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Sociodemographic Characteristics Related to Knowledge About Diabetes Prevention in Overweight Adolescents and Young Adults

Kendy Madero Zambrano[1], Javier José Arnedo Zúñiga[2], Jonathan Altamar Causado[1], María Mercedes Rodríguez Rodríguez[1]

Abstract

Introduction: Diabetes is a chronic metabolic disease that has increased in recent decades, especially among the young population. **Objective:** To analyze the sociodemographic characteristics related to knowledge of diabetes prevention in overweight adolescents and young adults. **Materials and methods:** A quantitative, correlational, cross-sectional study was conducted with a sample of 316 overweight adolescents and young adults residing in a neighborhood in locality one of Cartagena, Colombia. An instrument with two sections was used: sociodemographic aspects and level of knowledge about diabetes. The relationship between the level of knowledge and sociodemographic aspects was determined through a bivariate analysis using the Spearman correlation coefficient test. **Results:** The participants were young individuals (69.7%), predominantly from low socioeconomic status (97.5%), from urban areas (83.5%), and had low knowledge about diabetes prevention (83.5%). A statistically significant difference ($p = 0.000$) was observed between the level of knowledge and low socioeconomic status through the Spearman test. **Conclusion:** According to statistical analyses, it can be inferred that socioeconomic status is a factor associated with knowledge of diabetes prevention in overweight adolescents and young adults.

Keywords: diabetes mellitus; knowledge; young people and adolescents.

[1] Corporación Universitaria Rafael Núñez (Cartagena, Colombia).

[2] Universidad del Sinú (Cartagena, Colombia).

Corresponding author: María Mercedes Rodríguez Rodríguez. Email: maria.rodriguez@curnvirtual.edu.co

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Características sociodemográficas relacionadas con conocimientos sobre prevención de la diabetes en adolescentes y jóvenes con sobrepeso

Resumen

Introducción: La diabetes es una enfermedad metabólica crónica que se ha incrementado en las últimas décadas, especialmente en la población joven.

Objetivo: Analizar las características sociodemográficas relacionadas con los conocimientos para la prevención de la diabetes en adolescentes y jóvenes con sobrepeso.

Materiales y métodos: Estudio cuantitativo, de tipo correlacional, de corte transversal, con una muestra de 316 jóvenes y adolescentes con sobrepeso que residían en un barrio de la localidad uno de Cartagena (Colombia). Se empleó un instrumento con dos apartados: aspectos sociodemográficos y nivel de conocimientos sobre diabetes. Así se determinó la relación entre el nivel de conocimientos y aspectos sociodemográficos por medio de un análisis bivariado a través de la prueba de coeficiente de correlación Spearman.

Resultados: Se trató de jóvenes (69,7 %) de estrato bajo (97,5 %), procedentes del área urbana (83,5 %), y los conocimientos sobre la prevención de la diabetes fueron bajos (83,5 %). Por medio de la prueba Spearman se evidenció una diferencia estadísticamente significativa ($p = 0{,}000$) entre el nivel de conocimiento y el estrato socioeconómico bajo.

Conclusión: De acuerdo con los análisis estadísticos, se puede inferir que el estrato socioeconómico es un factor asociado a los conocimientos para la prevención de la diabetes en jóvenes y adolescentes con sobrepeso.

Palabras clave: diabetes mellitus; conocimiento; jóvenes y adolescentes.

Características sociodemográficas relacionadas aos conhecimentos sobre prevenção da diabetes em adolescentes e jovens com sobrepeso.

Resumo

Introdução: A diabetes é uma doença metabólica crônica que tem aumentado nas últimas décadas, especialmente na população jovem.

Objetivo: Analisar as características sociodemográficas relacionadas aos conhecimentos para a prevenção da diabetes em adolescentes e jovens com sobrepeso.

Materiais e métodos: Estudo quantitativo, de tipo correlacional, de corte transversal, com uma amostra de 316 jovens e adolescentes com sobrepeso que residiam em um bairro em Cartagena (Colômbia). Foi utilizado um instrumento com dois itens: aspectos sociodemográficos e nível de conhecimento sobre diabetes. Assim, foi determinada a relação entre o nível de conhecimento e os aspectos sociodemográficos por meio de uma análise bivariada através do coeficiente de correlação de Spearman.

