

Self-Care Management Practices among Diabetics Attending Tertiary Hospitals in Imo East Senatorial District of Imo State

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Abstract

The purpose of the study was to ascertain the self-care management practices among diabetics attending tertiary hospitals in Imo East senatorial district of Imo State. Five research questions and four null hypotheses guided the study. The study adopted the longitudinal survey design. The population for the study comprised of 17,076 registered diabetics attending tertiary hospitals in Imo East senatorial district, Imo State. The sample for the study consisted of 400 diabetics. The proportionate sampling technique, systematic random sampling and simple random sampling without replacement were used to determine the study sample. A researcher-structured questionnaire titled Self-care management practices Questionnaire was used for data collection. Face validity of the instrument was established through constructive criticism of five experts. The reliability index of .84 was obtained using Cronbach alpha statistics. The researchers administered the instrument by hand. SPSS version 22 software and Excel were used to analyze data. The statistical tools employed for analysis include percentages, mean, standard deviation, t-test and ANOVA. The study revealed that significant differences exist among diabetics' in the adoption of self-care management practices. In addition, the study found that gender does not significantly affect the adoption of self-care management practices. Based on the findings, recommendations were made among which is that self-care management education and awareness should be increased.

Keywords: Diabetes, self-care management, health promotion, practices, Imo East

Introduction

Diabetes is the most chronic metabolic and potentially disabling medical condition that has challenged the health of all ages, races and cultures in recent times. Diabetes is increasing rapidly in every part of the world, to the extent that it has now assumed epidemic proportions (Organization for Economic Co-operation and Development-OECD, 2011). International Diabetes Foundation (IDF, 2014) estimated that 382 million people have diabetes worldwide, with Type 2 diabetes making up about 90 per cent of the cases. The increased cases of diabetes have resulted in millions of deaths. Diabetes resulted in 1.5 million deaths worldwide in 2012, making it the eighth leading cause of death (World Health Organization – WHO, 2014). In their report, WHO (2014) indicated that diabetes has tripled in the last two decades globally with the highest prevalence rates found in developing countries. Prevalence of diabetes is projected to rise to 552 million worldwide by the year 2030, representing more than 54 per cent increase in less than 20 years (WHO, 2014). In Nigeria, diabetes is associated with high morbidity and mortality, with more than five million Nigerians affected (Diabetes Association of Nigeria-DAN, 2013).

This increase in incidence of diabetes in developing countries follows the trend of urbanization and lifestyle changes perhaps most importantly a “Western –Style” diet (World Health Organization, 2006). The burden of diabetes in developing countries is doubled because of the health cost implications. Diabetes is associated with complications such as cardiovascular diseases, nephropathy, retinopathy, neuropathy, which can lead to chronic morbidities and mortalities. The occurrence of these complications can be greatly reduced through appropriate self-care management.

The American Association of Diabetes Educators (AADE) and the American Diabetes Association (ADA) emphasize that diabetes self-care management is the most important part of diabetes care (ADA, 2014). Sufficient self-care management behaviours has been revealed to lower glycosylated haemoglobin levels, improve blood glucose levels, and improve dietary habits, considered as main step to decrease the occurrence of nephropathy and retinopathy (microvascular complications) and macrovascular ones, mainly cardiovascular diseases. Self-care management practices include: blood glucose monitoring, proper nutrition, exercise,

medication, foot care blood pressure monitoring, attending patient education and counselling classes, and getting optimal macronutrients of weight loss diets (ADA, 2014; Zainab & Mohammad, 2015).

Evidences in literature (DAN, 2013; IDF, 2014) show that much progress in self-care management practices has been made in recent years worldwide, but there is still room for improvement in tackling the growing number of diabetic cases in Nigeria, Imo East Senatorial District inclusive. Successful control of diabetes will significantly contribute to the prevention of other chronic diseases such as coronary heart disease, hypertension, osteoporosis and other cardiovascular diseases. This is due to their shared risk factors, underlying determinants and opportunities for intervention. To prevent or delay the onset of Type 2 diabetes, self-care management practices must be recognised as a cornerstone in a global response to the disease burden (Hagobian & Phelan, 2013).

