Integrated Strategies For Diabetes Mellitus Control

Estratégias Integradas Para O Controle Da Diabete Mellitus

Estrategias Integradas Para Controlar La Diabetes Mellitus

RESUMO:
Objetivo: Relatar a experiência das acadêmicas de medicina no desenvolvimento da extensão universitária de estratégias integradas para o controle da diabetes. Método: Trata-se de um relato de experiência da extensão universitária realizada na área de abrangência da ESF Jardim Eldorado em Várzea Grande no primeiro semestre de 2024. A metodologia utilizada foi a da problematização, a partir dela foram utilizadas outras metodologias ativas para abordar as estratégias de controle do diabetes mellitus junto da comunidade. Resultado: As estratégias utilizadas tiveram impacto positivo para a comunidade atingindo o objetivo da extensão universitária, corroborando com informação de qualidade para a modificação do estilo de vida das pessoas, a fim de controlar o diabetes. Conclusão: A extensão foi significativa para todos os envolvidos, especialmente a comunidade que questionou, se envolveu e se comprometeu em mudar o estilo de vida.
DESCRITORES: Diabetes Mellitus; Atenção Primária à Saúde; Medicina.

ABSTRACT
Objective: To report the experience of medical students in developing a university extension program of integrated strategies for diabetes control. Method: This is an experience report of the university extension program carried out in the coverage area of the Jardim Eldorado Family Health Strategy (FHS) in Várzea Grande during the first semester of 2024. The methodology used was problem-based learning, which was complemented by other active methodologies to address diabetes mellitus control strategies within the community. Result: The strategies employed had a positive impact on the community, achieving the goal of the university extension program. They provided quality information to encourage lifestyle changes among individuals, aiming to control diabetes. Conclusion: The extension program was significant for all involved, especially the community, which questioned, engaged, and committed to changing their lifestyle.
DESCRIPTORS: Diabetes Mellitus; Primary Health Care; Medicine.

RESUMEN:
Objetivo: Relatar la experiencia de estudiantes de medicina en el desarrollo de programas de extensión universitaria sobre estrategias integradas para el control de la diabetes. Método: Este es un informe de experiencia sobre el programa de extensión universitaria realizado en el área cubierta por el Jardim Eldorado ESF en Várzea Grande en el primer semestre de 2024. La metodología utilizada fue la problematización, a partir de la cual se utilizaron otras metodologías activas para abordar estrategias de control de la diabetes mellitus con la comunidad. Resultados: Las estrategias utilizadas tuvieron un impacto positivo en la comunidad, logrando el objetivo del programa de extensión universitaria, proporcionar información de calidad para cambiar los estilos de vida de las personas con el fin de controlar la diabetes. Conclusión: El programa de extensión fue significativo para todos los involucrados, especialmente para la comunidad que cuestionó, se involucró y se comprometió a cambiar sus estilos de vida.
PALABRAS CLAVE: Diabetes Mellitus; Atención Primaria de Salud; Medicina.

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Roselma Marcele da Silva Alexandre Kawakami
Master in Nursing. Specialist in Health Surveillance. Specialist in Health Services Auditing. Professor of Medicine at the UNIVAG University Center.
ORCID: https://orcid.org/ 0000-0001-5581-8115

Ana Giullia Martins Bonfim
Medicine student at the University Center - UNIVAG.
ORCID: https://orcid.org/ 0009-0000-2717-878X

Giullia Vitória Mendes Costa
Medicine student at the University Center - UNIVAG.
ORCID: https://orcid.org/ 0009-0005-9017-1018

Maria Clara Pereira Rodrigues Póvoas
Medical student at the University Center - UNIVAG.
ORCID: https://orcid.org/ 0009-0003-9088-4486

Maria Eduarda Cabral Barbosa
Medicine student at the University Center - UNIVAG.
ORCID: https://orcid.org/ 0009-0007-2520-7090

Mariana Vilela de Freitas Oliveira
Medicine student at the University Center - UNIVAG.
ORCID: https://orcid.org/ 0009-0006-2902-3953

