

Evaluation of the Effectiveness of Nursing Interventions in Improving the Quality of Life of Patients with Type 2 Diabetes

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Abstract

A documentary review was carried out on the production and publication of research papers related to the study of Nursing, Quality of Life and Type 2 Diabetes. The purpose of the bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during the period 2017-2022 by Latin American institutions, achieving the identification of 354 publications. The information provided by this platform was organized through graphs and figures, categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics have been described, the position of different authors on the proposed topic is referenced through a qualitative analysis. Among the main findings made through this research, it is found that Brazil with 242 publications with the highest scientific production registered in the name of authors affiliated with institutions in that country. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material referring to the study of the relationship that exists between nurses and patients, with the quality of the service offered in the intensive care unit, was Nursing, with 216 published documents, and the most used Publication Type during the period indicated above were Journal Articles, with 89% of the total scientific production.

Keywords: *Nursing, Quality of Life, Type 2 Diabetes.*

1. Introduction

Type 2 diabetes, is the most common type of diabetes, it is a global health disease that occurs when the level of glucose in the blood, also known as sugar in the bloodstream is too high, this type of disease affects millions of people around the world characterized by insulin resistance and the constant alteration of glucose regulation in the body, This disease requires careful treatment, as it presents a constant challenge for both patients with the disease and health specialists. Beyond the physiological difficulties, the mental and emotional health impact caused by screening for type 2 diabetes extends to those living with the condition, directly influencing their quality of life.

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In relation to this, the intervention of the nursing area represents a fundamental pillar in the care of these patients, since these professionals do not address the intra-hospital aspects but also the holistic needs that patients need. The effectiveness of nurses in improving the quality of life of patients with this condition of type 2 diabetes is a very relevant issue, since it directly reflects the capacities of health professionals to be able to effectively watch over and safeguard the well-being of patients and, In doing so, substantially alleviate the physical, emotional, and social burdens that these patients must face.

Type 2 diabetes is a disease caused by problems with the way the body regulates and uses sugar for fuel. This sugar is also called glucose. This type of diabetes is diagnosed late and is asymptomatic for years because elevated blood sugar levels are not high enough to cause diabetes. typical clinical symptoms. This predicts cardiovascular disease, kidney dysfunction which can have an impact on the health of affected patients. However, this condition is directly related to people's daily lives, where the emotional state, the psychological part and the social interactions that they can lead in their daily lives intervene.

In addition, social and environmental factors play an important role in the social experience of people with type 2 diabetes. One of the problems faced by people with this disease are those that stigma and discrimination related to diabetes, the lack of empathy and support from people and the limited access to health resources represent an emotional burden of the disease, therefore, facing the psychosocial aspects of type 2 diabetes is important to properly manage its components and clinical aspect.

The integration of nursing professionals in the context of the effectiveness of nursing intervention in improving the quality of life of patients with type 2 diabetes encompasses a wide range of activities and support mechanisms, both emotional and psychological, this allows inclusion and education for patients who can have advice from those in charge of health to be able to manage medications in a timely manner. and allow them to guide and modify their lifestyle and have emotional support. Through this holistic approach, the role of nursing plays a unique position that not only to help patients manage their diabetes in an effective way, but also to be able to improve patients' quality of life, improve and challenge the emotional and social conflicts presented by this condition that affects many people around the world. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in the Scopus database related to the variables Nursing, Quality of Life and Type 2 Diabetes, as well. Such as the description of the position of certain authors affiliated with institutions, during the period between 2017 and 2022

2. General Objective

To analyze, from a bibliometric and bibliographic perspective, the preparation and publication of research papers in high-impact journals indexed in the Scopus database on the variables Nursing, Quality of Life and Type 2 Diabetes during the period 2017-2023.

3. Methodology

This article is carried out through a research with a mixed orientation that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study of Nursing, Quality of Life and Type 2 Diabetes. On the other hand, examples of some research works published in the area of study mentioned above are analyzed from a qualitative perspective, based on a bibliographic approach that allows describing the

position of different authors on the proposed topic. It is important to note that the entire search was carried out through Scopus, managing to establish the parameters referenced in *Figure 1*.

