PREVALENCE, RISK FACTORS AND PERCEIVED MANAGEMENT STRATEGIES OF DEPRESSION AMONG TYPE 2 DIABETES MELLITUS PATIENTS IN BUEA AND LIMBE REGIONAL HOSPITAL

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Abstract: Purpose: Depression is the most common psychiatric disorder among Type 2 diabetes mellitus patients with a prevalence of 15% to 24%.The prevalence of depression among T2DM patients in the world is 13%.In Cameroon, A cross-sectional study was carried out in the Douala General Hospital among Type 2 diabetes mellitus patients who were receiving chronic care in the outpatient diabetes unit. Depression was assessed using the 9-item-Patient Health Questionnaire. Out of the 177 participants, 52 had depression. This study was aimed at investigating the prevalence, risk factors and perceived management strategies of depression among T2DM patients in the Buea and Limbe Regional Hospital.

Materials and Methods: This was a cross-sectional hospital-based study conducted from September 2024 to June 2025 in Buea and Limbe Regional Hospital. A Purposive Sampling technique was used to collect data while a convenience sampling technique was used to choose the health facility. Data was collected using a structured questionnaire which included the Patient Health Questionnaire 9 (PHQ-9) filled by the participants with guidance. Data collected was entered into Microsoft Excel 2021 and analyzed using the Statistical Package for Social Science (SPSS) version 28.0.

Findings: A total of 79 participated in the study, the majority 64(81.0%) were surveyed in Buea, while only 15 (19.0%) were from Limbe. The Prevalence of Depression in Buea and Limbe Regional Hospital among T2DM patients was high. The results revealed that 74(92.4) patients had depression. Among the depressed participants, 36(45.6%) had moderate depression, followed by 34(43.0%) with mild depression, and 3(3.8%) with severe depression. 81.0% of the patients experienced chronic stress. 92.4% of the patients reported taking their medications.

Implications to Theory, Practice and Policy: Nurses should identify the prevalence, risk factors and know perceived management strategies of depression among Type 2 diabetes mellitus patients.

Key words: Depression, Prevalence, Risk Factors, Percieved Management Strategies, Buea Regional Hospital.

1. INTRODUCTION

Depression is the most common psychiatric disorder among Type 2 diabetes mellitus patients with a prevalence of 15% to 24% [1]. Being newly diagnosed with diabetes is a major stress for the patient, many of them go through the typical stages of mourning such as denial, anger, depression and acceptance [2]. Many studies has shown that there is a high rate of depression among Type 2 Diabetes Mellitus Patients compared to non-diabetic patients [2].The relationship between diabetes and depression is bidirectional with one disease leading to the increased risk of having the other [3]. Depression complicates the management of diabetes and it is associated with worst clinical outcomes compared to having diabetes alone. Depression among Type 2 Diabetes mellitus patients has led to poor treatment adherence, poor quality of life, increased risk of cardiovascular disease, poor glycaemic control, higher complication rates, increased healthcare utilization and costs, greater disability, loss of productivity and increased risk of death [1]. Depression is a major risk factor for hospital admissions and diabetes related complications.

Studies show that a habit of smoking, being women, poor social support, higher level of cholesterol, physical disability and body mass index are risk factors of depression among Type 2 diabetes mellitus patients [4]. Self-care activities, diet control, strict medication adherence, regular exercise and continuous blood sugar monitoring to control symptoms have been used by Type 2 diabetes mellitus patients to manage depression [5]. For example, a cross- sectional study among T2DM found that adherence to a healthy diet was significantly associated with a lower risk of depression. As an important part of self-care activities, diet management can improve the physiological indicators of diabetic patients and have a positive impact on mental

health [5]. These activities also reduce depression by alleviating symptoms of patients with depression, decreasing their self-percieved burden, and improving their compliance and ability to deal with stress [5].

