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Lifestyle Adjustment and Counselling Needs of People Living with Diabetes in Jos Metropolis

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Abstract
This study adopted survey design to examine the lifestyle adjustment and counselling needs of people living with diabetes in Jos Metropolis. It was guided by six research questions and one hypothesis tested at 0.05 level of significance. The population of the study comprised all people living with diabetes in Jos Metropolis. 122 males and 220 females participated in the study. They were selected through purposive and accidental sampling techniques. A 60-item instrument titled "Lifestyle Adjustment and Counselling Needs of People Living with Diabetes Questionnaire (LACNDQ)" was developed by the researchers, and used to collect data. The instrument was face validated by two experts from Educational Foundations, Faculty of Education, University of Jos. Cronbach alpha statistics was used to obtain reliability coefficient of 0.76 index using 20 diabetes patients outside the study area. The finding of the study revealed the lifestyle changes and counselling needs of the people living with diabetes in Jos Metropolis, and that gender is not a significant factor on their counselling needs. It was therefore recommended among others that government and NGOs should establish functional counselling centres in all communities for the provision of appropriate counselling services.
Keywords: lifestyle, adjustment, counselling, mental, diabetes

Introduction
Diabetes also called diabetes mellitus is a group of diseases that result in too much sugar in the blood (high blood glucose). Diabetes is a term used for several conditions affecting how the human body turns food into energy. An inability to take up sugars (glucose) from food into the cells of the body in order to produce energy, leads to a buildup of sugars in human blood. If not controlled properly, diabetes can harm both large and small blood vessels leading to diseases in different parts of the body, including the heart, kidneys, eyes, and nerves. World Health Organization (WHO) (2021) defines diabetes as a chronic

disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. It moves sugar from the blood into one's cells to be stored.

Diabetes mellitus, according to Malathy *et al*. (2011), is a group of metabolic disorders characterized by hyperglycemia. Diabetes is associated with abnormalities in carbohydrate, fat and protein metabolism and results in chronic complication including microvascular, macrovascular, and neuropathic disorders (Stephen & Daryl, 2001). The prevalence of diabetes has risen dramatically over the years. It is estimated that the prevalence of diabetes in adults worldwide will rise to 5.5% in 2025 (as compared to 4% in year 1995), with Nigeria contributing the major part (WHO, 2021). In 2019, diabetes was the ninth leading cause of death with an estimated 1.5 million deaths directly caused by diabetes (WHO, 2021). Many causes have been postulated for the rise in the number of cases, including urbanization, sedentary lifestyles, poor nutrition and obesity. Type 2 diabetes is primarily the result of cells in muscle, fat and the liver becoming resistant to insulin. These cells do not interact in a normal way with insulin; as a result they do not take in enough sugar. If the pancreas is unable to produce enough insulin to manage blood sugar levels, diabetes can occur. Inactivity is believed to be one of the causes of diabetes. Genetic and environmental factors are also believed to play a role in the development of diabetes. Family history of diabetes can be among the causes of diabetes. Age is a factor in the development of diabetes, as well as pregnancy. People with obstructive sleep apnea have an increased risk of insulin resistance (Mayo Clinic, 2022).

There are different types of diabetes. According to the Centres for Disease Control and Prevention (CDC, 2020), the most common types of diabetes include:

a) Type 1 diabetes: This type is an autoimmune disease, meaning the body attacks itself. The immune system attacks and destroys cells in the pancreas, where insulin is made. Up to 10% of people who have diabetes have type 1. It is usually diagnosed in children and young adults (but can develop at any age). It was once known as "juvenile" diabetes. People with Type 1 diabetes need to take insulin every day. This is why it is also called insulin-dependent diabetes (Folaranmi, 2013).

