

Self-Management Practices among Diabetic Women of Reproductive Age in a Tertiary Hospital, Osun State, Nigeria

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Received: July 20, 2020 Accepted: August 22, 2020 Online Published: September 10, 2020

doi:10.5539/gjhs.v12n11p73

URL: <https://doi.org/10.5539/gjhs.v12n11p73>

Abstract

Purpose: To investigate self-management practices of diet, exercise, medication, and self-monitoring of blood glucose among diabetic women of reproductive age in OAUTHC.

Methods: This study employed a descriptive design. A total enumeration of 185 diabetic women of reproductive age in a tertiary hospital in Osun state constituted a sample size. A self-structured questionnaire with 40 items under 5 sections and a check list for recording glyceamic control measures were used for data collection. The data retrieved from the respondents were analyzed using the Statistical Package for Social Sciences (SPSS) version 23. Results were presented as frequencies, mean and standard deviation.

Results: The findings from the study revealed a moderate level of dietary intake (mean = 2.80), moderate physical exercise (mean = 2.80), moderate medication intake (mean = 2.13) and moderate self-management practices (mean = 2.85) on 5points Likert scale.

Discussion: The findings of the study were compared with previous studies and the researchers showed how the relevant theories that guided the study were used to explain the findings.

Conclusion: It was concluded that most of the women had moderate practice of diet, exercise, medication and self-monitoring of blood glucose as shown in their past medical history.

Keywords: diabetic women, reproductive age, self-management practices, tertiary hospitals

1. Introduction

1.1 Background

Monitoring is an essential behaviour change technique (BCT) that can be applied to various health behaviours (Michie, Richardson, Johnston, Abraham, Francis, Hardeman, et al., 2013). When people keep records of their behaviours in the form of a diary or checkmarks on their calendar, they become aware of gains and deficits, which leads them to take further action. Self-management entails planning, controlling, and monitoring one's action or behaviour to achieve a set of objectives, which reduces blood glucose levels. Self-management includes regular monitoring of blood glucose levels, exercise, and dieting. Diabetes requires continuous self-management practice to prevent its acute and chronic complications in diabetic patients, so this study aims to examine variables like age, education, income, and parity on glycemic control among women of reproductive age.

Various scholars have examined diabetes self-management practices in a different setting. Mukeshimana, Hakizimana, Mwali, Umuhoza, Uwambajimana, & Asingizwe (2015) assessed the knowledge and practice of self-care management among patients attending a diabetes clinic in Kigali, Rwanda and found that the participants had a self-care knowledge gap in some areas of diabetes self-management. The authors documented that as many as 54.9% of the participants did not know the frequency of blood sugar testing; 63.7% others did not know the importance of snack/meal before exercising and 70% were not taking a snack/meal before exercising. As a result, the participants experienced complications ranging from feet problems, retinopathy, hypertension and kidney diseases. In a related study, Adu, Malabu, Malau-Aduli, & Malau-Aduli (2019) identified gaps in diabetes self-management skills which include the ability to recognize and manage the impact of stress on diabetes, exercise planning to avoid hypoglycemia and interpreting blood glucose pattern levels. Self-efficacy for healthy

coping with stress and adjusting medications or food intake to reach ideal blood glucose levels were minimal.

Similarly, Yao, Wang, Yin, Yin, Guo, and Sun (2019) investigated the association between self-efficacy and self-management behaviours among Chinese patients with type 2 diabetes. Their study revealed that the estimated proportions of T2DM in the active and inactive groups were 54.8% and 45.2%. They found that that higher DES-SF score was significantly associated with a higher possibility of active self-management behaviours. This was corroborated by Al Johani, Kendall and Snider (2015) who examined self-management practices among type 2 diabetes patients attending primary health-care centres in Medina, Saudi Arabia.

In the study cited by Ralf, Agata, & Maryam (2014), an active control intervention (self-monitoring tool for dental flossing) was conducted; self-monitoring had a beneficial effect only for those students who were already somewhat motivated to increase their oral self-care. Self-monitoring worked in the volition (post-intentional) stage of the participants, but not in the earlier motivation (pre-intentional) stage. This showed how self-management helped in dental flossing; this why this study seeks to examine self-management effects on glycemic control. Thus, individuals with diabetes and their families are challenged with complex, multifaceted issues when integrating diabetes care into daily life. To promote optimal medical outcomes and psychological well-being, patient-centred care is essential, defined as “providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions” (Young-Hyman, de Groot, Hill-Briggs, Gonzalez, Hood & Peyrot, 2016).