Depression is the second leading cause of disability in the world with a higher likelihood of occurrence among Type 2 diabetes mellitus patients. The prevalence of depression among T2DM patients in the world is 13% [6]. A study carried out in Africa showed a prevalence of depression among Type 2 diabetes mellitus patients to be 27%. A study carried out in Ethiopia showed that the prevalence of depression among Type 2 diabetes mellitus patients were ranging from 13% to 40% [4]. The presence of depression in patients with diabetes mellitus was associated with the burden of financial stress, and poor health. It also worsened the prognosis of diabetes, increased non-compliance to medication and prolonged the recovery from diabetes [4]. A study carried out in Nigeria showed that the prevalence of depression among Type 2 diabetes mellitus patients were ranging from 30% to 49.6%, and it was associated with poor diabetes management and increased risk of complications [5].

In Cameroon, A cross-sectional study was carried out in the Douala General Hospital among Type 2 diabetes mellitus patients who were receiving chronic care in the outpatient diabetes unit. Depression was assessed using the 9-item-Patient Health Questionnaire. Out of the 177 participants, 52 had depression. It was associated with major life events, neuropathy and poor glycaemic control [6]. This study is carried out inorder to determine the prevalence, risk factors and perceived management strategies of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital. The research finding would help health personnels to initiate early screening, diagnosing and management of depression among Type 2 diabetes mellitus patients.

Problem statement

Depression is the most common psychiatric disorder among Type 2 diabetes mellitus patients with a prevalence of 15% to 24% [1]. Diabetes and depression have a bidirectional relationship called the body-mind connection that impacts patient health and quality of life [7]. Diabetes mellitus affects brain function through physiological mechanisms such as inflammation and oxidative stress, which in turn increases the risk of depression [7]. Depression causes Type 2 diabetes mellitus patients to have poor compliance to medication, poor glycaemic control, increased risk of cardiovascular disease and impaired quality of life [8].

Depression increases healthcare costs and negatively impacts quality of life in diabetic patients. Despite its high Prevalence and serious consequences, depression in T2DM patients is often undiagnosed and untreated, highlighting the need for integrated mental health screening and management within diabetes care. Considering a high prevalence in Cameroon, there's a need for an extensive study. This study aims to determine the Prevalence,Risk Factors and Perceived Management Strategies of depression among Type 2 diabetes mellitus patients. spital. The research finding would help health personnels to initiate early screening, diagnosing and management of depression among Type 2 diabetes mellitus patients.

Research Objectives

General Objectives

To determine the prevalence, risk factors and Perceived management strategies of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital.

Specific Objectives

1. To determine the Prevalence of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital.

2. To identify the risk factors of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital.

3. To investigate percieved management strategies of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital.

Research Questions

1. What is the Prevalence of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital?

2. What are the risk factors of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital?

3. What are the Percieved management strategies of depression amongst Type 2 diabetes mellitus patients at Buea and Limbe Regional Hospital?

Hypotheses

1. Female patients with Type 2 diabetes mellitus exhibit a higher prevalence of depression compared to male patients due to emotional and social differences.

2. Patients with Type 2 diabetes mellitus who have lower social support are at higher risks of experiencing depression

3. Patients with Type 2 diabetes who engage in regular physical activity and adhere to nutrition have a lower prevalence of depression compared to those who do not.

Theoretical Framework Hg

The Cognitive Behavioral Theory (CBT)

It posits that thoughts, feelings, and behaviors are interconnected and that negative or unhelpful thoughts and behaviors can lead to mental health problems. Cognitive Behavioral Therapy aims to help individuals identify and change these patterns to improve their well-being. CBT emphasizes that our ourthoughts, feelings and behaviors are not separate but rather influence each other. CBT is primarily focused on addressing current prroblems and developing coping mechanisms for the present, rather than dwelling on the past. CBT helps individuals recognize and challenge negative or unhelpful thought patterns that contributes to their problem.

How the Cognitive behavioral theory applies to depression amongst Type 2 diabetes mellitus patients.

It suggests that negative thought patterns can contribute to both depression and poor diabetes management. For example, a patient may have thoughts of hopelessness that affect their motivation to adhere to treatment thus worsening both their diabetes and depressive symptoms.

