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Level of self-care practice and attitude among adults with type 2 diabetes

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ABSTRACT

Introduction: Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose and emerged as a major public health problem. Self-care is one of the processes to manage their health by adopting skills and attitude to avoid disease and health recovery. Patients who have good self-care and right attitude could manage their illness to avoid complication by doing self-management.

Methodology: AQuantitative, Descriptive cross sectional research design was adopted. The study was conducted among adults with type 2 diabetes who are attending an outpatient clinic at Government hospital, Chennai. 200 participants were selected by non-probability convenient sampling technique. Demographic data such as age, gender, education. Occupation, type of family, duration of DM and Monthly income were collected. Summary of diabetes self-care activities (SDSCA), Attitude towards diabetes self-care questionnaire were used to collect the data.

Results: Among 200 participants,49% had satisfactory self-care practice and 51% had unsatisfactory self-care practice. Respondents had an overall SDSCA score of 33.18 ± 11.55. The study results found that half of the participants (50%) had satisfactory scores for diet, while 51% obtained a satisfactory overall score for the physical activity, foot care and blood sugar testing. Adults with type 2 diabetes had most favourable attitude towards diet, glucose & BP monitoring, medication adherence than attitude towards weight management, exercises and foot care.

Conclusion: The level of self-care practice was found to be sub-optimal even though the majority of them had a favourable attitude. Nurses should deliver adequate health information regarding diabetic self-care practices.

Keywords: Adults, Attitude , Diabetes, Self-care Practice

INTRODUCTION

Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves. The most common is type 2 diabetes, usually in adults, which occurs when the body becomes resistant to insulin or doesn't make enough insulin. In the past 3 decades the prevalence of type 2 diabetes has risen dramatically in countries of all income levels. About 422 million people worldwide have diabetes, the majority living in low-and middle-income countries, and 1.5 million deaths are directly attributed to diabetes each year. **(WHO, 2023)**

Diabetes mellitus is a common noncommunicable disease in India and emerged as a major public health problem. Diabetes is a chronic disease, requiring a multidimensional approach for its management, wherein the patients are required to follow certain self-care practices such as regular physical activity, appropriate dietary practices, daily foot care practice, compliance with treatment regimen to achieve an optimal glycemic control and prevent complications.

Self-care is one of the processes to manage their health by adopting skills and attitude to avoid disease and health recovery. Patients who have good self-care and right attitude could manage their illness to avoid complication by doing self-management. [3]

Self-care in the form of adherence to diet and drug regimens, blood glucose monitoring, regular physical activity, maintenance of optimum weight, blood pressure, recognition of symptoms associated with glycosuria and hypoglycaemia etc. are key elements in secondary prevention.[4]

Need for the study

Approximately 537 million adults (20-79 years) are living with diabetes. The total number of people living with diabetes is projected to rise to 643 million by 2030 and 783 million by 2045. 3 in 4 adults with diabetes live in low- and middle-income countries. **(IDF, 10th Edition, 2021)**

Diabetes can be treated and its consequences avoided or delayed with diet, physical activity, medication and regular screening and treatment for complications. **(WHO)**

Successful management of diabetes is highly dependent on self-care behaviours of the patient. Most studies have indicated that patients with diabetes have lower self-care ability and a poor control of diabetes results with chronic complications such as retinopathy, nephropathy, and certain cardiovascular diseases. A proper adherence to self-care behaviours can

reduce disease complications up to 50%. Non-adherence to self-care practices is the main cause of mortality in diabetics. **[11]**

Studies have also shown that there exists a significant connection between attitude and health behaviours; a positive attitude towards a certain behaviour result in more willingness to do that behaviour**[7,11**]. Therefore, the current study aimed at assessing the level ofdiabetes self-care practices and attitude towards self-care in patients with type 2 diabetes.

Statement of the Problem:A Descriptive Cross-Sectional study to assess the level of self-care practice and attitude among adults with type 2 diabetes, Chennai, Tamilnadu

Objectives:
1. To assess the level of diabetes self-care practice and attitude among adults with diabetes.
2. To correlate the diabetes self-care practice and attitude among adults with diabetes.