Self-management of DM remains the cornerstone of diabetes care. Every effort should be made by all involved with diabetes care to support self-monitoring blood glucose (SMBG) as part of an overall self-management strategy. Further, self-monitoring of blood glucose and normal blood pressure (BP) measurement is essential for better well-being of DM. Similarly, in a study cited by Kisokanth, Prathapan, Indrakumar, and Joseph (2013) stated that home blood glucose monitoring had become a central component of DM's active self-management. Self-monitoring blood glucose has proven effective for patients with type 1 DM and patients with type 2 DM. The patient might cope more independently with their disease with self-monitoring of blood glucose. They might achieve a better understanding of the factors that affect their disease and potentially the better-perceived quality of life.

Self-management of DM can be achieved by self-management education. Diabetes self-management education provides the person with diabetes the knowledge and skills needed to perform self-care, manage the crisis, and make lifestyle changes required to manage the disease successfully. The goal of the process is to enable the patient to become the most knowledgeable and, hopefully, the most active participant in their diabetes care. Ralf, Agata, and Maryam (2014) reported that self-management skills such as action control facilitate adherence with self-monitoring being the most studied component of action control. Action control comprises monitoring one's progress, comparing performance with goals, and investing more effort if needed. Monitoring is an essential behaviour change technique (BCT) that can be applied to a variety of health behaviours (Michie, Richardson, Johnston, Abraham, Francis, Hardeman, 2013). When people keep records of their behaviours in the form of a diary or checkmarks on their calendar, they become aware of gains and deficits, which leads them to take further action.

In the study of Ralf, Agata and Maryam (2014) who examined self-monitoring tool for dental flossing, the authors found that self-monitoring had a beneficial effect among students who were motivated to increase their oral self-care. Besides, poor self-monitoring practices may associate with low rate fertility in women and thus, requires continuous self-care practices to keep blood glucose at control. Hitherto, little or no study has been carried out on self-management practices and glycemic control among diabetic females of reproductive age in Osun State, hence, the need for the current study which examined self-management practices among diabetic women of reproductive age in selected tertiary hospitals in Osun State, Nigeria.

1.2 Research Objective

The following specific objectives were formulated at the onset of this study:

1. Ascertain the practice good diet among diabetic women of reproductive age in OAUTHC
2. determine the practice of exercise among diabetic women of reproductive age in OAUTHC
3. find out the practice regular medication intake among diabetic women of reproductive age in OAUTHC, and
4. Assess the self-monitoring of blood glucose among diabetic women of reproductive age in OAUTHC

1.3 Research Questions

The following research questions were answered in the course of this study.

1. To what extent do diabetic women of reproductive age practice self-management (diet) in OAUTHC?
2. To what extent do diabetic women of reproductive age practice self-management (exercise) in OAUTHC?
3. To what extent do diabetic women of reproductive age practice self-management (medication) in OAUTHC?
4. To what extent do diabetic women of reproductive age practice self-management (self-monitoring of blood glucose) in OAUTHC?

1.4 Adapting the Theory of Health Promotion Model

Nola Pender Health promotion model adapted to this study was first coined in 1982 and later revised in 1996 with an aim to “complementary counterpart to models of health protection.” This health promotion model focuses mostly on three areas namely: individual characteristics and experiences, behaviour-specific cognitions and affect and behaviour outcomes. The first category is individual characteristics and experiences which are later divided into sub-categories of prior related behaviour and personal factors. The second category included is behaviour specific cognitions and affect, sub-categories are perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences and situational influences; commitment to the planning of action, immediate competing demands and preferences.

Musenge, Michelo, Mudenda & Manankov (2015) conducted a cross-sectional study using 198 consenting randomly selected patients at the University Teaching Hospital diabetic clinic between September and December 2013 in Lusaka, Zambia. The study reported that the proportion of patients that had good glycemic control status (48 mmol/mol) was 38.7% compared to 61.3% that had poor glycemic control status (49 mmol/mol). However, the study also revealed that self-blood glucose monitoring and exercise did not predict glycemic control status of the patients. The study concludes that evidence of poor glycemic control status among most diabetic patients suggests that health promotion messages need to take into account both individual and community factors to promote behaviours likely to reduce non-adherence.

