mango tree in the management of Diabetes. It was recommended that homemakers should study good books on food and nutrition as it relates to the management of diabetes. Homemaker should utilize leaves of mango tree as vegetable as the leaves and fruits extract reduce the absorption of glucose in type 2 diabetes and stimulate glycogenesis in liver causing reduction in blood glucose level.

Keywords: Diabetes, COVID 19, Homemakers

Introduction

Diabetes also known as diabetes mellitus is a variety of metabolic diseases where there is a high blood sugar level over a long period. The foremost types of diabetes mellitus are: Types 1 & 2 diabetes. Other types of diabetes include; Maturity Onset Diabetes of the Young (MODY), Latent Auto Immune Diabetes of Adult (LADA). Type 1 diabetes is also known as insulin dependent or juvenile onset diabetes mellitus and Type 2 diabetes mellitus (DM) also known as adult onset diabetes mellitus or non-insulin dependent mellitus. The type 1 diabetes or insulin-dependent diabetes is a protracted condition in which the pancreas produces little or no insulin. Insulin is a hormone needed to allow sugar (glucose) to enter cells to produce energy (World Health Organization, WHO, 2018). Different factors, including genetics and some viruses, may contribute to type 1 diabetes. Though type 1 diabetes usually appears during childhood or adolescence, it can also develop in adults. Type 2 diabetes comes about as a result of too high body weight or inactivity. In this type of diabetes mellitus, the disease process begins

with insulin resistance. Under this circumstance the cells of the body do not respond to insulin properly.

Diabetes and its complications inevitably cause high cost of treatment for the affected patients and their families. They are a cause of severe economic and psychosocial burden, especially for the poor. Regrettably, the incidence of diabetes is quite high. By 2018 almost half a billion people had diabetes worldwide (WHO, 2019). Whereas, three years earlier less than 400 million people had diabetes, and in 1980 about 100 million had the disease (WHO, 2018). The implication is that diabetes is on the rise and it is a major killer. In 2021, 6.7 million deaths worldwide was attributed to diabetes mellitus (International Diabetes Federation (IDF), 2021).

More than 5 million people have diabetes in Africa and it is expected to be 15 million people by 2025 (WHO, 2019). Diabetes mellitus is the most prevalent endocrine disorder in Nigeria. About 1.7 million Nigerians have diabetes and this number is expected to rise to 4.8 million by 2030 and Nigerians

with diabetes out number that of any other country in Africa (WHO, 2018). It is sad to note that despite the morbidity and mortality associated with diabetes mellitus the disease has no cure, so the death toll will increase especially with the breakout of COVID 19 pandemic.

Coronavirus (COVID-19) is an infectious disease that is triggered by the newly discovered coronavirus, currently called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (WHO, 2020). The world is adjusting to the effects of the COVID-19 pandemic, which began in the metropolitan city of Wuhan, China in December 2019 and with infections reaching out to about 5 million people globally (Ren, Wang & Wu, 2020). Based on available data from the World Health Organization, the figure of confirmed cases is now about 2 million and death toll due to COVID-19 worldwide has risen to hundreds of thousands (WHO, 2020). People are affected by COVID-19 in diverse ways, and most infested people will develop mild to moderate symptoms. Common symptoms include fever, tiredness, and dry cough while some people may experience aches and pains, nasal congestion, running nose, sore throat, and diarrhoea, among others. On average, it takes 5 - 6 days from when someone is infected with the virus for symptoms to show; nonetheless it can take up to 14 days (WHO, 2020). However, while COVID-19 patients are expected to recover within days of being ill, older patients and others with underlying medical conditions like diabetes and cardiovascular diseases are more likely to develop severe illness (Zhang & Dong, 2020).

Epidemiological evidence from other regions of the world severely affected by the SARS-CoV-2 infection showed that the risk of fatal outcome due to COVID-19 is approximately 50% higher in patients who suffer diabetes as co-morbidity as compared to non-diabetes (Bornstein, Rubino & Khunti, 2020). It is therefore understandable that prevention is the key in the management of diabetes post pandemic era. Critical to both prevention and treatment are nutrition/dietary modifications; here lies the inalienable role of homemakers in the prevention, management and control of diabetes mellitus.