b) Type 2 diabetes: Type 2 diabetes occurs when an individual's body becomes resistant to insulin, and sugar builds up in the blood. It also occurs when the body does not make enough insulin. This is the most common type of diabetes. Up to 95% of people with diabetes have Type 2 (Cleveland Clinic, 2022). It usually occurs in middle-aged and older people. Other common names for Type 2 include adult-onset diabetes and insulin-resistant diabetes. It is also called "having a touch of sugar" (Abdulazeez *et al.*, 2014).

c) Pre-diabetes: This type is the stage before Type 2 diabetes. Pre-diabetes occurs when an individual's blood sugar is higher than normal, but not high enough to be officially diagnosed with Type 2 diabetes.

d) Gestational diabetes: Gestational diabetes is high blood sugar during pregnancy. This type develops in some women during their pregnancy. Insulin-blocking hormones produced by the placenta cause this type of diabetes. Gestational diabetes usually goes away after pregnancy. However if one has gestational diabetes, one is at higher risk of developing Type 2 diabetes later on in life (CDC, 2020; Wood, 2021).

Less common types of diabetes include:

a) Monogenic diabetes syndromes: These are rare and inherited forms of diabetes accounting for up to 45 of all cases. Examples are neonatal diabetes and maturity-related diabetes of the young.

b) Cystic fibrosis-related diabetes: This is a form of diabetes specific to people with this disease.

c) Drug or chemical-induced diabetes: Examples of this type happen after organ transplant, following HIV/AIDS treatment or are associated with glucocorticoid steroid use (Jansirani, 2013).

Each type of diabetes has unique symptoms. Diabetes symptoms are caused by rising blood sugar. The general symptoms of diabetes include: increased hunger and thirst, weak, tired feeling, blurred vision, numbness or tingling in the hands or feet, and slow-healing sores or cuts. Others are unplanned weight loss, frequent urination, frequent unexplained infections, and dry mouth. In addition to the general symptoms of diabetes, men with diabetes may have a decreased sex drive, erectile dysfunction, and poor muscle strength. Women with diabetes can also have symptoms such as dry and itchy skin and frequent yeast infections or urinary tract infections.

International Diabetes Association (2020) outlined the following risk factors associated with diabetes to include family history of diabetes, overweight, unhealthy diet, physical inactivity, increasing age, and high blood pressure. Others include ethnicity, impaired glucose tolerance, history of gestational diabetes, having polycystic ovary syndrome, having a history of heart disease, and being a smoker.

Complications associated with diabetes include cardiovascular issues including coronary artery disease, chest pain, heart attack, stroke, high blood pressure, high cholesterol, atherosclerosis (narrowing of the arteries); nerve damage (neuropathy) that causes numbing and tingling that starts at toes or fingers then spreads; kidney damage (nephropathy) that can lead to kidney failure or the need for dialysis or transplant; and eye damage (retinopathy) that can lead to blindness; cataracts, glaucoma. Others include foot damage including nerve damage, poor blood flow and poor healing of cuts and sores; skin infections; erectile dysfunction; hearing loss; depression; dementia; and dental problems (National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK, 2021).

Diabetes is diagnosed and managed by checking the body's glucose level in a blood test. There are three tests that can measure an individual's blood glucose level. These include: fasting plasma glucose test, which is best done in the morning after an eight hour fast. Secondly, random plasma glucose test can be done anytime without the need to fast. Thirdly, AIC a blood test which is also called HbAIC or glycated hemoglobin test, provides an individual's average blood glucose level over the past two to three months. This test measures the amount of glucose attached to hemoglobin, the protein in the red blood cells that carries oxygen. This type of test does not need fasting. Also, oral glucose tolerance test can be done. In this test, blood glucose level is first measured after an

overnight fast. A sugary drink can then be drunk. The blood glucose level is then checked at hours one, two and three (International Diabetes Federation, 2015).