Darawad, Hammad, Mosleh, Samarkandi, Hamdan-Mansour, Khalil and Arabiat, (2017) conducted a study on psychosocial correlates of diabetes self-management practices. The reported a high levels of depressive symptoms among their participants. They found that diet practices had a significant positive correlation with family support attitude and negative correlation with depressive symptoms. Testing blood sugar significantly correlated with both support needed and support received. The study concluded that diabetes patients were found to practice less than optimum DM self-management practices and to consider diet practices than exercise practices. This study confirmed that the subcategories of DM self-care management should be considered rather than considering the general plan.

Furthermore, Gurmu, Gela and Aga, (2018) in a related study and Lee, Piette, Heisler, Janevic and Rosland (2019) who conducted a study on diabetes self-management and glycemic control to assess the role of autonomy support from informal health supporters. The study finds out that in adjusted models, greater autonomy support was associated with lower diabetes distress and greater self-efficacy. There were more frequent SMBG, and better subsequent 12-month glycemic control but not with medication adherence. The study concluded that autonomy support from main health supporters is significantly associated with better diabetes-related attitudes, self-care, and glycemic control after adjusting for relationship and patient characteristics. In a related study, Shah Kaselitz and Heisler (2013) researched six community health centres in Massachusetts. Results of their study showed that even when corrected for the race, the intervention group was more likely than patients in the control group to set a self-management goal, confirming the importance of community health workers in a team-based care model.

2. Research Methodology

2.1 Research Design

This study employed a descriptive design to assess self-management practices as correlates of glycemic control amongst diabetic women of reproductive age in a selected tertiary hospital in Osun State.

2.2 Population/Sample

Total enumeration method was utilized to select 167 respondents obtained from five weeks record of clinic attendance in endocrinology unit of the selected hospital; Obafemi Awolowo University Teaching Hospitals Complex, Osun State (109 and 58 diabetic patients) both at Ife Hospital Unit and Wesley Guild Ilesha respectively.

2.3 Ethical Consideration

In line with adhering to the ethical guidelines that guide the conduct of research, this study sought permission for ethical clearance from the Babcock University Research Ethical Committee (BUHREC), Health research ethics

committee of the study centres was also approached through an application letter from the School of Nursing, Babcock University Ilishan-Remo, Ogun State. Permission letter was received by the Health research ethics committee of the study centres and be taken to the Head of Department internal Medicine, Endocrinology unit. Consent of all participants gotten before the conducts of research, promising to keep entire information gathered from them in confident

2.4 Instrument

The study involved the use of quantitative data only. The quantitative data obtained through the use of a self-structured questionnaire which consisted of five sections for primary data based on socio-demographics, self-management practices and checklist for secondary data on information that pertains to the clinical history of respondent's glycemic level.

2.5 Data Analysis

The researcher examined the entire instrument for completeness and those not properly filled were excluded. Out of 185 questionnaires given out, the researcher was able to retrieve 167 which were coded and analysed using the computer social package statistical software (SPSS Version 23). Percentage distribution, mean and standard deviation were calculated to answer the four research questions while correlation and multiple regression statistics were used for testing the hypotheses guiding this study at a significance level of 0.05.

3. Result

3.1 Socio-Demographic Characteristics

Table 1. Sociodemographic data-N=167

Variable	F	%
Age		
15-20	10	6.0
21-25	25	15.0
26-30	37	22.2
31-35	57	34.1
40 and above	38	22.8
Highest Educational Qualification		
No formal education	20	12.0
Primary	23	13.8
Secondary	31	18.6
Tertiary	93	55.7
Average Monthly Income		
less than 20,000	70	41.9
20,000-40,000	83	49.7
Above 80,000	14	8.4
Parity		
None	65	38.9
1-2	59	35.3
3-4	18	10.8
5-6	9	5.4
>7	16	9.6

The result is presented according to the research questions. Table 1 illustrates the distribution of the research participants according to their socio-demographic variables. It shows that (34.1%) of the respondents were within

the age group 31-35 followed by the age group 40 years plus (22.8%). It also shows that the respondents had tertiary education (55.7%) with monthly income between 20,000 – 40,000 Naira (49.7%) and parity none (38.9%).