Self-care and health promotion

Health promotion is the process of helping people to take control over their lives so that they can choose options that are health promoting rather than those that are health risking (WHO, 2005). Health promotion seeks the development of community and individual measures, which can help people to develop lifestyles that can maintain and enhance the state of their well-being. Health promotion that aims at preventing people from developing diabetes encourages healthy lifestyle, and for diabetics facilitates proper maintenance and stability of their conditions. In this study, health promotion is the process of helping diabetics in Imo East Senatorial District to take control over their diabetic condition through good self-care management practices.

Self-care refers to individual responsibilities for healthy lifestyle behaviours necessary for human development and functioning. It also include those activities required to cope with health conditions such as diabetes. According to Orem (1995), self-care is behaviour initiated or performed by individuals on their own to safe life and promotes health. Self-care suggests that individuals use their resources, including personal attributes such as knowledge, skills, positive attitudes, determination, courage, and optimism, to improve health. Self-care includes the actions individuals and carers take for themselves, their children and their families to stay fit and maintain good physical and mental health; meet social and psychological needs; prevent illness or accidents; care for minor ailments and long-term conditions, and maintain health and well-being after an acute illness or discharge from hospital. Positive self-care behaviours includes lifestyle (diet and exercise); managing therapy (concordance); using services effectively; and being able to understand symptoms and problems and responding to them appropriately (Davis, Forbes, & Wylie-Rosett, 2009). For diabetics to manage their debilitating health conditions, self-care knowledge, attitude and skills must be translated to self-care management practices.

Self-care management is the ability of the diabetic in conjunction with family, community and healthcare professionals to manage symptoms, treatments, lifestyle changes and psychosocial, cultural, and spiritual consequences of diabetes. It is an ability and process that diabetics use in conscious attempts to gain control of their disease, rather than being controlled by it (Omisakin, & Ncama, 2011). The process of self-management includes monitoring perceived health and implementing strategies to manage treatments and medications, safety, symptoms, and other implications of chronic disease (Thorne, Paterson & Russell, 2003).

Blood pressure control, glucose monitoring, and proper foot care are important for people with the disease (ADA, 2014). Type 1 diabetes must be managed with insulin injections (WHO, 2013). Unlike type 1 diabetes, Type 2 diabetes may be treated with medications with or without insulin, while gestational diabetes disappears after parturition. Self-care management practice is an important means of promoting health of the diabetics. Self-care management practices provide and equip diabetics with knowledge and skills necessary to live through the debilitating complications of diabetes. Contextually, self-care management practices are the health promoting self-care in the management of diabetes.

Factors associated with self-care management practices

Self-care management practices could be affected by some demographic factors. McGuire (2011) posited that demographic factors such as age, gender, occupation and level of education affect health behaviours of the diabetics. Age is a marked risk factor for developing Type 2 diabetes. Reports from IDF (2011) show that societies with aging population experience have an increase in the number of people with Type 2 diabetes. The fact that glucose intolerance increases with age has been apparent for over 30 years, leading to the suggestion at one time that the diagnostic criteria for diabetes be amended to account for this inevitable consequence of the aging process (Reaven, 2011). Most aged diabetics can not exercise adequately or adapt to some self-care practices. As a result of lifestyle changes, incidence of diabetes is increasing among the younger generation (Pires-Yfantouda & Evangeli, 2012).

Gender is another veritable demographic factor that could impinge on this study owing to the fact that gestational diabetes affects only the females. Huxley (2006) opined that gender influences the development of risk factors for Type 2 diabetes. In line with this, Abdullah, Peters, Courten and Stoelwinder (2010) posited that obesity

rate in women are higher than in men. Keeling and Dain (2010) stated that gender affects health risks, access to and utilization of health care. Gender-separated data are essential to reveal the true extent of the inequalities in access to, and quality of health care for women. The influence of gender on diabetes self-care management is still a mystery in the area of the study, which this study tends to demystify.

Level of education is another important variable that can determine the self-care management practices of diabetics. Davidson (2011) stated that educated persons tend to adopt health-promoting practices more than their non-educated counterparts when they are confronted with diabetes and other chronic diseases because they are more knowledgeable on the need for healthy behaviours. Poor adherence to self-care management practices is due to poor health literacy (Chew, 2004). Educational attainment is considered a factor to health and well-being, because it enhances human capital (e.g., skills and abilities of general value) and helps people accumulate other resources that promote health and well-being (Levanger, 2010). The level of education in this study was delimited to pre-secondary school education (no formal & primary school), secondary school education and post-secondary school education.