To best mange diabetes, one needs to take steps to keep the risk factor under control and within the normal range, such as keeping blood glucose levels as near to normal as possible by following a diet plan, taking prescribed medication and increasing one's activity level. This can be achieved by planning what to eat and following a healthy meal plan as Mediterranean diet (vegetables, whole grains, beans, fruits, healthy fats, low sugar) or DASH diet. These diets are high in nutrition and fibre and low in fats and calories. It can also be managed by exercising regularly and losing weight if overweight. Maintenance of blood cholesterol (HDL and LDR levels) and triglyceride levels as near the normal ranges as possible, taking medication and insulin, if prescribed, and closely following recommendations on how and when to take it and also controlling the blood pressure by monitoring the blood glucose and blood pressure levels at home, are effective management strategies. Also, getting an adequate amount of sleep (typically 7 to 9 hours), keeping appointments with healthcare providers and having laboratory test completed as ordered by the physician, quitting smoking (if one smokes), and refraining from drinking excessive amounts of alcohol are other management options available (Wood, 2021).

Some basic principles in the prevention of diabetes include getting at least 150 minutes per week of aerobic exercise, such as walking or cycling, cutting saturated and trans fats, along with refined carbohydrates out of one's diet, eating more fruits, vegetables, and whole grains, eating smaller portions, and trying to lose 7% body weight if overweight. Avoiding tobacco use, medication and regular screening can help delay diabetes and its consequences (Health Line, 2022). Other ways are population-based interventions. These population based programmes aimed at modifiable risk factors that can reduce the incident of diabetes while also lowering blood pressure and other cardiovascular risk factors (WHO, 2016a). Actions to address over-weight and obesity are critical to preventing type 2 diabetes by promoting healthy diet and physical activity (WHO Global Report on Diabetes, 2016b). Population-level intervention to reduce tobacco use through a set of legislative, regulatory, fiscal and educational measures may contribute to prevention of diabetes. Supportive environments for physical actions such as sports, recreation and leisure facilities also helps in the prevention of diabetes. More so, settings based intervention, according to WHO Global Report on Diabetes (2016b), can support diabetes prevention and control.

Counselling needs of people with diabetes is very important because it will help in the management of the disease, and also help new diabetes patients understand how diet can help control diabetes and its complications. Counselling gives diabetes patients a chance to identify and work through problems with a trained counsellor. Yusuf and Abubakar (2017) suggested that diabetes patients should be helped to take rational control of their feelings and reactions. Ahikpe (2012) reported that mental health counselling gives the opportunity to the client and the enabling environment to discuss freely with the counsellor. Wellness counselling has been described as counselling services sought by people who are in distress, who wish to discuss and resolve their health problems in a

relationship that is more disciplined and perhaps less stigmatizing than helping relationship offered in traditional and medical setting. Describing wellness counselling, British Association of Counsellors (2012) related some of the aspects of wellness counselling as nutrition and mental health counselling. Diabetes is a disease with associated risks, new medication, and a new lifestyle. Eating a healthier diet is among the most important lifestyle component of managing the disease. Nutrition counselling is a supportive resource. Walton et al. (2010) opine that a focus on nutrition counselling as a workplace wellness is the starting point when people are on the pathway to maximizing diabetes health. Nutrition counselling is a supportive resource in helping diabetes patients to make healthier choices, identify problems and gaps in their nutrition and suggest ways to incorporate healthy foods, dressing and physical activities (Allison, 2021; Glasier, 2016). In nutrition counselling, the counsellor discusses client's current lifestyle changes, such as losing weight, eating healthy and engaging in regular, moderate physical activity, set realistic health goals and could refer client to registered nutritionist who can help if there is need for detailed nutritional plan.

Lifestyle refers to the way a diabetes patient lives including learning skills to live a fulfilling life, reducing struggle with diabetes, eating and drinking habits, taking diabetes medications as prescribed, physical activity, and regular screening. Foster's (2004) hormonal system of naturalistic approach to illness is in agreement with this, as the concept holds that maintaining hormonal balance in illness involves attention to diet and activity including regulating one's diet according to one's illness.

