Health promotion for people with diabetes in primary care: an integrative review

Promoção da saúde às pessoas com diabetes na atenção primária: revisão integrativa

**ABSTRACT**

**Objective:** To identify diagnoses, interventions and/or outcomes, including clinical indicator assessment scales, of patients in the immediate postoperative period of cardiac surgery based on the literature. **Method:** Scoping review based on the Joanna Briggs Institute manual in 11 research databases or directories. Data analysis identified diagnoses, interventions and outcomes described in standardized and non-standardized language. **Results:** Of the ten studies included, five contained NANDA International diagnoses. No studies were found that used standardized language for nursing interventions and outcomes, however, one study addressed an intervention with non-standardized language and five studies described clinical nursing indicator scales. **Conclusion:** This study synthesized the elements of the nursing process for patients in the immediate postoperative period of cardiac surgery based on the literature and can help develop products in this area.

**Descriptors:** Postoperative Care; Nursing Diagnosis; Perioperative Nursing; Nursing Process; Standardized Nursing Terminology

**RESUMO**

**Objetivo:** Identificar diagnósticos, intervenções e/ou resultados, incluindo escalas de avaliação de indicadores clínicos, de pacientes no pós-operatório imediato de cirurgia cardíaca com base na literatura. **Método:** revisão de escopo baseada no manual do Joanna Briggs Institute em 11 bases ou diretórios de pesquisa. Para a análise dos dados foi realizada a identificação de diagnósticos, intervenções e resultados descritos em linguagem padronizada e em linguagem não padronizada. **Resultados:** dos dez estudos incluídos, cinco continham diagnósticos da NANDA Internacional. Não foram encontrados estudos que utilizaram linguagem padronizada de intervenções e resultados de enfermagem, no entanto, um estudo abordou uma intervenção com linguagem não padronizada e cinco estudos descreveram escalas de indicadores clínicos de enfermagem. **Conclusão:** este estudo sintetizou os elementos do processo de enfermagem para pacientes em pós-operatório imediato de cirurgia cardíaca baseados na literatura e pode auxiliar o desenvolvimento de produtos na área.

**Descritores:** Cuidados Pós-operatórios; Diagnostic de Enfermagem; Enfermagem Perioperatória; Processo de Enfermagem; Terminologia Padronizada em Enfermagem

**HOW TO CITE THIS ARTICLE:**

INTRODUCTION

Health Promotion (HP) is defined in the Ottawa Charter as a process of empowering the community to improve the quality of life and health, as well as greater participation in the control of this process. It involves actions in five central areas: drawing up healthy policies, creating health-friendly environments, strengthening community action, developing personal skills, and reorienting health services.¹

In this broader view of the life-disease process, HP and care are interrelated with intersectoral public policies aimed at creating spaces that favor health, the development of skills that support this condition and the empowerment of the person and the collective.² For this, the participation and interaction of people in their social, economic, and cultural environment and maintaining relations with instances at different levels is essential.³

Health-supportive skills involve identifying and dealing with the determinants associated with behavioral and lifestyle issues, as well as social and environmental circumstances.²,⁴ Directly related to these elements, Diabetes Mellitus (DM) is an illness condition that can be prevented and controlled once it is established.

DM is a public health problem worldwide⁴ and is characterized as a chronic, progressive metabolic disorder caused by an absolute or relative deficiency of the hormone insulin.⁵

By 2022, Brazil is expected to have 15.7 million people with DM, and by 2045, the disease will affect 23.2 million Brazilians; the country currently ranks tenth among those with the highest incidence of the disease in the world.⁶ Furthermore, the increase in prevalence is attributed to population aging and, especially, to lifestyle.⁴,⁷

The prevention and control of DM are developed in Primary Health Care (PHC), where a set of actions is carried out that include promotion, prevention, diagnosis, treatment, and rehabilitation. It should be noted that PHC is the gateway to the Brazilian Health Care Network system.⁸,⁹

In this sense, people who are diagnosed with DM tend to become more dependent on health services, having difficulties expressing personal autonomy in the face of this condition. This highlights the importance of developing strategies that influence people’s autonomy and, consequently, improve their quality of life.¹⁰

It is of the utmost importance to incorporate the articulation of health promotion into the care of people with diabetes. This integrated approach emphasizes disease prevention and promotes health practices that contribute to effective diabetes management. By integrating health promotion strategies, it is possible to strengthen
awareness, educate patients about healthy lifestyle habits, and empower individuals to make informed decisions regarding their health. This, in addition to having a positive impact on diabetes prevention, improves the quality of life of diagnosed patients, providing them with essential tools to face the challenges associated with this chronic condition.