3.1. Methodological design



Figure 1. Methodological design
Source: Authors' own creation

3.1.1 Phase 1: Data collection

Data collection was carried out from the Search tool on the Scopus website, where 128 publications were obtained from the following filters:

TITLE-ABS-KEY (nursing, AND quality AND of AND life, AND type 2 diabetes) AND PUBYEAR > 2016 AND PUBYEAR < 2023

- Published documents whose study variables are related to the study of Nursing, Quality of Life and Type 2 Diabetes
- Limited to the period 2017-2022.
- Without distinction of country of origin.
- Without distinction of area of knowledge.
- No distinction of type of publication.

3.1.2 Phase 2: Construction of analytical material

The information collected in Scopus during the previous phase is organized and then classified by graphs, figures and tables as follows:

- Co-occurrence of words.
- Country of origin of the publication.
- Area of knowledge.
- Type of publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, the results of the previous results are analysed, resulting in the determination of conclusions and, consequently, the obtaining of the final document.

4. Results

4.1 Co-occurrence of words

Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.

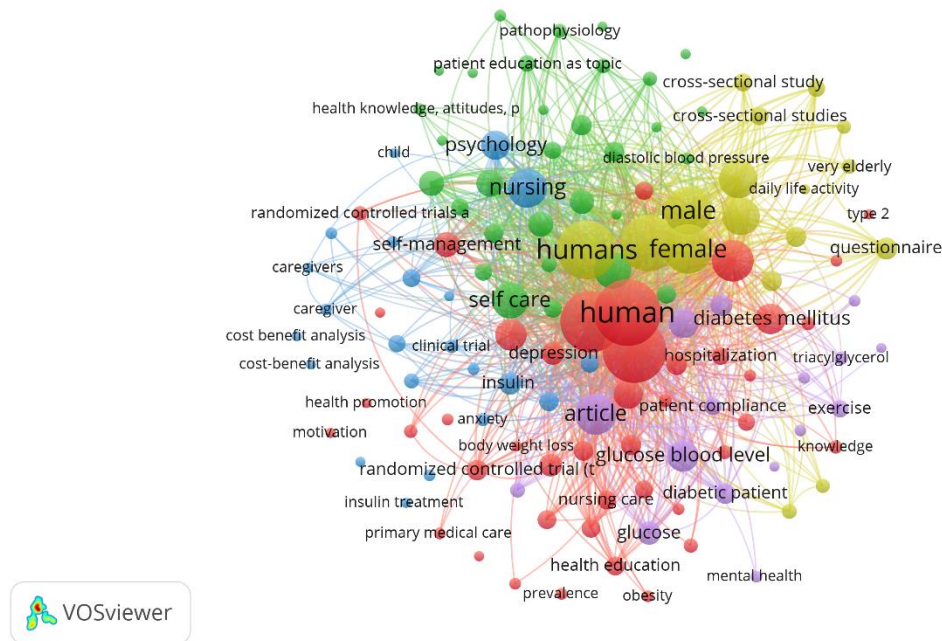


Figure 2. Co-occurrence of words

Source: Authors' own elaboration (2023); based on data exported from Scopus.

Nursing was the most frequently used keyword within the studies identified through the execution of Phase 1 of the Methodological Design proposed for the development of this article. Psychology is among the most frequently used variables, associated with variables such as Personal Care, Patient Complexity, Glucose, Diabetes, Type 2, Hospitalization, Insulin. From the above, it is striking, nurses are more than health professionals; They are educators, counselors, and patient advocates. They provide patient-centered care that goes beyond clinical disease management. Her intervention ranges from educating patients on how to manage their disease and carry out effective treatments to providing emotional support to address the psychological challenges that come with type 2 diabetes. Patient empowerment through education is a fundamental pillar of type 2 diabetes nursing. When patients understand their condition and how they can take steps to manage it, they feel more empowered to manage their own health. This has a direct impact on your quality of life by reducing the uncertainty and fear that often accompany the disease. In addition, nurses play a vital role in promoting a healthy lifestyle. They help patients make changes in diet, exercise, and other habits that are essential for managing diabetes. Not only does this improve physical health, but it also contributes to a higher quality of life by allowing patients to actively participate in the activities they enjoy and in their everyday lives.

4.2 Distribution of scientific production by year of publication

Figure 3 shows how scientific production is distributed according to the year in which each document was published.

