

A survey about the current scenario of diabetes in Chattogram area by determining the practice of self-care activities among people with diabetes

ABSTRACT

Diabetes is one of the four major types of non-communicable diseases (NCDs) that make the largest contribution to morbidity and mortality worldwide. To determine the practice of self-care activities among people with diabetes and a comparative study with the current scenario of diabetes in Chattogram Diabetic General Hospital, Bangladesh. This study and data collection was performed into two ways. Firstly, review literatures to evaluate self-care activities of diabetic patients. After that, preparation of the survey on self-care activities of diabetic patients during the past 7 days in Chattogram Diabetic General Hospital, Bangladesh had been carried out. The data was collected from 11th August - 10th November 2021. Our study has revealed that among the age groups, the 41-60 cohorts showed the highest diabetes rate (48.8%) and in terms of gender, the prevalence of diabetes in females (52%) was more than that in males (48%). Highest patients suffered from Diabetes for 01-05 years (43%). Joint pain was highest found (64%) and Hypertension was found (62%), so Joint Pain & Hypertensive patient are more affected. Only 58% of the patients were participated in Diabetes Management Program. In the prior of 7 days, 43% of the patients were followed a healthful eating plan regularly & 9% of the patients were not followed, 43% of the patients were participated in physical exercise regularly & 24% of the patients were not participated, 58% of the patients were tested blood sugar level in 1 day & 7% of the patients were not tested, 41% of the patients were checked their feet regularly (most of them are females) & 24% of the patients were not checked, 14% of the patients were smoked cigarettes regularly & 83% of the patients were not smoked, 68% of the patients were taken regular diabetes medications & 9% of the patients were not taken their medications. The finding of the study is that, Self-care practices were found to be unsatisfactory in almost all aspects except for blood sugar monitoring and taking medication. As these practices are essential for prevention of complications and better quality-of-life, more efforts should be put to educate the people with diabetes. Self-care activities relating to pharmacological interventions predominated, while non-pharmacological care, including food and physical exercise, was less frequent.

Key words: Diabetes, Self-care activities, Hypertension, Medication, Pharmacological Intervention

Introduction

The International Diabetes Federation has predicted that the number of individuals with diabetes will increase from 240 million in 2007 to 380 million in 2025, with 80% of the disease burden in low and middle-income countries. More than 60% of the world's population with diabetes will come from Asia, because it remains the world's most populous region (1). In the recent World Economic Forum Report, the increasing burden of chronic diseases including diabetes was highlighted as a major global risk predicted to cause substantial financial loss resulting from in diabetic complications, clinical studies, registry, prospective cohorts, cross sectional cohorts,

casecontrol, cohorts, epidemiology, prevalence, incidence, causes, causation, diagnosis, prognosis, socioeconomic status, ethnicity, depression, psychosocial stress, smoking, haemoglobinopathy, thalassemia, visceral fat, hepatitis, C reactive proteins, infections, tobacco, alcohol, dietary factors, persistent organic pollutants, environmental toxins, pollutants, urbanization etc (2). Separate searches were performed for specific Asian countries. In rural Bangladesh, prevalence of diabetes increased from 2.3% to 6.8% between 1999 and 2004 (3). WHO aims to stimulate and support the adoption of effective measures for the surveillance, prevention and control of diabetes and its complications (4). To this end, WHO: provides scientific guidelines for the prevention of major noncommunicable diseases including diabetes; develops norms and standards for diabetes diagnosis and care; builds awareness on the global epidemic of diabetes, marking World Diabetes Day (14 November); and conducts surveillance of diabetes and its risk factors (5). The WHO Global report on diabetes provides an overview of the diabetes burden, interventions available to prevent and manage diabetes, and recommendations for governments, individuals, the civil society and the private sector (6). The WHO module on diagnosis and management of type 2 diabetes brings together guidance on diagnosis, classification and management of type 2 diabetes in one document (7). The module is for policy-makers who plan service delivery of diabetes care, national program managers responsible for training, planning and monitoring service delivery, and facility managers and primary care staff involved in clinical care and monitoring processes and outcomes of diabetes care (8). In April 2021 WHO launched the Global Diabetes Compact, a global initiative aiming for sustained improvements in diabetes prevention and care, with a particular focus on supporting low and middle-income countries (9). The Compact is bringing together national governments, UN organizations, nongovernmental organizations, private sector entities, academic institutions, and philanthropic foundations, people living with diabetes, and international donors to work on a shared vision of reducing the risk of diabetes and ensuring that all people who are diagnosed with diabetes have access to equitable, comprehensive, affordable and quality treatment and care. In May 2021, the World Health Assembly agreed a Resolution on strengthening prevention and control of diabetes (10). It recommends action in areas including increasing access to insulin; promoting convergence and harmonization of regulatory requirements for insulin and other medicines and health products for the treatment of diabetes; and assessing the feasibility and potential value of establishing a web-based tool to share information relevant to the transparency of markets for diabetes medicines and health products (11). Diabetes is one of the four major types of non-communicable diseases (NCDs) that make the largest contribution to morbidity and mortality worldwide (12). According to WHO global health days 2016, about 422 million people globally had diabetes, with most living in the developing countries, and unfortunately, more than 80% of diabetes deaths occur in low- and middle-income countries. And 80% of people with diabetes live in low- and middle-income countries. The prevalence of diabetes is increasing in Bangladesh in both urban and rural areas (13).

Aim of the Work

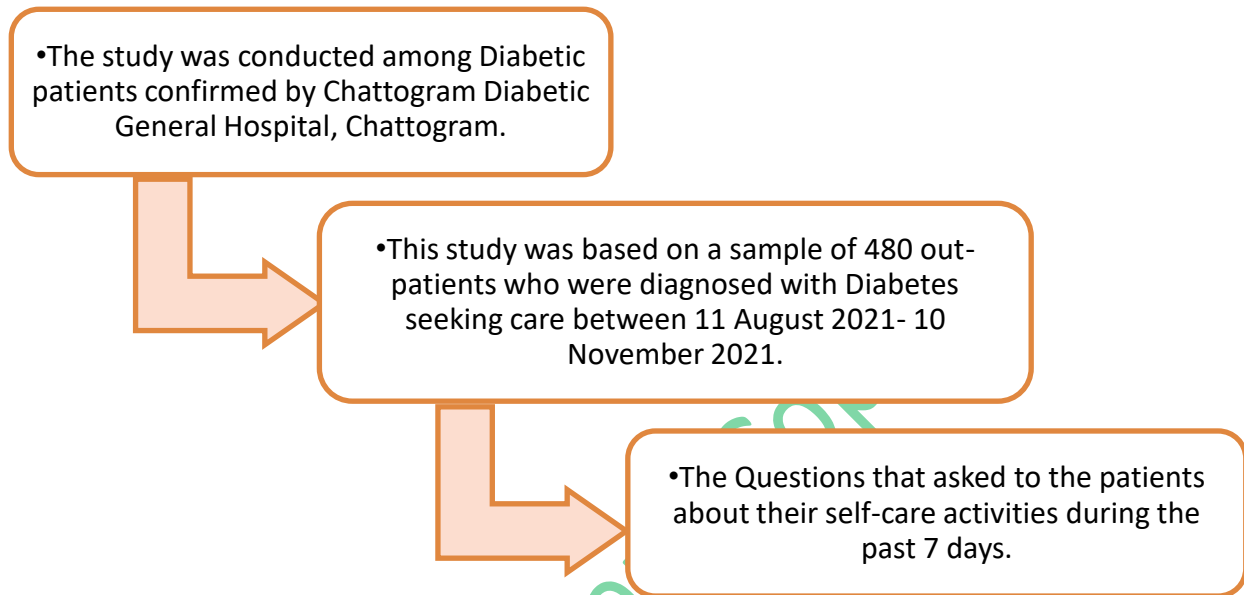
The aim of the work is to present the current scenario of the outdoor diabetic patients in Chattogram Diabetic General Hospital.