Mental health counselling is the process of helping the diabetes patients to achieve cognitive, behavioural and emotional wellbeing in which they acquire full awareness of their condition, realize their own abilities to cope with the stress of life and live satisfactorily. Therefore, the psychological therapies include Cognitive Behavioural Therapy (CBT); Mindfulness Based Cognitive Therapy (MBCT); and Cognitive Analytic Therapy (CAT). Cognitive behavioural therapy is a form of psychotherapy that can be helpful in overcoming negative thought and behaviour. The purpose of CBT is to change how diabetes patients think about the situations they find themselves in and take positive actions. Mindfulness based cognitive behavioural therapy is specifically developed to change the way diabetes patients perceive their experience of life, rather than attending anxieties about the future. Mindfulness-based cognitive therapy is designed to help diabetes patients come out of depression and chronic unhappiness. It is defined as the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to things as they are. Cognitive analytic therapy helps diabetes patients to understand problems linked to the past that are affecting them now and looks to improve their ability to cope with situations in the present and future (BAC, 2012).

Objectives of the study

The following are the objectives of the study: To

1. Determine the causes of diabetes in Jos Metropolis.

2. Identify the risk factors associated with diabetes among the people in Jos Metropolis.
3. Ascertain the complications associated with diabetes among the people in Jos Metropolis.
4. Access the control measures of diabetes in Jos Metropolis.
5. Discover the prevention measures of diabetes in Jos Metropolis.
6. Find out the lifestyle changes in terms of nutrition for improved diabetics' health among diabetes patients in Jos Metropolis.
7. Ascertain the counselling needs facilitating the lifestyle changes for optimal diabetics' health.

Research questions

The following research questions were answered in the course of the study:

1. What are the causes of diabetes among the people in Jos Metropolis?
2. What are the possible complications associated with diabetes among the people in Jos Metropolis?
3. How is diabetes managed in Jos Metropolis?
4. What are the prevention measures for diabetes in Jos Metropolis?
5. What are the lifestyle changes in term of nutrition for improved diabetics' health?
6. What are the counselling needs facilitating the lifestyle changes for optimal diabetics' health?

Hypothesis

Ho1: There is no significant difference in the mean ratings of male and female participants on the counselling needs of people living with diabetes in Jos metropolis.

Methodology

The study adopted descriptive survey research design. It investigated the lifestyle adjustment and counselling needs of people living with diabetes in Jos Metropolis, Nigeria. This design was deemed appropriate for the study because its focus was to investigate a phenomenon that is in existence, upon which the researchers have no influence. Kothari and Gaurav (2016) assert that the main purpose of descriptive research is to describe the state of affairs as it presently exists and that the researcher has no control over the variables; he can only report what is happening. The target population of this study comprised all diabetes patients in Jos Metropolis, Plateau State. The purposive and accidental sampling techniques were adopted, as only diabetes patients that were readily accessible were selected. Akinade and Owolabi (2011) observe that accidental sampling method involves selecting individuals that are readily available at the point of study. The sample size for the study is 342 respondents.

An instrument titled "Lifestyle Adjustment and Counselling Needs of people living with Diabetes Questionnaire (LACNDQ)" was developed by the researchers. It contains two sections of "A and B". Section 'A' contains demographic variables, while section 'B' comprises of items to elicit respondents' views on how they perceive and feel towards diabetes mellitus. The respondents were required to respond to the items of the LACNDQ

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on a four-point scale of "Strongly Agree" (SA), "Agree" (A), "Disagree" (D) and Strongly Disagree (SD). Sections 'B' consists of sixty positively worded items to be responded to. The response modes for the questionnaire were Strongly Agree (4 points), Agree (3 points), Disagree (2 points) and Strongly Disagree (1 point). In determining the level of agreement toward any given behaviour as constituting diabetes, the criterion mean of 2.5 was used to make decisions; any behaviour with mean below 2.5 will be termed not accepted by the respondents as constituting diabetes, while any with a mean above 2.5 shows it is accepted as diabetes.

