









ORIGINAL

Prevalence of risk factors for Type II Diabetes Mellitus in the inhabitants of Parque Chacabuco, Buenos Aires, Argentina

Prevalencia de factores de riesgo para el desarrollo de Diabetes Mellitus Tipo II en habitantes de Parque Chacabuco, Buenos Aires, Argentina

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ABSTRACT

Objective: to determine the prevalence of risk factors for the development of type II Diabetes Mellitus in a sample of adults aged 18 to 60 years in the Parque Chacabuco neighborhood of the Autonomous City of Buenos Aires during the period from August to September 2024.

Method: descriptive, cross-sectional, and quantitative study. The FINDRISK survey was used to evaluate the prevalence of risk factor for type II Diabetes Mellitus.

Results: 71 individuals were enrolled. 35,21 % percent of the sample was between the ages of 18 and 34, 64,79 % were female, 71,83 % were unmarried, 90,14 % were employed, and 45,07 % were working under a dependency relationship. According to the FINDRISK Scale, 49,30 % of the participants were overweight, 61,97 % had a family history of Diabetes, 57,75 % were sedentary, 23,97 % had a low consumption of fruits and vegetables, 1,41 % were hypertensive, and 45,07 % had a low risk (<7 points) of developing type II Diabetes Mellitus.

Conclusions: this study underscores the significance of recognizing risk factors for Type II Diabetes Mellitus in the Parque Chacabuco neighborhood, including a sedentary lifestyle, overweight, and family history. Obesity and lack of physical activity persist as salient concerns. The FINDRISK Scale identified 11 % and 4 % of the population at moderate and high risk, respectively, highlighting the need for preventive strategies. Type II Diabetes Mellitus is a condition that can be prevented through lifestyle modifications, including improvements in diet and increased physical activity.

Keywords: Type 2 Diabetes Mellitus; Self Care; Risk Factors; Cardiometabolic Risk Factors; Health Risk Behaviors; Nursing.

RESUMEN

Objetivo: identificar la prevalencia de los factores de riesgo para el desarrollo de Diabetes Mellitus Tipo II en una muestra de adultos de 18 a 60 años del barrio Parque Chacabuco de la Ciudad Autónoma de Buenos Aires en el período agosto a septiembre de 2024.

Método: estudio descriptivo, transversal y cuantitativo. Se utilizó la encuesta FINDRISK para evaluar el factor de riesgo para Diabetes Mellitus Tipo II.

Resultados: participaron 71 personas. El 35,21 % tenía entre 18 y 34 años, 64,79 % eran mujeres, 71,83 %

se encontraban solteros, 90,14 % eran empleados, 45,07 % trabajaba bajo relación de dependencia. 49,30 % presentaron sobrepeso, 61,97 % contaban con antecedentes familiares de Diabetes, 57,75 % eran sedentarios, 23,97 % tenían un bajo consumo de frutas y verduras, 1,41 % eran hipertensos y 45,07 % tuvieron un riesgo bajo (<7 puntos) según la Escala FINDRISK.

Conclusiones: este estudio resalta la importancia de identificar los factores de riesgo para la Diabetes Mellitus Tipo II en el barrio Parque Chacabuco, como el sedentarismo, el sobrepeso y los antecedentes familiares, por lo que la obesidad y la falta de actividad física siguen siendo factores preocupantes. La Escala FINDRISK identificó un 11 % y 4 % de la población en riesgo moderado y alto, respectivamente, lo que resalta la necesidad de estrategias preventivas. La Diabetes Mellitus Tipo II es prevenible mediante cambios en el estilo de vida, como mejorar la dieta y aumentar la actividad.

Palabras clave: Diabetes Mellitus tipo 2; Autocuidado; Factores de riesgo; Factores de Riesgo Cardiometabólico; Conductas de Riesgo para la Salud; Enfermería.

INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disease characterised by the pancreas not secreting enough insulin (the hormone responsible for regulating blood glucose levels) or the body becoming resistant to it, leading to insulin resistance. If DM is not controlled, hyperglycaemia (high blood sugar) can occur, which over time can cause severe damage to the body, including blindness, kidney failure, acute myocardial infarction, stroke, and lower limb amputation.^(1,2)

Most people have type II DM, which usually begins in adulthood as a result of the body's ineffective use of insulin and is also linked to excess weight and physical inactivity. People are typically diagnosed with the disease several years later, when complications have already developed.^(3,4) The prevalence of DM varies depending on age, ethnicity, gender, nutritional habits, genetic characteristics, and environmental factors.⁽⁵⁾

Between 2010 and 2030, it is estimated that there will be a 69 % increase in adults with diabetes in developing countries and a 20 % increase in developed countries. Today, global estimates of the prevalence of Type II Diabetes Mellitus are uncertain due to the high percentage of recent diagnoses in low- and middle-income countries, and they are not correctly recorded, which could mean that more people are affected than those counted in the latest studies provided by the World Health Organisation.⁽¹⁾

It has often been observed that people undergo a limited number of preventive health checks. This highlights the need for health professionals to reach out to the environments where people live and develop to identify possible health problems. This facilitates the prevention or early diagnosis of diseases such as type II DM, whose prevalence in Argentina is estimated to reach 12,7 % of the population.⁽⁶⁾

Knowing the risk factors in the community allows for different types of disease prevention and health promotion activities to be carried out to modify the factors detected in the population at highest risk. In this way, the development of the disease and the appearance of its associated complications can be prevented. Type II DM is now considered a disease of public health interest, given that it has a direct and multifaceted impact on patients and their families, society, and the health system.⁽⁷⁾

The theoretical relevance of this study is based on the principles of Dorothea Orem's Self-Care Theory, which emphasises the individual's ability to carry out self-care activities to maintain their well-being. This concept is key to preventing and managing chronic diseases like type 2 DM. Applying Orem's theory to this study justifies the research by highlighting the importance of identifying self-care deficits that may be present in the at-risk population. The knowledge gained provides valuable information about individuals' abilities and limitations in managing risk factors associated with type II DM, such as diet, physical activity, and adherence to preventive treatments.^(8,9)

Therefore, this study was designed to determine the prevalence of risk factors for the development of type II DM in the Parque Chacabuco neighbourhood of the Autonomous City of Buenos Aires, Argentina, between August and September 2024.

METHOD

This was an observational, descriptive, cross-sectional study with a quantitative approach. Seventy-one residents of the Parque Chacabuco neighbourhood of the Autonomous City of Buenos Aires, Argentina, who voluntarily agreed to respond to the questionnaire, participated in the study. The sampling was non-probabilistic.

Permanent residents of the neighbourhood, of both sexes, aged between 18 and 60 years, who voluntarily agreed to participate in the research, were included. Those diagnosed with type II DM, pregnant women, and people with diagnosed mental illness (dementia or consciousness disorders) were excluded.

The FINDRISK (Finnish Diabetes Risk Score) instrument was used for data collection. (10) FINDRISK was

developed due to a cohort study conducted in Finland, which allows the risk of diabetes in adults to be determined by estimating the incidence of diabetes over 10 years. The FINDRISK scale consists of eight simple questions, including age (years), body mass index (BMI) (kg/m²), physical activity (at least 30 min/day), daily fruit and vegetable consumption, family history of diabetes, blood pressure, and waist circumference (cm). This tool consists of eight questions with two to four answer options and allows the risk of developing type II DM to be stratified based on the risk factors for the disease detected. The risk of developing type II DM is considered high when the score exceeds 14 points. The scores on the tool are interpreted as follows: less than 7 points is a low risk, between 7 and 11 points is a slightly elevated risk, between 12 and 14 points is a moderate risk, between 15 and 20 points is a high risk, and less than 20 points is a very high risk.

The survey was self-administered and anonymous, lasting no more than 15 minutes. After obtaining informed consent, it was distributed through instant messaging applications such as Messenger and WhatsApp. Once the information was obtained, it was exported to a Microsoft Excel database and then analysed using Infostat v/L software.

For data analysis, absolute (n) and relative (%) frequencies were calculated.

The study is considered low risk given its observational and anonymous nature. Written informed consent was implemented, participation was emphasised as voluntary, and confidentiality in data handling was ensured. No personal or identifying information was requested.

RESULTS

Data from 71 residents who met the inclusion criteria were analysed. Of this population, 35,21 % were between 18 and 34, 64,79 % were women, 71,83 % were single, and 91,55 % were employed (self-employed, dependent, or in informal employment) (table 1).