Occupation could also influence self-care management practices of diabetics. Occupation is referred to as what the diabetics do for a living. The occupation with the level of education of the diabetics can go a long way to determine the income level. Wilkinson and Marmot (2006) noted that increased family income can positively affect the adoption of health promoting self-care management practices. Diabetics from poor families or those with no or menial occupation may have difficulties accessing health services and in paying hospital bills, conforming to nutritional directives as well as procuring some needed equipments and supplies needed for self-care.

This study was conducted in Imo East Senatorial District. The district is one of the three Senatorial Districts in Imo State, South-east of Nigeria. Imo East Senatorial District comprises of nine local government areas (Aboh Mbaise, Ahiazu Mbaise, Ezinihitte Mbaise, Ikeduru, Mbaitolu, Ngor-Okpala, Owerri Municipal, Owerri North and Owerri West). The inhabitants are predominantly farmers, traders and civil servants. Tertiary health care facilities in Imo East Senatorial District (Federal Medical Centre, Owerri and Specialist Hospital, Umuagwo) provide services and care for the diabetics in the area. Urbanization and westernization of cultures are the chief detrimental factors that influence the risk factors among diabetics (Al-Moosa, Allin, Jemiai, Al-Lawati, & Mossialos, 2006).

Health educators and diabetes educators are utilizing awareness campaigns in order to educate people on how to guard themselves against diabetes; and help those already affected by the disease. Those who already have diabetes are advised to imbibe self-care management practices and adopt lifestyles that will not aggravate the disease. Many studies have been conducted on patterns, severity, causes, incidences and prevalence, and many other aspects of diabetes. Yet, annual reports from DAN (2013) and IDF (2014) show increase in the cases of diabetes (Type 2 diabetes) in Nigeria and worldwide respectively. According to Adefemi (2009), the increasing number of people with diabetes in Nigeria is an indication that the disease is spreading widely and silently in the country. World Health Organization (2013) documented the teeming rate of NCDs in Africa during the Sixty-sixth World Health Assembly and the need for prevention and health promotion. During the proceedings, diabetes was extensively discussed which show that it has gained global concern. This study investigated the self-care management practices among diabetics attending tertiary hospitals in Imo East Senatorial District of Imo State.

Purpose of the Study

The purpose of the study is to determine the self-care management practices among diabetics attending tertiary hospitals in Imo East Senatorial District of Imo State. Specifically, the study determined the:

1. self-care management practices adopted by diabetics;
2. self-care management practices of diabetics based on age;
3. self-care management practices of male and female diabetics’;
4. self-care management practices of diabetics based on occupation; and
5. self-care management practices of diabetics’ of varied level of education.

Hypotheses

The following null hypotheses were postulated and tested at .05 level of significance.

1. There is no statistically significant difference in the self-care management practices of diabetics based on gender.
2. There is no statistically significant difference in the self-care management practices of diabetics based on age.
3. There is no statistically significant difference in the self-care management practices of diabetics based on occupation.

4. There is no statistically significant difference in the self-care management practices of diabetics based on educational level.

Methods and Materials

The study adopted the cross-sectional survey research design. This design was considered appropriate because the entire sample could not be reached in one contact. The study was conducted in Imo East Senatorial District from September 2014 to February, 2015. Imo East senatorial district houses nine local government areas with two tertiary hospitals. These tertiary hospitals are Federal Medical Centre, Owerri and Specialist Hospital, Umuguma. The population for the study comprised of 17,076 registered diabetics attending tertiary hospitals in Imo East senatorial district, Imo State. (This data was from the Health Records Department, FMC, Owerri, 2014 and Health Records, Umuguma, 2014).

The sample for the study consisted of 400 diabetics. The proportionate sampling technique was used to draw the sample from the hospitals based on their population. This ensured proper representation of the hospitals. Then, systematic random sampling was used to select the respondents using their daily attendance register. This technique was employed consecutively for four weeks to ensure that every diabetic has the chance of being sampled. Already sampled persons after the first week were invalidated when sampled the second time.