Resultados: Tratou-se de jovens (69,7%) de estrato baixo (97,5%), procedentes da área urbana (83,5%), e baixos conhecimentos sobre a prevenção da diabetes (83,5%). Através do coeficiente de correlação de Spearman, foi evidenciada uma diferença estatisticamente significativa ($p = 0,000$) entre o nível de conhecimento e o estrato socioeconômico baixo.

Conclusão: De acordo com as análises estatísticas, pode-se inferir que o estrato socioeconômico é um fator associado aos conhecimentos para a prevenção da diabetes em jovens e adolescentes com sobrepeso.

Palavras-chave: diabetes mellitus; conhecimento; jovens e adolescentes.

INTRODUCTION

Diabetes is a condition that occurs when the body cannot produce insulin or uses it incorrectly. This poses a health risk and is the sixth leading cause of death in the Americas and the second leading cause of disability in the region (1). The increase in obesity, poor diet, and lack of physical activity, among other factors, have favored the rise of diabetes in adults. According to a 2022 report by the Pan American Health Organization, this disease has tripled in the last three decades in the Americas, a trend likely to continue due to the lack of commitment from those affected. "The report also points to an alarming trend among young people in the region: more than 30% are now considered obese or overweight, almost double the global average" (2,3).

Therefore, it is necessary for countries to take actions aimed at promoting healthy lifestyles and, by ensuring timely diagnosis, improving adherence to treatments to prevent complications to the maximum extent possible. Likewise, the idea is to promote support for individuals and families through therapeutic education to adapt to a better lifestyle (4).

On the other hand, adolescence and youth constitute an important period that marks the transition from childhood to adulthood. With them come physical, psychological, and social changes, accompanied by beliefs and habits that determine individual attitudes and behaviors regarding health risk perceptions. Therefore, adopting unhealthy lifestyles at this stage can lead to the onset of diseases and significant vascular and neurological complications, as well as causing a great psychological impact, not only on the adolescent's life but also on their surroundings (5).

In the diabetic population, education and treatment are essential to prevent or delay the onset of disease complications. Likewise, the family is a key element in coping with the disease and treatment adherence (3). Now, health education provided in primary care to people with noncommunicable chronic diseases such as diabetes aims to contribute to an individualized plan that offers knowledge and healthy practices, through empowering individuals in their health-disease process (6).

On the other hand, socioeconomic status plays a fundamental role in health determinants. Various studies have identified that socioeconomic level seems to influence the appearance of metabolic risk factors associated with diabetes, both in developed countries and those in developing stages. Additionally, the level of education stands out as a stable marker for making positive and negative health-related decisions (7).

A study conducted in Peru revealed the existence of protective factors regarding the degree of therapeutic adherence among adolescents with type I diabetes, such as motivation and family and social support (8). In this regard, Ramírez et al. (9) consider that sociodemographic characteristics constitute one of the most relevant factors regarding patient adherence since educational level and age is directly linked to the knowledge and behaviors that the patient may have about the disease.

Through a review of available literature on the subject, it was inferred that the young population presents many preventable risk factors that have been increasing proportionally with non-communicable chronic diseases. These factors may be associated with the influence of social networks on new generations; their presence in the lives of young people has led to lifestyle changes that have affected society, especially after the mandatory confinement due to COVID-19, and one of them is sedentary behavior, a risk factor for obesity (10).

In Colombia, the prevalence of diabetes ranges from 2% to 11.2% of the population (11); however, it is estimated that this figure is much higher and affects one in 10 people. Additionally, a large portion of this population is unaware that they are sick (12). On the other hand, the Ministry of Health and Social Protection, through comprehensive health care routes, aims to reduce modifiable risk factors for diabetes by promoting strengthening education, consuming a balanced diet, engaging in physical activity, and having friendly spaces focused on enhancing the population's knowledge (13).