Variable	Category	n	%
Age	18 to 34 years old	25	35,21
	35 to 44 years old	22	30,99
	45 to 54 years old	19	26,76
	55 to 60 years old	5	7,04
Sex	Female	46	64,79
	Male	25	35,21
Marital status	Common-law or married	19	26,76
	Divorced or widowed	1	1,41
	Single	51	71,83
Work	No	7	9,86
	Yes	64	90,14
Occupation	Housewife	6	8,45
	Self-employed	14	19,72
	Employee in a relationship of dependency	32	45,07
	Informal worker	19	26,76
Total		71	100

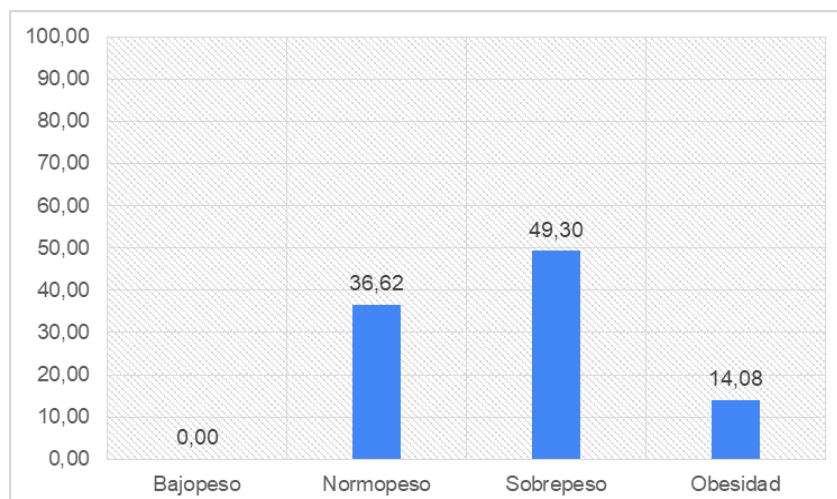


Figure 1. Body Mass Index of respondents. Categorical analysis

When analysing Body Mass Index (BMI) data, 49,30 % of respondents were overweight, 36,62 % were of normal weight, and 14,08 % were obese. These factors are crucial, as they significantly increase the risk of developing diabetes if effective strategies are not implemented to prevent or mitigate this situation (figure 1).

One of the indicators that point to a high risk of developing type II DM is waist circumference, which is considered abnormal according to gender: more than 88 cm in women and more than 102 cm in men. It was found that 69,57 % of women had a waist circumference <80 cm and 76,00 % of men had a waist circumference <94 cm, meaning the surveyed population was within normal values (figure 2).

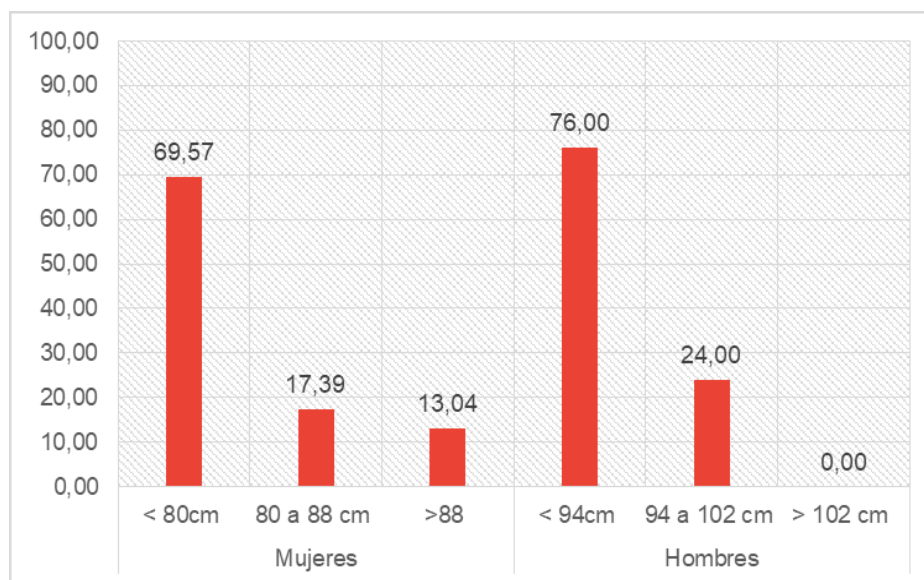


Figure 2. Waist circumference by gender

Figure 3 shows that within the study population, 61,97 % had a family history of type II DM, 57,75 % were sedentary, 23,97 % had a low fruit and vegetable intake, and 1,41 % were hypertensive.