The role nutrition play in the treatment of diabetes cannot be over emphasized. The nutritional needs of individuals differ according to their physiological

state, age and health conditions. Diabetic patients may need supplementation of insulin and they should drastically reduce the consumption of carbohydrates foods. Such patients should consume generous amounts of legumes and leafy vegetables. They should also reduce their fats and oils consumptions (Adebisi, 2017). Some nutritional remedies for managing diabetes include bitter leaf, use of tender leaves of the mango plant, protein containing food, regular exercise and black plum.

“Bitter leaf” also known as *Vernonia amydalina* is a medium sized shrub with petiolate green leaf of about 6mm diameter and elliptic in shape. This leave has found relevance in traditional folk medicine as anti helminthics, anti-malaria, anti-microbial, anti-cancer and as a laxative herb (Oguwike, Offor, Onubeze, & Nwadioha, 2019). Common names for these species include onugbu (Igbo), Ndole (cameroun), Ewuro (Yoruba), Shawaka (Hausa) (Oguntola, 2018). They are common in most West African and central African countries. Andrographolide is the main active ingredient in bitter that serves to reduce levels of glucose in the blood. The extent of homemakers’ utilization of the leave remains to be seen since it’s readily available just as mango leaves.

The use of tender leaves of mango is another way by which diabetes can be controlled. Adeniji, (2016) reported that mango leaves can successfully cure diabetes at the early stage. The researcher explained that the tender leaves of the mango tree (contain “tannis”, known as “anthocyanidins,”) could treat early diabetes and some other diseases at their early stages. The researcher indicated that the leaves could be dried and grinded into powder to treat some diseases. The most useful parts of the leaves are the tender, reddish or purplish part, while the old mango leaves, which are dark- green in colour and with pale underside, can also be dried and used. These leaves are rich in vitamins A, B and C. They are also rich in other nutrients.

A homemaker is an individual who is in charge of cooking and housekeeping. In a broader sense, homemakers may be referred to as those who are into preparation of meal such as a cook, chef and food vendors. Understandably, homemakers’ nutritional knowledge may determine the quality of the food they cook; as to whether such food would predispose to diabetes, impaired blood sugar control or be effective in the management and control of

diabetes. The other duty of a homemaker (housekeeping) entails the management of household affairs which includes shopping and payment of bills. Therefore, the duties of a homemaker essentially involves cooking and general running of the home. Since diabetes may be viewed as nutrition determined disease, it therefore means that homemakers have pivotal roles to play in the prevention, control or management of diabetes being that they purchase food items and prepare meals. If they have good nutritional knowledge concerning the management of diabetes, the implication would be that they know the right meal to prepare for their clients (diabetic patients) that would be beneficial in the management of the disease and thereby help to maintain good level of blood sugar. Also, other family members or household members would be protected against developing diabetes.

However, it appears homemakers are not adequately aware of the nutritional values of bitter leaf and mango leave in the management of diabetes especially in post COVID 19 pandemic hence the prevalence of the disease and increased death rate of patient with diabetes in our society today. Regrettably, in Delta State in particular it appears homemakers face challenges as it appears they do not have adequate knowledge of the contributions of nutritional practices as reported by America Diabetes Association (2021) with reference to COVID 19 which seems to hinder the utilization of such practices in the management of diabetes. It is baffling when one sees the crowd of diabetic patients thronging to receive treatment in the hospitals perhaps due to the ignorance of many patients and homemakers of alternative means of management of the ailment. If this trend continues unabated, the mortality rate of diabetes patients might continually be on the increase. It is against this context that the investigator assessed homemakers' nutritional knowledge on management of diabetic patients in post COVID 19 pandemic in Asaba metropolis.

