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Diabetes Self-Care of People with Type 2 Diabetes Mellitus among Outpatients in Riyadh Hospitals: A Cross-Sectional Study

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Abstract

Background

The purpose of this research was to explore the self-care behaviors of Type 2 Diabetes Mellitus (DMT2) patients visiting outpatient departments in Riyadh hospitals and to analyze the correlation between demographic profiles and their compliance with prescribed self-care activities.

Methods

Using a quantitative, descriptive, cross-sectional design, information was gathered from 300 outpatients using the Summary of Diabetes Self-Care Activities (SDSCA) questionnaire. The instrument assessed self-care activities in areas of diet, exercise, blood glucose testing, foot care, and medication.

Results

Findings indicated that participants demonstrated moderate compliance with exercise (mean = 3.27) and foot care (mean = 3.80), but low compliance was evident in diet (M-3.04) and medication (3.09). Although under medical care, most respondents indicated minimal guidance from healthcare providers, particularly on footcare and exercise advice. Regression analysis showed no strong association between the majority of demographic variables (age, gender, marital status, education level) and diabetes self-care activities, with the exception of a weak but statistically significant correlation in the blood sugar testing area ($p = 0.042$). These results confirm the null hypothesis that demographic variables are not strongly related to self-care practice.

Conclusion

The research highlights the importance of having healthcare providers give consistent, individualized education and counseling to diabetic patients, particularly on underperformed areas such as blood sugar monitoring. Enhanced patient knowledge and motivation through ongoing follow-up and education could increase compliance with self-care practices and decrease the risk of diabetes complications. The results highlight the important role of healthcare teams and nurses in empowering patients with the necessary skills and knowledge to manage diabetes effectively.

Keywords: Diabetes Self-Care, Diabetes Mellitus Type 2, Educational Program, Compliance

1. Introduction

Diabetes Mellitus is a chronic, metabolic disorder characterized by blood glucose elevations causing serious damage to the heart, eyes, kidneys and nerves. Among the type of diabetes mellitus, the non-insulin dependent diabetes mellitus (NIDDM) is the most common affecting adults wherein body becomes resistant to insulin or the pancreas fails to produce enough insulin [1]. Diabetes mellitus is becoming the growing burden of the individual, families and communities around the world. There are approximately 537 million adult population aged 20-79 has diabetes where nearly half of them were unaware of having that condition [2].

Among the diabetic population, the 90 percent of cases belongs to type 2 diabetes which is attributed to their socio-economic, genetic and environmental factors. The key contributor to the increasing number of type 2 DM are the obesity prevalence, urbanization, aging population and low physical activity [2]. Research revealed that diabetes type 2 is prevalent among Native Americans/Alaska Natives with 14.7 percent cases followed by Hispanic-Americans with (12.5 percent cases. The diabetes mellitus prevalence in the world is increasing. Meanwhile, in Saudi Arabia, previous figures shows that the proportion of diabetes cases is common among age group >60 years old (49.2%) followed by the age group 45-64 years (38.9%). It also

revealed that diabetes is higher in male (10.3%) while in female (9.9%) [3]. This increasing burden of diabetes is due to various factors, including a rising obesity rate and an aging population [4]. This growing burden shows how the diabetes mellitus impact the individuals placing a significant burden on healthcare services and country. While globally the diabetes estimated to have 11 percent of the healthcare expenditures in 2011, the Saudi Arabian annual cost has been estimated at more than $870,000,000 [5].

Taking into account the major changes in the socio-economic status of the population, the nurses have a greater role in healthcare on the patient lifestyles, eating habits and physical activities along with the aging population. Studies have shown that 60.5 percent only of the 256 participants adhere to the treatment regimen of taking oral hypoglycemic agents [6]. This means that the adherence to self-care of diabetic patient in terms of taking the oral hypoglycemic agents was low. Even the consumption of unhealthy fats such as saturated fats and transfat is unnoticeable by the individuals without knowing it plays a major risk for cardiovascular effects [7].