Considering the above, the guiding question of this research was: How do scientific productions address health promotion in the care of people with diabetes by primary care professionals? The aim of the study was to analyze the health promotion carried out by primary care professionals in the care of people with diabetes.

**OBJECTIVE**

The aim of the study was to analyze the health promotion carried out by primary care professionals in the care of people with diabetes.

**METHOD**

This is an integrative literature review, a method that allows the synthesis of results from research on a topic in a systematic, orderly and comprehensive way, and it supported the theoretical framework. The following steps were taken to conduct the study: definition of the clinical problem converted into the research question; search strategy and determination of eligibility parameters; extraction of information; evaluation of the studies; presentation and synthesis.

The research question was based on the acronym PCC (Problem, Concept and Context). Thus, we have: How do scientific productions address the development of health promotion in the care of people with diabetes by primary care professionals?

Data were collected in December 2020 using the following electronic databases: Web of Science, National Library of Medicine - National Institutes of Health (PubMed), Medical Literature Analysis and Retrieval System Online (Medline), Latin American and Caribbean Health Sciences Literature (LILACS), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Embase.

Health Sciences Descriptors (DeCS), Medical Subject Headings (MeSH) and descriptors from the Emtree vocabulary (available on the Embase database) were selected. In addition, we added free terms from the researchers' professional practice, selected from abstracts of nursing articles.
When sampling the study in the PubMed, Medline, LILACS and CINAHL databases, the Health Sciences Descriptors (DeCS) "Interdisciplinary Team", "Primary Health Care", "Health Promotion" and "Diabetes" were established in Portuguese, English and Spanish, using the Boolean operators AND and OR to search for publications.

The search strategy used in the PubMed, Medline, CINAHL and Embase databases was established with Medical Subject Headings (MeSH), defined as follows:

(("Grupo de Atención al Paciente" OR "Patient Care Team" OR "Equipo Multiprofesional" OR "Health Care Team" OR "Grupo de Atención de la Salud" OR Interdisciplinary Health Team" OR "Grupo de Salud Interdisciplinario" OR "Medical Care Team" OR "Diabete" OR "Diabetes Mellitus") AND ("Atención Primaria" OR "Primary Health Care" OR "Cuidado de la Salud Primarios" OR "Cuidado de la Salud Primarios" OR "Basic Health Care" OR "Diabetes Mellitus") "Basic Health Care" OR "Estrategia de Salud Familiar" OR "Family Health Strategy" OR "Diabete" OR "Diabetes Mellitus") AND ("Promoción de la Salud" OR "Health Promotion" OR "Campanas de Salud" OR "Promotion of Health" OR "Programas del Bienestar" OR "Promotional Item" OR "Promoción del Bienestar" OR "Wellness Programs" OR "Diabete" OR "Diabetes Mellitus").

The eligibility parameters for inclusion were primary study, available in full and published between 2015 and 2020. The time frame was based on the advances made in the last five years in the care of people with diabetes and health promotion policies, at the time of the survey. This period was chosen, endorsing the request of renowned journals with the greatest scientific impact to cite references of articles published recently.

Exclusion criteria were letters; editorials; event proceedings; opinion articles; theoretical reflections, commentaries, essays, previous notes, theses, dissertations, monographs, course completion papers; dossiers; official documents from national and international programs; health policies; epidemiological bulletins; management reports; books; book chapters; and studies that did not cover the scope of this study. The search and selection of studies took place in December 2020.

In the first stage, 297 records were identified in the databases, six in Web of Science, 21 in PubMed, 117 in Medline, 19 in LILACS, 16 in CINAHL and 118 in Embase. The descriptor filters and eligibility parameters were applied and 212 records were eliminated. This left 85 records, of which: one from Web of Science, seven from PubMed, 27 from Medline, seven from LILACS, three from CINAHL and 30 from Embase.

In the second stage, the titles, abstracts, and descriptors of the 85 articles were read. Nine duplicate articles—one that was not a scientific study and three that did not have a full text—were eliminated. Thus, 72 articles were selected for full reading.
In the third stage, the 72 articles were searched on the Portal of Periodicals of the Coordination for the Improvement of Higher Education (CAPES), and the texts were read in full. Of these, 61 did not meet the objective of the study and/or the inclusion criteria, leaving 11 studies to make up the final sample for analysis, as shown in figure 1.