The Health Belief Model

The Health Belief Model (HBM) is a psychological framework that seeks to explain and predict health behaviors by focusing on the attitudes and beliefs of individuals. It was developed in the 1950s by social psychologists Godfrey M. Hochbaum, Irwin M. Rosenstock, and Stephen Kegels at the U.S. Public Health Service to understand why people did or did not participate in programs to detect and

prevent disease. The model suggests that a person's belief in a personal threat of an illness or disease, the perception of the benefits of taking action to avoid it, and the barriers to taking that action, as well as cues to action, influence their readiness to act [27]. This model consists of different components as listed below:

Perceived Susceptibility: This refers to an individual's belief about their chances of getting a health condition or disease.

Perceived Severity: This is the individual's belief about how serious a health condition and its consequences are.

Perceived Benefits: This involves the individual's belief in the efficacy of the advised action to reduce risk or seriousness of impact.

Perceived Barriers: These are the potential obstacles that may hinder an individual from adopting a recommended health behavior.

Cues to Action: These are events or circumstances that trigger an individual to take steps towards changing their health behavior.

Self-Efficacy: This refers to an individual's confidence in their ability to take action and overcome barriers.

How the Health Belief Model relates to Depression amongst Type 2 diabetes Mellitus Patients.

1. Perceived Susceptibility
Patients with T2DM may not recognize their vulnerability to depression, especially if they associate their diabetes solely with physical health. Education about the increased risk of depression in individuals with chronic illnesses can help them understand that they are susceptible and encourage them to monitor their mental health.

2. Perceived Severity
Understanding the serious implications of untreated depression such as poor glycemic control, increased risk of complications and reduced quality of life can motivate patients to seek help. Emphasizing that depression can worsen diabetes outcomes may encourage patients to take their mental health seriously

3. Perceived Benefits
Patients need to recognize the benefits of addressing depression, which may include improved mood, better diabetes management, enhance quality of life and reduce risk of complications.

4. Perceived Barriers
Patients may face barriers to seeking help for depression such as stigma, lack of access to mental health services or a belief that they should be able to manage their feelings on their own.

5. Cues to action
Cues to action can inclue reminders from healthcare providers during routine check-ups, educational materials on the connection between diabetes and mental health

6. Self-efficacy
Building self-efficacy involves enhancing patients' confidence in their ability to manage both their diabetes and their mental health. Providing coping strategies can empower patients to take proactive steps toward managing their depression alongside diabetes

2. METHODS AND MATERIALS

A hospital based cross sectional study, among T2DM patients in Buea and Limbe Regional Hospital.

This study was carried out at the Buea and Limbe Regional Hospital.The LRH is approximately 200 bed hospital located in the coastal town of Limbe in the Southwest Region of Cameroon which serves as a crucial healthcare facility in the region. It is operated by the government and it provides a wide

range of medical services including radiology, surgery, gynecology, obstetrics, dental care, ophthalmology, pediatrics, physiotherapy, maternity, and general medicine. The Diabetes unit does outpatient follow-up and management of diabetes-related complications and addressing complications such as chronic kidney disease and dyslipidemia in diabetic patients.The BRH is one out of the two regional hospital found in the South West Region and it's situated in Buea station between Buea town and bokwaongo. It is the main health facility in the Buea Health District and serve as reference hospital to all health centres of the district. It is divided in to various unit which include Emergency/outpatient department, surgical ward, medical ward, paediatric ward, maternity, ANC, IWC, Family planning, neonatal ward, Covid 19 ward, ARV treatment centre, Operating theatre, Tuberculosis unit, Haemodialysis unit, pharmacy, laboratory, blood bank, ophthalmology unit and dental treatment, physiotherapist department, psychiatric department.The diabetes unit provides outpatient care once a week, specifically on Tuesdays, where diabetic patients receive follow-up and management.

3. FINDINGS

A total of 79 participated in the study, the Mean(SD) age was (61.96+-12.54 years). Out of the total 79 respondents, the majority 64 (81.0%) were surveyed in Buea, while only 15(19.0%) were from Limbe. The age of respondents ranged from 30 to 90 years. The majority fell within the 60–70 years 26(32.9%), the sample consisted predominantly of females, who made up 60(75.9%) of the respondents, while males accounted for only (19)24.1%. Most respondents were married 37(46.8%), self-employed 46(58.2%), Christians 70(88.6%) earned 21,000–40,000 FCFA 17 (21.5%).