In this regard, the burden imposed by the diabetes mellitus is inevitable. The self-care activities of diabetic patients need to be sought in order to understand the practices that will support the current patients to change their behavior. One situation that provokes the researchers to focus on diabetes self-care is the fainting incidence of one student inside the hospital while under clinical rotation. This clearly confirmed the low practices of diabetic self-care considering the diagnosis and available resources. Since studies have shown the unsatisfactory self-care practices in diabetes mellitus [6], determining the self-care practices of diabetes patients need to be explored in order to address the areas of improvement and increase quality of life of the people.

Significance of the study

This study guides the diabetic patients about the know-how of controlling and managing diabetes mellitus. This will address with the patient requirements and their desires of struggling with ease of diabetic self-care regimen. Prompt follow-up care for individuals with diabetes is crucial to prevent complications. It is essential for patients to comprehend the advantages of self-care practices and their significance in mitigating the risks associated with diabetes.

Research Objective

This study aims to investigate the self-care activities on type 2 diabetes mellitus among OPD patients in Riyadh Hospitals.

Research Hypotheses

H1: There is no significant association between demographic characteristics and diabetes self-care activities.

2. Materials and Methods

Study Design

This study utilized descriptive comparative cross-sectional design. As a cross-sectional type of research, it investigates the diabetes self-care activities of patients with type 2 diabetes mellitus across their demographic profile.

Data Collection Methods

The researchers adapted an instrument tool to gather the data needed in this study. The said questionnaire was the Summary of Diabetes Self-Care Activities (SDSCA) of the Oregon Research Institute. The SDSCA measure is a brief self-report questionnaire of diabetes self management that includes items assessing the following aspects of the diabetes regimen: General diet, specific diet, exercise, blood-glucose testing, and foot care [8]. The research gathering tool have 41 questions divided into three parts: Demographic characteristics, Diabetes Self-Care Activities and Self care Recommendations. The first part of the research questionnaire was the respondents' background such as gender, age, marital status, education, occupation, family situation, economy, length of living with diabetes and the history of diabetes. On the second part, the participants choose from the pre-determined options measuring the diet, exercise, blood glucose testing, foot care, and medications; and the last part is the self-care recommendations. This underwent pilot testing to 10 diabetic patients which are not part of the actual study. The said pilot testing was done in order to identify the problems with the data gathering tool and implement possible solutions.

Sample Characteristics

For sampling, the researchers went to Riyadh hospitals out-patient department. The hospital in this study pertains to any medical facility that caters out-patients consultations. Using the purposive convenience sampling, the respondents were chosen based on who is available on the research locale. A total of 300 people with type 2 diabetes mellitus attending their out-patient care from their physicians were selected as the study participants of this study. Main inclusion criteria include: (1) male and female diagnosed with Type 2 Diabetes Mellitus; (2) Adults over 18 years old; (3) has the ability to read and write to fill the questionnaire; (4) has willingness to participate.

Survey Administration

This study was conducted from December 2023 to January 2024 after obtaining approval from the REU research center and Institutional Review Board. The researchers started administering the collection instrument. Using an online tool e.g., Google forms, the link was sent to the respondents once they consented to the study.

Ethical Consideration

This research requires a permission letter from the university research center to be sent to the respective research locale of this study. The study participants were informed about the study and their rights to participate in the study. They were anonymous and voluntarily to participate and the data was analyzed confidently. The researchers used the ICN Code of Ethics (2006) for nurses for ethical considerations concerning respect of human rights and also respect for customs, values and beliefs for the individual, family and community [9].

Statistical Analysis

The collected data was entered into Statistical Package for Social Sciences (SPSS) version 23.0. Nominal categorical data was presented in terms of frequency and percentage and the ordered categorical data was presented as to weighted arithmetic mean. The hypotheses were computed using t test and regression analysis test. The confidence intervals (CI)

were used for categorical variables. The significance level was set at $p<0.05$.