Researcher-structured questionnaire titled Self-care Management Practices Questionnaire was used for data collection. It consisted of two sections (A & B). Section A was on selected demographic variables for the study (gender, age, occupation and level of education), while section B consisted of questions on some self-care management practices for diabetics. Five experts validated the instrument. Three experts were from Department of Human Kinetics and Health Education, University of Nigeria Nsukka; two came from Federal Medical Centre. The experts' constructive criticisms, corrections and suggestions were used to modify and improve the instruments before it was used for the present study. Cronbach alpha was utilized to determine the internal consistency since the items were polychotomously scored. The reliability index of .84 was obtained, and adjudged reliable for the study using Zikmund and Babin (2012) criterion of .70 and above as good reliability.

The researchers administered four hundred copies of the questionnaire to the respondents by hand. Out of the 400 copies of the questionnaire that were administered, 387 were properly and duly filled out, and were used for data analysis. This yielded a return rate of 96.75 per cent. International Business Machine Statistical Package for Social Sciences (IBM SPSS version 22) software and Excel 2013 version were used to analyze data. The analysis was done by calculating percentages, proportions, mean and standard deviation. Five-option likert type of daily, 2-4 times a week; 1-4 times in a month; few times a year and Never were used at the scales of 1, 2, 3, 4 and 0 respectively. Limit of numbers were used to report the extent of self-care management practices (0-1.9= low extent, 2.0-2.9=moderate extent; 3.0-3.9= High extent), where as criterion mean of (3.0) was arbitrarily used. The differences between self-care management practices of diabetics and gender was tested using t-test, while age, level of education and occupation were tested using Analysis of Variance (ANOVA) statistics at .05 alpha level.

Results

Table 1: Extent of Adoption of Self-Care Management Practices among Diabetics (n=387)

S/n	Item statement	Yes f (%)	If Yes, at what extent?				No f (%)	\bar{x}	SD	Remarks
			Daily	2-4 times in a week	1-4 times in a month	Few times in a year				
1	Attend patient education classes?	342 (88.4)	99 (25.6)	78 (20.2)	93 (24.0)	72 (18.6)	45 (11.6)	2.71	1.34	ME
2	Measure and monitor your blood glucose level?	384 (89.9)	66 (17.1)	114 (29.5)	87 (22.5)	81 (20.9)	39 (10.1)	2.78	1.24	ME
3	Measure and monitor your blood pressure?	306 (79.1)	45 (11.6)	105 (27.1)	114 (29.5)	42 (10.9)	81 (20.9)	3.02	1.30	HE
4	Receive nutrition therapy?	327 (84.5)	63 (16.3)	117 (30.2)	75 (19.4)	72 (18.6)	60 (15.5)	2.87	1.32	ME
5	Engage in physical activity?	306 (79.1)	54 (14.0)	69 (17.8)	93 (24.0)	90 (23.3)	81 (20.9)	3.19	1.33	HE

6	Take care of your foot?	300 (77.5)	51 (13.2)	69 (17.8)	105 (27.1)	75 (19.4)	87 (22.5)	3.20	1.33	HE
7	Get optimal macronutrients of weight loss diets?	321 (82.9)	96 (24.8)	87 (22.5)	81 (20.9)	57 (14.7)	66 (17.1)	2.77	1.41	ME

ME= moderate extent; HE= High Extent,

Table 1 indicates that diabetics attending tertiary hospitals in Imo East Senatorial District measure and monitor their blood pressure (\bar{x} =3.02, SD =1.30), engage in physical activities (\bar{x} =3.19, SD =1.33) and take care of their foot (\bar{x} =3.20, SD =1.33) to a high extent. Other self-care management practices were moderately adopted.

Table 2: Self-care management practices of Diabetics by Age (n=387)

Item No.	Self-care Management Practices	\bar{x}_1	\bar{x}_2	\bar{x}_3	\bar{x}_g	SD_g	F-cal	p-val	Remark	
		(127)	(141)	(119)					\bar{x}_g	F-cal
As a diabetic, Do you::										
1	Attend patient education classes?	2.4	3.1	2.5	2.7	1.3	10.63	.000	D	S
2	Measure and monitor your blood glucose level?	2.5	3.0	2.8	2.8	1.2	5.105	.006	D	S
3	Measure and monitor your blood pressure?	2.7	3.2	3.2	3.0	1.3	7.704	.001	A	S
4	Receive nutrition therapy?	2.8	3.1	2.6	2.9	1.3	6.396	.002	D	S
5	Engage in physical activity?	3.2	3.4	2.9	3.2	1.3	6.150	.002	A	S
6	Take care of your foot?	3.3	3.4	2.9	3.2	1.3	3.714	.025	A	S
7	Get optimal macronutrients of weight loss diets?	2.6	3.1	2.5	2.8	1.4	6.788	.001	D	S