3.2 Analysis of the Formulated Research Questions

Research Question 1: To what extent do diabetic women of reproductive age practice self-management (diet) in OAUTHC?

Table 2. Diabetic Self-Management Practices (Diet) (N = 167)

Diet Practices	Very Low	Low	Moderate	High	Mean	Std. Dev
I am always conscious of what I eat because of my sugar level	15(9.0)	22(13.2)	130(77.8)	0(0)	3.69	0.63
I take foods containing dietary fibres like grains, vegetables and fruits.	73(43.7)	94(56.3)	0(0)	0(0)	3.56	0.50
I eat diabetic diet only as recommended.	7(4.2)	5(3.0)	54(32.3)	101(60.5)	3.49	0.75
I strictly follow the rules when it comes to my diet as a diabetic patient.	9(5.4)	73(43.7)	85(50.9)	0(0)	3.46	0.60
Seen others eating what they want does not allow me comply with my diet regimen	33(19.8)	76(45.5)	58(34.7)	0(0)	3.15	0.73
I set a limit on taking sweets and carbohydrates.	11(6.6)	12(7.2)	86(51.5)	58(34.7)	3.14	0.82
I take carbonated drinks	93(55.7)	46(27.5)	28(16.8)	0(0)	1.61	0.76
I eat what other family members are eating	93(55.7)	53(31.7)	17(10.2)	4(2.4)	1.59	0.77
I take sweets and other food rich in carbohydrates.	104(62.3)	35(21.0)	28(16.8)	0(0)	1.54	0.77
Average Mean					2.80	0.70

In order to answer this research, a descriptive statistic was carried out to generate frequency, percentage, mean and standard deviation. On one hand, when interpreting from top to bottom, table 2 provides information with a total number of responses per construct. On the other hand, when reading the table horizontally, the results provide information with frequency and percentage distribution, mean and standard deviation. Overall, the study revealed a moderate level of practice with an overall mean score of 2.8 of the diet practices. However, the construct with the highest mean score was, I am always conscious of what I eat because of my sugar level (mean = 3.69); closely followed by the second construct which was I take foods containing dietary fibers like grains, vegetables, and fruits (mean = 3.56). Others include, eating diabetic diets only as recommended (mean = 3.49); I strictly follow the rules when it comes to my diet as a diabetic patient (mean = 3.46); Seen others eating what they want does not allow me to comply with my diet regimen (mean= 3.15); I set a limit on taking sweets and carbohydrates (mean = 3.14). Some of the construct taken less seriously were; I take carbonated drinks (mean= 1.6); I eat what other family members are eating (mean = 1.59) while the construct with the lowest mean as recorded by the respondents was I take sweets and other food rich in carbohydrates (mean = 1.54). A critical assessment of these responses pointed to the fact that women diabetic patients in the study area took their diet seriously and showed a normal status of diabetic self-management practices.

Research Question 2: To what extent do diabetic women of reproductive age practice self-management (exercise) in OAUTHC?

Table 3. Diabetic Self-Management Practices (Exercise) (N = 167)

Exercise Practices	Very Low	Low	Moderate	High	Mean	Std. Dev
I engage in physical activities to control my sugar level.	0(0)	0(0)	70(41.9)	97(58.1)	3.58	0.49
I perform exercise for at least 30 minutes daily.	0(0)	33(19.8)	31(18.6)	103(61.7)	3.42	0.80
I don't see exercise as part of the management option for diabetes.	1(0.6)	18(10.8)	62(37.1)	86(51.5)	3.40	0.70
I considered my involvement in exercise as stress.	0(0)	4(2.4)	95(56.9)	68(40.7)	3.38	0.53
I desire to loose weight, thus carrying out my exercise	11(6.6)	17(10.2)	49(29.3)	90(53.9)	3.31	0.90
I have a peculiar exercise I engage in.	9(5.4)	10(6.0)	79(47.3)	69(41.3)	3.25	0.80
Exercise is time consuming	26(15.6)	23(13.8)	5(34.7)	60(35.9)	2.91	1.06
I avoid exercise because it is tiring.	70(41.9)	25(15.0)	51(30.5)	21(12.6)	2.14	1.10
I don't know the type of exercise to engage in	85(50.9)	30(18.0)	3(1.8)	49(29.3)	2.10	1.30
I avoid regular physical activities although it will improve my sugar level.	59(35.3)	71(42.5)	20(12.0)	17(10.2)	1.97	0.94
I skip planned physical activities.	110(65.9)	57(34.1)	0(0)	0(0)	1.34	0.48
Average mean					2.80	0.83