![Diagram](https://via.placeholder.com/150)

**Figure 1** - Flow of the integrative review between 2015 and 2020, applied to the PRISMA-ScR Diagram. Florianópolis, SC, Brazil, 2022

Source: Research data

To extract the data, a specific tool was used, containing: authors, year, country, title, type of study and level of evidence, theme, objective and main results. The studies were classified according to the level of evidence according to Melnyk; Fineout-Overholt (2015) as level I - systematic review or meta-analysis of randomized controlled clinical trials; level II - well-designed randomized controlled clinical trials; level III - well-designed clinical trials without randomization; level IV - well-designed cohort and case-control
studies; level V - systematic review of descriptive and qualitative studies; level VI - descriptive or qualitative study; and level VII - opinion of authorities and/or reports12. The studies were coded A1, A2, A3 and so on.

The data was analyzed descriptively, and to present the results, two tables were drawn up, the first containing the following information: study code with its respective reference; objectives; type of study; and level of evidence. The second: study code; actions taken; objectives; use strategy; main results.

All the stages of the research were carried out by two researchers, both twice and independently. Initially, the studies were classified as yes or no, according to their relevance to the objective of the integrative review. When there was no agreement on the selection, a consensus was reached between the reviewers through a new evaluation by a third researcher.

It should be noted that ethical principles were preserved, respecting copyright, in accordance with Law No. 9,610/1998, by citing the authors.

RESULTS

Of the 11 articles in the study's final sample, publications from 2019 and 2018 predominated. Regarding the origin of the studies, North American origin was predominant. Regarding the level of evidence, those at level VI predominated, as can be seen in chart 1.


<table>
<thead>
<tr>
<th>Article</th>
<th>Authors/Year/Country</th>
<th>Journal of publication</th>
<th>Target audience</th>
<th>Type of study/ Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Aujla N, Yates T, Dallosso HM, KAI J. 2019 England</td>
<td>BMJ Open</td>
<td>Diabetics type 2</td>
<td>Qualitative VI</td>
</tr>
<tr>
<td>A3</td>
<td>Moradi A, Alavi SM, Salimi M, Nouhjah S, Shahvali EA.</td>
<td>Diabetes Metab Syndr.</td>
<td>Diabetics</td>
<td>Randomized clinical VI</td>
</tr>
<tr>
<td></td>
<td>Publication Year</td>
<td>Country</td>
<td>Authors</td>
<td>Journal</td>
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</tr>
<tr>
<td>A5</td>
<td>2018 United States of America</td>
<td>Kessler M, Thumé M, Duro SMS, Tomasi E, Siqueira SCV, Silveira DS, Nunes BP, Volz PM, Santos AA, França SM, Bander JD, Piccinini T, Fachini LA.</td>
<td>Epidemiol. Serv. Saúde</td>
<td>The National Program for Improving Access and Quality of Primary Care</td>
</tr>
<tr>
<td>A6</td>
<td>2018 Brazil</td>
<td>Benedict AW, Spence MM, Sie JL, Chin Ha, Ngo CD, Salmingo JF, Vidaurreta AT, Rashid N.</td>
<td>J Manag Care Spec Pharm</td>
<td>Diabetics type 2</td>
</tr>
<tr>
<td>A7</td>
<td>2017 Brazil</td>
<td>Marinho MGS, Fontbonne A, Barbosa JMV, Rodrigues HM, Carvalho EF, Souza WV, Cesse EAP.</td>
<td>Elsevier Journal</td>
<td>Health professionals</td>
</tr>
<tr>
<td>A8</td>
<td>2016 Israel</td>
<td>Levin-Zamir D, Badarne S, Najami M, Gan Noy S, Poraz I, Shapiro M, Lieberman N, Goldfracht M.</td>
<td>Glob Health Promot.</td>
<td>Diabetics type 2 Primary Care professionals</td>
</tr>
<tr>
<td>A10</td>
<td>2015 United States of America</td>
<td>Billimek J, Guzman H, Angulo M.</td>
<td>Trials</td>
<td>CHA, Diabetics type 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Article No.</th>
<th>Author(s) and Year</th>
<th>Journal and Country</th>
<th>Type of Study</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Aujla N, Yates T, Dallosso HM, KAI J. 2019 England</td>
<td>BMJ Open</td>
<td>Diabetics type 2</td>
<td>Qualitative</td>
</tr>
<tr>
<td>A3</td>
<td>Moradi A, Alavi SM, Salimi M, Nouhjah S, Shahvali EA. 2019 Iran</td>
<td>Diabetes Metab Syndr.</td>
<td>Diabetics</td>
<td>Randomized clinical</td>
</tr>
<tr>
<td>A5</td>
<td>Kessler M, Thumé M, Duro SMS, Tomasi E, Siqueira SCV, Silveira DS, Nunes BP, Volz PM, Santos AA, França SM, Bander JD, Piccinini T, Fachini LA. 2018 Brazil</td>
<td>Epidemiol. Serv. Saúde</td>
<td>The National Program for Improving Access and Quality of Primary Care</td>
<td>VI cross-sectional</td>
</tr>
<tr>
<td>A6</td>
<td>Benedict AW, Spence MM, Sie JL, Chin Ha, Ngo CD, Salmingo JF, Vidaurreta AT, Rashid N. 2018 United States of America</td>
<td>J Manag Care Spec Pharm</td>
<td>Diabetics type 2</td>
<td>Retrospective cohort</td>
</tr>
</tbody>
</table>