METHODOLOGY
AQuantitative, Descriptive cross sectional research design was adopted. The study was conducted among adults with type 2 diabetes who are attending an outpatient clinic at Government hospital, Chennai. 200 participants were selected by non-probability convenient sampling technique. Demographic data such as age, gender, education. Occupation, type of family, duration of DM and Monthly income were collected. Summary of diabetes self-care activities (SDSCA),[9] Attitude towards self-care questionnaire were used to collect data. Summary of Diabetes Self-Care Activities (SDSCA) instrumentSDSCA is a self-report measurewith four components of diabetes self-management (diet, exercise, blood sugar testing, andfoot care). The respondents were asked to rate how many days during the past 7 days did theyperformed a specific self-care behavior. The scale ranges from 0 to 7, whereby higher scorescorrespond to higher diabetes management activities. Attitude towards self-care questionnaireincludes 14 items such as, “Daily wash and care offeet is necessary for my diabetes feet ulcer”. Theanswer to each item is on a 5-point Likert type scalefrom 1 to 5 (completely disagree to completely agree).The data was analyzed using descriptive and inferential statistics.

Results:

Table 1. Frequency and Percentage Distribution of Demographic Variables N = 200

S No.	Demographic Variables		Frequency	Percentage
1	Age in Years			
	a.	≤ 40	37	18.5
	b.	**41 – 60**	**115**	**57.5**
	c.	≥ 61	48	24
2	Gender			
	a.	**Male**	**114**	**57**
	b.	Female	86	43
3	Education			
	a.	Non-literate	52	26
	b.	Primary & Secondary School	54	27
	c.	High School	**59**	**29.5**
	d.	Degree and above	35	17.5
4	Occupation			
	a.	**Employed**	**118**	**59**
	b.	Unemployed	82	41
5	Type of Family			
	a.	Joint	70	35
	b.	**Nuclear**	**130**	**65**
6	Duration of DM			
	a.	**≤ 5 Years**	**107**	**53.5**
	b.	6 - 10 Years	77	38.5
	c.	≥ 11 Years	16	8
7	Monthly Family Income			
	a.	≤ Rs. 5000	62	31
	b.	**Rs. 5001 - 10000**	**98**	**49**
	c.	≥ Rs. 10001	40	20

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Table 1 summarizes the demographic profile of the study participants. Among 200 participants, 115 (57.5%) were aged between 41-60 yrs, 114 (57%) were males, 59 (29.5%) had high schooleducation, 118 (59%) were employed, 107 (53.5%) had a duration of DM of <5 years and 98 (49%) had monthly family income of Rs.5001-10000.

Fig.no.1 Percentage distribution of level of self-care practice

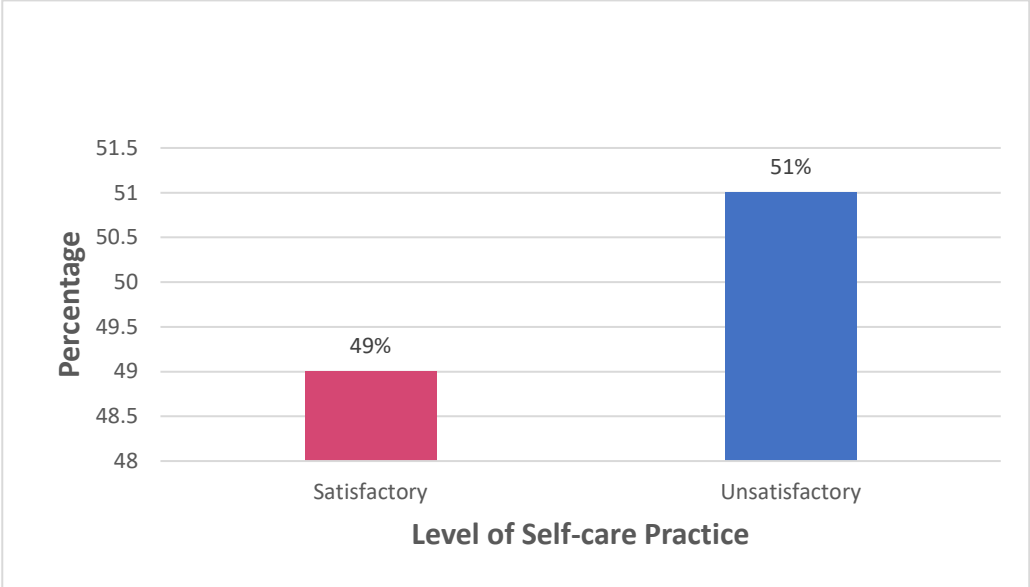

Fig.no. 1 presents that 49% had satisfactory self-care practice and 51% had unsatisfactory self-care practice.