Physical activity plays a fundamental role in childhood, especially as a protective factor against cardiovascular and metabolic diseases in adulthood. For this reason, physical exercise should be promoted in educational environments as a public health strategy for the care and maintenance of health in younger populations (14). A study conducted in Medellín, Colombia revealed that school-age adolescents have moderate knowledge about healthy lifestyles and their impact on health. It is noteworthy that knowledge was lower in the lower socioeconomic strata and among males (15).

On the other hand, a study of university students revealed that 78% consider their eating habits to be poor; 37% have common diseases such as migraines, gastritis, diabetes, triglycerides, and cholesterol, and 65% of the population believes that such diseases are closely related to eating habits (16). In this regard, Benítez (17) points out that when discussing healthy lifestyles, the individual's reality must be taken into account, which may be influenced by family situations, knowledge, as well as physical, economic, age groups,

and work environments. In this sense, behavioral patterns that pose health risks may originate in response to different daily conditions of the individual and constitute a negative factor for health.

Therefore, childhood, adolescence, and youth stages constitute a key moment for learning and developing healthy habits that will later be a determining factor in health care, especially in preventing chronic diseases. Hence the importance of identifying factors related to knowledge for the prevention of diabetes in overweight adolescents and youth, which will allow providing information that enables relevant entities to design and implement measures that promote healthy habits and lifestyles; in this way, it will contribute to improving their quality of life (18).

MATERIALS AND METHODS

This was a quantitative, correlational, cross-sectional study involving 316 overweight young adults and adolescents residing in a neighborhood in District One of Cartagena de Indias, Colombia. Young adults and adolescents with a normal body mass index and those belonging to other districts were excluded.

To collect information, the instrument *"Level of knowledge about diabetes mellitus in young adults between 20 and 30 years old at Centro de Salud San Juan de Dios-Pisco,"* developed by Aquije (19), was used. Data analysis was conducted using the SPSS program, version 25. The results of sociodemographic variables were presented as relative and absolute frequencies, by categories. Additionally, a bivariate analysis was performed using the Spearman correlation coefficient test.

According to Resolution 008430 of 1993 of Colombia, the study was classified as research without risk to the participants, as no actions or interventions were carried out that would modify the psychological and social variables of the study participants. In addition, informed consent was obtained to ensure voluntary participation of the participants. It is worth noting that the project was approved by the Research Committee of the Nursing program of Corporación Universitaria Rafael Núñez, through its Resolution 002 IIP 2022.

RESULTS

Sociodemographic characteristics of the study population

The study included 316 overweight adolescents and young adults residing in a neighborhood in District One of Cartagena de Indias, where females predominated (51.6% [163]), individuals aged between 18 and 26 years (69.9% [221]), and from urban backgrounds (83.5% [264]). The

majority of participants reported being students (69.9% [221]), with a secondary school education level (40.8% [129]), and a low socioeconomic status (97.5% [308]).

Knowledge Analysis

Overall, the knowledge of overweight adolescents and young adults regarding diabetes prevention was low (83.5% [164]), with only 16.5% (52) achieving good results.

Regarding the Spearman test, a statistically significant difference was evidenced (p = 0.000), allowing us to reject the null hypothesis. Therefore, we can affirm that there is a correlation between socioeconomic status and knowledge about diabetes prevention among the young population under study, and obtaining a correlation coefficient of 0.785 (positive and close to 1), this indicates a strong and directly proportional relationship, demonstrating that the lower the socioeconomic status of the adolescents and young adults under study, the less knowledge they have about diabetes prevention.

Similar data were found in the study by Salvador (20), where type 1 diabetic adolescents from higher socioeconomic status adhered better to treatment than participants from lower socioeconomic status. However, it is important to clarify that the results cannot be generalized to the entire population of the District of Cartagena de Indias, which becomes a potential limitation of the study. Therefore, this research encourages the study of populations with different sociodemographic characteristics to establish comparisons of the results (Table 1).