- The objective of this survey is to analyze the intentness of doing regular physical activities.

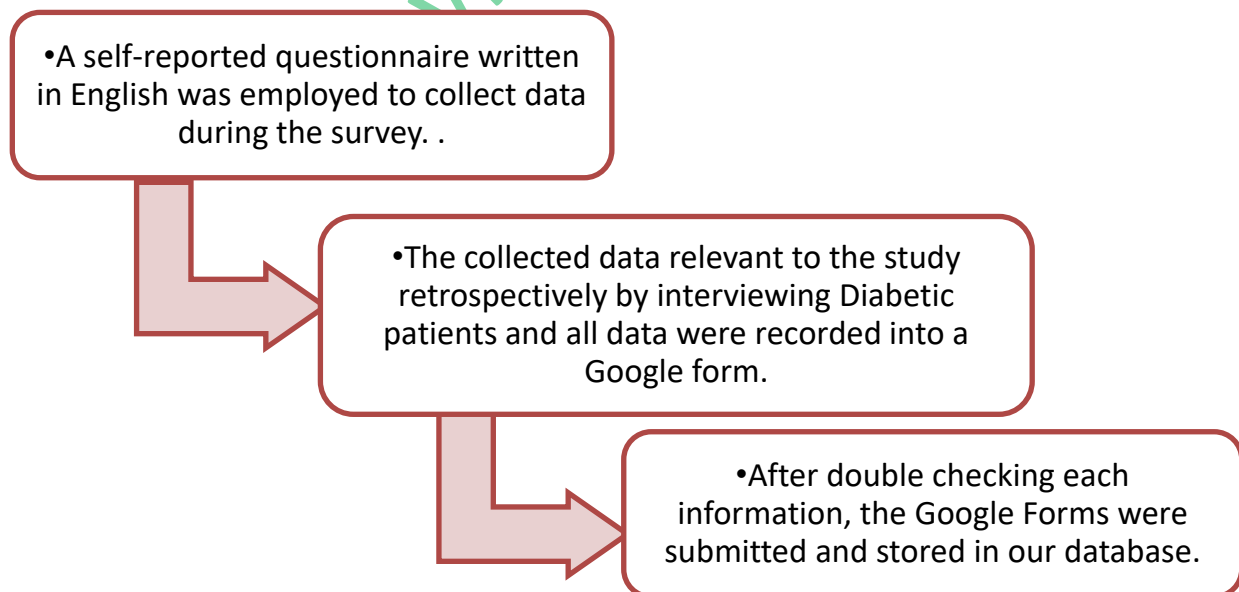
- The health and mental condition, which they are suffered, how they maintain their regular self-care activities.
- To find out the present condition of the patients.
- To find out habits that associated with diabetes.

Materials and Methodology

Study design and participants:



Data collection procedure:



- a) This survey was done by first researching published papers on Diabetes self-care management. The paper was searched on Google scholar, PubMed, Sci hub and retrieved 18 literatures. After that the paper were screened to 5 literatures.
- b) This was a cross-sectional, observational study carried out in the Chittagong Diabetes General Hospital, Bangladesh. Offline survey was done by bodily going to the hospital and asking questions to people. Those who didn't want to perform it was given the right to deny. Safety measures were taken for coronavirus spread.
- c) An online semi-structured questionnaire was developed. The link of the questionnaire was sent through e-mails, WhatsApp and other social media to the contacts of the investigators. The participants were encouraged to roll out the survey to as many people as possible. On receiving and clicking the link the participants got auto directed to the information about the study and informed consent. After they accepted to take the survey, they filled up the demographic details. Then a set of several questions appeared sequentially, which the participants were to answer.
- d) The questionnaire was consisted of 19 questions about participant's general demographic information, summary of diabetic self-care activities and self-care recommendations for the patients.
- e) The survey was conducted from 11th August to November 10th, 2021 where 410 from offline and 70 social media users responded and then the data was collected, analyzed and the result were prepared according to the responses.

RESULT AND DISCUSSION

This survey based on present scenario of Diabetes by determining the practice of self-care activities in Chittagong Metropolitan Area. The survey was conducted from 11 October 2021 to 10 November 2021 where 70 social media users and 410 people from offline responded. Here the assessment has been done on the 480 responses that had been submitted by the people. The result in demographic table and charts are shown and discussed here below:

SUBJECT CHARACTERISTICS

Age:

Table 1: Age Difference of the participants

Age	No. of Participants	Percentage
Below 20 years	6	1%
21-40 years	121	25%
51-60 years	234	49%
Above 60 years	119	25%

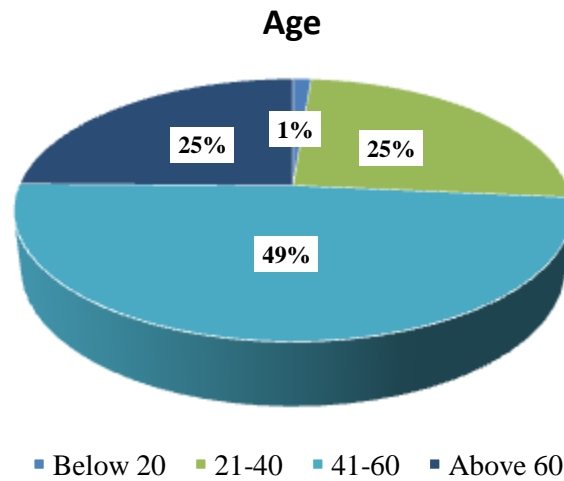


Figure 1: Age difference of the participants.

Discussion: This figure shows that, the participants were divided into four categories based on their Age difference. Most of the participants (n=234, 49%) were aged 41-60 years. Those who were above 60 years made up only 25% (n=119) of the participants.

Gender

Table 2: Gender of the participants

Gender	No. of the Participants	Percentage
Male	232	48%
Female	248	52%

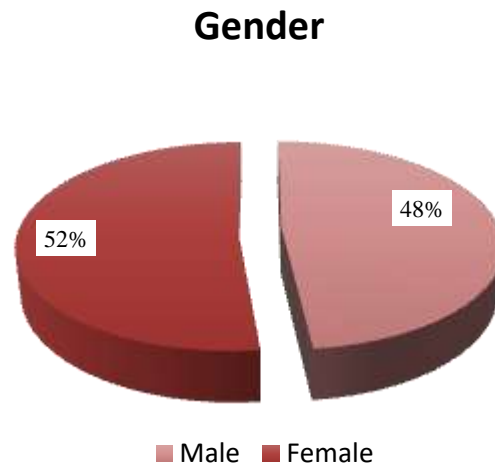


Figure 2: Gender of the participants.