Table 2. Summary of Diabetes Self-Care Activities (SDSCA) Domains among adults with type 2 diabetes

SDSCA	Mean (SD)
Diet	13.21 (4.89)
Physical Activity	6.76 (3.05)
Blood Sugar Testing	6.27 (3.16)
Foot Care	6.93 (3.39)
Total Score	33.18 (11.55)

Participants had an overall SDSCA score of 33.18 ± 11.55. The findings showed that the participants had diet, physical activity, blood sugar testing and foot care scores of 13.21 (4.89), 6.76 (3.05), 6.27 (3.16) and 6.93 (3.39), respectively (Table 2).

Table 3. Frequency and Percentage Distribution at which adults with type 2 diabetes performed self-care activities N=200

	Questionnaires	Days in the past week							Mean SD
		1	2	3	4	5	6	7	
DIET	How many of the last SEVEN DAYS have you followed a healthful eating plan	37	32	31	57	26	6	11	3.32 ± 1.66
	On average, over the past month, how many DAYS PER WEEK have you followed your eating plan?	30	32	41	39	40	6	12	3.46 ± 1.66
	On how many of the last SEVEN DAYS did you eat five or more servings of fruits and vegetables?	38	21	39	54	34	6	8	3.37 ± 1.61
	On how many of the last SEVEN DAYS did you eat high fat foods such as red meat or full-fat dairy products?	50	32	37	35	33	10	3	3.05 ± 1.64
PHYSICAL ACTIVITY	On how many of the last SEVEN DAYS did you participate in at least 30 minutes of physical activity? (Total minutes of continuous activity, including walking)	42	18	38	48	30	8	16	3.47 ± 1.79
	On how many of the last SEVEN DAYS did you participate in a specific exercise session(such as swimming, walking, biking) other than what you do around the house or as part of your work	49	22	34	42	34	8	11	3.29 ± 1.77

BLOOD SUGAR TESTING	On how many of the last SEVEN DAYS did you test your blood sugar?	58	15	38	30	43	15	1	3.17 ± 1.72
	On how many of the last SEVEN DAYS did you test your blood sugar the number of times recommended by your health care provider?	57	18	38	39	33	12	3	3.10 ± 1.69
FOOT CARE	On how many of the last SEVEN DAYS did you check your feet?	38	29	33	36	36	14	14	3.50 ± 1.82
	On how many of the last SEVEN DAYS did you inspect the inside of your shoes	54	17	25	37	37	18	12	3.43 ± 1.93

Among the participants, only 5.5% (n = 11) had followed a healthy eating plan for the entire week, while 3% (6) followed a healthy eating plan 6 days per week. Females had better adherence to a healthy eating plan (5.41 ± 0.79 days) compared with males (5.37 ± 0.81 days). Nearly 1/4th of the participants (n = 54, 27%) consumed fruits and vegetables 5 days a week, 14.2% consumed the same foods 6 days a week, and only 2% consumed the same for the entire 7 days. About 1/4th of participants (n = 50, 25%) consumed high-fat, red meat, and dairy products once a week, while 18.5% consumed the same 3 days a week. Data showed that adults with diabetes had poor self-care planning for physical activity and exercise. Among them only 8% performed 30 minutes of physical activity for each day of the week, while only 5.5% reported participating in specific exercise sessions for the entire week.

Similarly, the results showed very poor self-care planning concerning foot care and blood sugar testing among adults with diabetes.Only 7% (n = 14) of the participants examined their feet 7 days a week and18.5% inspected their shoes 5 days a week. Moreover, participants demonstrated poor blood sugar testing similar to foot care and physical activity. Among the adults with type 2 diabetes, only 21.5% (n = 43) monitored their blood sugar 5 days a week. (Table 3).