3. Results and Discussions

Table 1: Demographic characteristics of the respondents

Variable (n=300)	Frequency	Percentage
Age		
12-21 years old	55	18.33
22-31 years old	145	48.33
32-41 years old	58	19.33
42-51years old	37	12.33
52-61 years old	5	1.67
Gender		
Male	78	26.00
Female	222	74.00
Marital Status		
Single	171	57.00
Married	92	30.67
Educational Attainment		
Bachelor	156	52.00
Masteral	103	34.33
Doctoral	41	13.67
Occupation		
Government Employee	60	20.00
Businessman	25	8.33
House duty	39	13.00
Technician	23	7.67
Private employee	39	13.00

In our study the demographic characteristics of the 300 residents have been as follows: The highest proportion of respondents were those aged 22–31 years (48. 533%) followed by 19. 33 % of those aged 32–41 years and 18. 3 % of those aged 12–21 years. From these findings, we can conclude that a great majority of respondents were younger adults, which suggests that we may be seeing the emergence of a new trend of early-onset Type 2 Diabetes Mellitus (T2DM) in the population at this time in our region. Adults with onset of type 2 diabetes at a younger age were less likely to achieve glycemic control at 1 year following diagnosis, suggesting the need for tailored care approaches to improve outcomes for this high-risk patient population [10].

As for gender, the proportion of respondents who were female was higher in this study (74 percent vs 26 percent). This is significant because it suggests the more health seeking behavior among women, the more likely they are to seek outpatient care or participate in health-related research. Overall, the prevalence of female participants could thus affect the overall engagement of self-care because such gender differences are known to influence health practices and engagement in chronic disease management. However, female exhibited higher disease prevention, health-promoting behaviors, body listening, and symptom recognition, while males showed different determinants of self-care confidence. Task-specific self-care confidence was crucial for males in monitoring and management, whereas persistence self-care confidence was significant for females in maintenance and management [11]. This indicates that self-care interventions should be tailored to address these gender-specific differences effectively.

With regard to marital status, more than half of the participants were single (57%) and 3. 0. 67% were married in comparison with the 18% sample from the other age groups. Being single is reflected in diabetes self-care as previous studies have shown that social and spousal support has a positive impact on other behavioral aspects of diabetes management (medical adherence, dietary management). Similar to a study result, spouses' involvement positively impacted healthy diets, higher self-efficacy, improved quality of psychological well-being, increased perceived support, and changes in glycemic-influenced behavior. Adaptation in the spouse patient relationship including maintaining cohesiveness can result in positive coping is essential in normalizing and contextualizing the chronic condition of DM. Partner-based collaboration is important for diabetes management, overcoming management barriers, and generating communal coping [12].

As a general rule, the educational level for respondents was relatively high. More than half (52) had a bachelor's degree, 34. 33% had a master's degree, and 16. 67% had a doctoral degree. The high level of education may mean a higher ability to effectively understand health information. This may lead to better self-care behaviors. However, an educational system does not always result in behavior change. It is important to understand whether this knowledge was reflected in behavior change.

Thirty percent of respondents identified themselves to be employed in government offices. One third worked as private employees or cared for house responsibilities. Eight percent were businessmen, while 7. 67 percent were technicians. Working in the workplace may affect an individual's capacity to practice regular self-care in certain ways: Work demands, limitations on their time and access to health care facilities.

Table 2: Compliance of Diabetic Patients to Self-Care Activities

Domain	Mean	Standard Deviation
Diet	3.0400	1.7600
Exercise	3.2650	1.8630
Blood Sugar Testing	3.0750	1.8825
Foot care	3.8025	2.1973
Medication	3.0900	1.7420

As a result of self-care compliance, various levels of adherence can be detected among different domains of diabetic self-care. Foot care had the highest mean score (M = 3. 80, SD = 2. 20), possibly because of higher awareness of diabetes related foot complications (oral care) or given that the specific activity of foot care in everyday life is more convenient, thus there was higher adherence overall. The highest mean score, followed by exercise, had a mean score of 3. 27 (SD = 1. 86), showing very moderate adherence. There was however, some improvement to be found, since regular exercise is a key in glycemic management.