Table 1:Socio-demographic characteristics of the respondents

Variable	Category	Frequency	Percent (%)
Health Facility	Limbe	15	19.0
	Buea	64	81.0
	Total	**79**	**100.0**
Age (years)	30–40	4	5.1
	40–50	11	13.9
	50–60	16	20.3
	60–70	26	32.9
	70–80	18	22.8
	80–90	4	5.1
	Total	**79**	**100.0**
Sex	Male	19	24.1
	Female	60	75.9
	Total	**79**	**100.0**
Marital Status	Single	10	12.7
	Married	37	46.8
	Divorced	3	3.8
	Widowed	29	36.7
	Total	**79**	**100.0**
Occupation	Employed	7	8.9
	Self-employed	46	58.2
	Unemployed	19	24.1
	Housewife	6	7.6
	Student	1	1.3
	Total	**79**	**100.0**

Religion	Muslim	7	8.9
	Christian	70	88.6
	Traditionalist	1	1.3
	None	1	1.3
	Total	**79**	**100.0**
Level of Education	Primary	37	46.8
	Secondary	22	27.8
	Tertiary	9	11.4
	No formal education	11	13.9
	Total	**79**	**100.0**
Income Level (FCFA)	Less than 20,000	42	53.2
	21,000 – 40,000	17	21.5
	41,000 – 60,000	4	5.1
	61,000 – 80,000	4	5.1
	81,000 – 100,000	4	5.1
	Greater than 100,000	8	10.1
	Total	**79**	**100.0**

Prevalence of depression among Type 2 diabetes mellitus patients in Buea and Limbe Regional Hospital

Based on figure 1, a total of 79 patients diagnosed with Type 2 Diabetes Mellitus were assessed for depression using a standardized screening tool which is the PHQ-9. According to the PHQ-9, individuals with a total score ≥5 is said to be depressed, and the severity being mild (≥5, ≤9), moderate (≥10, ≤19) and severe (≥20, ≤27). The results revealed that 74(92.4) patients had depression. Among the depressed participants, 36(45.6%) had moderate depression, followed by 34(43.0%) with mild depression, and 3(3.8%) with severe depression.

Figure 1: Prevalence of Depression Among Type 2 Diabetes Mellitus Patients at Buea and Limbe Regional Hospital
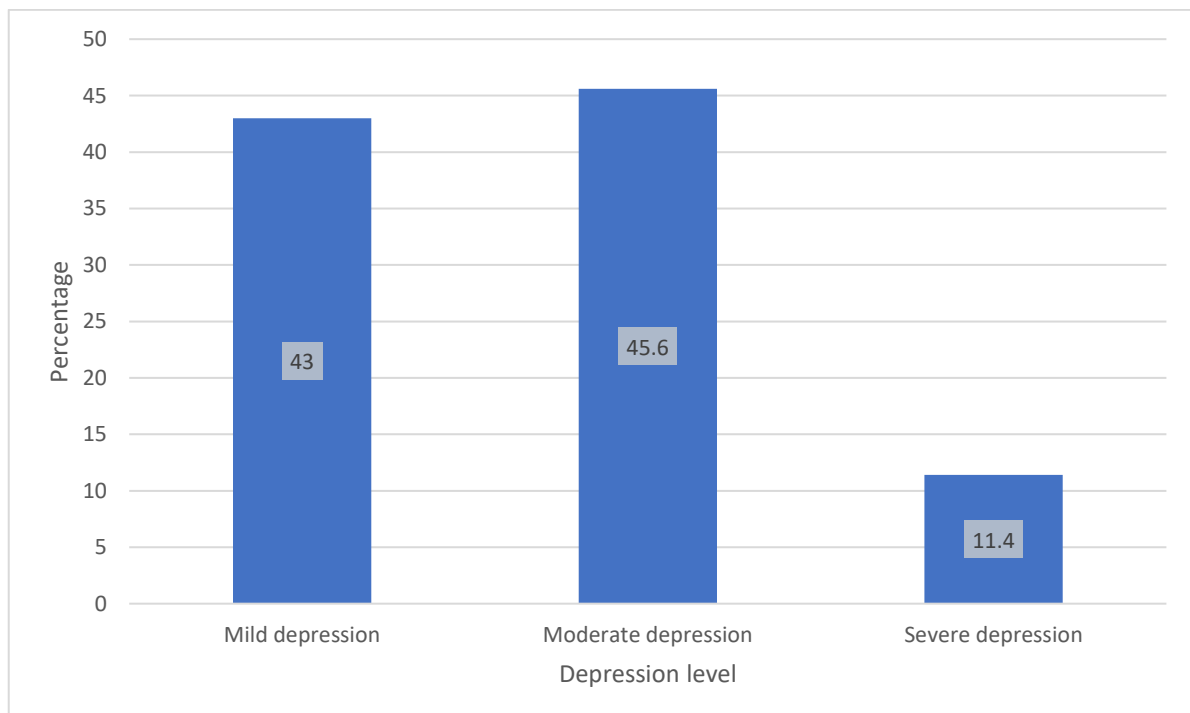
Table 2: Association Between Depression Levels and Selected Sociodemographic Variables Among Patients with Type II Diabetes (N = 79)