Table 4. Frequency and Percentage Distribution of Satisfactory and unsatisfactory responses to self-care practice N=200

	Questionnaires	Satisfactory N (%)	Unsatisfactory N (%)
DIET	How many of the last SEVEN DAYS have you followed a healthful eating plan	100 (50)	100 (50)
	On average, over the past month, how many DAYS PER WEEK have you followed your eating plan?	97 (48.5)	103 (51.5)
	On how many of the last SEVEN DAYS did you eat five or more servings of fruits and vegetables?	102 (51)	98 (49)
	On how many of the last SEVEN DAYS did you eat high fat foods such as red meat or full-fat dairy products?	81 (40.5)	119 (59.5)
PHYSICAL ACTIVITY	On how many of the last SEVEN DAYS did you participate in at least 30 minutes of physical activity? (Total minutes of continuous activity, including walking)	102 (51)	98 (49)
	On how many of the last SEVEN DAYS did you participate in a specific exercise session(such as swimming, walking, biking) other than what you do around the house or as part of your work	95 (47.5)	105 (52.5)
BLOOD SUGAR TESTING	On how many of the last SEVEN DAYS did you test your blood sugar?	89 (44.5)	111 (55.5)
	On how many of the last SEVEN DAYS did you test your blood sugar the number of times recommended by your health care provider?	87 (43.5)	113 (56.5)
FOOT CARE	On how many of the last SEVEN DAYS did you check your feet?	100 (50)	100 (50)
	On how many of the last SEVEN DAYS did you inspect the inside of your shoes	104 (52)	96 (48)

The study results found that half of the participants (50%) had satisfactory scores for diet, while 51% obtained a satisfactory overall score for the physical activity domain. Moreover, findings showed that participants exhibited poor total foot care (51%) and blood sugar testing (44%). (Table 4).

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Table 5. Frequency and Percentage Distribution of Self-Care Practices according to the Demographic Variables N=200

Characteristics		Diet Mean (SD)	Exercise Mean (SD)	Blood Glucose Testing Mean (SD)	Foot Care Mean (SD)
Age in Years					
a.	≤ 40	11.86 (4.61)	5.94 (3.03)	5.89 (2.87)	6.16 (3.35)
b.	41 – 60	14.66 (4.21)	7.52 (2.80)	6.96 (3.17)	7.49 (3.09)
c.	≥ 61	10.79 (5.43)	5.56 (3.16)	4.91 (2.90)	6.18 (3.90)
Gender					
a.	Male	13.07 (5.20)	6.72 (3.13)	6 (3.24)	6.72 (3.45)
b.	Female	13.40 (4.48)	6.80 (2.96)	6.62 (3.04)	7.20 (3.32)
Education					
a.	Non-literate	12.71 (6.15)	6.36 (3.71)	5.96 (3.62)	5.86 (3.47)
b.	Primary &	12.70 (4.32)	6.62 (2.36)	6.74 (2.62)	7.16 (2.78)
Secondary School		13.55 (4.29)	6.93 (2.74)	6.89 (2.90)	6.98 (2.63)
c.	High School	14.17 (4.59)	7.25 (3.45)	4.97 (3.29)	8.08 (4.72)
d.	Degree and above				
Occupation					
a.	Employed	12.76 (5.15)	6.57 (3.10)	6.07 (3.33)	6.62 (3.59)
b.	Unemployed	13.86 (4.45)	7.02 (2.98)	6.56 (2.90)	7.37 (3.05)
Type of Family					
a.	Joint	14.05 (4.45)	7.12 (3.02)	7.18 (2.90)	7.64 (3.15)
b.	Nuclear	12.76 (5.08)	6.56 (3.06)	5.78 (3.20)	6.55 (3.47)
Duration of DM					
a.	≤ 5 Years	12.36 (5.38)	6.28 (3.20)	5.65 (3.27)	6.18 (3.37)
b.	6 - 10 Years	14.19 (4.06)	7.45 (2.63)	7.06 (2.89)	7.55 (2.89)
c.	≥ 11 Years	14.18 (4.30)	6.56 (3.48)	6.62 (2.94)	8.93 (4.47)
Monthly Family Income					
a.	≤ Rs. 5000	11.83 (5.70)	5.58 (2.99)	6.04 (3.29)	6.35 (3.12)
b.	Rs. 5001 – 10000	14.24 (4.09)	7.43 (2.73)	6.95 (3.07)	7.41 (3.28)
c.	≥ Rs. 10001	12.92 (4.91)	6.92 (3.40)	4.95 (2.74)	6.65 (3.95)