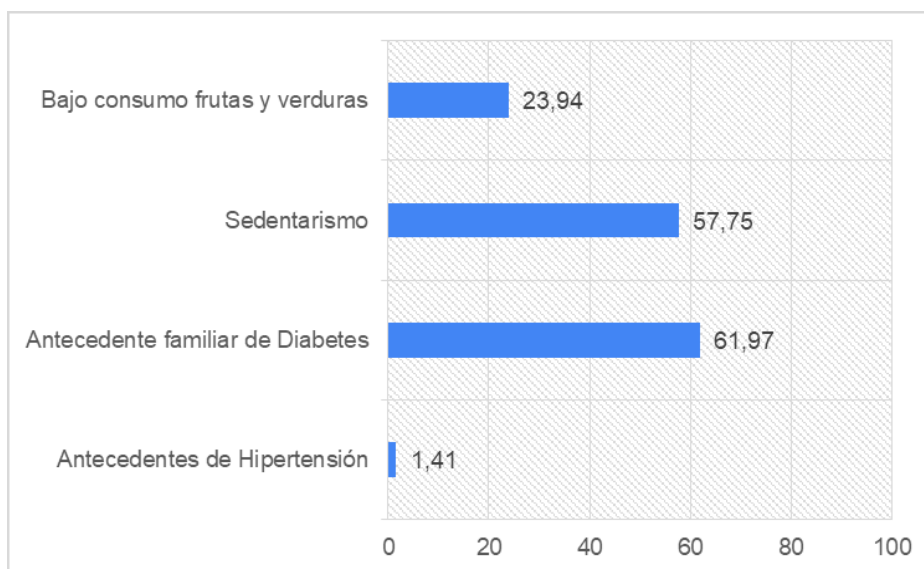


Figure 3. Prevalence of factors relevant to determining the risk of developing type II DM

Finally, using the FINDRISK Scale, different risk groups for the development of type II DM were identified according to the score obtained. Forty-five point zero seven per cent of respondents had a low risk (<7 points), 39,44 % had a slightly elevated risk (7-11 points), 11,27 % had a moderate risk (12-14 points), and 4,23 % had a high risk (15-20 points) (figure 4).

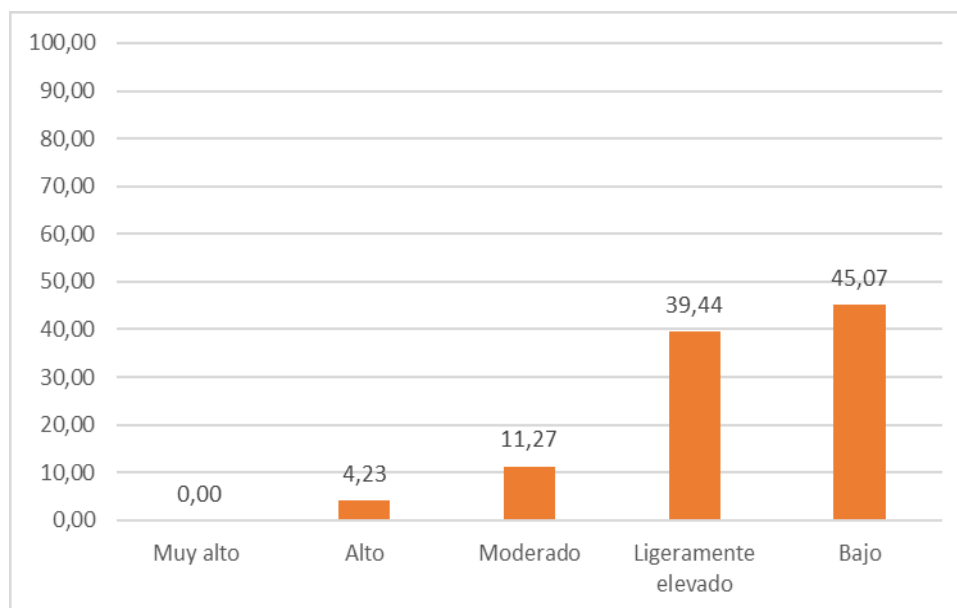


Figure 4. Risk groups determined by the FINDRISK Scale

DISCUSSION

The analysis of the results obtained in this study reveals several worrying trends regarding the health of the population evaluated, especially with regard to type II DM and its risk factors. Compared to other recent studies, 49,30 % of participants were overweight, a significant risk factor for this disease.