The content validity of the items were verified by two experts in Counselling Psychology, Research, Measurement and Evaluation units, all in the Department of Educational Foundations, University of Jos. The reliability of the instrument was analyzed applying Cronbah Alpha, using SPSS versions 22 and the reliability coefficient of the instrument was 0.76. For the purpose of answering the research questions, descriptive statistics of mean, standard deviation, frequency counts and percentages were used, while t-test for independent samples was used to test the null hypothesis at 0.05 level of significance.

Presentation of results

Research question one: What are the causes of diabetes among people in Jos Metropolis?

Table 1: Causes of diabetes as rated by the respondents in Jos metropolis

S/N	Causes of diabetes	N	Mean	Std	Agree Frequency and %
1.	Urbanization	342	2.97	0.98	258(75.4%)
2.	Sedentary lifestyles	342	2.99	0.90	266(77.8%)
3.	Poor nutrition	342	3.52	0.79	259(75.5%)
4.	Obesity	342	2.99	0.90	266(75.5%)
5.	Cells in muscles becoming resistant to insulin	342	3.01	0.94	267(78.1%)
6.	Inactivity	342	2.68	1.21	216(63.1%)
7.	Genetic factors	342	3.90	0.08	296(88.3%)
8.	Environmental factors	342	3.80	0.40	294(86.0%)
9.	Family history	342	3.15	0.83	289(84.5%)
10	Sleep apnea	342	3.15	0.83	289(84.5%)
11	Age	342	2.97	0.98	258(75.4%)
12	Pregnancy	342	2.68	1.21	216(63.1%)

Criterion mean = 2.50

Table 1 presents the mean scores and standard deviation of the responses of people living with diabetes on the causes of diabetes in Jos Metropolis. All the 12 items have their respective mean scores above the cut-off point of 2.50. Thus, the respondents generally agreed that all the items are among the causes of diabetes including genetic and

environmental factors, poor nutrition, cells in muscle becoming resistant to insulin, family history, sleep apnea, obesity, sedentary lifestyles, urbanization, age and pregnancy. Their pooled mean is equally above the cut-off mean of 2.50. Their pooled standard deviation is 0.06.

Research question two: What are the possible complications associated with diabetes among the people in Jos Metropolis?

Table 2: Possible complications associated with diabetes among the people in Jos metropolis

S/N	Possible complications associated with diabetes	N	Frequency and percentages of response		
			Agree	Disagree	No response
1.	Coronary artery disease	342	255(74.5%)	80(23.4%)	7(2.0%)
2.	Chest pain	342	254(74.3%)	85(24.9%)	3(0.9%)
3.	Heart attack	342	239(69.8%)	102(29.8%)	1(0.3%)
4.	High blood pressure	342	259(75.7%)	79(23.1%)	4(1.2%)
5.	Nerve damage	342	280(81.8%)	57(16.7%)	5(1.5%)
6.	Kidney damage	342	295(86.0%)	44(12.9%)	4(1.2%)
7.	Eye damage	342	229(67.0%)	92(26.9%)	21(6.1%)
8.	Foot damage	342	294(86.0%)	44(12.9%)	4(1.2%)
9.	Skin infections	342	239(69.8%)	102(29.8%)	1(0.3%)
10.	Erectile dysfunctions	342	294(86.0%)	44(12.9%)	4(1.2%)
11.	Hearing loss	342	254(74.3%)	80(23.4%)	7(2.0%)
12.	Depression	342	239(68.8%)	102(29.8%)	1(0.3%)
13.	Dementia	342	229(67.0%)	92(26.9%)	21(6.1%)
14.	Dental problems	342	259(75.7%)	79(23.1%)	4(1.2%)
15.	Stroke	342	254(74.3%)	80(23.4%)	7(2.0%)

Table 2 reveals that 86% of the respondents believe that possible complications associated with diabetes are kidney damage, foot damage and erectile dysfunction. 81.8% of these respondents are of the opinion that nerve damage is another possible complications associated with diabetes, also 75.7% believe that other complications are high blood pressure and dental problems respectively. 74.5% are of the opinion that coronary artery disease is another complication of diabetes, while 74.3% believe that chest pain, hearing loss and stroke are also possible complications associated with diabetes.