In order to answer this research, a descriptive statistic was carried out to generate frequency, percentage, mean and standard deviation. As shown in Table 3; overall, there was a moderate level of diabetic self-management practice with regards to exercise with an average mean of 2.8 on the scale of 4 points. The table shows the construct with the highest mean score was I engage in physical activities to control my sugar level (mean = 3.58) closely followed by I perform the exercise for at least 30 minutes daily (mean = 3.42) and I don't see exercise as part of the management option for diabetes (mean = 3.40). Also, the construct with the lowest mean was I skip planned physical activities (mean = 1.34). The high mean of the aforementioned construct shows a positive response to exercise practice among diabetic patients while the low mean constructs were the negative response about exercise practices among diabetic patients.

Research Question 3: To what extent do diabetic women of reproductive age practice self-management (medication) in OAUTHC?

Table 4. Diabetic Self-Management Practices (Medication) (N = 167)

Medication Practices	Very Low	Low	Moderate	High	Mean	Std. Dev
I take my diabetic medications as prescribed	5(3.0)	24(14.4)	40(24.0)	98(58.7)	3.38	0.84
I forget to take my diabetic medications.	0(0)	0(0)	107(64.1)	60(35.9)	3.36	0.48
I feel bored with the pill dose	31(18.6)	24(14.4)	14(8.4)	98(58.7)	3.07	1.22
I have a feeling my diabetic drug is not effective	57(34.1)	59(35.3)	42(25.1)	9(5.4)	2.02	0.90
I go off the drugs because of fear of adverse reactions.	70(41.9)	71(42.5)	5(3.0)	21(12.6)	1.86	0.97
I am afraid of injecting myself with insulin when needed.	68(40.7)	71(42.5)	28(16.8)	0(0)	1.76	0.72
I am scared of routinely taking drugs.	72(43.1)	90(53.9)	5(3.0)	0(0)	1.60	0.55
I hate to take drugs	91(54.5)	71(42.5)	5(3.0)	0(0)	1.49	0.56
I make modification in the timing of my drugs	121(72.5)	26(15.6)	20(12.0)	0(0)	1.40	0.69

I make modification in the dose of drug prescribed	121(72.5)	33(19.8)	13(7.8)	0(0)	1.35	0.62
Average Mean					2.13	0.76

In order to answer this research, a descriptive statistic was carried out to generate frequency, percentage, mean and standard deviation. The results in Table 4.5 indicated that there is a moderate level of medication adherence among the respondents with an average mean of 2.13. However, the first ranked medication practices among diabetic patients was I take my diabetic medications as prescribed (mean = 3.38), the second highly ranked construct was I forget to take my diabetic medications (mean= 3.36), the third construct with high mean score was I feel bored with the pill dose (mean= 3.07) while construct with the lowest was, I modify the dose of drug prescribed (mean = 1.35).

Research Question 4: To what extent do diabetic women of reproductive age practice self-management (self-monitoring of blood glucose) in OAUTHC?

Table 5. Diabetic Self-Management Practices (Self-Monitoring of Blood Glucose) (N = 167)

Self-Monitoring of Blood Glucose Practices	Very Low	Low	Moderate	High	Mean	Std. Dev
I do monitor my blood sugar	0(0)	0(0)	62(37.1)	105(62.9)	3.63	0.48
I maintain optimal blood sugar level	0(0)	0(0)	61(36.5)	106(63.5)	3.63	0.48
I record my blood sugar level	0(0)	0(0)	84(50.3)	83(49.7)	3.50	0.50
I analyse the value chart of my sugar level	0(0)	23(13.8)	62(37.1)	82(49.1)	3.35	0.71
I am afraid of checking my blood sugar level	81(48.5)	46(27.5)	37(22.2)	3(1.8)	1.77	0.86
I am not keen about checking my blood sugar	141(84.4)	17(10.2)	4(2.4)	5(3.0)	1.24	0.64
Average Mean					2.85	0.61

In order to answer this research, a descriptive statistic was carried out to generate frequency, percentage, mean and standard deviation. The results in Table 5 indicated moderate practices of Self-Monitoring of Blood Glucose with a mean of 2.85. It revealed that; the top ranked self-monitoring of blood glucose practices among diabetic patients did monitor my blood sugar (mean = 3.63) and I maintain optimal blood sugar level (mean= 3.63); closely followed by the construct I record my blood sugar level (mean= 3.50), the third construct with high mean score was I analyse the value chart of my sugar level (mean= 3.35). The lowest construct was I am not keen about checking my blood sugar (mean = 1.24).

