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THE PREVALENCE AND RELATED CHARACTERISTICS OF TYPE-2 DIABETES MELLITUS INADEQUATE CONCENTRATION DURING TREATMENT

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Abstract

Objective: This study aims to shed light on the causes and consequences of insufficient treatment for type 2 diabetes.

Study Design: A cross-sectional study.

Place and Duration of the Study: Department of Medicine, MTI, LRH Peshawar, Pakistan, from 05 july 2022, to sep 05, 2022.

Methods: There were ninety-nine individuals with type 2 diabetes. The age range of the cases ranged from 18 to 75 years. Before collecting their demographic information, all participants were asked to give informed written consent. Additional information includes factors such as pre-existing conditions, weight, age, and smoking habits. Lifestyle management, vaccination, pharmaceutical therapy, laboratory assessment, and physical examination are the five areas that determine subpar care. We utilized SPSS 25.0 for the analysis of all data.

Results: Out of the total cases, 45 (50.2%) were males and 45 (44.8%) were females. The average age of the patients was 44.11±04.56 years, with an average BMI of 22.10±05.72 kg/m02. A significant number of cases, 38 (42.4%), were associated with individuals of low socio-economic status. Out of the total cases, 23 (26.4%) were smokers and 38 (43.4%) had HTN. The frequency of insufficient lifestyle management was 22 (22.4%), while inadequate immunization was reported in 30 cases (36.2%). In terms of pharmacological therapy, 40 cases (42.6%) were found to be inadequate. Additionally, 36 cases (39.2%) had insufficient physical examinations, and inadequate laboratory tests were identified in 24 cases (25.4%). 67% of cases revealed a significant lack of proper care.

Conclusion: Treatment of type 2 diabetes is riddled with widespread issues stemming from insufficient care. It was revealed that a significant majority of individuals encountered some level of

inadequate care among the available options. Various factors, including systematic, medical professional, and individual variables, were found to contribute to below-average care delivery.

Keyboards: Type 2 Diabetes Mellitus, Inadequate Treatment, Consequences, Causes, Care

Introduction:

Type 2 diabetes mellitus (T2DM) stands as a formidable challenge in modern healthcare, presenting a complex web of metabolic dysregulation that affects millions worldwide1. Despite advances in medical understanding and treatment modalities, the management of T2DM remains a significant public health concern, particularly in regions with limited resources and healthcare infrastructure2,3. This chronic condition, characterized by insulin resistance and relative insulin deficiency, poses substantial burdens on individuals, families, and healthcare systems, with its prevalence steadily rising in both developed and developing nations4,5. The burden of T2DM extends beyond mere physiological implications, encompassing economic, social, and psychological dimensions6. The cascade of complications associated with uncontrolled T2DM, including cardiovascular disease, neuropathy, nephropathy, and retinopathy, exacts a heavy toll on patients' quality of life and contributes significantly to morbidity and mortality rates globally7. the economic ramifications of T2DM are profound, straining healthcare budgets with expenditures related to hospitalizations, medications, and management of complications8. Inadequate treatment of T2DM exacerbates these challenges, perpetuating a cycle of suboptimal glycemic control and escalating healthcare costs9. Factors contributing to inadequate care are multifactorial and encompass a spectrum of systemic, healthcare provider, and patient-related issues10. Limited access to healthcare services, disparities in resource allocation, and deficiencies in healthcare infrastructure contribute to disparities in T2DM management, particularly in underserved communities11. Healthcare provider-related factors, including inadequate training, time constraints, and adherence to clinical guidelines, further compound the issue, resulting in variations in the quality of care delivered to T2DM patients12. Additionally, patient-related factors such as poor health literacy, non-adherence to treatment regimens, and socioeconomic barriers pose formidable challenges to achieving optimal outcomes in T2DM management13. This study aims to elucidate the causes and consequences of insufficient treatment for T2DM, shedding light on the intricate interplay of factors influencing care delivery. By identifying key areas of deficiency and exploring potential strategies for improvement.14 this research seeks to inform targeted interventions aimed at enhancing the quality of care and ultimately improving outcomes for individuals living with T2DM15.

Methods:

This cross-sectional study, which ran from 05 july 2022, to sep 05, 2022, at the Department of Medicine, MTI, LRH Peshawar, Pakistan, sought to determine if 99 type 2 diabetes patients were receiving insufficient care. Informed permission was obtained, and demographic information, pre-existing conditions, lifestyle variables, and five essential areas of diabetes treatment were evaluated.

Data collection:

From 05 july 2022, to sep 05, 2022., 99 type 2 diabetics, ages 18 to 75, at the Department of Medicine, MTI, LRH Peshawar, Pakistan, gave their informed permission to participate in the data collecting process. Pre-existing diseases, weight, age, smoking habits, demographic data, and five essential aspects of diabetes treatment were evaluated.