IINTRODUCTION

Diabetes mellitus (DM) is a complex metabolic disorder of global health importance, with high prevalence. Its complications mainly affect the renal, cardiovascular and immune systems. It is classified as type 1, 2, gestational and others. Several factors play a role in this disease, such as obesity, oxidative stress, impaired insulin production and secretion, among others. [1] Constant hyperglycemia is the main characteristic of the disease. Laboratory diagnosis can be performed using fasting blood glucose, blood glucose 2 hours after oral glucose tolerance test (OGTT) and glycated hemoglobin (HbA1c). [2]

Research is needed to prevent complications and identify therapies for the treatment of diabetes and its complications. Considering that each individual has a different response, medicine must be personalized according to genetic, epigenetic and phenotypic characteristics to adapt treatment strategies in a unique way. Pharmacological treatments are necessary, but it is essential that lifestyle changes be encouraged, as they significantly reduce the risk of complications. [1] Inadequate management of diabetes can result in complications that compromise quality of life. The prevalence of DM and its complications is increasing, with an uneven distribution in the population. [3]

In 2017, Brazil ranked fourth in the world with 12.5 million people with diabetes. The projection for 2045 is that this number will reach 20.3 million, ranking fifth. In developing countries, individuals of all ages will be affected, with the 20 to 44 age group being the most affected. Unlike in developed countries, the increase in prevalence is mainly due to the contribution of elderly people with diabetes, as a result of increased life expectancy and population growth. [2]

Considering this context, it is understood that diabetes mellitus is a complex public health problem in Brazil and sensitive to primary care. To minimize this problem in the primary care area of a family health unit in Várzea Grande-MT, an extension project was developed. This study aims to report the experience of medical students in the development of university extension of integrated strategies for diabetes control.

METHOD

This is an experience report of five first-semester undergraduate medical students and a nurse preceptor who participated in the Integrated Extension Program (PEI) curricular component of the UNIVAG University Center in the city of Várzea Grande.

The experience refers to a curricular extension project that took place between March and June of 2024, in the area covered by a Family Health Strategy (ESF) in the Jardim Eldorado neighborhood in Várzea Grande-MT. The problematization methodology was used to develop the project, following the stages of the Maguerez arc, as shown in the figure below, and the 5W2H tool was used for planning. During the observation of the reality, it was possible to get to know the unit, hold interprofessional meetings and territorialization in order to prioritize diabetes mellitus as a problem.

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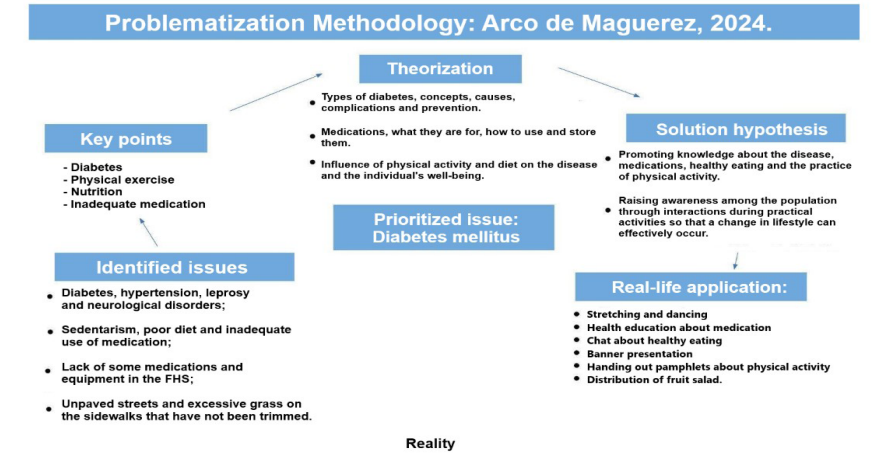
Imagem 01: Metodologia da problematização: arco de maguerez, 2024.



Source: UNIVAG medical students, 2024.