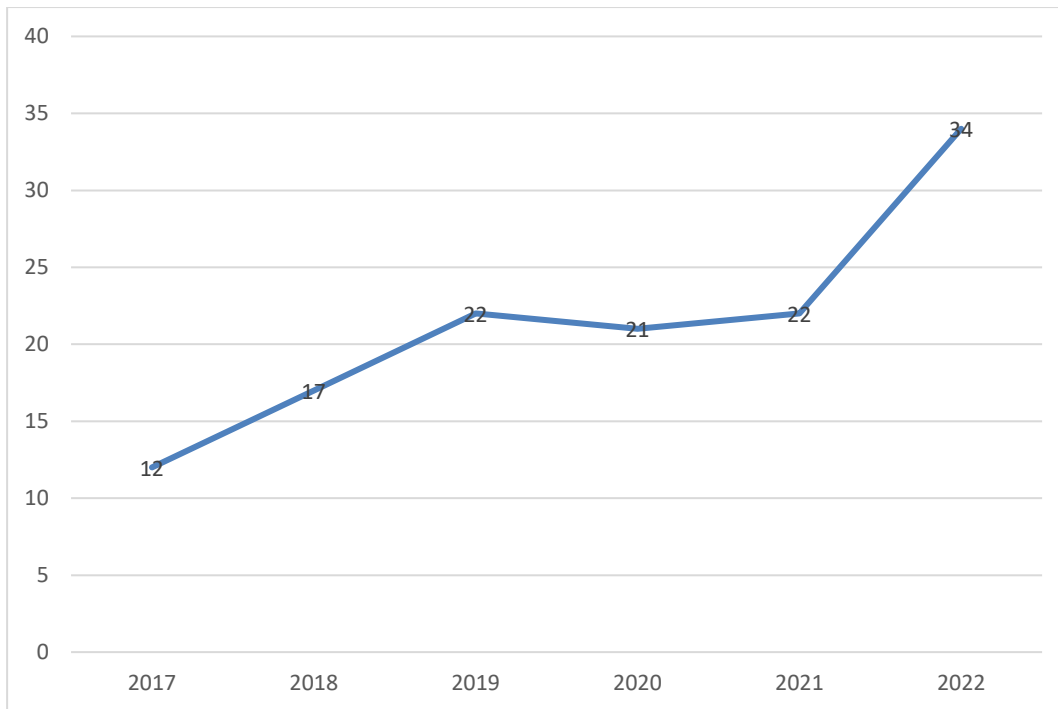


Figure 3. Distribution of scientific production by year of publication.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

Among the main characteristics evidenced through the distribution of scientific production by year of publication, the number of publications registered in Scopus was in 2022, reaching a total of 34 documents published in journals indexed on this platform. This can be explained thanks to articles such as the one entitled "Diabetes Management After a Therapeutic Education Program: A Qualitative Study" Our objective was to know the perception and adherence to the recommendations on diabetes management in patients with type 1 diabetes after participating in a therapeutic education program. (2) Methods: A qualitative descriptive study followed the guidelines of the Standards for Reporting Qualitative Research. Patients with type 1 diabetes were recruited and participated in a therapeutic education program from February to April 2022. Semi-structured in-depth interviews were used and transcripts were analyzed using the inductive qualitative content analysis method. The final sample consisted of 18 patients with type 1 diabetes mellitus. (3) Results: Several patients with type 1 diabetes reported that they had improved their glycemic control after participating in the therapeutic education program. Some patients recognized that the chronic disease and the complexity of the complications led to stress and anxiety. This influenced their regular life, work, and interpersonal relationships. (4) Conclusions: In terms of satisfaction, most patients reported a good perception of the quality of the organization, the professionals involved, and the contents of the program. The physical and psychosocial benefits of self-management training have been demonstrated.(Romero-Castillo, 2022)

4.3 Distribution of scientific output by country of origin

Figure 4 shows how scientific production is distributed according to the country of origin of the institutions to which the authors are affiliated.