Table 2: Prevalence of depression among Type 2 diabetes mellitus patients

Variable	Category	Mild	Moderate	Moderate to Severe	Severe	Chi-square (df)	p-value
Health Facility	Limbe	3 (20.0%)	11 (73.3%)	0 (0.0%)	1 (6.7%)	7.223 (3)	.065
	Buea	31 (48.4%)	25 (39.1%)	6 (9.4%)	2 (3.1%)		
Age Group	30–40	1 (25.0%)	2 (50.0%)	1 (25.0%)	0 (0.0%)	8.874 (15)	.884
	40–50	6 (54.5%)	4 (36.4%)	0 (0.0%)	1 (9.1%)		
	50–60	7 (43.8%)	7 (43.8%)	2 (12.5%)	0 (0.0%)		
	60–70	11 (42.3%)	11 (42.3%)	2 (7.7%)	2 (7.7%)		
	70–80	8 (44.4%)	9 (50.0%)	1 (5.6%)	0 (0.0%)		
	80–90	1 (25.0%)	3 (75.0%)	0 (0.0%)	0 (0.0%)		
Sex	Male	9 (47.4%)	8 (42.1%)	2 (10.5%)	0 (0.0%)	1.408 (3)	.704
	Female	25 (41.7%)	28 (46.7%)	4 (6.7%)	3 (5.0%)		
Marital Status	Single	2 (20.0%)	5 (50.0%)	2 (20.0%)	1 (10.0%)	11.118 (9)	.268
	Married	18 (48.6%)	17 (45.9%)	2 (5.4%)	0 (0.0%)		
	Divorced	0 (0.0%)	3 (100.0%)	0 (0.0%)	0 (0.0%)		
	Widowed	14 (48.3%)	11 (37.9%)	2 (6.9%)	2 (6.9%)		
Occupation	Employed	3 (42.9%)	3 (42.9%)	1 (14.3%)	0 (0.0%)	11.591 (12)	.479
	Self-employed	23 (50.0%)	20 (43.5%)	3 (6.5%)	0 (0.0%)		
	Unemployed	7 (36.8%)	8 (42.1%)	2 (10.5%)	2 (10.5%)		
	Housewife	1 (16.7%)	4 (66.7%)	0 (0.0%)	1 (16.7%)		
	Student	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)		
Religion	Muslim	0 (0.0%)	3 (42.9%)	1 (14.3%)	3 (42.9%)	37.029 (9)	.000
	Christian	33 (47.1%)	32 (45.7%)	5 (7.1%)	0 (0.0%)		
	Traditionalist	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)		
	None	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)		
Education Level	Primary	16 (43.2%)	17 (45.9%)	2 (5.4%)	2 (5.4%)	3.963 (9)	.914
	Secondary	10 (45.5%)	10 (45.5%)	2 (9.1%)	0 (0.0%)		
	Tertiary	3 (33.3%)	5 (55.6%)	1 (11.1%)	0 (0.0%)		
	No Formal Ed.	5 (45.5%)	4 (36.4%)	1 (9.1%)	1 (9.1%)		

*p < .05 indicates statistically significant association.