\bar{x}_1 = mean for diabetics aged 13-30 years; \bar{x}_2 = mean for diabetics aged 31-49 years; \bar{x}_3 = mean for diabetics aged 50 years and above; \bar{x}_g = grand mean; df = 384; S= significant; α =0.05

Table 2 reveals that significant differences exist in diabetics of all age's adoption of self-care management practices in 1-7 statements. The table further shows that most diabetics aged 31 – 49 adopted all the items more than others except on measure and monitor of blood glucose level where they have same mean score with diabetics aged \geq 50 years (31 -49 years = \bar{x} = 3.2; \geq 50 years = \bar{x} =3.2; 13-30 years= \bar{x} =2.7).

Table 3: Differences in the mean self-care management practices of male and female diabetics. (n=387)

Item No.	Self-care management practices	\bar{x}_1	\bar{x}_2	\bar{x}_g	SD_g	t-test	p-val	Remark		
		(168)	(219)					\bar{x}_g	t-test	
Most diabetics:										
1	Attend patient education classes?	2.8	2.7	2.7	1.3	.879	.380	D	NS	
2	Measure and monitor your blood glucose level?	2.8	2.8	2.8	1.3	.228	.820	D	NS	
3	Measure and monitor your blood pressure?	3.1	2.9	3.0	1.3	1.83	.068	A	NS	
4	Receive nutrition therapy?	2.8	2.9	2.9	1.4	-.998	.319	D	NS	
5	Engage in physical activity?	3.1	3.3	3.2	1.3	-.742	.082	A	NS	
6	Take care of your foot?	3.2	3.2	3.2	1.3	-.452	.651	A	NS	
7	Get optimal macronutrients of weight loss diets?	2.7	2.8	2.8	1.4	-.575	.566	D	NS	

\bar{x}_1 = mean for males; \bar{x}_2 = mean for females; \bar{x}_g = grand mean; SD_g = standard deviation; A= Agree; D=Disagree; NS= Not Significant; α = 0.05

Table 3 shows that no significant differences exist in male and female diabetics' adoption of self-care management practices with regard to all the items. This implies that gender does not affect the adoption of self-care management practices.

Table 4: Self-care management practices of Diabetics by Occupation. (n=387)

Item No.	Self-care Management Practices	\bar{x}_1	\bar{x}_2	\bar{x}_3	\bar{x}_4	\bar{x}_g	SD _g	F-cal	p	Remark	
		(88)	(90)	(60)	(149)					\bar{x}_g	F-cal
As a diabetic, Do you::											
1	Attend patient education classes?	2.4	2.6	2.9	2.8	2.7	1.3	2.430	.065	D	NS
2	Measure and monitor your blood glucose level?	2.6	2.6	2.8	3.3	2.8	1.2	4.777	.003	D	S
3	Measure and monitor your blood pressure?	3.1	3.1	2.8	3.3	3.0	1.3	1.734	.159	A	NS
4	Receive nutrition therapy?	2.6	2.8	3.0	3.1	2.9	1.3	2.781	.041	D	S
5	Engage in physical activity?	3.0	3.2	3.4	3.0	3.2	1.3	2.985	.031	A	S
6	Take care of your foot?	3.0	3.1	3.5	3.0	3.2	1.3	4.724	.003	A	S
7	Get optimal macronutrients of weight loss diets?	2.5	2.5	3.0	3.0	2.8	1.4	2.907	.035	D	S

\bar{x}_1 = mean for diabetic civil servants; \bar{x}_2 = mean for diabetic business/traders; \bar{x}_3 = mean for diabetic artisans; \bar{x}_4 = mean for unemployed/retired diabetics; \bar{x}_g = grand mean; NS= Not significant; S= Significant

Table 4 shows that significant differences exist in self-care management practices in five out of the seven statements. The differences are with regard to most diabetics measuring and monitoring glucose level, receiving nutrition therapy, taking care of their foot, engaging in physical activity and getting optimal macronutrients of weight loss diets. All occupations engage in physical activity and foot care. Artisans did not measure and monitor their blood pressure ($\bar{x} = 2.8$) as they ought to. Only the unemployed/retired diabetics measured and monitored their glucose level ($\bar{x} = 3.3$) appropriately.