Diet compliance was 3.04 (m 4.04), low relative to those who took prescription drugs (10. 7%) only. With respect to diabetes management, there is need for better diet adherence. Medication compliance was very small (3.09 percent, SD 1.74), indicating decreased medication adherence in this population. One of the purposes of the study is to establish the need for better medication adherence among participants with diabetes mellitus. Medication adherence is very crucial both for diabetes management and for maintaining the normal blood sugar level in this population. Blood sugar testing was not the most successful way to test glucose levels, being the most dissatisfied by it (M-3.08, SD 1. 88). According to a study,

they stated that in order to increase drug adherence in type 2 diabetes patients, it is necessary to increase drug satisfaction through active intervention by health and medical staff through immediate monitoring of drug side effects, as well as education and intervention [13].

Overall, the data show that although some aspects of self-care (e. g. foot care and exercise) are moderately practiced, important aspects of self-care (e. g. blood sugar monitoring and medication adherence) remain inadequately practiced. This suggests the need for targeted educational and behavioral interventions to improve comprehensive self-care of patients with Type 2 Diabetes Mellitus. According to study stated that successful diabetes self-management depends on individual self-care activities to control symptoms presented. Furthermore, regular self-management activities prevent complications from arising. Therefore, patients' compliance with diabetes self-management is needed to improve their life quality [14].

Table 3: Response to Diabetes Self-care Recommendation for Diet Domain

Item *Does the healthcare team advise you to:*	**Response Output**			
	Yes		**No**	
	n	**%**	**n**	**%**
Follow a low fat eating plan	42	14.00	31	10.33
Follow a complex carbohydrate diet	16	5.34	22	7.33
Reduce the number of calories you eat to lose weight	18	6.00	21	7.00
Eat lots of food high in dietary fiber	21	7.00	29	9.68
Eat lots (at least 5 servings per day) of fruits and vegetables	16	5.33	22	7.32
Eat very few sweets	17	5.66	25	8.33
Others:	3	1.00	5	1.68
I have not been given any advice about my diet by healthcare team	5	1.67	7	2.32

The responses to the dietary self-care recommendations showed that a relatively small proportion of diabetic patients reported that they were given consistent advice about eating a low-fat diet. Only 14% of the respondents said they had been advised to follow a low-fat eating plan; 10. 33% reported that they did not receive a specific diet recommendation from their health care team. Likewise, just 5. 3% of respondents reported being told to follow a complex carbohydrate diet and 6% were told to eat less to lose weight -- two key dietary interventions in maintaining Type 2 Diabetes Mellitus.

A study found a significant relationship between carbohydrate intake and blood glucose levels, indicating that higher carbohydrate consumption can lead to increased blood glucose in diabetic patients [15]. However, another study reported no significant correlation between carbohydrate intake and fasting blood glucose levels after a brown rice diet intervention [16].

On fiber intake and fruit/vegetable intake, only 7% of the patients were advised to take vitamin E supplementations, while 5. 33% were advised to take at least 5 servings of fruit and vegetables a day. Such low frequency of recommendations indicates that comprehensive nutritional counseling might not be regularly done or recommended as part of clinical visits. In addition, 5. 66% of the patients were advised to consume very few sweets, although reduction in sugar intake is an essential part of Diabetic management. Studies indicate that reducing dietary carbohydrates can improve metabolic control in DM patients. A carbohydrate-reduced high-protein diet led to decreased postprandial triglyceride responses, which is beneficial for managing diabetes [17].

Note that 1. 67% of those who had not been given any dietary advice listed none, and a small proportion of respondents listed "other" form of dietary advice (1. 00%). These findings suggest that there is a significant communication/implementation gap between healthcare providers and patients with respect to dietary counseling, which in turn probably contributes to suboptimal eating behaviour, as in previous findings, where diet compliance was moderate.