Purpose of the Study

The main purpose of the study was to assess homemakers' nutritional knowledge of the management of diabetic patients in post COVID 19 pandemic. Specifically, the study sort to find out:

1. sources of knowledge of homemakers on nutritional management of diabetic patient in post COVID 19 pandemic.

2. extent of homemakers' utilization of bitter leave juice to stabilize glucose level of type 2 diabetic patients in post COVID 19 pandemic.
3. extent of homemakers' utilization of vegetable from tender leaves of mango as treatment for diabetes in post COVID 19 pandemic.

Methodology

The design adopted for this study was the descriptive survey. A descriptive survey research involves surveying people and recording their responses for analysis. It was considered appropriate for this study because the researcher simply wants to collect information on homemakers' nutritional knowledge on management of diabetes for the purpose of describing and interpreting existing conditions without any intention to manipulate the factors under investigation.

The population of the study consisted of homemakers that accompanied diabetic patients to the hospital for treatment at Asaba Specialist Hospital, Asaba. The population of the study is infinite hence researcher used homemakers accompanying diabetic patients to the diabetic clinic of Asaba Specialist Hospital. The sample of the study comprised 100 purposively sampled homemakers with their client visiting the Asaba Specialist Hospital for diabetes treatment. Simple random sampling was used to select 100 respondents.

The instrument for data collection was a questionnaire titled "Assessment of Homemakers' Nutritional Knowledge on Management of Diabetic Patients" (AHNKMDP). The questionnaire was divided into two sections. Section A of the questionnaire consists of "demographic data" of the respondents' sex. Section "B" contained 24 items generated from the three (3) research questions. The four likert type scale used for the questionnaire items as: 4 = Very High Extent; 3 = High Extent; 2 = Low Extent; 1=Very Low Extent. The breakdown of the questionnaire items shown that research question 1 had items 1 – 8; research question 2 had items 9 – 16 and research question 3 had items 17 – 24 respectively.

The instrument was validated by three experts who have been involved in the development of similar instrument. The suggestions and correction made were effected into the final draft of the instrument.

The reliability of the instrument was determined using Cronbach alpha statistics after administering the instrument to 20 homemakers visiting the Federal Medical Center, Asaba with their patient who is on treatment for diabetes. The result obtained was 0.86 which indicated that the instrument was reliable.

The researcher paid a visit to the diabetic clinic of the Asaba Specialist Hospital, Asaba and appealed to the doctors to ask the diabetic patients to come along with their homemaker at their next visit to the hospital. The researcher assured the respondents that the information given was purely for academic purpose and responses were treated with utmost confidentiality and anonymity (they did not write their names on the questionnaire). The instrument for data collection, which was the questionnaire, was

administered to the respondents (homemakers) by the researcher with the help of two research assistants to facilitate quick recovery of data. The questionnaires were retrieved by the researcher with the help of two research assistants. The data collected were analysed using mean, (x) and standard deviation (SD) statistical tools to answer all research questions. The decision rule was based on any mean (x) equal or greater than 2.50 was regarded as high extent while any mean (x) less than 2.50 was regarded as low extent.

Results

Data collected to address research question 1 were summarized in table 1. What are the sources of knowledge of Homemakers on nutritional management of diabetic patient in post COVID 19 pandemic?

Table 1: Mean and Standard on the sources of knowledge of Homemakers on nutritional management of diabetic patient

S/N	Sources of Knowledge of homemakers on nutritional management of diabetes	X	SD	Remark
1	I learnt how to prepare diabetic meals through observation of others while they cook	3.44	.72	High Extent
2	I was taught how to prepare diabetic meals by my mother	2.99	.91	High Extent
3	I learnt how to prepare meals to manage diabetes in school through subjects like home economics and food and nutrition	2.79	1.02	High Extent
4	I learnt how to prepare meals to manage diabetes by studying books on food and nutrition	2.45	.97	Low Extent
5	I was taught how to prepare diabetic meals by a local food vendor	2.88	.89	High Extent
6	I learnt how to prepare diabetic meals from my friends	2.93	.91	High Extent
7	I was taught how to prepare meals to manage diabetes by a food specialist (caterer)	2.96	.90	High Extent
8	I improved on my food preparation skills on managing diabetes by watching and listening to TV or radio programs on meal preparation.	2.81	.95	High Extent
Total		2.91	.91	High Extent