The mean scores of diet, physical activity, blood sugar testing, and foot care did not significantly differ according to sex, duration of DM, type of family and Occupational status. However, adults aged 41–60 years had a higher mean for all self-care domains compared with those in other age categories. Employed adults exhibited significantly higher diet and physical activity scores compared with those in the other categories (13.39 ± 1.65 and 11.05 ± 1.63, respectively.
Adults with a diabetes duration of >11 years had higher diet and foot care scores compared with those in the other categories (14.18 ± 4.30; 8.93 ± 4.47: P < 0.001), whereas those with a disease duration of 6-10 years had higher physical activity and blood glucose monitoring scores compared with those in the other categories (7.45 ± 2.63; 7.06 ± 2.89). Adults with Diabetes living in a joint family had higher mean scores over four self-care domains compared with those living in a nuclear family. Adults with education more than a degree had higher mean scores for diet, Exercise, foot care (14.17 ± 4.59; 7.25 ± 3.45; 8.08 ± 4.72) and less score for blood sugar testing (4.97 ± 3.29). (Table 5)

Table 6. Frequency and Percentage Distribution of Attitude towards selfcare N=200

Level of Attitude	Frequency	Percentage
Favourable	200	100
Unfavourable	0	0

Table 7. Frequency and Percentage Distribution of Favourable and Unfavourable Attitude towardsdiabetes self-care N=200

Questionnaires	Favourable N (%)	Unfavourable N (%)
Consumption of fruits and vegetables are beneficial in controlling diabetes.	188 (94)	12 (6)
Quitting smoking is an effective approach to diabetes treatment.	186 (93)	14 (7)
Lowering the consumption of sweets and fried foods are effective approaches to diabetes control.	176 (88)	24 (12)

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Doing exercise regularly is an effective approach to diabetes control.	171 (85.5)	29 (14.5)
Daily foot washing is a key element in the prevention of diabetes foot ulcer.	167 (83.5)	33 (16.5)
Stress management is an effective approach to diabetes control.	173 (86.5)	27 (13.5)
Adherence to diabetes insulin injection or taking tablets is effective approaches to diabetes control.	171 (85.5)	29 (14.5)
Weight loss and control help me to better control diabetes.	164 (82)	36 (18)
Regular physician visiting is necessary for controlling my diabetes.	173 (86.5)	27 (13.5)
Monitoring blood glucose levels at home is effective for prevention diabetes complications.	175 (87.5)	25 (12)
Monitoring blood pressure at home is effective for prevention diabetes complications.	169 (84.5)	31 (15.5)
Wearing shoes at home reduces diabetes ulceration.	162 (81)	38 (19)
Checking HBA1C could help me better control my diabetes.	185 (92.5)	15 (7.5)
Daily foot care and nail trimming could prevent diabetes foot ulceration.	165 (82.5)	35 (17.5)

Table.no. 7 presents that adult with type 2 diabetes had most favourable attitude towards diet, glucose & BP monitoring, medication adherence than attitude towards weight management, exercises and foot care.