To identify the profile of people with diabetes, home visits were carried out on two days, April 26 and May 3, 2024. During these visits, blood pressure and capillary blood glucose levels were measured, in addition to questions about eating habits and individual guidance on diabetes control.

Based on knowledge of the community's problems and profile survey, extension actions were planned, such as:

1. Rhythm and Health: the proposal was to perform stretching exercises for 10 minutes in the Chapel that covers the Cidade de Deus neighborhood, which is part of the unit's coverage area. Five types of stretching exercises were established, each lasting 10 seconds. In addition, five types of aerobic dance were also performed, using the songs "Despacito", "Esperando na Janela", "Macarena", and "A Bomba".

2. Unveiling the treatment: this action was educational, using a banner and oral communication, explaining the importance of controlling blood glucose, describing what insulin is and how its mechanism works, the types of insulin (oral or subcutaneous), how to administer it, highlighting the importance of educating patients on how to avoid hyperglycemia or hypoglycemia, and dealing with insulin, as well as ways to store and use it, in addition to providing space to answer patients' questions.

3. Smart nutrition: A community awareness campaign was held through educational activities to promote a balanced and conscious diet, emphasizing the importance of reducing sugar in the diet and that it is essential to understand that, in controlling diabetes, it is necessary to consider the types of foods consumed, as well as the quantity, as this can significantly affect the amount of sugar in the blood. To present the smart nutrition stage, we used a banner with a drawing of a chair that represented diabetes and its 4 pillars (education, diet, physical exercise and medication), in addition to a panel with foods and their respective amounts of sugar.

After the extension actions, the data were organized, analyzed and discussed based on the literature. Due to the methodological nature, approval by the Research Ethics Committee is not required.

RESULT

The experience of the curricular university extension program allowed us to learn about the profile of some people with diabetes mellitus in the context of primary health care. The characteristics were identified through home visits in two micro-areas monitored by community health agents.

A total of nine people were visited, of which seven had diabetes, the majority were women (5) and (2) men, between the ages of 40 and 70 years old, did not exercise, used oral medication/insulin for treatment, but some used the medication irregularly, with changes being evidenced by measuring capillary blood glucose. Capillary blood glucose ranged from 83 to 408 mg/dL and blood pressure ranged from 110/80 to 140/70 mmHg.

In view of these findings, the extension was organized with integrated strategies for controlling diabetes mellitus in the area covered by the ESF. The extension actions were based on four pillars, in which the academics made an analogy using a chair to represent diabetes, and each "leg" of the chair represented a pillar, namely education, nutrition, physical activity and medication. If the chair has problems with one of its legs, it becomes unbalanced, the same occurs with the health of the person with diabetes; when there is a deficit in one pillar, there is disharmony in the health condition, which can lead to serious complications. The image below represents the banner that was displayed to the community on the days of the integrated actions demonstrating the pillars for controlling diabetes.

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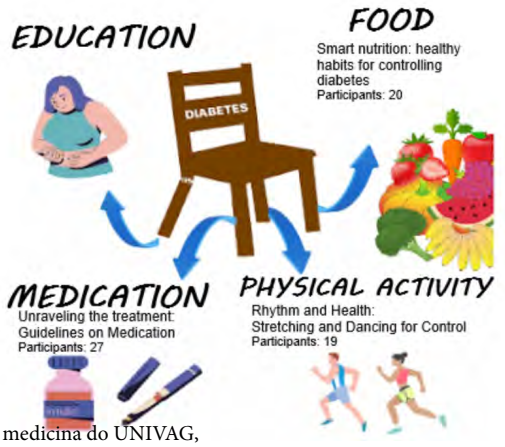
Image 2: Recommended pillars in the extension for the control of diabetes mellitus, 2024.



Fonte: Acadêmicos de medicina do UNIVAG, 2024.

Rhythm and Health: Stretching and Dancing to Control Diabetes.