Source: Field Work (2022)

Table 1 shows that item 4 had mean score of 2.45 and standard deviation that of .97 which indicated low extent studying books on food and nutrition is a source of knowledge of homemaker on nutritional management of diabetic patient. The other items whose mean score range from 2.79 – 3.44 and standard deviation that range from 0.72 – 1.02 indicated to a high extent homemakers’ sources of knowledge on nutritional management of diabetic patient include: observation, from mother, from

home economics and food and nutrition studies, from local food vendors, friends, caterer and watching TV or listening to radio programs on meal preparation.

Data collected to address research question 2 were summarized in table 2. To what extent do homemakers utilize bitter leave juice to manage type 2 diabetes in post COVID-19 pandemic?

Table 2: Mean and Standard Deviation of homemakers' utilization of bitter leave juice to manage type 2 diabetes

S/N	Knowledge of utilization of bitter leave juice to manage diabetes	\bar{X}	SD	Remark
9	I regularly utilize bitter leave juice to manage diabetes	3.15	.88	High Extent
10	I understand the quantity of bitter leave juice to be administered to diabetic patient	2.78	.93	High Extent
11	I understand the preparation of bitter leave juice to manage diabetes	3.12	.97	High Extent
12	I am aware that bitter leaves contain andrographolide which is the main active ingredient in bitter leave that helps to reduce levels of glucose in the blood	3.09	.91	High Extent
13	I understand the right time to administer bitter leave juice to a diabetic patient	2.75	.87	High Extent
14	I understand that fresh bitter leaves are the one to be used in preparing bitter leave juice.	2.68	.84	High Extent
15	I rarely utilize bitter leave juice to manage diabetes	2.20	.85	Low Extent
16	I am aware of the importance of bitter leave juice in the management of diabetes	3.02	.92	High Extent
	Total	2.86	.90	High Extent

Source: Field Work (2022)

Table 2 shows that item (15) had mean score of 2.20 and standard deviation of 0.85 which indicated that homemakers rarely utilize bitter leave juice to manage diabetes to a low extent. The other items whose mean score range from 2.68 – 3.15 and standard deviation that range from 0.84 – 0.97

indicated to a high extent that homemaker utilize bitter leave juice to manage type 2 diabetes. Data collected to address research question 3 were summarized in table 3. To what extent do homemakers utilize the leaves of mango tree as vegetable for the management of diabetes in post COVID 19 pandemic?

Table 3: Mean and Standard Deviation of homemakers' utilization of the leaves of mango tree as vegetable for the management of diabetes

S/N	Knowledge of utilization of leaves of mango tree as vegetable for the management of diabetes?	\bar{X}	SD	Remark
17	I am aware that mango leaves have powerful antioxidant properties that have a high content of flavonoids and phenols for managing diabetes	2.48	.81	Low Extent
18	I understand the quantity of leave of mango tree as vegetable to be administered to diabetic patient	2.17	.90	Low Extent
19	I understand the preparation of leaves of mango tree as vegetable for the management of type 2 diabetes	2.09	.88	Low Extent
20	I am aware that mango leaves are rich in vitamin A	2.42	.87	Low Extent
21	I am aware that the tender leaves of mango contain tannins which are also called anthocyanin's that help in the early treatment of diabetes	2.10	.86	Low Extent
22	I am aware that mango leaves are rich in vitamin B	2.18	1.00	Low Extent
23	I am aware that mango leaves are rich in vitamin C	2.16	1.01	Low Extent
24	I often use leaves of mango tree for the management of diabetes.	2.04	.90	Low Extent
	Total	2.21	.90	Low Extent

Source: Field Work (2022)