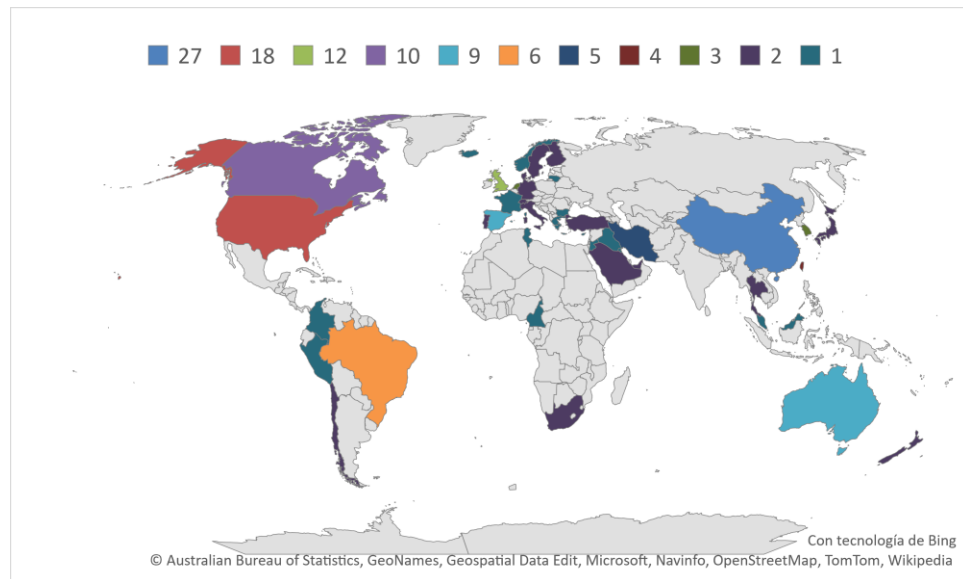


Figure 4. Distribution of scientific production by country of origin.

Source: Authors' own elaboration (2023); based on data provided by Scopus

Within the distribution of scientific production by country of origin, the registrations from institutions were taken into account, establishing China as the country of this community, with the highest number of publications indexed in Scopus during the period 2017-2022, with a total of 27 publications in total. In second place, the United States with 18 scientific papers, and the United Kingdom occupying third place presenting to the scientific community, with a total of 12 documents among which is the article entitled "Usability of the glucometer for patients over 65 years of age with type 2 diabetes: knowledge on physical and cognitive issues" Our objective was to investigate the physical and cognitive problems related to the use of glucometers in patients with T2DM aged 65 years or more. Materials and methods: The existing literature was analyzed to define an original framework that shows the logical link between physical and cognitive issues and quality of life. We then collected evidence that addresses the specific case of the Accu-Chek® instant glucometer produced by Roche Diabetes Care GmbH, which implements new features that aim to improve usability. We conducted 30 interviews with patients with T2DM aged 65 years or older, three interviews with senior nurses, and a focus group with three senior physicians and three senior nurses. Results: From the interviews, both patients and nurses stated that they were generally satisfied with the characteristics of the Accu-Chek® Instant glucose meter. The focus group discussed the results and, in the light of some divergent responses, set out improvements for future implementation. Conclusions: Our study produces future evidence and suggestions on the use of glucometers in patients with type 2 diabetes aged 65 years and older. (Pinelli, 2022)

4.4 Distribution of scientific production by area of knowledge

Figure 5 shows the distribution of the elaboration of scientific publications based on the area of knowledge through which the different research methodologies are implemented.