Discussion: This figure shows that out of 480 study participants, 232 (48%) were male and 248 (52%) were female.

Place of Residence

Table 3: Residence area of the participants

Area	No. of the Participants	Percentage
Rural	183	38%
Urban	297	62%

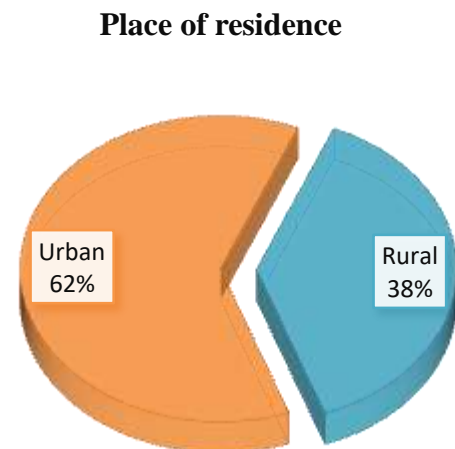


Figure 3: Residence area of the participants.

Discussion: This figure shows that out of 480 study participants, 183 (38%) were lived in rural area and 297 (62%) were lived in urban area.

Diabetes Duration

Table 4: Duration of Diabetes of the participants

Range (Year)	No. of the Participants
01-05	207(43%)
06-10	151(31%)
11-15	70(15%)
16-20	36(7%)
21-25	12(3%)
26-30	4(1%)

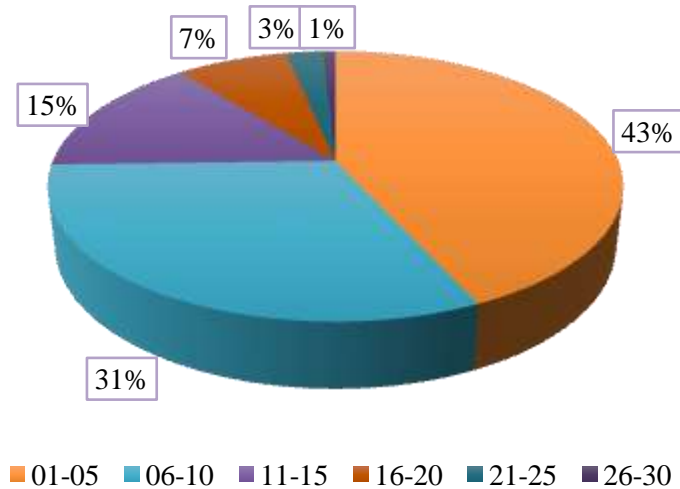


Figure 4:Duration of Diabetes of the participants.

Discussion: This figure shows that out of 480 study participants, highest patients suffered from Diabetes for 01-05 years (43%).

Treatment with Insulin

Table 5: Treatment with Insulin of the participants

Treatment with Insulin	No. of the Participants	Percentage
Yes	242	50%
No	238	50%

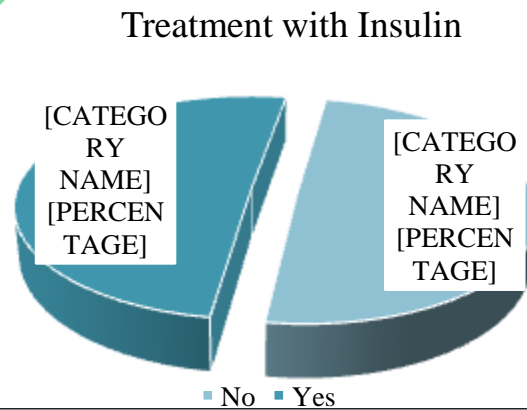


Figure 5:Treatment with Insulin of the participants.

Discussion: This figure shows that out of 480 study participants, 50% of the participants were treated with Insulin and 50% were not treated with Insulin.

Diabetes Management Program participation:

Table 6: Diabetes Management Program participation of the participants

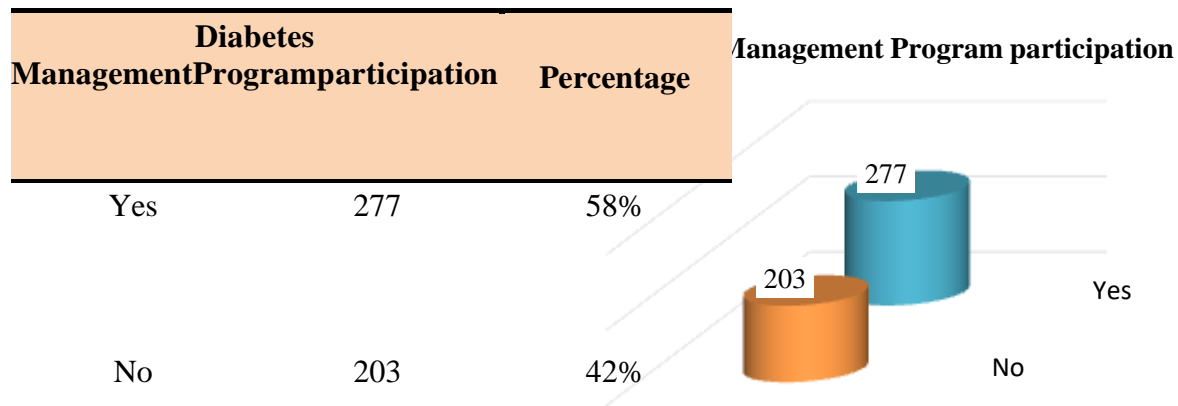


Figure 6:Diabetes Management Program participation of the participants.

Discussion: This figure shows that out of 480 study participants, 58% of the participants were participated in the Diabetes management program and 42% were not participated.

Additional Chronic Disease

Table 7: Additional Chronic Diseases of the participants

Diseases	No. of Patients
Anemia	1
Hyperthyroidism	5
Hypercholesterolemia	7
Eye Disease	3
Asthma	21
Allergy	210
Joint Pain	287
Chronic Gestational Disease	198
Chronic Heart Disease	109
Chronic Renal Disease	71
Chronic Back Pain	235
Hypertension	272

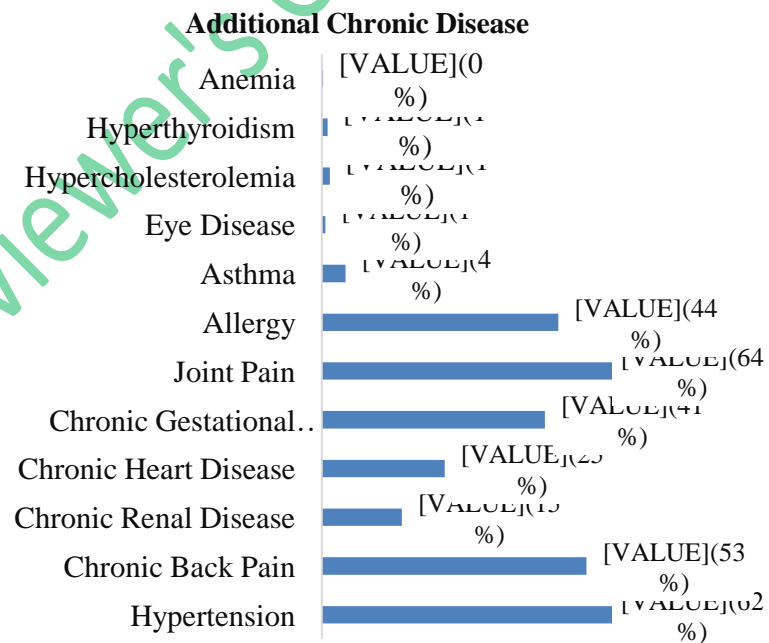


Figure 7:Additional Chronic Diseases of the participants

Discussion: This figure shows that out of 480 study participants, Joint pain was highest found (64%) and Hypertension was found (62%), so Joint Pain & Hypertensive patient are more affected.