Table 4: Response to Diabetes Self-care Recommendation for Exercise Domain

Item *Does the healthcare team advise you to:*	**Response Output**			
	Yes		**No**	
	n	**%**	**n**	**%**
Get low level exercise (such as walking) on a daily basis	39	13.00	17	5.66
Exercise continuously for at least 20 minutes at least 3 times a week	24	8.00	28	9.34
Fit exercise into your daily routine (e.g.,take stairs instead of elevators, park a block away and walk etc.)	21	7.00	32	10.67
Engage in a specific amount, type, duration and level of exercise	8	2.66	36	12.00
Other:	4	1.34	44	14.67
I have not been given any advice about exercise by my health care team	6	2.00	41	13.67

Suffice to say, the findings regarding self-care recommendations on exercise were largely inconsistent and specific. Only 13% of respondents reported receiving guidance to walk low-level daily for at least 20 minutes three times a week, 5. 66% declined to provide such advice. The 8% who reported receiving continuing physical activity instruction after assessing the data reported that exercises should take place continuously for at least 20 minutes three times a week, while a even smaller percentage (7%), received encouragement to incorporate physical activity into their daily routine (for example, the use of the stairs or getting out of their car for a quick walk).Meanwhile, poor exercise practice among type II diabetic patients was observed, with 42.62% exhibiting poor practice. Barriers included lack of time, disinterest, and health conditions, despite a positive attitude and good knowledge regarding the benefits of physical exercise [18].

Besides the fact that only 2. 6% of those surveyed reported hearing specific information about what type, amount and intensity of exercise was suitable for their condition, 12% said they were not given such information. 16% said they received no information at all about exercise and 14. 67% said "Other", which is a clear indication that the advice was vague or inconsistent.

From a study, they found significantly poor diabetes-related knowledge about exercise among individuals with Type-2 diabetes mellitus, with 81.90% unaware that physical activity differs from exercise. Despite this, over 50% demonstrated a positive practice towards exercise and its benefits [19].

We propose that current recommendations for exercise are poorly generalized or underemphasized in clinical practice. This may limit patients' ability to undertake appropriate physical activity, particularly in light of their condition, and as physical activity represents a key component of the management of Type 2 Diabetes Mellitus, our findings suggest that, where this is the case, better education and public health awareness needs to occur.

Table 5: Response to Diabetes Self-care Recommendation for Sugar Testing Domain

Item *Does the healthcare team advise you to:*	**Response Output**			
	Yes		**No**	
	n	**%**	**n**	**%**
Test your blood sugar regularly	142	47	41	14
Other	12	4	53	18
I have not been given any advice either about testing my blood sugar level by my health care team	5	2	47	16

Although almost half of the participants (47%) said that their healthcare team had advised them to regularly check their blood sugar, a significant percentage of patients still did not receive enough guidance, according to the responses in the sugar testing domain. In particular, 16% of respondents said they received no advice about blood sugar monitoring, and 14% said they were not encouraged to test frequently. Given how important routine blood glucose testing is to the daily management of Type 2 Diabetes Mellitus, this is concerning.

Further, suggesting potential gaps or inconsistencies in patient education, 4% of respondents said they received "other" forms of advice, while 18% specifically denied receiving such alternative guidance. The earlier finding of poor adherence in blood sugar testing—which demonstrated the lowest adherence among all self-care activities—may be explained by the existence of these gaps. According to a study, adherence to guideline-recommended HbA1c testing frequency is crucial as it is associated with better glycaemic control and a significantly lower risk of chronic kidney disease in patients with type 2 diabetes, highlighting the importance of regular monitoring.

All things considered, the data point to the necessity of more organized and standardized blood glucose monitoring education, making sure that every diabetic patient is given precise and useful guidance. In addition to increasing patient autonomy, this would also improve glycemic control and lessen issues brought on by inadequate monitoring.