According to the Pan American Health Organisation,⁽³⁾ overweight and obesity affect more than 50 % of the adult population in various regions and, in Argentina, according to the 4th ENFR,⁽⁴⁾ they affect 66,1 % of the population, with the prevalence of overweight and obesity being significantly lower in both cases. This highlights the urgent need to address body weight disorders and related factors from a public health perspective.⁽¹¹⁾

Furthermore, the fact that 61,97 % of participants had a family history of type II DM is consistent with recent research findings suggesting that family history is a reliable predictor of the risk of developing type II DM. This highlights the need to implement early detection programmes for those with a family history, which could help mitigate risk through proactive health management.^(13,14,15)

Regarding physical inactivity, 57,75 % of participants were classified as sedentary, which aligns with trends observed in public health studies. According to the World Health Organisation,⁽¹⁾ approximately 27,5 % of the global population is sedentary, highlighting the need for effective interventions that promote physical activity. The relationship between sedentary lifestyles and type II DM is well documented⁽¹⁶⁾, and regular physical activity has been shown to significantly reduce the risk of developing this disease.⁽¹⁷⁾

The literature also reflects low fruit and vegetable consumption, reported in 23,97 % of the sample. A study by Campirano-Núñez⁽¹⁸⁾ highlights that a diet low in these foods increases the risk of chronic diseases, including type II DM. According to the 4th ENFR,⁽⁴⁾ only 6,00 % of the Argentine population consumes the recommended five servings of fruits and vegetables. These findings suggest that health policies should focus on increasing fruit and vegetable consumption and improving nutrition education and access to healthy foods.

The finding of a 15,00 % moderate to high risk of developing type II DM in the surveyed population was considered similar to the findings of the 4th ENFR, which concluded that 20 % of Argentines are at high or very high risk of developing type II DM within 10 years.

Although the study presents significant findings, some limitations should be discussed. First, the study's cross-sectional design prevents the establishment of causal relationships between risk factors and type II DM. It is essential to conduct longitudinal studies that allow the population to be followed over time to observe the evolution of risk factors and their relationship with the development of the disease. In addition, the sample may not be representative of the general population, which limits the generalisation of the results.

Another aspect to consider is that 1,41 % of participants identified themselves as hypertensive. This percentage is remarkably low compared to the national average reported by the Pan American Health Organisation,⁽³⁾ which estimates that nearly 30 % of the adult population suffers from hypertension. This finding could indicate that the population studied has a different risk profile, suggesting the need to explore this specific group's sociodemographic and health characteristics further.

The lines of work derived from this study are also relevant. It is suggested that the social determinants of health that influence dietary habits and physical activity in the population need to be investigated. In addition, how community education and awareness can improve the adoption of healthy lifestyles should be explored.

This is especially important in contexts where knowledge about diabetes and its prevention is limited.

There is a need to develop educational campaigns integrating health promotion with access to services. According to research by Cotonieto-Martínez & Rodríguez-Terán,⁽¹⁹⁾ community intervention can be a powerful tool for improving health-related knowledge and behaviours. Collaboration between government institutions, non-governmental organisations, and the community is crucial to address these public health issues effectively.⁽²⁰⁾

The results of this study underscore the need for a comprehensive approach to address the risk of diabetes in the population. Promoting healthy eating habits, increasing physical activity, and raising awareness about the dangers of type 2 diabetes mellitus are essential for prevention. As research and public policy implementation progress, it is necessary to consider the limitations and new questions that arise, thus ensuring that strategies are practical and tailored to the population's specific needs.

CONCLUSIONS

This study confirms the importance of identifying and addressing risk factors for developing Type II DM, especially in urban contexts such as the Parque Chacabuco neighbourhood. The research showed a high prevalence of predisposing conditions in the study population, such as a sedentary lifestyle, overweight, family history, and low fruit and vegetable consumption. These findings reinforce the need to implement timely preventive measures, integrating educational and community health promotion strategies.

Analysis of the data collected highlights that nearly 49 % of the sample was overweight, while 14 % was already obese. Both indicators are closely linked to the risk of diabetes and underscore the negative impact of unhealthy lifestyles, such as a lack of physical activity, reported in 57 % of participants. Despite this, it was observed that a large part of the population had an abdominal circumference within normal ranges, indicating an area of opportunity to prevent complications through targeted interventions.

Using the FINDRISK scale, the population was stratified according to risk, identifying that 11 % and 4 % of respondents are in moderate and high risk categories, respectively. These groups require priority attention and specific actions to modify their risk factors. The tool proved effective in detecting vulnerable profiles, and its implementation on a larger scale should be considered in similar contexts.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Formal analysis: Cecilia Melisa Delgado, Carlos Jesús Canova-Barrios.

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