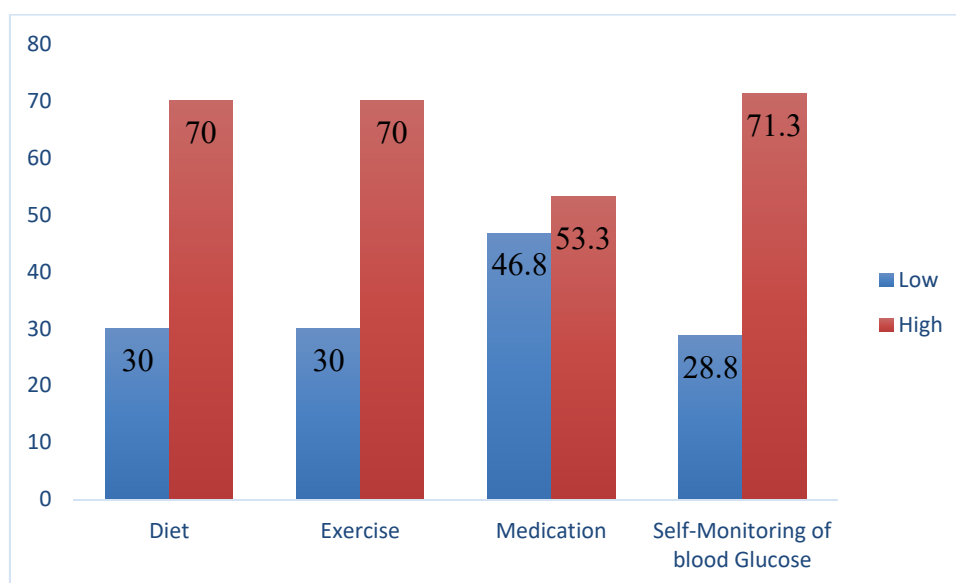


Figure 1. Summary of diabetic self-management practices

Figure 1 revealed that overall, the study revealed a high level of diabetic self-management practices of women of reproductive age in the selected hospitals in Osun State.

4. Discussion

The findings from the study indicated that exercise, medication, and self-monitoring practices though at moderate level among the patients did not significantly influence. The outcome will help diabetic patients to appreciate the effect of good self-management practices for a healthy life among diabetes patients across all ages. The study revealed that although most of the patients had good diabetes self-management practices, however, there seems to be a disparity between their past medical records history of diabetes status and the outcome of their self-management practices based on their responses to the questionnaires administered. Findings from the current study tally with the study of Darawad, Hammad, Mosleh, Samarkandi, Hamdan-Mansour, Khalil and Arabiat, (2017) who conducted a study on psychosocial correlates of diabetes self-management practices and diet practices; their findings revealed that; diet practices had a significant positive correlation with depressive symptoms. Their study also revealed that some diabetes patients were found to practice less of diet and exercise.

The study revealed a generally moderate practice of the recommended diet by their doctors. Previous studies have link diet with glycemic control. For example, Darawad, Hammad, Mosleh, Samarkandi, Hamdan-Mansour, Khalil and Arabiat, (2017) conducted a study on psychosocial correlates of diabetes self-management practices and diet practices; their findings revealed that; diet practices had a significant positive correlation with depressive symptoms. Their study also revealed that some diabetes patients were found to practice less of diet and exercise. Besides, it has been established that; the need for good glycaemic control is imperative as it helps in a managerial condition where the body's ability to process blood glucose is impaired due to both lifestyles and health problems (Ayesha, 2015). Thus, the act of controlling blood glucose level will help in reducing diabetes which is a rapidly emerging condition across the globe (World Health Organization 2018).