SUMMARY OF DIABETIC SELF-CARE ACTIVITIES

How many days of the last 7 DAYS have you followed a healthful eating plan?

Table 8: Number of patients followed a healthful eating plan during **the** past 7 days

No. of Days	0	1	2	3	4	5	6	7
No. of participants	42(9%)	15(3%)	16(3%)	26(5%)	33(7%)	46(10%)	32(7%)	270(56%)

Number of patients followed a healthful eating plan during the past 7 days

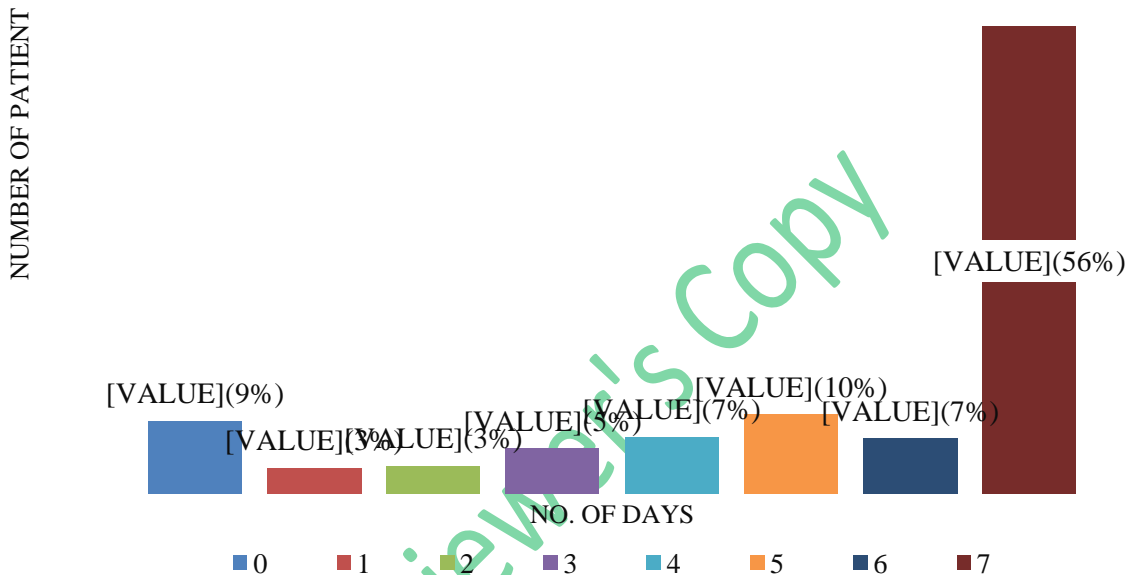


Figure 8: Number of patients followed a healthful eating plan during the past 7 days

Discussion: In the prior of 7 days, this figure shows that most of the participants (n=270, which were almost 56%) were followed a healthful eating plan for 7 days. 7% of the participants were followed a healthful eating plan for 6 days, 10% for 5 days, 7% for 4 days, 5% for 3 days, 3% for 2 days, 3% for 1 days & 9% of the participants were not followed within those days.

On how many of the last 7 DAYS did you eat high fat foods such as red meat or full-fat dairy products?

Table 9: No. of participants ate high fat foods during **the** past 7 days

No. of Days	0	1	2	3	4	5	6	7
No. of participants	224(47%)	119(25%)	69(14%)	34(7%)	14(3%)	9(2%)	6(1%)	5(1%)

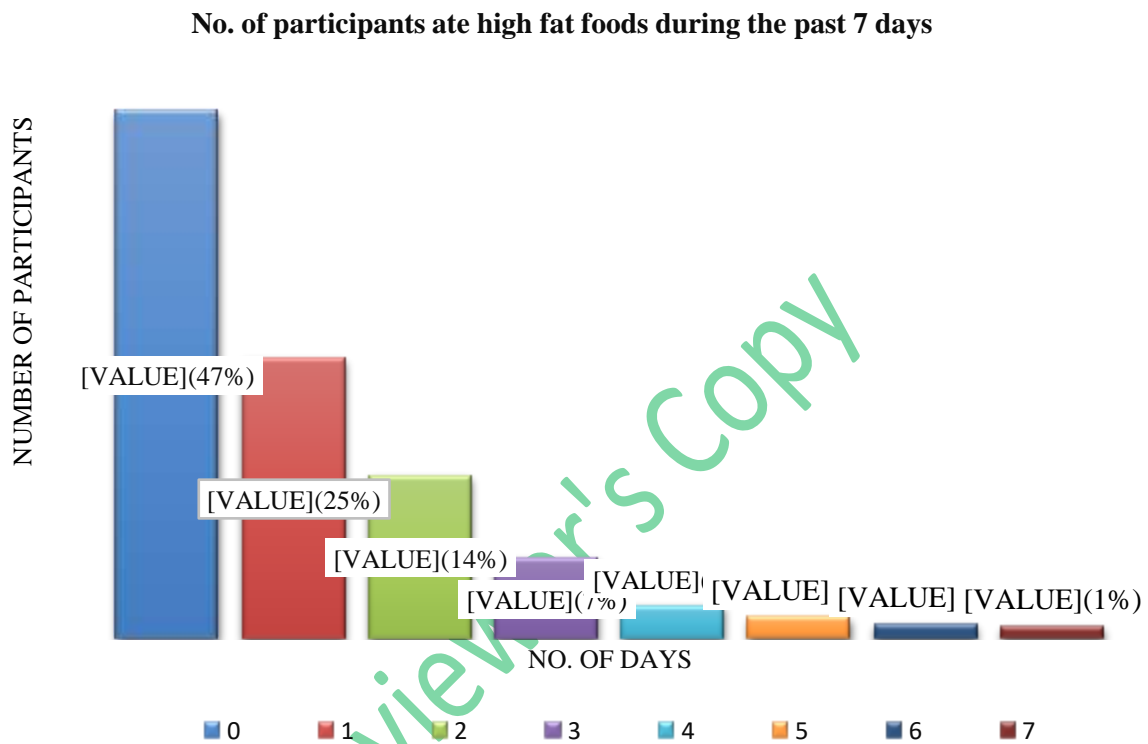


Figure 9:No. of participants ate high fat foods during **the** past 7 days

Discussion:In the prior of 7 days, this figure shows that most of the participants (n=224, which were almost 47%) were ate high fat foods for 0 days. 25% of the participants were ate high fat foods for 1 days, 14% for 2 days, 7% for 3 days, 3% for 4 days, 2% for 5 days, 1% for 6 days & 1% of the participants were ate within those days.

On how many of the last 7 DAYS did you participate in at least 30 minutes of physical activity?