On May 24, the outreach activity was held at the Nossa Senhora Aparecida chapel, at around 7:30 in the morning. After organizing the environment, so that there was enough space for the practice, the students noticed the presence of 19 people, 14 of whom were patients, and the others were from the family health team, composed of 1 doctor, 1 nurse and 3 community health agents (CHAs) who also participated in the outreach. After the group was introduced to the participants, the outreach project and its relationship with diabetes were explained, and only then did the exercises begin.

There were 5 different types of stretches with 10 movements each. Then, with the selected music, the dance steps were demonstrated slowly so that everyone could follow along. As soon as everyone understood all the steps, the music started, and in cases of difficulty, there was exclusive assistance for the participant so that they could keep up with all the other participants. It was a very fun practice for both us and the patients; happiness was clearly expressed on their faces and satisfaction and joy were demonstrated. There was a sequence of 4 songs, with a short break for the last choreography.

herefore, we provided guidance on the practice of physical activities recommended by the Brazilian Diabetes Society, and we obtained the collaboration of our preceptor who explained the importance of practicing these exercises to control diabetes. Everyone's blood glucose levels were checked and a brief satisfaction questionnaire was completed, which we obtained very positive results. The participants reported that they loved the practice and asked if it would be possible to repeat it later.

Unraveling Treatment: Medication Guidelines

On June 7th, 2024, an outreach activity was held at the reception of the Jardim Eldorado Family Health Strategy. This activity enabled the student to acquire knowledge about diabetes, medication, and lifestyles that influence blood glucose control. Furthermore, during the presentation, the student developed public communication skills, even with anxiety.

The language used was appropriate for the population, so that there were no questions at the end of the explanation. All 27 individuals who were at the unit signed the attendance list, showed interest in the topic, and listened attentively, not engaging in side conversations or playing with their cell phones.

The presentation initially consisted of an introduction to the extension project itself; then, the difference between type 1 and type 2 diabetes mellitus was briefly mentioned, so that the rest of the presentation would be coherent and those present would understand what would be explained; as the main theme of the day was to reveal the treatment for controlling diabetes, the relationship between the type of diabetes and the medication used was explained, highlighting how it acts to control blood sugar and emphasizing the importance of using it properly; continuing, some specificities of the insulin pen were explained, such as how to handle it, the appropriate places for application, how to store it and the correct disposal of needles; finally, the four pillars for controlling diabetes were highlighted, indicating that diet, physical activity and education on the topic should be done together with the use of the medication.

At the end of the presentation, the unit's receptionists asked about the relationship between the four legs of the chair and the pillars of diabetes control. They explained that in order to control this disease, it is necessary to have an education on the subject, eat well, exercise and use medication correctly, and that failing to do any of these actions prevents the treatment from being effective.

They found the analogy so interesting and important that they decided to place the banner at the entrance of the ESF, so that all patients who entered could see the project. The main purpose of this action was to guide the population on the importance of medication and its regular use, so that access to information is made available and the population has a better quality of life

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Smart nutrition: healthy habits for diabetes control

On June 14th, 2024, the third stage of the extension action was developed at the reception of ESF Jardim Eldorado. With this activity, the students acquired knowledge about diabetes, eating habits and lifestyles that influence blood glucose control. Approximately 20 individuals participated, all of whom demonstrated interest in the topic.

Smart nutrition for diabetes control involves a balanced diet, and for this purpose it was necessary to educate about the daily nutritional recommendations for carbohydrates, proteins, fibers and sugars. The panel that was displayed showed the amount of sugar in certain foods that are consumed regularly by

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the community, which generated awareness among those present to change their habits. It was evident during the presentation that one participant was surprised to see the amount of sugar in the foods and was interested in taking the panel to show her family. Finally, the four pillars for diabetes control were highlighted, indicating that medication, physical activity and education should be done together with the adoption of better eating habits.

At the end of the presentation, fruit salads were made available to the attendees, who were very pleased to receive the breakfast. It is worth noting that some of the attendees reported excessive consumption of ultra-processed foods, and were encouraged to change their habits after seeing how rich they are in sugar. The event demonstrated the importance of choosing healthy foods, the need to adopt a healthy lifestyle, and to increase access to information for the population to improve their quality of life.