Research question three: How is diabetes managed among the people in Jos Metropolis?

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Table 3: Management of diabetes among the people in Jos metropolis

S/N	Items	N	Frequency and percentages of responses		
			Agree	**Disagree**	**No response**
1.	By following a diet plan	342	294(86.0%)	44(122.9%)	4(1.2%)
2.	By taking prescribed medication	342	254(74.3%)	80(23.4%)	8(2.3%)
3.	By increasing one's activity level	342	259(75.7%)	79(23.1%)	4(1.2%)
4.	By exercising regularly	342	280(81.8%)	57(16.7%)	5(1.5%)
5.	By losing weight if overweight	342	284(86.0%)	57(16.7%)	5(1.5%)
6.	Maintenance of blood cholesterol	342	255(74.3%)	80(23.4%)	7(2.0%)
7.	By controlling one's blood pressure	342	280(81.8%)	57(16.7%)	5(1.5%)
8.	By quitting smoking (if one smokes)	342	254(74.3%)	85(24.9%)	3(0.9%)
9.	By refraining from drinking excessive amount of alcohol	324	239(69.8%)	102(29.8%)	1(.3%)

Table 3 indicates management of diabetes by the people in Jos metropolis. The analysis shows that out of the 9 possible ways of managing diabetes, majority of the respondents rated all highly. Items 1, 5, 4, 7, 3, 2, 6, 8 and 9, which include following a diet plan, losing weight, exercising regularly, increasing one's activity level, among others, are rated between 74.3% and 86% .

Research question four: What are the prevention measures for diabetes in Jos Metropolis?

Table 4: The prevention measures for diabetes in Jos metropolis

S/N	Items	N	Frequency & percentages of responses		
			Agree	**Disagree**	**No response**
1	Getting at least 150 minutes per week of aerobic exercise	324	294(86.0%)	44(12.9%)	4(1.2%)
2	Cutting saturated and trans fats out of one's diet	324	259(75.7%)	79(23.1%)	4(1.2%)
3	Cutting refined carbohydrates out of one's diet	324	259(75.7%)	57(16.7%)	5(1.5%)
4	Eating more fruits, vegetables and whole grains	324	280(81.8%)	80(23.4%)	7(2.0%)
5	Eating smaller portions of food	324	255(74.5%)	44(12.9%)	4(1.2%)

6	Trying to lose 7% body weight if overweight	342	294(86.0%)	57(16.7%)	5(1.5%)
7	Avoiding tobacco use	324	254(74.3%)	80(23.4%)	7(2.0%)
8	Use of medication	324	280(81.8%)	85(24.0%)	3(0.9%)
9	Regular screening	324	239(69.8%)	102(29.8%)	1(0.3%)

Table 4 shows that 86% of the respondents believe that getting at least 150 minutes per week of aerobic exercise and losing 7% of body weight if overweight can help prevent diabetes. 81.8% of respondents are of the opinion that eating more fruits, vegetables, and whole grains will help greatly alongside the use of medication. 75.7% of the respondents are of the opinion that cutting saturated and trans fats alongside refined carbohydrates out of one's diet help in the prevention of diabetes. Other prevention measures include eating smaller portions of food (74.5%), avoiding tobacco use (74.3%), and regular screening (69.8%).

Research question five: What are the lifestyle changes in terms of nutrition for improved diabetes health?