Table 10: No. of participants Participated in at least 30 minutes of physical Activity during the last 7 days

No. of Days	0	1	2	3	4	5	6	7
No. of participants	116(24%)	30(6%)	28(6%)	24(5%)	36(8%)	27(6%)	14(3%)	205(43%)

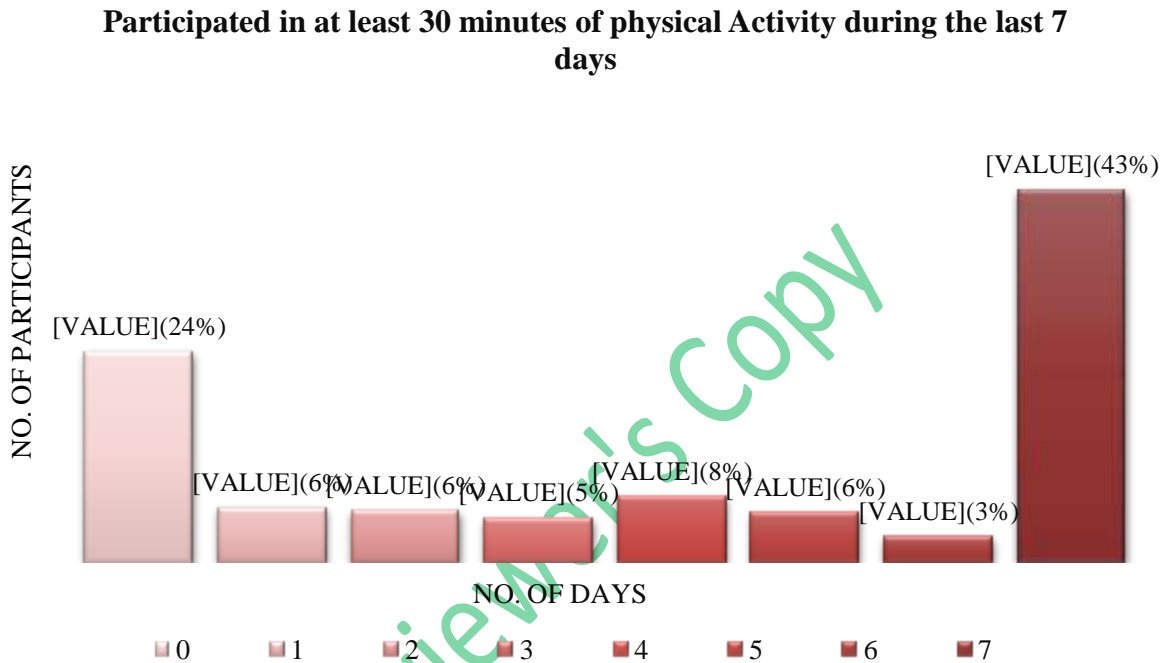


Figure 10: No. of participants Participated in at least 30 minutes of physical Activity during the last 7 days

Discussion: In the prior of 7 days, this figure shows that most of the participants (n=205, which were almost 43%) were participated in at least 30 minutes of physical activity for 7 days. 3% of the participants were participated for 6 days, 6% for 5 days, 8% for 4 days, 5% for 3 days, 6% for 2 days, 6% for 1 days & 24% of the participants were not participated withing that days.

On how many of the last 7 DAYS did you test your blood sugar the number of times recommended by your health care provider?

Table 11:No. of participants tested blood sugar during the last 7 days

<i>No. of Days</i>	0	1	2	3	4	5	6	7
<i>No. of participants</i>	34(7%)	277(58%)	83(17%)	43(9%)	26(5%)	9(2%)	2(0%)	6(1%)

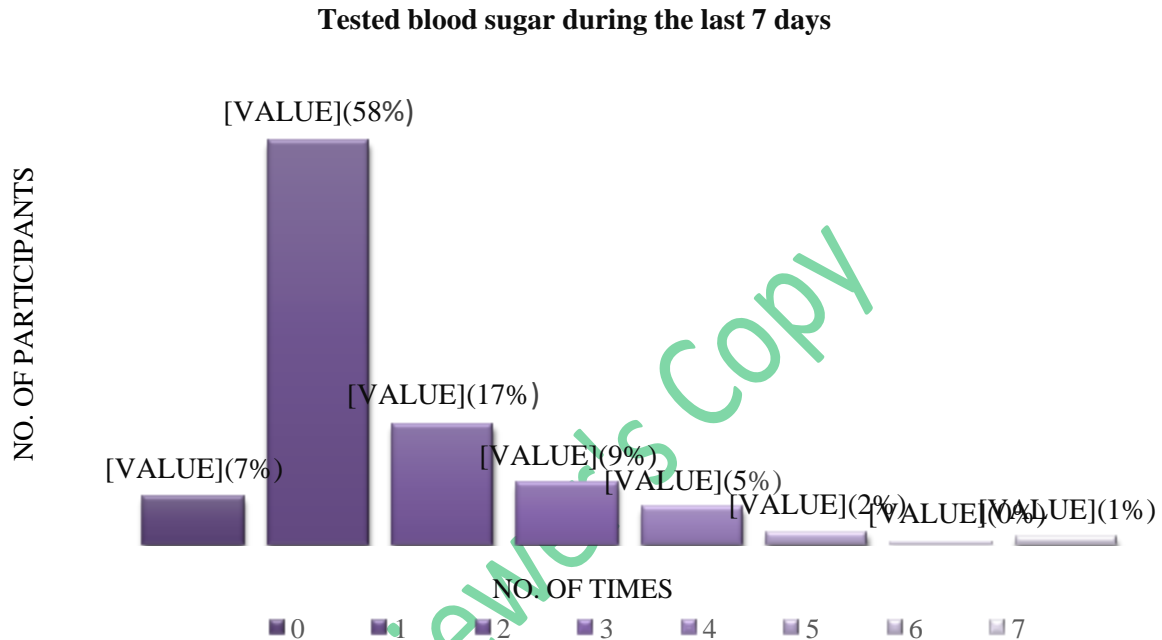


Figure 11: No. of participants tested blood sugar during the last 7 days

Discussion:In the prior of 7 days, this figure shows that most of the participants (n=6, which were almost 1%) were tested blood sugar level for 7 days. 0% of the participants were participated for 6 days, 2% for 5 days, 5% for 4 days, 9% for 3 days, 17% for 2 days, 58% for 1 days & 7% of the participants were not tested withing that days

On how many of the last 7 DAYS did you check your feet?