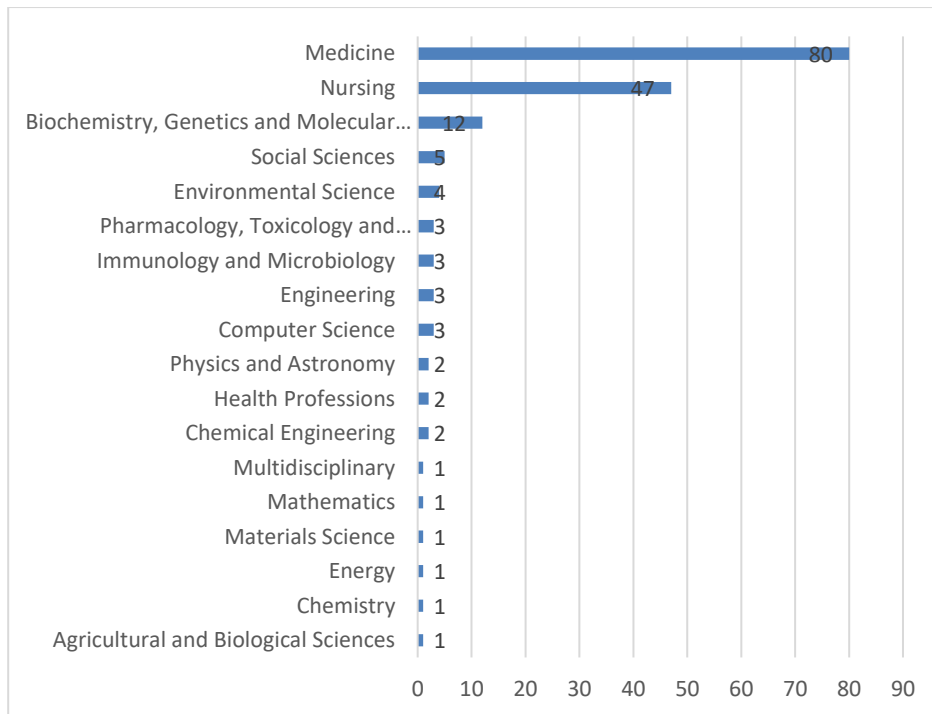


Figure 5. Distribution of scientific production by area of knowledge.

Source: Authors' own elaboration (2023); based on data provided by Scopus

Medicine was the area of knowledge with the highest number of publications registered in Scopus with a total of 80 documents that have been based on its Nursing, Quality of Life and Type 2 Diabetes methodologies. In second place, Nursing with 47 articles and Biochemistry, Genetics and Molecular Biology in third place with 12. The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by Medicine entitled "Validation of the Diabetes Knowledge Questionnaire (DKQ) in the Taiwanese Population: Concurrent Validity with the Diabetes Specific Quality of Life Questionnaire Module for Diabetes" The objective of this study was to validate the 24-item Diabetes Knowledge Questionnaire (DKQ). Patients and methods: The 24-item DKQ and the Diabetes-Specific Quality of Life Module (DMQoL) were administered to 425 patients (mean age \pm SD = 58.4 \pm 11.6) with type 2 DM. Results: The factor structure of the 24-item DKQ was first examined using an exploratory factor analysis (EFA). Items with low factor loads were eliminated and 18 items were retained to develop a DKQ-18. Five factors were identified in the DKQ-18, which were called etiology and symptoms of diabetes (F1), intermediate nursing (F2), complications (F3), diet and treatment (F4) and elementary nursing (F5). The DKQ-18 had satisfactory internal consistency (Cronbach's α = 0.732 and McDonald's ω = 0.748), good known group validity (participants with higher educational attainment scored better on DKQ-18; participants with HbA1c \leq 7 scored better on DKQ-18 compared to the group with HbA1c level $>$ 8.5), acceptable test-retest reliability ($r=0.69$), appropriate responsiveness (DKQ-18 can detect knowledge changes) and concurrent validity with DMQoL. Conclusion: The DKQ-18 is a valid measure to assess diabetes knowledge. The DKQ-18 could assess participants' diabetes knowledge and improve their diabetes knowledge and self-management through a diabetes team and serve as a tool to assess the knowledge of participants with type 2 DM. (Hsieh, 2022)

4.5 Type of publication

In the following graph, you will see the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.