Table 5: Nutritional lifestyle changes for improved diabetes health

S/N	Items	N	Frequency & percentages of responses		
			Agree	**Disagree**	**No responses**
1.	Eating a healthier diet	342	294(86.0%)	44(12.9%)	4(1.2%)
2.	Losing weight	342	259(75.7%)	79(23.1%)	4(1.2%)
3.	Engaging in regular moderate physical activity	342	280(81.8%)	57(16.7%)	5(1.5%)
4.	Learning skills to live a fulfilling life	342	239(69.8%)	102(29.8%)	1(0.3%)
5.	Taking diabetes medications as prescribed	342	294(86.0%)	44(12.9%)	4(1.2%)
6.	Regular screening	342	280(81.8%)	80(23.4%)	7(2.0%)
7.	Avoiding tobacco use	342	254(74.3%)	80(23.4%)	7(2.0%)

Table 5 presents the respondents' responses on nutritional lifestyle change for improved diabetes health. 86% of respondents believe that eating a healthier diet, and taking diabetes medications as prescribed are effective lifestyle changes for improved diabetes health. 81.8% of respondents of Jos metropolis are of the opinion that engaging in regular, moderate physical activity, and regular screening respectively are also effective lifestyle changes for improved diabetes health. Other lifestyle changes include losing weight (75.7%), avoiding tobacco use (74.3%) and learning skills to live a fulfilling life (69.8%).

Research question six: What are the counselling needs facilitating the lifestyle changes for optimal diabetics' health?

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Table 6: Responses on counselling needs facilitating the lifestyle changes of diabetics

S/N	Items	Male (N=122)		Female (N=220)		Decision
		$\bar{x}$	SD	$\bar{x}$	SD	
1	Nutrition counselling in which the counsellor discusses clients current lifestyle changes	1.60	0.02	3.90	0.10	Agree
2	Assisting diabetics to form a healthy eating and drinking habits	3.90	0.02	3.70	0.04	Agree
3	Referring diabetes patients to a registered nutritionist for a moderately nutritional plan prescribed for them	1.40	0.01	2.10	0.10	Disagree
4	Helping diabetes patients to learn what food to avoid	3.80	0.04	3.90	0.10	Agree
5	Counselling the clients to understand how to manage diabetes illness	3.70	0.01	3.80	0.03	Agree
6	Offering mental health education to diabetics	3.90	0.10	3.70	0.20	Agree
7	Mental health counselling that encourages full information gathering	3.40	0.04	3.00	0.06	Agree
8	Provision of enabling environment for diabetics to discuss freely with the counsellor	2.80	0.02	3.10	0.10	Agree
	Pooled mean	3.30	0.04	3.90	0.08	Agree

Table 6 reveals the mean scores and standard deviation of male and female respondents' perception on the counselling needs of diabetes patients. All the items except item 3 have mean scores above the cut-off point of 2.50. This indicates that all the counselling needs listed in table 6 are among the counselling needs that could facilitate lifestyle changes for maintenance of optimal health among diabetes patients in Jos Metropolis as perceived by the respondents in this study.

Ho1: There is no significant difference in the mean ratings of male and female respondents on the counselling needs of people living with diabetes in Jos Metropolis.

Table 7: t-test Analysis on mean ratings of males and female respondents on the counselling needs of people living with diabetes in Jos metropolis

Gender	N	Mean	SD	Df	t-call	t-crit
Male	122	3.3	0.04			
				341	-92.59	1.96
Female	220	3.9	0.08			

Result in table 7 shows the t-test for independent sample assuming equal variance. The result from the test shows t-cal of -92.59 is less than t-crit of 1.96 at 0.05 level of

significance and 341 degree of freedom. Hence, the null hypothesis of no significant difference is accepted. It is therefore concluded that there is no significant difference in the mean ratings of males and females on the counselling needs of people living with diabetes for the optimal diabetics' health.