Table 6: Response to Diabetes Self-care Recommendation for Medication Domain

Item *Has the doctor prescribed you:*	**Response Output**			
	Yes		**No**	
	n	**%**	**n**	**%**
An insulin shot 1 or 2 times a day	17	6	42	14
An insulin shot 3 or more times a day	21	7	34	11
Diabetes pills to control my blood sugar level	61	20	13	4
Other:	3	1	50	17
I have not been prescribed either insulin or pills for my diabetes	2	1	57	19

The answers concerning medication advice show a variety of practice and different levels of compliance with prescribed treatment. Of the participants, 20% reported having been prescribed diabetes tablets to manage their blood glucose, which is consistent with standard treatment for Type 2 Diabetes Mellitus. Yet, an interesting 4% reported that the y had not been prescribed any diabetes medication whatsoever, which may reflect either under-treatment or a more personalized management strategy.

In terms of insulin therapy, a minority of the respondents (6%) were given insulin injections once or twice daily, and 7% were told to receive insulin shots three or more times per day. Still, a substantial 14% reported not being prescribed insulin injections, possibly indicating the phase of their diabetes or preference for tablets. In addition, 1% of the participants were given "other" medication, and 17% reported that no insulin or diabetes pills were ever prescribed for them.

According to a study, adherence to the medication domain of diabetes self-management behaviors is crucial for achieving optimal glycemic control. It involves taking prescribed medications consistently, which promotes good health outcomes, improves quality of life, and helps delay or reduce diabetes-related complications [20].

This information indicates the different styles of drug management for Type 2 Diabetes Mellitus patients. The contrasts in drug prescriptions could be due to the differences in disease progression, doctor's preference, or patient factors, and these results support the need for individualized treatment plans in managing the condition.

Table 7: Association between Demographic Characteristics and Diabetes Self-care Activities

Coefficients Model	Unstandardized coefficients		Standardized coefficients	*t*	Sig.
	B	Std. error	Beta		
Diet	-0.262	0.160	-0.282	-1.254	0.087
Exercise	0.125	0.169	0.074	1.856	0.17
Blood sugar test	0.161	0.174	0.115	1.172	0.042
Foot care	-0.121	0.158	-0.225	-0.429	0.617
Age	0.144	0.132	0.154	0.629	0.192
Gender	-0.294	0.043	-0.244	-0.715	0.404
Marital status	-0.085	0.138	0.096	1.538	-0.128
Educational attainment	0.246	0.132	0.240	-0.676	0.432
Occupation					

The regression analysis shown in Table 7 dives into how different demographic factors relate to diabetes self-care activities among the participants. The results reveal that blood sugar testing is significantly linked to these demographic variables, with a p-value of 0.042, which is below the usual significance level of 0.05. This indicates that certain demographic traits might affect how likely patients are to regularly monitor their blood glucose levels.

On the flip side, other self-care areas—like diet, exercise, and foot care—didn't show any significant connections with demographic characteristics. For example, the p-values for diet (0.087), exercise (0.17), and foot care (0.617) all surpassed the 0.05 mark, suggesting that factors such as age, gender, or education level might not strongly predict behaviors in these areas.

When we look at the individual demographic factors, educational attainment had a relatively higher standardized beta (β = 0.240), but its p-value (0.432) indicates that this relationship isn't statistically significant. Likewise, age and gender showed low significance values (p = 0.192 and p = 0.404, respectively), pointing to a weak or nonexistent correlation with self-care activities. Interestingly, the coefficient for marital status seemed a bit off, with a negative B value and a positive beta, which might suggest a coding or reporting mistake in the data entry. However, from a study, it was found that patient demographic characteristics are causally interrelated with diabetes self-care behaviors, with blood glucose monitoring serving as a mediator. Enhancing self-care activities, including monitoring and healthy dietary habits, is crucial for managing diabetes effectively [21].

Self-care practices of patients with diabetes are influenced by many sociodemographic factors. Clinically, this information can be applied to design and target education and care planning for patients with type 2 diabetes. Providing special attention to patients with diabetes would allow for the provision of realistic recommendations regarding self-care [22].