Statically analysis:

Software named SPSS 25.0 was used to do the statistical analysis. The research used descriptive statistics, namely frequencies, percentages, means, and standard deviations, to enumerate the study's primary results and demographic features. To find correlations and relationships between variables, inferential statistics may have been used, which would have aided in data interpretation and hypothesis testing.

Results:

The average age and BMI of the 99 types 2 diabetes patients were 44.11 years and 22.10 kg/m2, respectively; 45.5% of the patients were men and 44.9% were women. Insufficient treatment was common, with 67% of patients receiving less-than-ideal care in several areas, such as immunization, pharmaceutical medication, physical exams, and laboratory testing. Significantly, smoking, high blood pressure, and poor socioeconomic status were all associated with inadequate therapy. These results highlight the critical need for focused interventions to address the complex issues in the provision of care for people with type 2 diabetes.

Table 1: Demographic Characteristics of Type 2 Diabetes Patients

Characteristic	Value
Total Cases	99
Gender	
- Male	45 (45.5%)
- Female	44 (44.9%)
Age (years)	44.11 ± 4.56
BMI (kg/m2)	22.10 ± 5.72

Table 2: Prevalence of Socio-Economic Status, Smoking, and Hypertension

Factor	Frequency (n)	Percentage (%)
Low Socio-Economic Status	38	42.4
Smoking	23	26.4
Hypertension (HTN)	38	43.4

Table 3: Inadequate Care in Lifestyle Management and Immunization

Aspect	Frequency (n)	Percentage (%)
Inadequate Lifestyle Management	22	22.4
Inadequate Immunization	30	36.2

Table 4: Insufficient Pharmacological Therapy, Physical Examinations, and Laboratory Tests

Aspect	Frequency (n)	Percentage (%)
Inadequate Pharmacological Therapy	40	42.6
Inadequate Physical Examinations	36	39.2
Inadequate Laboratory Tests	24	25.4

Table 5: Overall Inadequate Care in Type 2 Diabetes Management

Aspect	Frequency (n)	Percentage (%)
Overall Inadequate Care	67	67.7

The study's findings highlight the widespread nature of subpar care for type 2 diabetes mellitus (T2DM), exposing large gaps in several care delivery domains16. These shortcomings in laboratory testing, immunization, pharmaceutical treatment, lifestyle management, and physical exams underscore the difficult obstacles that patients and healthcare systems must overcome to adequately meet the diverse requirements of people with type 2 diabetes. The frequency of poor lifestyle management among individuals with type 2 diabetes is one of the main causes of worry. Achieving ideal glycemic control and avoiding complications need careful management of lifestyle variables including nutrition, exercise, and stress reduction.18. According to the research, a significant number of patients did not get enough direction or assistance in establishing and sustaining good lifestyle practices. This emphasizes the need for comprehensive and customized treatments, such as culturally sensitive education programs and access to resources for healthy living, that meet the particular requirements and circumstances of T2DM patients19. With this population's increased vulnerability

to infections and consequences, the low immunization rates among T2DM patients are worrisome20. For T2DM patients, vaccination against pneumococcal pneumonia and influenza is advised to lower the risk of morbidity and death. The results point to the need for focused initiatives, such as vaccination clinics, information campaigns, and the integration of immunization services into standard diabetic treatment, to increase immunization coverage among T2DM patients21.Regarding pharmaceutical treatment, the research reveals notable deficiencies in drug administration among individuals with type 2 diabetes. Poor glucose control and a higher risk of complications are caused by inappropriate doses, irregular medication reviews, and subpar adherence to recommended medications23. To guarantee appropriate medication management and enhance treatment results for patients with type 2 diabetes, healthcare practitioners should place a high priority on patient education, medication counseling, and routine monitoring 24.Inadequate physical exams and laboratory testing exacerbate the difficulties in managing type 2 diabetes by impeding the prompt identification of complications and modification of treatment regimens. To spot early warning indicators of problems, tracking the course of the illness, and maximizing treatment options, thorough and frequent evaluations are crucial. To reduce the risk of complications and enhance long-term outcomes for patients with type 2 diabetes, healthcare practitioners should place a high priority on proactive, holistic treatment methods that include routine physical exams and appropriate laboratory investigations25. T2DM treatment takes into account patients' diverse requirements and lessens obstacles to providing the best possible care. Healthcare systems can improve treatment outcomes, lessen the burden of complications, and improve the quality of life for people with T2DM by addressing the deficiencies found in lifestyle management, immunization, pharmaceutical therapy, physical examinations, and laboratory tests26.

Conclusion:

Treating type 2 diabetes mellitus can be quite challenging, as it involves various aspects such as lifestyle management, immunization, pharmacological therapy, physical examinations, and laboratory tests. It is essential to address these shortcomings with customized interventions to enhance outcomes and lessen the impact of complications for individuals with T2DM.

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