Findings also indicate a moderate level of exercise among the study population. Studies have shown that exercise is one important management techniques for diabetes. That is, lack of exercise is one of the most common causes of diabetes mellitus and is highly associated with a family history, older age and obesity. It is also a fact that the rate of diabetes mellitus during pregnancy is rapidly increasing in our areas probably due to inadequate exercise and poor diets during pregnancy (Aychew, 2018). As shown in this study, the first ranked medication practices among diabetic patients were taken medications as prescribed while a good percentage still forget to take their medications. This study found a moderate practice of self-monitoring of blood glucose among the respondents. It indicated that the top-ranked self-monitoring practices of blood included monitoring of an individual's blood sugar and maintaining optimal blood sugar level as well as analyzing the value chart of my sugar level. Although. There was a moderate practice, studies have shown that the need for glycaemic control is imperative because it helps when the body's ability to process blood glucose is impaired due to both lifestyles and health problems (Ayesha, 2015)

5. Recommendation

The study revealed a good practice of recommended diets among all patients examined in this study, hence, such practice should be sustained. The regular practice of physical exercise should also be maintained among diabetes women of childbearing age. The study revealed a good medication intake which has reduced glycemic control among diabetic women of reproductive age in Ile-Ife and environ. Hence, such practice should be sustained among women. The practice of self-monitoring of blood glucose was also moderate among the patients hence, such practice should be sustained among diabetes women of childbearing age. Above all, the level of glycemic control among diabetic women of reproductive age in Ile-Ife is high hence, they should be commended.

6. Conclusion

The findings revealed that most of the women had a moderate practice of diet, exercise, medication and self-monitoring of blood glucose, implying good self-management practices among diabetic women of reproductive age in selected tertiary hospitals in Osun State.

7. Limitations

The major limitation was difficulties in retrieving patients' case records due to the hospitals' bureaucratic procedures of releasing patient health information for research because of its confidential nature. However, this issue was resolved through the office of the ethical committee of the hospital.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