Among the 79 surveyed T2DM patients, onequarter (22.8 %) reported a family history of depression, while only 11.4 % admitted to selfisolation, and a worrying 60.8 % were physically inactive. Encouragingly, every respondent claimed perfect medication adherence and 86.1 % reported adequate glycemic control; nonetheless, 31.6 % lacked a reliable income source an economic strain likely fueling distress. Socially, 96.2 % enjoyed family or friend support, yet 35.4 % engaged in alcohol or harddrug use and a striking 81.0 % experienced chronic stress, both potent drivers of depressive symptoms. Nutritional and restorative habits appeared strong, with 97.5 % maintaining a balanced diet and 87.3 %.

Table 3:Risk Factors of depression among Type 2 diabetes mellitus patients

Factor	Yes		No		Total	
	F	**%**	**F**	**%**	**n**	**%**
Family member who has suffered depression	18	22.8%	61	77.2%	79	100%
Isolating self	9	11.4%	70	88.6%	79	100%
Engaged in physical activity	31	39.2%	48	60.8%	79	100%
Effectively taking medication	79	100.0%	0	0.0%	79	100%
Control blood sugar	68	86.1%	11	13.9%	79	100%
Has source of income	54	68.4%	25	31.6%	79	100%
Support system (friends/family)	76	96.2%	3	3.8%	79	100%
Use of alcohol/hard drugs (e.g., cocaine)	28	35.4%	51	64.6%	79	100%
Experiencing stress	64	81.0%	15	19.0%	79	100%
Eating balanced diet	77	97.5%	2	2.5%	79	100%
Adequate sleep	69	87.3%	10	12.7%	79	100%

Table 4: Relationship between Socio-demographic characteristics and risk factors of depression

Variable / Category	Mild (%)	Moderate (%)	Moderately Severe (%)	Severe (%)	Chi-Square (χ^2)	df	p-value	Fisher's Exact Test (2-sided)
Family Member with Depression: Yes	4 (11.8%)	12 (33.3%)	1 (16.7%)	1 (33.3%)	4.941	3	0.176	0.117
Family Member with Depression: No	30 (88.2%)	24 (66.7%)	5 (83.3%)	2 (66.7%)				
Isolating Self: Yes	2 (5.9%)	6 (16.7%)	1 (16.7%)	0 (0.0%)	2.566	3	0.464	0.456
Isolating Self: No	32 (94.1%)	30 (83.3%)	5 (83.3%)	3 (100.0%)				
Engaged in Physical Activity: Yes	12 (35.3%)	13 (36.1%)	3 (50.0%)	3 (100.0%)	5.306	3	0.151	0.185
Engaged in Physical Activity: No	22 (64.7%)	23 (63.9%)	3 (50.0%)	0 (0.0%)				
Effectively Taking Medication: Yes	34 (100.0%)	36 (100.0%)	6 (100.0%)	3 (100.0%)	Not applicable	-	-	-
Control Blood Sugar: Yes	33 (97.1%)	29 (80.6%)	3 (50.0%)	3 (100.0%)	11.338	3	0.010	0.012*
Control Blood Sugar: No	1 (2.9%)	7 (19.4%)	3 (50.0%)	0 (0.0%)				
Source of Income: Yes	24 (70.6%)	24 (66.7%)	4 (66.7%)	2 (66.7%)	0.138	3	0.987	0.491
Source of Income: No	10 (29.4%)	12 (33.3%)	2 (33.3%)	1 (33.3%)				
Support System: Yes	33 (97.1%)	35 (97.2%)	5 (83.3%)	3 (100%)	N/A	-	N/A	N/A
Support System: No	1 (2.9%)	1 (2.8%)	1 (16.7%)	0 (0%)				