Table 12: No. of participants checked their feet during the last 7 day

No. of Days	0	1	2	3	4	5	6	7
No. of participants	116(24%)	31(6%)	26(5%)	45(9%)	28(6%)	23(5%)	14(3%)	197(41%)

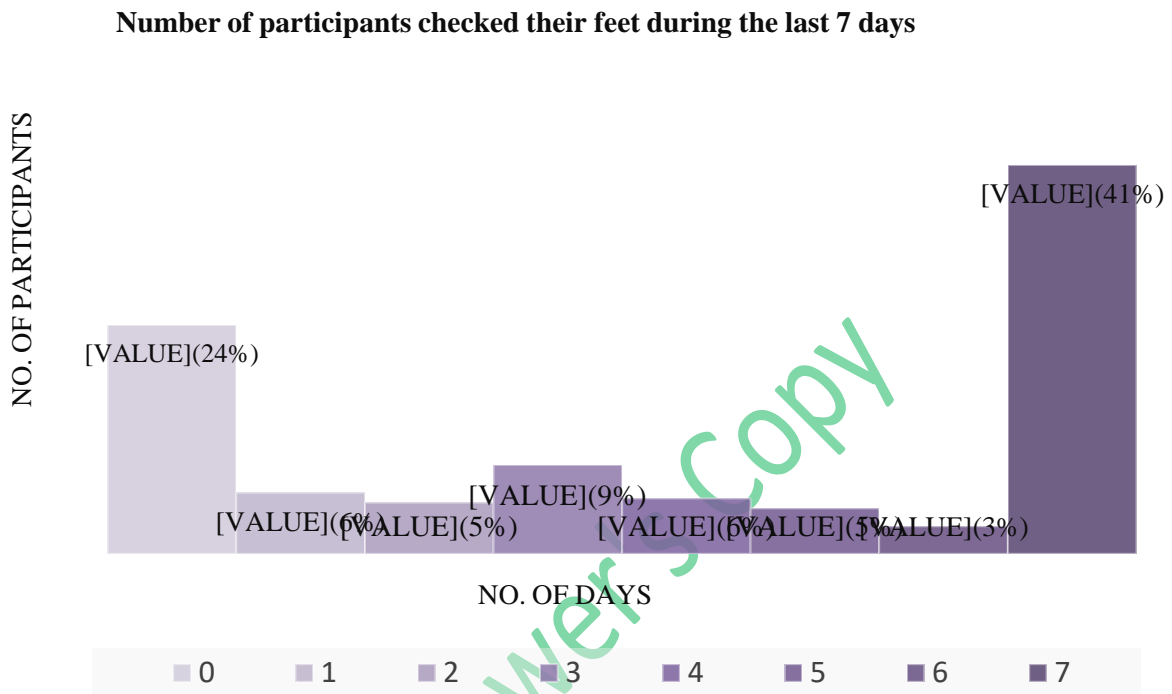


Figure 12: No. of participants checked their feet during the last 7 day

Discussion: In the prior of 7 days, this figure shows that most of the participants (n=197, which were almost 41%) were checked their feet for 7 days. 3% of the participants were participated for 6 days, 5% for 5 days, 6% for 4 days, 9% for 3 days, 5% for 2 days, 6% for 1 days & 24% of the participants were not checked withing that days.

Have you smoked a cigarette during the past 7 DAYS?

Table 13: No. of participants smoked during the last 7 day

No. of Days	0	1	2	3	4	5	6	7
No. of participants	396(83%)	3(1%)	3(1%)	3(1%)	1(0%)	2(0%)	4(1%)	68(14%)

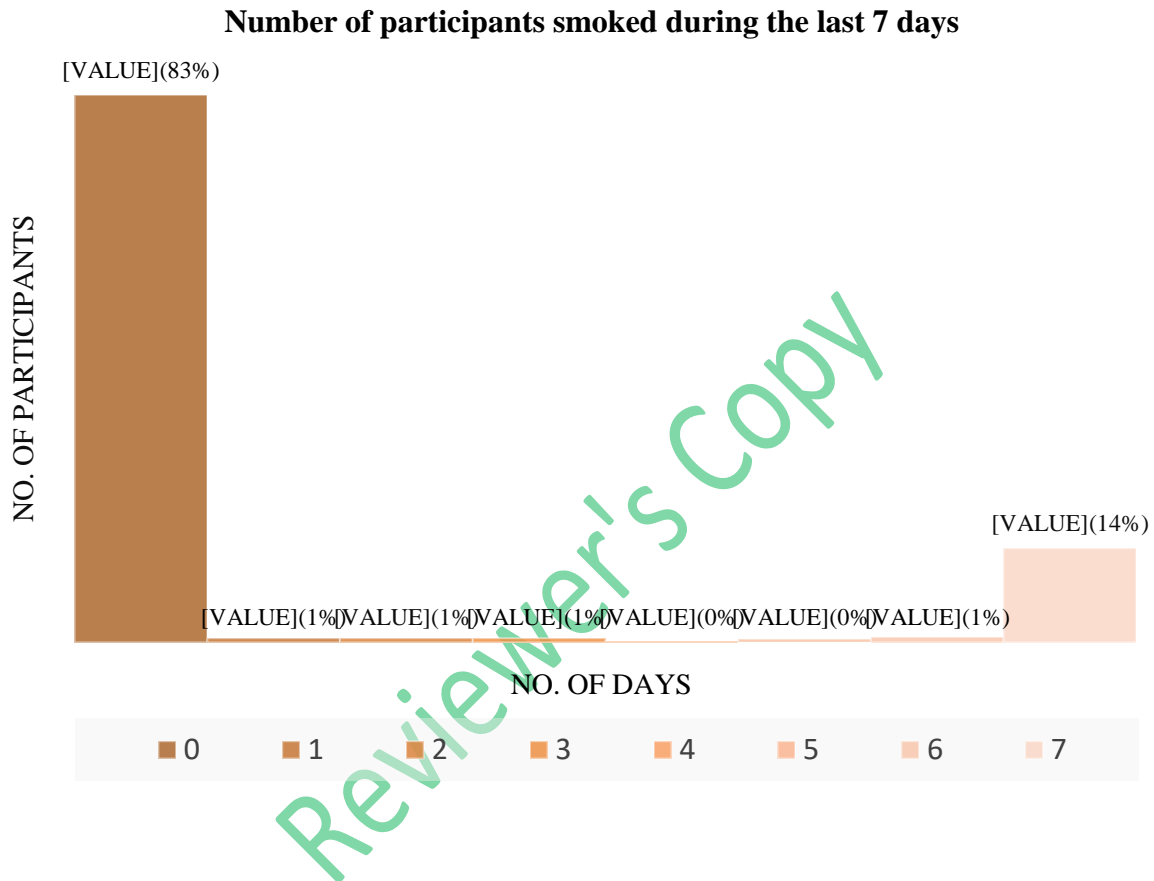


Figure 13: No. of participants smoked during the last 7 day

Discussion: In the prior of 7 days, this figure shows that most of the participants (n=396, which were almost 83%) were not smoked during that days. 1% of the participants were participated for 6 days, 0% for 5 days, 0% for 4 days, 1% for 3 days, 1% for 2 days, 1% for 1 days & 14% of the participants were smoked during that days.

On how many of the last 7 DAYS, did you take your recommended diabetes medication?