References

- Adu, M. D., Malabu, U. H., Malau-Aduli, A. E., & Malau-Aduli, B. S. (2019). Enablers and barriers to effective diabetes self-management: A multi-national investigation. *PloS one*, *14*(6), e0217771. <https://doi.org/10.1371/journal.pone.0217771>
- Al Johani, K. A., Kendall, G. E., & Snider, P. D. (2015). Self-management practices among type 2 diabetes patients attending primary health-care centres in Medina, Saudi Arabia. *EMHJ-Eastern Mediterranean Health Journal*, *21*(9), 621-628.
- Beck, J., Greenwood, D. A., Blanton, L., Bollinger, S. T., Butcher, M. K., & Condon, J. E. (2017). 2017 National standards for diabetes self-management education and support. *The Diabetes Educator*, *43*, 449-464. <https://doi.org/10.1177/0145721717722968>
- Darawad, M. W., Hammad, S., Mosleh, S., Samarkandi, O. A., Hamdan-Mansour, A., Khalil, A. A., & Arabiat, D. (2017) psychosocial correlates of diabetes self-management practices. *Iran J Public Health*. *46*(6), 771-781.
- Gurmu, Y., & Gela, A. (2018). Factors associated with self-care practice among adult diabetes patients in West Shoa Zone, Oromia Regional State, Ethiopia. *BMC Health Serv Res.*, *18*, 732(2018). <https://doi.org/10.1186/s12913-018-3448-4>
- Kisokanth, G., Prathapan, S., Indrakumar, J., & Joseph, J. (2013). Factors influencing self-management of Diabetes Mellitus; a review article. *Journal of diabetology*, *4*(3), 6.
- Lee, A., Piette, J. D., Heisler, M., Janevic, M. R., & Rosland, A. M. (2019). Diabetes self-management and glycemic control: The role of autonomy support from informal health supporters. *Health Psychol*, *38*(2), 122-132. <https://doi.org/10.1037/hea0000710>
- Lloyd, A., Sawyer, W., & Hopkinson, P. (2001). Impact of long-term complications on quality of life in patients with type 2 diabetes not using insulin. *Value in Health*, *4*, 392- 400. <https://doi.org/10.1046/j.1524-4733.2001.45029.x>
- Michie, S., Richardson, M., Johnston, M., Abraham, C.H., Francis, J., Hardeman, W., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine*, *46*, 81-95. <https://doi.org/10.1007/s12160-013-9486-6>
- Mukeshimana, M., Hakizimana, G., Mwali, C., Umuhoza, Uwambajimana, J., & Asingizwe, D. (2015). The knowledge and practice of self-care management among patients attending a diabetes clinic in Kigali, Rwanda. *Rwanda Journal Series F: Medicine and Health Sciences*, *2*(1), 24-30. <https://doi.org/10.4314/rj.v2i1.3F>
- Musenge, E. M, Michelo, C., Mudenda, & Manankov. (2015) Glycaemic Control and Associated Self-Management Behaviours in Diabetic Outpatients: A Hospital Based Observation Study in Lusaka, Zambia. *Journal of Diabetes Research*. <https://doi.org/10.1155/2016/7934654>
- Ng, J. Y., Ntoumanis, N., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Duda, J. L., & Williams, G. C. (2012). Self-determination theory applied to health contexts: A meta-analysis. *Perspectives on Psychological Science*, *7*, 325-340. <https://doi.org/10.1177/1745691612447309>
- Osman, A., Hoffman, A., Moore, S., & Van der Spuy, Z. (2015). Reproductive knowledge and use of contraception among women with diabetes. *South African Medical Journal*, *105*(9), 760-764.
- Ralf, S., Agata, A., & Maryam, G. (2014) A brief intervention changing oral self-care, self-efficacy and self-monitoring. *British Journal of Health Psychology*, *20*. <https://doi.org/10.1111/bjhp.12091>
- Shah, M., Kaselitz, E., & Heisler, M. (2013). The role of community health workers in diabetes: update on current literature. *Current diabetes reports*, *13*(2), 163-171. <https://doi.org/10.1007/s11892-012-0359-3>
- Tewahido, D., & Berhane, Y. (2017). Self-Care Practices among Diabetes Patients in Addis Ababa: A Qualitative Study. *PLoS ONE*, *12*(1), e0169062. <https://doi.org/10.1371/journal.pone.0169062>
- Williams, G. C., Lynch, M. F., McGregor, H. A., Ryan, R. M., Sharp, D., & Deci, E. L. (2006). Validation of the "Important Other" Climate Questionnaire: Assessing autonomy support for health-related change. *Families, Systems, & Health*, *24*, 179 -194. <https://doi.org/10.1037/1091-7527.24.2.179>
- Williams, G. C., Lynch, M., & Glasgow, R. E. (2007). Computer-assisted intervention improves patient-centered diabetes care by increasing autonomy support. *Health Psychology*, *26*, 728-734.

<https://doi.org/10.1037/0278-6133.26.6.728>

- Williams, G. C., McGregor, H. A., King, D., Nelson, C. C., & Glasgow, R. E. (2005). Variation in perceived competence, glycemic control, and patient satisfaction: Relationship to autonomy support from physicians. *Patient Education and Counseling*, *57*, 39-45. <https://doi.org/10.1016/j.pec.2004.04.001>
- Williams, G. C., McGregor, H. A., Zeldman, A., Freedman, Z. R., & Deci, E. L. (2004). Testing a self-determination theory process model for promoting glycemic control through diabetes self-management. *Health Psychology*, *23*, 58 - 66. <https://doi.org/10.1037/0278-6133.23.1.58>
- Yao, J., Wang, H., Yin, X., Yin, J., Guo, X., & Sun, Q. (2019). The association between self-efficacy and self-management behaviors among Chinese patients with type 2 diabetes. *PLoS ONE*, *14*(11), e0224869. <https://doi.org/10.1371/journal.pone.0224869>
- Yekta, Z., Pourali, R., Aghassi, M. R., Ashragh, Ravanyar, L., & Rahim, M. Y. (2015). Assessment of self-care practice and its associated factors among diabetic patients in Urban are of urmia, Northwest of Iran. *Journal of Research in Health Science*, *11*, 1.
- Young-Hyman, D., de Groot, M., Hill-Briggs, F., Gonzalez, J. S., Hood, K., & Peyrot, M. (2016) Psychosocial Care for People With Diabetes: A Position Statement of the American Diabetes Association. *Psychosocial Research and Care in Diabetes*. <https://doi.org/10.2337/dc16-2053>

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