Discussion of the findings

The objective of this study was to investigate lifestyle adjustment and counselling needs of people living with diabetes in Jos metropolis, Plateau State. The finding are organized and discussed according to the research questions and the lone hypothesis postulated to guide the study. The results of the study indicated the causes of diabetes to include genetic and environmental factors, poor nutrition, cells in muscle becoming resistant to insulin, family history, sleep apnea, obesity, sedentary lifestyles, urbanization, age and pregnancy. The finding is in agreement with the views of Mayo Clinic (2022) who remarked that genetic and environmental factors are believed to play a role in the development of diabetes, alongside family history. The Mayo Clinic further started that age is a factor in the development of diabetes, as well as pregnancies.

The result of this study also showed possible complications associated with diabetes among the people in Jos metropolis, such as kidney damage, foot damage and erectile dysfunction. Others include nerve damage, high blood pressure, dental problems, heart diseases and hearing loss. This finding was supported by the outlined possible complications associated with diabetes by National Institute of Diabetes and Digestive and Kidney Diseases (2021) as cardiovascular issues, nerve damage, kidney damage, eye damage and erectile dysfunction. Other mentioned complications are skin infections, hearing loss, depression, dementia, and dental problems.

The finding on management of diabetes agrees with Glasier (2016) and Allison (2021) who opined healthy foods and physical activities for improved diabetes health. The findings are also in consonance with Foster's (2004) hormonal system of naturalistic approach to illness, which holds that maintaining hormonal balance in illness involves attention to diet and activity including regulating one's diet according to one's illness. In a supportive view, Healthline (2022) listed some basic principles in the prevention of diabetes to include getting at least 150 minutes per week of aerobic exercise, cutting saturated and trans fat, along with refined carbohydrates out of one's diet. Others include eating more fruits, vegetables and whole grains, losing weight, avoiding tobacco use and the like.

The findings further indicated the counselling needs facilitating the lifestyle changes of people living with diabetes, such as nutrition counselling, and mental health counselling. The findings confirm the assertion by Walton *et al.* (2010) who posited that a focus on nutrition counselling as a workplace wellness is the starting point when people are on the pathway to maximizing diabetes health. The findings are also in agreement with that of Yusuf and Abubakar (2017) who reiterated that diabetes patients should be helped to take rational control of their feelings and reactions. The findings indicated the need for mental health counselling for maintenance of optimal diabetics' health. This is in agreement with

Ahikepe (2012) who reported that mental health counselling gives the opportunity and the enabling environment to the client to discuss freely with the counsellor.

The result of the hypothesis of no significant difference was accepted; the result shows that there was no significant difference in the mean ratings of male and female respondents on the counselling needs of people living with diabetes in Jos metropolis. This in essence shows that being a male and female does not have direct influence on diabetes lifestyle adjustment and counselling needs. This supports Denga's (2015) assertion which welcomes accessing counselling for diabetes patients as an antidote. This also supports the assertion of Mayo staff Clinic (2022) that people who are unsanitary and dwell on crowded conditions could be vulnerable to diabetes mellitus.

Conclusion

This study concludes that lifestyle changes for optimal maintenance of diabetes health include nutrition counselling, learning skills to live a fulfilling life, taking medications as prescribed, physical activity and regular screening. The counselling needs of the people living with diabetes include mental health counselling and wellness counselling. Diabetes patients also need the following psychological therapies in order to live satisfactorily: cognitive behavioral therapy, mindfulness based cognitive therapy and cognitive analytic therapy.

Recommendations

Based on the results of the study, the following recommendations were proffered:

1. Government and NGOs should provide enabling environment for recreational and sporting activities for the people to engage in physical exercises on daily basis, and weight reduction programme.
2. Counsellors should focus on nutritional and mental health counselling in order to help diabetes patients live a satisfying life.
3. Government and NGOs should establish functional counselling centres in all communities for the provision of appropriate counselling services.
4. Community counsellors and health personnel should sensitize the general populace on the prevalence, damaging health and psychological effects and ills of diabetes mellitus.
5. Government should make diabetes drugs available and affordable for the common man.
6. Intervention measures should be provided with a particular focus on possible stressful life events at all spheres of life.
7. People living with diabetes should always avail themselves for regular screening.

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