Table 5: Self-care management practices of Diabetics by Level of Education (N=387)

Item No.	Self-care management practices	\bar{x}_1	\bar{x}_2	\bar{x}_3	\bar{x}_g	F-cal	p	Remark	
		(36)	(105)	(246)				\bar{x}_g	F-cal
As a diabetic, Do you::									
1	Attend patient education classes?	2.9	2.5	2.8	2.7	1.699	.184	D	NS
2	Measure and monitor your blood glucose level?	2.5	2.7	2.9	2.8	1.653	.193	D	S
3	Measure and monitor your blood pressure?	2.5	3.2	3.0	3.0	4.318	.014	A	S
4	Receive nutrition therapy?	2.9	2.6	3.0	2.9	2.406	.092	D	NS
5	Engage in physical activity?	2.9	3.4	3.1	3.2	2.208	.111	A	NS
6	Take care of your foot?	3.2	2.8	3.4	3.2	7.215	.001	A	S
7	Get optimal macronutrients of weight loss diets?	3.3	2.7	2.7	2.8	2.353	.096	D	NS

\bar{x}_1 = mean for diabetics whose highest educational level was pre-secondary education; \bar{x}_2 = mean for diabetics whose highest educational level was secondary education; \bar{x}_3 = mean for diabetics whose highest educational level was post secondary education; \bar{x}_g = grand mean

Table 5 shows that significant differences exist among diabetics of various level of education with regards to self-care management practices in three out of the seven statements. The differences are with statements that most diabetics; measure and monitor their blood glucose level and blood pressure, and take care of their foot. The table further shows that only diabetics with pre-secondary education failed to measure and monitor their blood pressures ($\bar{x} = 2.5$) and participate in physical activities ($\bar{x} = 2.9$) while others did optimally. Only diabetics with post secondary education received nutrition therapy ($\bar{x} = 3.0$) averagely.

Discussions

Table 1 show out that diabetics attending tertiary hospitals measure and monitor their blood pressure (\bar{x} =3.02, SD=1.30), engage in physical activities (\bar{x} =3.19, SD=1.33) and take care of their foot (\bar{x} =3.20, SD=1.33) to a high extent. This finding was partly anticipated. This is because it was anticipated that the diabetics should take matters of their healthcare very serious. However, diabetics were expected to have routine glucose check daily or weekly at most. Responses on the items: measure and monitor blood glucose level (\bar{x} = 2.78) and attend patient education classes (\bar{x} = 2.86) were moderately attended to. This finding was not satisfying. The researchers expected a high extent, instead of the moderate. Extent of adoption of blood glucose monitoring is very essential for every

diabetic. The reason for this finding could be because of healthcare professionals' nonchalant attitude to self-care. Feleke and Enquselassie (2005) found out that: only 21 per cent of patients had access to blood glucose monitoring at the same health institutions; the emphasis given for diabetic education (24%) was less than expected; only 5 per cent of diabetes patients were able to do self blood glucose monitoring at home.

Self-care management practices such as blood glucose monitoring for people with newly diagnosed Type 2 diabetes was recommended by the British National Health Service in 2008. However, the benefit of self-monitoring in those not using multi-dose insulin is questionable (Farmer, Perera, Ward, Heneghan, Oke, Barnett, Davidson, Guerci, Coates, Schwedes & O'Malley, 2012). Ripsin, Kang and Urban (2009) stated that management of Type 2 diabetes should focus on lifestyle interventions, lowering other cardiovascular risk factors, and maintaining blood glucose levels in the normal range. These are achieved optimally through self-care management education (nutrition therapy sessions and patient education classes) and self-care management practices (foot care, measure and monitor of blood glucose and pressure).