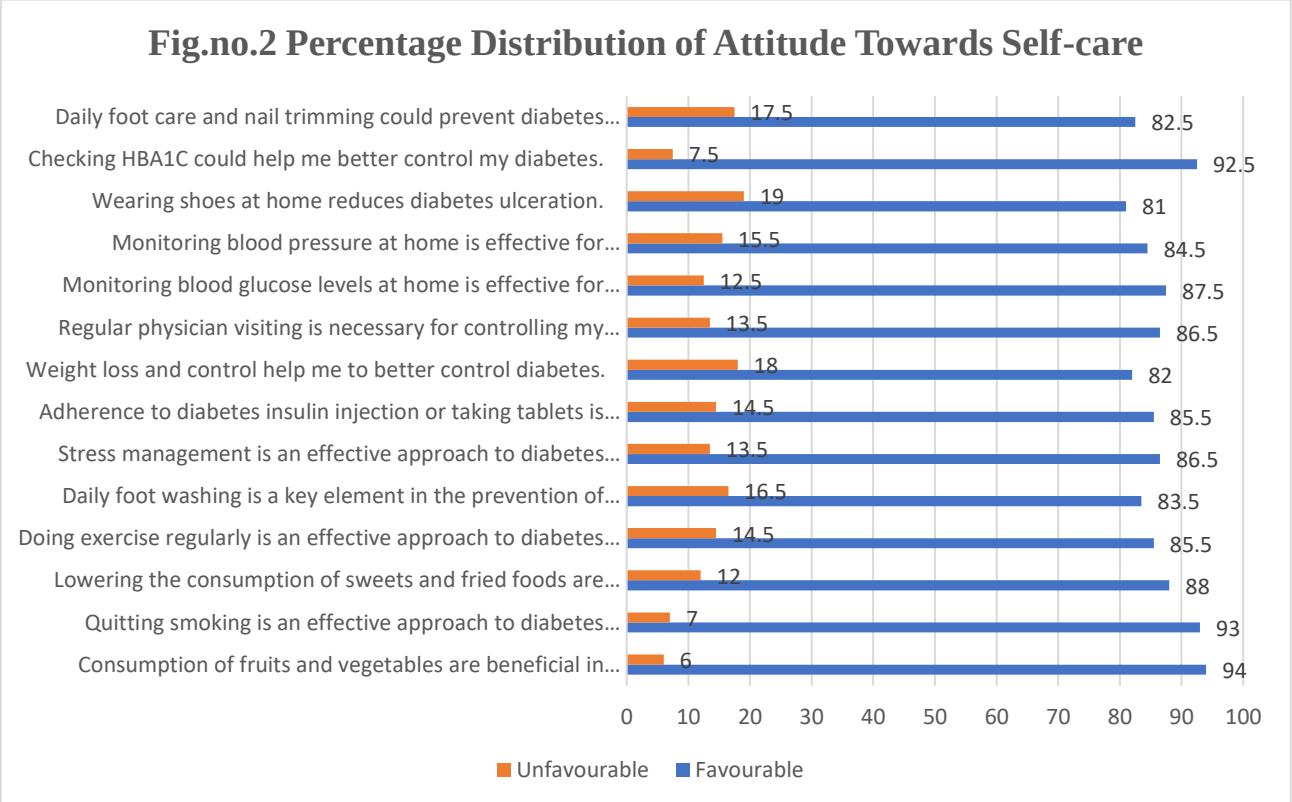

Table 8. Correlation between Diabetes Selfcare practice and attitude

Variables	Mean	Standard Deviation	r value
Selfcare Practice	33.2	11.56	0.0531*
Attitude	57.8	5.16	

Table.no.8 presents that a significant positive correlation between diabetes self- care practices and attitude.

Discussion

Self-management strategies such as self-monitoring of blood glucose, dietary restrictions, regular foot care, and ophthalmic examinations have been shown to markedly reduce the incidence and progression of diabetes-related complications. Self-care practices and lifestyle modification remains the mainstay treatment of T2DM.

Among 200 participants, 115 (57.5%) were aged between 41-60 yrs, 114 (57%) were males, 59 (29.5%) had high school education, 118 (59%) were employed, 107 (53.5%) had a duration of DM of <5 years. These findings were consistent with the study conducted by Syed, W, et.al., (2022) showed that 64.4% were male, 34.3% were aged between 43 and 52 years, 73.4% received an education (basiceducation and above), approximately 50% wereemployed, 46.3% of the respondents had adisease duration of <5 years.

The findings revealed that the participants engaged in diabetes self-care practiceswith a total SDSCA score of 33.18 ± 11.55.This result waslesser than the findings of Goitom M.T et al. (2021)revealing 46.4%participants had good diabetic self-care practices and higher than the study findings of Niguse et al. (2019) revealed 25.5% had good self-care practices.

The study results found that 50%,51%, 51% and 44% of the participants had satisfactory scores for diet, Physical activity, foot care and blood sugar testing respectively. This result was consistent with Amer *et al.* in (2018) reported that 64.5%of participants adhered to a healthy diet, while 17.6%adhered to physical activity and exercise. lack of adherence toblood sugar testing and foot care practice indicating individualdifferences in measures used, the living arrangements and characteristics of therespondents.

The results showed that adult with type 2 diabetes had most favourable attitude towards diet, glucose & BP monitoring, medication adherence than attitude towards weight management, exercises and foot care which was supported by Nikhil P. H et.al., (2012). He reported that the attitude response towards diabetes can be controlled (55.6%) and realized the importance ofmedications (46.2%).

Conclusion

Although the attitude of the study participants towards diabetes was favourable, the self-care practices are lower than desirable. Enhancing adherence to selfcareactivities through continuous patient education during the follow up visits mustbe included as a part of a diabetes self-care management plan.

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