DISCUSSION

Combining distinct therapies in diabetes and its complications may produce better results than single-agent treatments. [1] Non-pharmacological measures include dietary modifications and physical activity, thus constituting lifestyle changes. Current treatment of T2DM in young people recommends the introduction of pharmacotherapy (metformin) from the beginning, together with lifestyle modifications. Screening for chronic complications and cardiovascular risk factors should be performed annually from the time of diagnosis. [2]

From this perspective, university extension was an action that enhanced work in primary care, promoting the four pillars for diabetes control, but research needs to be developed to evaluate the long-term effectiveness of these actions in order to control the disease and reduce complications.

A cross-sectional study with 6,317 people with diabetes showed that more than a third (37.8%) reported having some type of vision (30.6%) or kidney (9.7%) complication. Inequalities were found with a higher prevalence of complications among the less educated and the poorest. Regarding the characteristics of the individuals included, 59.2% were female, 45.1% were 65 years old or older, 47.0% reported being white and the majority had incomplete elementary education (46.5%). [3]

In the city of Vitória da Conquista - BA, from 2013 to 2023, there were a total of 3,391 cases of diabetes mellitus, with 2022 being the year with the highest number of hospitalizations. Most admissions were male, brown-skinned and between 60 and 69 years old. Approximately 99.6% of patients were treated as emergency patients in public hospitals. The year 2017 was the year with the highest number of deaths from this disease. [4]

Considering the situations presented, it is clear that human health is complex and clinical procedures should be centered on the patient as a whole. The final decision is defined by the patient's health history within a social and financial context, in addition to being influenced by the guidelines of the Brazilian Diabetes Society. [2]

A qualitative systematic review indicated that medication-related problems in diabetes control are associated with patients' adherence to their daily routines. The study highlighted that the level of knowledge about the importance of medication in controlling the disease, the existence of a routine for drug use, the perceived support of health professionals and family members, and the discomfort caused by the medications themselves are the main factors that influence medication adherence in diabetic individuals. In addition, the review highlighted that health service providers play an important role in promoting correct and continuous drug treatment, and that broad knowledge about the disease and adequate training to educate the community are essential. [5]

Research conducted in Amazonas showed that in primary health care, prevention and control actions for type 2 diabetes are priorities, from dispensing medications to non-medication actions such as physical activity and nutrition. The lack of specialized professional training in nutrition and physical activity and the high staff turnover were identified as barriers to the implementation of programs. In addition, there was difficulty in incorporating specific care and behavior modification strategies, which negatively impacted the care received by users. Although users received detailed information on "what to do", they lacked practical knowledge and skills on "how to do it". [6]

A randomized study found that a 9-month exercise program conducted in the San Francisco Bay Area between November 2016 and December 2019 had as its primary outcome the change in glycated hemoglobin (HbA1c) levels at months three, six, and nine. Changes in body composition occurred at 9 months in participants who completed at least 50% of the sessions. This research showed that strength training alone was effective and superior to aerobic training in reducing HbA1c levels in normal-weight people with type 2 diabetes mellitus. [7]

The studies presented corroborate the development of university extension, since they point to significant results for the control of diabetes by adopting physical exercise practices, healthy eating, correct use of medication and being educated to control the disease.

CONCLUSION

The outreach activities were significant for everyone involved, especially the community that questioned, got involved and committed to changing their lifestyle. The team received support for the action, and the partnership between the health service and the university was important. Keeping the banner displayed encouraged people to read the content. The activity made it possible to raise awareness about the importance of a balanced diet, medication and physical activity, and to do so, knowing what is appropriate for individual health is important and necessary. The limitation was that the participation of the diabetic public reached was not longitudinal and was limited to a certain audience of people, although the entire area of coverage was invited. Finally, it is suggested that other outreach and research projects be developed with people who have diabetes so that it is possible to control the disease and reduce complications.

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