The findings in Table 2 showed that females engaged in physical activities slightly more than males (males \bar{x} = 3.1; females \bar{x} = 3.3). This is both shocking and astounding. However, the finding was at variance with the works of Zainab and Mohammed (2015) who found that male patients perform exercise more regularly than female patients do. The analysis of variance of the data in Table 2 showed that there was no significant difference on all self-care management practices of the diabetics based on gender. Contrariwise, Wright, O'flynn and Macdonald (2006) reported that females were more cautious in their healthy lifestyle practices than males, particularly in nutrition and routine exercise.

Results in Table 3 revealed that older participants reported performing exercise (13-30 years \bar{x} = 3.2; 31-49 years \bar{x} = 3.4; \geq 50 years \bar{x} =2.9) and foot care (13-30 years \bar{x} = 3.3; 31-49 years \bar{x} = 3.4; \geq 50 years \bar{x} =2.9) less frequently than younger participants. This finding was expected and not surprising because the middle adulthood is the best time for self-management. People organize themselves at this period to get married, put some projects in place and attain greater heights in one's profession. Therefore, it calls for more precision in organizational and management skills. This finding lends credence to the findings of Zainab and Mohammad (2015) but is at variance other researches of Xu, Pan and Liu (2010) and Yamashita, Kart, and Noe (2012). The justification of this could be related to the fact that older participants have other chronic diseases and diabetes complications that make it difficult for them to perform diabetes self care management behaviors such as physical exercise and foot care. Data in Table 3 further showed that there was significant difference on all diabetic self-care management practices based on age. This finding is very surprising because it was expected that all ages should not differ in self-care management practices since they all attended patient education classes, received nutrition therapy and engaged in physical activities as reported earlier. This can be explained better with theory of planned behaviour. This theory opines that changes in behaviour come from tailored and planned behaviour. The actions lead to desirable outcome which is change in behaviour. In this context, the diabetics in Imo East Senatorial District have positive attitude to behaviour (attend patient classes, receive nutrition therapy, measure and monitor blood glucose and blood pressure etc.). They are also motivated to comply (subjective norm) to the behavioural intention of adopting the health promoting practices (Prochaska, & Norcross, 2001). It is worthy of note that all the diabetics used in this study have gone beyond the pre-contemplation stage, because they all seek professional care.

Concerning occupation of the diabetics in the study as indicated in Table 4, unemployed/retired diabetics measured and monitored their glucose level (\bar{x} = 3.3) above the benchmark. This finding is expected because the more independent and less tasking a job/occupation is, the more quality time the patient has for his/her treatment. Civil service came last probably because civil servants need to get clearance and approval from their superiors in order to attend patient classes, go for nutrition therapy and engage in physical exercises. All the same, this finding is in tandem with Tan and Magarey (2008) who found that employed patients have constraint to diabetes self care management practices. Table 4 indicated that there was significant difference on self-care management practices (receiving nutrition therapy, blood glucose monitoring, physical activity participation, foot care and getting weight loss diets) of diabetics based on occupations. This finding is not surprising as some private firms do not allow their employees to take adequate care of their health. This calls for redress. Policy makers can come up with strategies to help every diabetic get self-care and manage the debilitating problems that are associated with it.

Data in Table 5 showed that only diabetics with post secondary education (\bar{x} = 3.0) attending tertiary hospitals measured and monitored their blood pressure (\bar{x} = 3.0) and receive nutrition therapy (\bar{x} = 3.0) as supposed. Diabetics with only pre-secondary education got optimal macronutrients of weight loss diets (\bar{x} = 3.0). It is very surprising to find out that pre-secondary education adopted self-care management practices more than the secondary education. Plethora of studies discovered a correlation between self-care management practices and level of education (Tan & Magarey, 2008; Omisakin & Ncama, 2011). Table 5 further showed that there was significant difference on the foot-care management practices of diabetics based on educational level (F = 7.215, P = .001 > .05). This finding is intriguing because the researchers conceived that educational level ought not to be

significant with foot-care management practices. Diabetics, educated or not feels the numbness in the feet. One does not require a soothsayer to remind him or her to take charge of the foot to avoid loosing the feet to neuropathy.

Recommendations

Based on the findings, the following recommendations were made.

1. Self-care management education and awareness should be increased by health educators and other allied health professionals to promote good diabetic care.
2. The public should be empowered so as to be able to make healthy behavioural choices, equipped with appropriate skills to interact effectively with healthcare services, and provided with opportunities to assume responsibility and participate in self-care.

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