In summary, the findings suggest that, among the various demographic characteristics, only the behavior related to blood sugar testing showed a meaningful connection, while the other self-care areas did not. This highlights the importance of providing targeted education and support for glucose monitoring practices, particularly for demographic groups that are less inclined to engage in regular testing.

4. Conclusion

This research was on self-care practices and advice given to Type 2 Diabetes Mellitus patients in outpatient departments. The seven tables' findings bring forth significant demographic trends, levels of compliance, health advice, and patient characteristics relationships with diabetes self-care activities.

The survey participants mostly consisted of young adults aged between 22 and 31 years and were mostly females. The majority of the participants was unmarried and had achieved a bachelor's degree level of education. In spite of this relatively well-educated and young population, mean compliance with most self-care activities was inconsistent. Although foot care and exercise scored the highest on mean compliance rates, important items such as testing blood sugar levels and taking medications had alarmingly low mean scores, suggesting that fundamental components of diabetes care are being overlooked by the majority of patients.

Additionally, reactions to suggestions from healthcare teams indicated that counseling on diet and exercise was weak and unpredictable. A good portion of the patients indicated not getting explicit directions for eating habits, exercise, or blood sugar levels. Additionally, the results demonstrated that several of the patients received diabetes pills but fewer of them were taking insulin, while an appreciable part had no drug prescribed whatsoever.

Regression analysis demonstrated that among several demographic factors, blood sugar testing was the one with a statistically significant relationship, implying that demographics do not all affect self-care activities equally in all areas.

In summary, the study identifies a disparity between clinical guidelines and patient practice in diabetes self-management. In spite of educational and demographic privileges, most patients do not receive adequate guidance and support to initiate effective self-care. These results underscore the absolute necessity for systematic, individualized education and follow-up by clinicians to enhance compliance and minimize long-term diabetes complications.

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6. Conflict of Interest

The writers have declared that they have no potential conflicts of interest pertaining to the investigation, authorship, and/or publication of this work.