Alcohol/Drug Use: Yes	15 (44.1%)	13 (36.1%)	0 (0%)	0 (0%)	6.06	3	0.017	0.010*
Alcohol/Drug Use: No	19 (55.9%)	23 (63.9%)	6 (100%)	3 (100%)				
Experiencing Stress: Yes	29 (85.3%)	29 (80.6%)	4 (66.7%)	2 (66.7%)	1.614	3	0.689	0.070
Experiencing Stress: No	5 (14.7%)	7 (19.4%)	2 (33.3%)	1 (33.3%)				
Eating Balanced Diet: Yes	34 (100.0%)	34 (94.4%)	6 (100.0%)	3 (100.0%)	2.451	3	0.484	0.603
Eating Balanced Diet: No	0 (0.0%)	2 (5.6%)	0 (0.0%)	0 (0.0%)				
Adequate Sleep: Yes	33 (97.1%)	28 (77.8%)	6 (100.0%)	2 (66.7%)	7.912	3	0.048	0.033*
Adequate Sleep: No	1 (2.9%)	8 (22.2%)	0 (0.0%)	1 (33.3%)				

Perceived management strategies of Depression among Type 2 Diabetes Mellitus Patients in Buea and Limbe Regional Hospital

A large majority of the participants (82.3%) reported doing no exercise at all, while only 17.7% engaged in physical activity for 2–3 hours per week. 45.6% monitored their blood sugar either once or twice daily (24.1% and 21.5% respectively). Most respondents (49.4%) reported sleeping 6–7 hours daily, while 32.9% slept 4–6 hours, and only 17.7% had 8–10 hours of sleep. Encouragingly, a substantial majority of participants (92.4%) reported taking their medication exactly as prescribed by their doctor. Alarmingly, 89.9% of the participants reported not seeing a mental health professional at all, with only 10.1% visiting a mental health nurse weekly or more. 55.7% of participants consumed a balanced diet three times daily, while 34.2% did so twice daily, and 10.1% only once daily. In terms of psychological coping strategies, talking with a loved one was the most common stress relief method (41.8%)followed by mindful meditation (32.9%) and engaging in hobbies like reading (21.5%). Only 3.8% used deep breathing exercises.

Table 5:Perceived Management Strategies of Depression among Type II Diabetes Patients

Management Strategy	Category	Frequency (N=79)	Percent (%)
Number of hours doing exercise	0 hrs	65	82.3
	2–3 hrs	14	17.7
Duration of blood sugar monitoring	Once daily	19	24.1
	Twice daily	17	21.5
	Three times a week	4	5.1
	Two times a week	16	20.3
	Once monthly	23	29.1
Number of hours slept daily	4–6 hours	26	32.9
	6–7 hours	39	49.4
	8–10 hours	14	17.7
Medication adherence	As prescribed by doctor	73	92.4
	When I feel like taking it	4	5.1
	I don't take any medication	2	2.5
Mental health nurse visitation	Once a week	6	7.6
	Twice a week	1	1.3
	Thrice a week	1	1.3
	I don't see a mental health doctor	71	89.9

Frequency of taking balanced diet	Once a day	8	10.1
	Twice a day	27	34.2
	Thrice a day	44	55.7
Stress management technique used	Mindful meditation	26	32.9
	Deep breathing exercise	3	3.8
	Hobbies (e.g., reading)	17	21.5
	Talking with a loved one	33	41.8

Testing Hypothesis 3

Patients with Type 2 diabetes who engage in regular physical activity and adhere to a healthy diet have a lower prevalence of depression compared to those who do not.

In this analysis, all respondents were found to exhibit at least mild depressive symptoms based on standardized assessment tools. Given this uniform baseline, we adopted a clinically appropriate recoding strategy to enable meaningful statistical comparisons. Depression was categorized into: Mild, moderate, and severe depression.

4. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The result indicated that the prevalence of depression in BRH and LRH is high with the highest severity being moderate depression, followed by mild, then severe. Lack of physical activity, experience of chronic stress, substance use, alcohol intake, poor dietary habits, absence of a support system and sleep disturbances were significant factors of depression. The result also show that mental health care utilization is extremely low

Recommendations

To Health Practitioners:

Implement routine depression screening for diabetes patients.

➢ Help patients adhere to medications and monitor blood glucose regularly
➢ Provide patient-centred education on both physical and psychological self-care.

To Government:

➢ Recruit and train more mental health professionals in primary and secondary care.
➢ Provide free or subsidized mental health services for NCD patients.
➢ Integrate depression screening into national diabetes protocols.

Limitation of the study: Sample size could not be attained due to limited type 2 diabetes mellitus patients at the time of the study

Conflict of Interest: The authors declare that they have no conflict of interest

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