Table 14: No. of participants took their recommended diabetes medication during the last 7 day

No. of Days	0	1	2	3	4	5	6	7
No. of participants	41(9%)	4(1%)	7(1%)	13(3%)	9(2%)	29(6%)	49(10%)	328(68%)

Number of participants took their recommended diabetes medication during the last 7 days

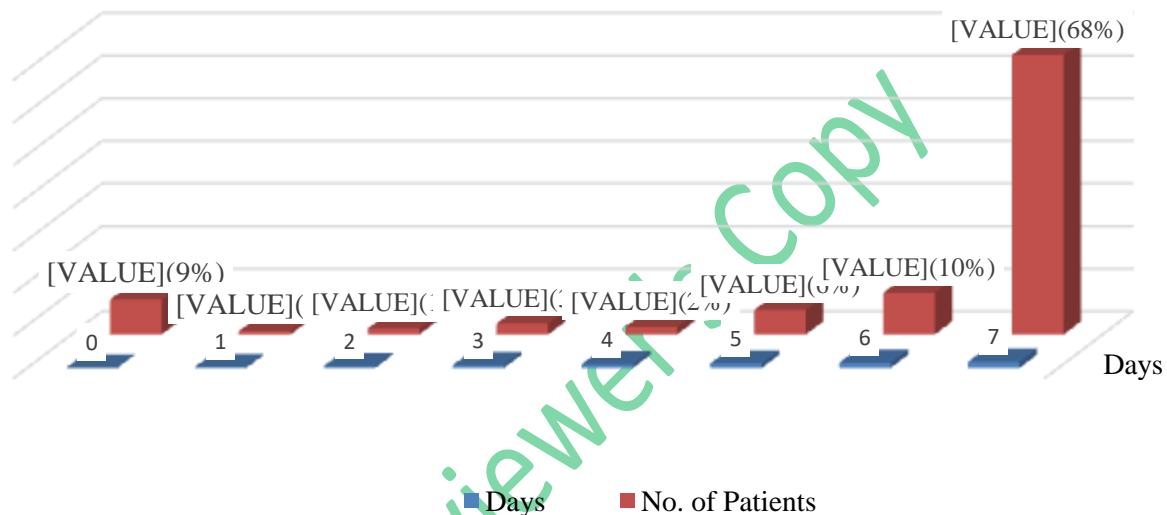


Figure 14 No. of participants took their recommended diabetes medication during the last 7 day

Discussion: In the prior of 7 days, this figure shows that most of the participants (n=328, which were almost 68%) were taken their recommended diabetes medication for 7 days. 10% of the participants were participated for 6 days, 6% for 5 days, 2% for 4 days, 3% for 3 days, 1% for 2 days, 1% for 1 days & 9% of the participants were not taken medications withing that days.

SELF-CARE RECOMMENDATIONS

Which of the following has your health care team (doctor, nurse, dietitian, or diabetes educator) advised you to do? Please check all that apply:

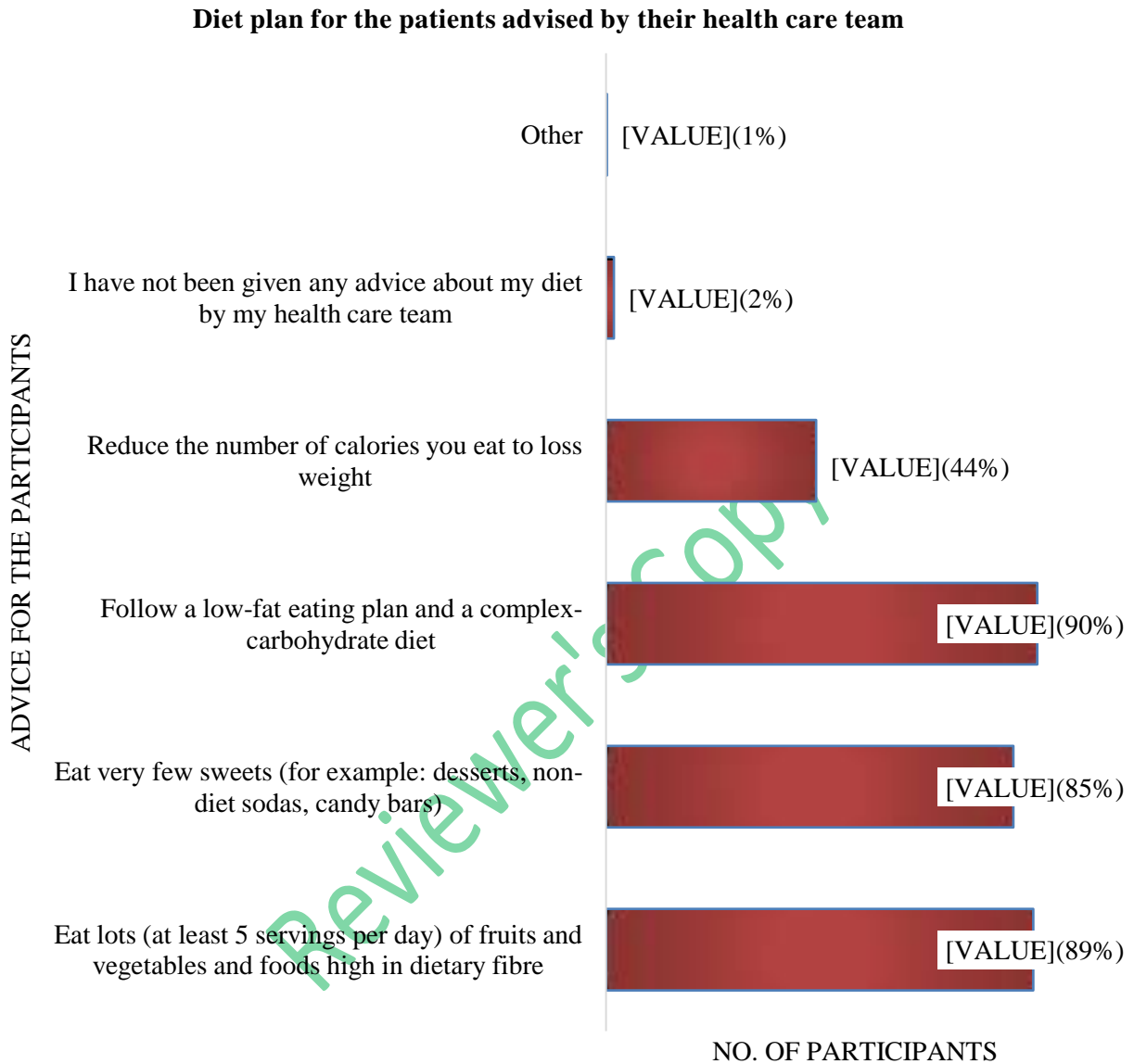


Figure 15: Diet plan for the participants advised by their health care team

Which of the following has your health care team (doctor, nurse, dietitian, or diabetes educator) advised you to do? Please check all that apply:

Recommended Exercise plan advised by Health care team

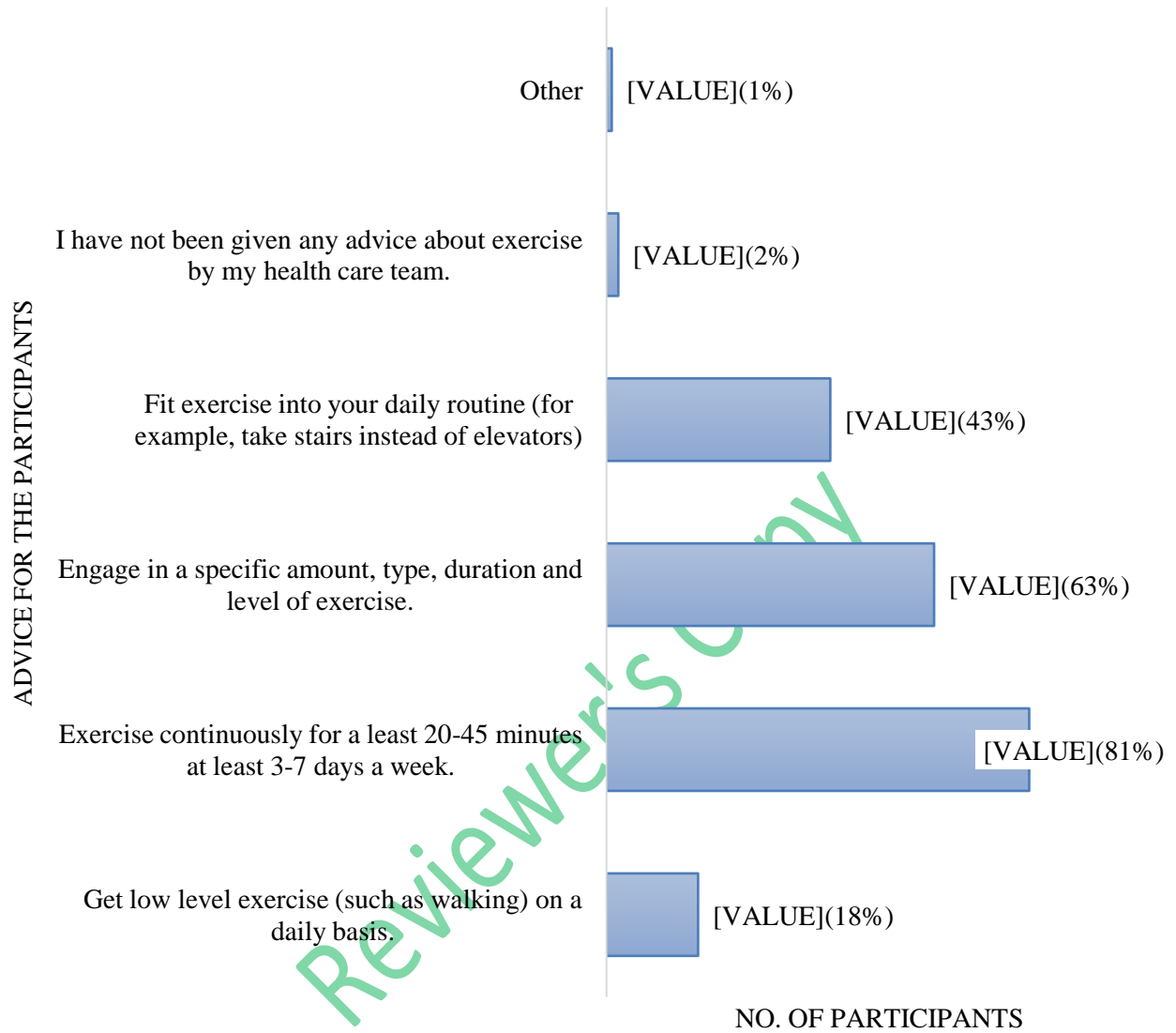


Figure 15: Recommended exercise plan for the participants advised by their health care team

Which of the following medications for your diabetes has your doctor prescribed? Please check all that apply:

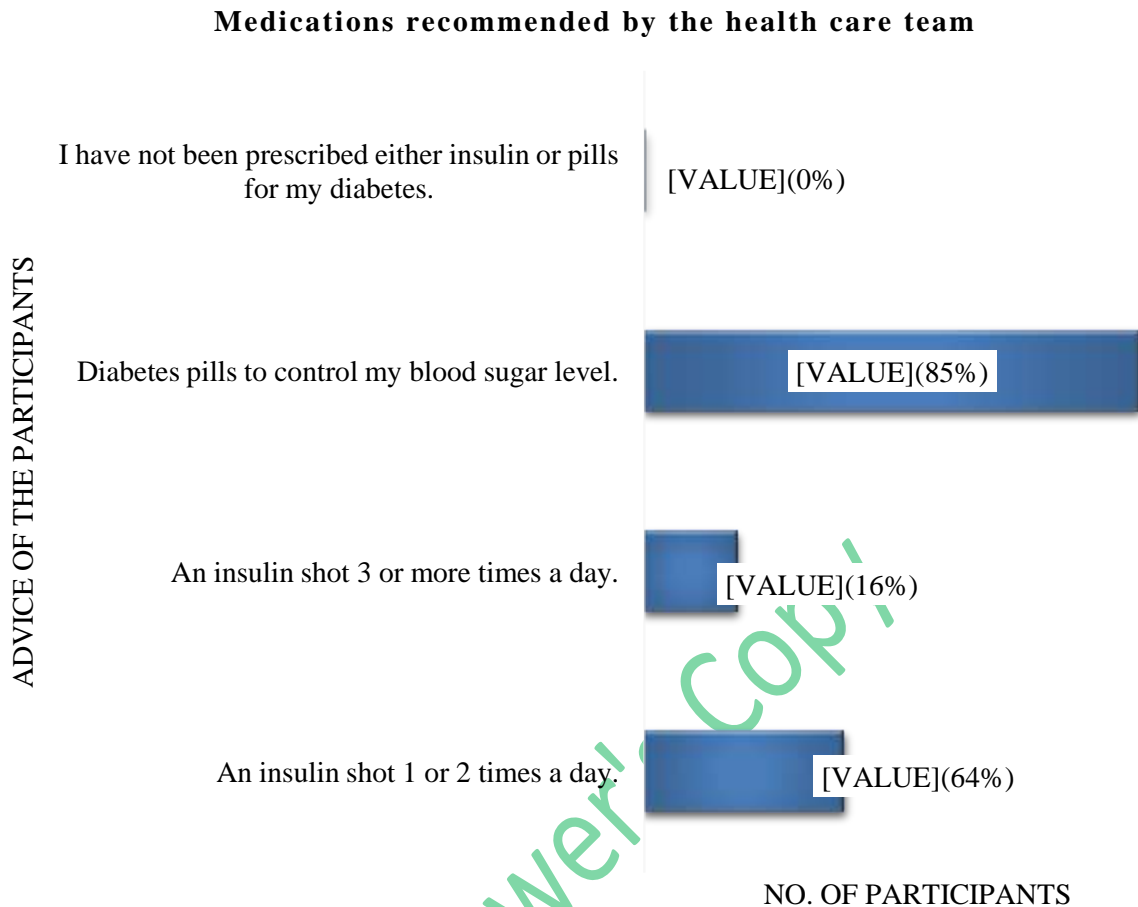


Figure16: Recommended medications for the participants advised by their health care team

Conclusion:

Age had a positive influence on patient's dietary control which may present that older patient showed higher rates of dietary control than younger patients. Another factor affecting dietary control is level of education which indicates more educated patients were associated with increased dietary control. To prevent morbidity and mortality associated with diabetes, patients' dedicated self-care activities are of crucial importance. Moreover, smoking, low education levels and increased combination of euglycemic agents are key predictors for poor self-care practices. Self-care activities relating to pharmacological interventions predominated, while non-pharmacological care, including food and physical exercise, was less frequent. Self-care practices were found to be unsatisfactory in almost all aspects except for blood sugar monitoring and taking medication. As these practices are essential for prevention of complications and better quality-of -life, more efforts should be put to educate the people with diabetes. The results obtained from this study could contribute to devising effective strategies for the provision of comprehensive health care to Diabetic patients. We assume that the outcomes of this study will work as a baseline for future studies in the same context.

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