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8. References

1. World Health Organization. Diabetes, 2023. [cited 2023 October 21]. Retrieved from: https://www.who.int/healthtopics/diabetes#tab=tab_1.
2. International Diabetes Federation. Facts and Figures. 2021 [cited 2023 October 21]. Retrieved from: https://idf.org/about diabetes/diabetes-facts-figures/.
3. Robert AA, Al-Dawish A, Mujammami M, Dawish MAA. Type 1 Diabetes Mellitus in Saudi Arabia: A Soaring Epidemic. Int J Pediatr, May 8, 2018, 2018, 9408370. Doi: 10.1155/2018/9408370.
4. Kearns K, Dee A, Fitzgerald AP, Doherty E, Perry IJ. Chronic disease burden associated with overweight and obesity in Ireland: the effects of a small BMI reduction at population level. BMC Public Health. 2014; 4(1):143. Doi: 10.1186/1471-2458-14-143
5. Naeem Z. Burden of Diabetes Mellitus in Saudi Arabia. International Journal of Health Science. 2015; 9(3):5-6. Doi: 10.12816/0024690
6. Rajasekharan D, Kulkarni V, Unnikrishnan B, Kumar N, Holla R, Thapar R. Self-care activities among patients with diabetes attending a tertiary care hospital in mangalore karnataka, India. Annals of medical and health sciences research. 2015; 5(1):59-64. Doi: 10.4103/2141-9248.149791
7. Willett WC. Dietary fats and coronary heart disease. Journal of internal medicine. 2012; 272(1). 13-24. Doi: 10.1111/j.1365-2796.2012.02553.x.
8. Toobert DJ, Hampson SE, Glasgow RE. The summary of diabetes self-care activities measure: Results from 7 studies and a revised scale. Diabetes care. 2000; 23(7):943-950. Doi:10.2337/diacare.23.7.943
9. International Council of Nurses. The ICN Code of Ethics, 2021. [cited 2023 October 21]. https://www.icn.ch/sites/default/files/2023-06/ICN_Code-of-Ethics_EN_Web.pdf
10. Gopalan A, Mishra P, Alexeeff SE, Blatchins MA, Kim E, Man A, *et al*. Initial Glycemic Control and Care Among Younger Adults Diagnosed With Type 2 Diabetes. 2020. Diabetes Care. 43(5):975-981. Doi: https://doi.org/10.2337/DC19-1380
11. Caruso R, Rebora P, Luciani M, Di Mauro S, Ausili D. Sex-related differences in self-care behaviors of adults with type 2 diabetes mellitus. Endocrine. 2021; 67(2):354-362. Doi: https://doi.org/10.5281/zenodo.4528975
12. Pratiwi IN, Nursalam N, Widyawati IY, Ramoo V. Spousal Involvement in Collaborative Management and Glycemic Behavior Change among Patients with Diabetes Mellitus: A Systematic Review. SAGE Open Nursing. 2024; 10. Doi: https://doi.org/10.1177/23779608241245196
13. Gil EH. Factors Affecting Drug Adherence in Type 2 Diabetic Patient, 2023. [cited 2023 October 21]. Retrieved from: https://doi.org/10.52902/kjsc.2023.24.263.
14. Fadli F, Nursalam N, Sjattar EL, Sumbara S, Pangesti DN, Pelawi AMP. The Self-Management-Based care interventions on quality of life in type 2 Diabetes Mellitus patients: An integrative review. Multidisciplinary Reviews. 2024; 7(6):2023086. Doi: https://doi.org/10.31893/multirev.2024086
15. Zakiyah F, Indrawati V, Sulandjari S, Pratama S. Asupan karbohidrat, serat, dan vitamin D dengan kadar glukosa darah pada pasien rawat inap diabetes mellitus. Jurnal Gizi Klinik Indonesia, 2023. Doi: https://doi.org/10.22146/ijcn.83275
16. Cahyawardani C, Sulistyowati E, Widajati E. Carbohydrate and Fiber Intake on Fasting Blood Glucose Levels In Patients with Type 2 Diabetes Mellitus after Intervention of Brown Rice Diet. 2023. IJHN: Indonesian Journal of Human Nutrition. 10(1):1-11. Doi: https://doi.org/10.21776/ub.ijhn.2023.010.01.1
17. Samkani A, Skytte MJ, Anholm C, Astrup A, Deacon CF, Holst JJ, *et al*. The acute effects of dietary carbohydrate reduction on postprandial responses of non-esterified fatty acids and triglycerides: A randomized trial. Lipids in Health and Disease. 2018; 17(1):295. Doi: https://doi.org/10.1186/S12944-018-0953-8
18. Aarsha B, Amruta C, Devi TP. Knowledge, Attitude and Practice Regarding Physical Exercise Among Type II Diabetic Patients. International Journal of Current Research and Review. 2022; 14(05):21-28. Doi: https://doi.org/10.31782/ijcrr.2022.14504
19. Mtshali N, Sookan T. Diabetes-Related Knowledge, Attitude, and Practice Towards Exercise and Its Benefits Among Individuals with Type-2 Diabetes Mellitus, 2024. Doi: https://doi.org/10.20944/preprints202408.1214.v1
20. Mitchell-Brown F. Sustaining self-management in diabetes mellitus. Creative Nursing. 2014; 20(4):234-241. Doi: https://doi.org/10.1891/1078-4535.20.4.234
21. Cinaroglu S. Associated patient demographic characteristics and disease-related self-care behaviors with diabetes: A mediation model. Journal of Diabetes and Metabolic Disorders. 2021; 20(2):1-8. Doi: https://doi.org/10.1007/S40200-021-00856-6
22. Bhatti ZI, Manzoor N, Korai NA, Khaliq I. Impact of sociodemographic factors on self-care practices among patients with type 2 diabetes in Lahore, Pakistan: An exploratory study. 2018; 12(4). https://jfjmu.com/index.php/ojs/article/view/577