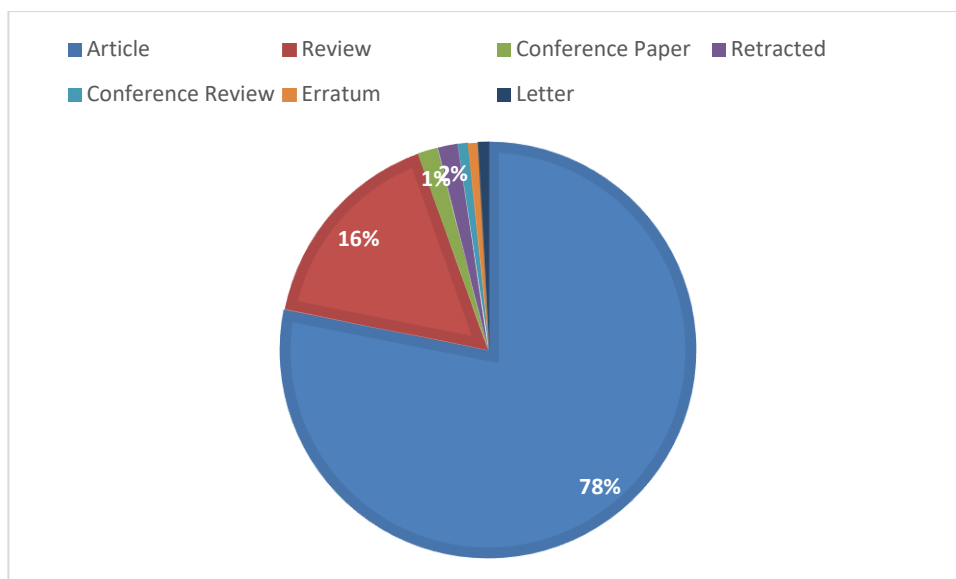


Figure 5. Type of publication.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

The type of publication most frequently used by the researchers referenced in the body of this document was the one entitled Journal Articles with 78% of the total production identified for analysis, followed by Journal with 16%. Session Paper are part of this classification, representing 1% of the research papers published during the period 2017-2022, in journals indexed in Scopus. In this last category, the one entitled "Effectiveness of disease management training for patients with type 2 diabetes mellitus: a systematic review" stands out. The aim of this systematic review was to examine the effectiveness of different educational programs on the management of the disease among patients with type 2 DM. Methods: The PRISMA-P (Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols) flowchart was used in the literature review. We conducted a literature search between 2010 and 2020 using the national database Ulakbim, Google Scholar, Scopus, PubMed, Library, Science Direct, Web of Science, Medline, Ebscohost, and Cochrane Library, and included 18 randomized controlled studies in English. Results: Within the scope of these studies, it was found that individualized and face-to-face training and long-term follow-up after training were effective in metabolic control. Peer support was also identified as an important factor in the effectiveness of the training. In line with the training, the self-care and quality of life scores of people with diabetes were positively affected.(Bağriaçık, 2022)

5. Conclusions

Through the bibliometric analysis carried out in this research work, it was possible to establish that the United States was the country with the highest number of published records regarding the variables Nursing, Quality of Life and Type 2 Diabetes. With a total of 21 publications in the Scopus database. In the same way, it was possible to establish that the application of theories framed in the area of Medicine, They were used more frequently in the effectiveness of nursing interventions for a comprehensive management of patients with the condition of type 2 diabetes, since this can present a risk to the health of this patient either of a personal nature, emotional, physical and social, therefore, this pertinent intervention plays an essential role in order to improve and offer a better quality of life for these patients. Undoubtedly, diseases play an essential role when it comes to informing and educating patients about the diagnosis and control of their disease, therefore, it is of utmost importance that health professionals can guide them in a timely management of medications, comprehensively promote a healthier lifestyle that allows

them to provide quality support in a psychological way the changes in their lifestyle as a result of diabetes of this type. A good education provided by the nursing area empowers patients with the proper knowledge and fundamental skills to be able to control and administer their medications in an effective way, which in turn has a greater sense of autonomy and control of their own health. In addition, a close support between the nursing and psychology areas can significantly help the levels of anxiety present in patients, alleviate the depression and stress that often accompany these patients with this type 2 condition, with this seeks to improve the mental health and quality of life of patients.

Undoubtedly, the present implementation of nursing in adherence to treatment plans and lifestyle changes, has a fundamental impact at the time of control and management of type 2 disease and with this seek prevention and complications in the long term for patients, this in turn, It allows patients and family members to have a better lifestyle since this disease directly impacted the emotional state of people, which can lead to a deterioration in the health of patients. It is important to highlight that the intervention of this health area plays a crucial role in improving the lifestyles of these people, since by being able to address the challenges and emotional and social effects that these patients face, the role of nursing can significantly help patients to have a better outlook of a full and healthier life. This care focused on the epicenter of the well-being of patients with type 2 diabetes and the management of personalized help are fundamental pillars to empower patients and thus achieve a more satisfactory life despite the chronic conditions they suffer from and ensure a more comprehensive and harmonious health.

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