Table 1. Correlation between knowledge level and sociodemographic aspects

		Knowledge level					
		High (n [%])	**Low (n [%])**	**Mean**	***p*-value**	**Correlation coefficient**	**SD**
Socioeconomic Status	Low	52 (16.4 %)	256 (81 %)	1.66	0.000	0.785	0.476
	High	0 (0 %)	8 (2.6 %)				
Gender	Female	23 (7.3 %)	140 (44.3 %)	1.49	0.507	0.037	0.519
	Male	29 (9.2 %)	124 (39.2 %)				
Age	Adolescence	14 (4 %)	81 (26 %)	1.70	0.322	0.056	0.459
	Youth	38 (12 %)	183 (58 %)				
Place of Residence	Rural	7 (2.2 %)	45 (14.2 %)	1.84	0.152	0.081	0.371
	Urban	45 (14.2 %)	219 (69.3 %)				

SD: standard deviation.

DISCUSSION

The World Health Organization defines prevention as: "measures aimed not only at preventing the onset of disease, such as reducing risk factors, but also at halting its progression and mitigating its consequences once established" (21). This calls for not only treating health events detected in a population but also identifying the determinants that impact each stage of the natural history of the disease, giving importance to primary prevention in pre-pathogenic periods to prevent an increase in incidence rates in at-risk populations. On the other hand, health promotion in chronic diseases like diabetes is part of the essential functions of public health, where research and knowledge management of health status take center stage and become a fundamental tool in primary prevention and aid in "providing people with the means to improve their health," according to the Ottawa Charter (22).

Regarding the study, the prevailing population according to its sociodemographic characteristics were women (51.6%), young individuals (30.1%), from low socioeconomic status (45.3%), and originating from urban areas (83.5%) who were in high school (40.8%). These data are similar to those of the study by Félix et al. (23), which indicates a higher diabetes rate in females compared to males, thus diabetic and non-diabetic women represent a risk due to the lack of understanding of the pathology. On the other hand, the data also differ from those of the article "Factors associated with metabolic control in type 2 diabetic patients" (24), which reported that the population was concentrated in strata 3 and 4 (middle). However, 62.4% of the studied population has poor metabolic control. Likewise, the background shows that precarious housing conditions and low educational levels influence the lack of adoption of healthy lifestyles, which coincides with the results obtained (25,26).

Regarding the knowledge of overweight adolescents and young adults regarding diabetes prevention, these were low (42.4%), followed by regular (41.1%). These data do not differ from those of Reyes and Severino (27), for whom the level of knowledge about the disease is regular, with 65% and 50% having no information on how to diagnose it. This also agrees with Aquije (28), for whom their participants had a low level of knowledge regarding diabetes mellitus, with an average of 40.

A study carried out in Cartagena to determine the factors associated with metabolic control in diabetic patients at the UBA Manga de Coomeva EPS reported that the population was concentrated in Socioeconomic Status 3 and 4 (medium), which contrasts with the results of the present study, where the population was from Socioeconomic Status 1 and 2 (45.3% and 37%, respectively

[low]). However, it should be clarified that this may be influenced by the location of the UBA Manga, which is characterized by middle-status neighborhoods (28)

On the other hand, 100% of the subjects studied engage in inadequate practices in diabetes prevention. This result is similar to that of Catagua (29), who found poor practices in diabetes prevention, as 56% of respondents did not exercise, and the main food they consumed was carbohydrates (29%), followed by fats (25%). However, the study is similar to that of Malavé et al. (30), where it was identified that 95% of respondents have basic knowledge but do not put it into practice, a situation related to the increase in people with diabetes mellitus.

CONCLUSIONS

The study revealed that overweight adolescents and young adults from a neighborhood in District One of Cartagena de Indias have little knowledge about diabetes prevention, and those belonging to low socioeconomic status showed the worst results. Hence, it is inferred that this population is more prone to developing this disease.

In this context, the directly proportional relationship between socioeconomic status and knowledge about diabetes prevention in young people is an invitation to local health system actors to design policies aimed at improving promotion, education, and surveillance of public health in low socioeconomic status areas. Similarly, promotion programs should be strengthened, aiming for a more preventive national healthcare system that involves the family, social context, and individual needs for the benefit of populations. Likewise, a call is extended to educational institutions to promote healthy habits and prevent non-communicable chronic diseases through educational interventions. Furthermore, if a new study were to be conducted, it would allow for the establishment of whether there has been any improvement in diabetes prevention in this population.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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