CHA Community Health Agents
Source: Research data
Chart 2 shows the main results found.

**Chart 2.** Summary of information from the review studies, 2015 to 2020. Florianópolis, SC, Brazil, 2022

<table>
<thead>
<tr>
<th>Article</th>
<th>Article title</th>
<th>Objectives</th>
<th>Strategy of use</th>
<th>Main results</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Users' experiences of a pragmatic diabetes prevention intervention implemented in primary care: a qualitative study.</td>
<td>To investigate system user and provider experience of the acceptability of the &quot;Let's Prevent Diabetes&quot; program, a six-hour pragmatic behavioral intervention using structured group education for teaching primary care practice.</td>
<td>The Let's Prevent Diabetes program, a proposal for behavioral interventions carried out by health professionals with diabetics.</td>
<td>Diabetics have little awareness of the risk and are surprised by the offer of treatment. The group is elderly, white, retired and concerned about their health; they like the talks, the social interaction, and the convenience of the location. They report that the lectures are long, and they have difficulty with the language. Those who have given up or refused treatment are apprehensive or unconvinced of the risk of developing diabetes.</td>
</tr>
<tr>
<td>A2</td>
<td>Impact of ENHANCED. Randomized controlled trial of telemedicine on optimal care outcomes in patients with Type 2 Diabetes.</td>
<td>To investigate the effectiveness of a telemedicine program led by a nutritionist/dietitian compared to a controlled group in terms of optimal adherence to diabetes medication.</td>
<td>ENHANCED is used by nutritionists to teach people about diabetes prevention.</td>
<td>A small improvement was found in optimal diabetes care in the intervention group, with greater adherence to the use of diabetes medication. The control group had better adherence to other medications, such as simvastatin and aspirin.</td>
</tr>
<tr>
<td>A3</td>
<td>The effect of short message service (SMS) on preventive knowledge of diabetic foot ulcers in patients with type 2 diabetes.</td>
<td>To evaluate an educational intervention via SMS on foot care in patients with type 2 diabetes.</td>
<td>SMS is used to send educational actions to the intervention group. Tests and questionnaires were carried out with both groups.</td>
<td>The SMS intervention results in diabetic foot prevention and metabolic control. Awareness of diabetic foot care in the intervention group improved significantly after the training.</td>
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<tr>
<td>A4</td>
<td>Evaluation of an academic community Medication Therapy Management (MTM) in rural communities to improve pharmaceutical care for patients with diabetes and/or hypertension.</td>
<td>To evaluate telephone-based and community-based clinical pharmacy services related to improving health indicators for underserved rural patients.</td>
<td>The MTM program is a partnership between academics and pharmacists in the care of people with diabetes.</td>
<td>MTM has brought therapeutic, safety, economic and humanistic health results. People with diabetes in rural areas tend to have worse disease control outcomes than those in urban areas.</td>
</tr>
<tr>
<td>A5</td>
<td>Educational and health promotion actions in teams of the National Program for Improving Access and Education.</td>
<td>To investigate the provision of educational and health promotion activities in primary care and the association with markers of the FHS.</td>
<td>Educational activities are developed to meet the markers of the FHS.</td>
<td>The educational activities cover topics such as healthy lifestyle habits, encouraging self-care, breastfeeding, and regular check-ups. Participants are seen individually and/or in groups, and include people with diabetes.</td>
</tr>
<tr>
<td>A6 16</td>
<td>Evaluation of a diabetes program managed by pharmacists in primary health care</td>
<td>To evaluate the effect of a pharmacist-managed diabetes program within a primary care setting by determining the percentage of patients who reached the target set in HEDIS on glycated hemoglobin (A1c) for patients with type 2 diabetes.</td>
<td>Program used for dispensing medication.</td>
<td>Patients with type 2 diabetes, who were assisted by clinical pharmacists, achieved a better and faster percentage set in the HEDIS target, keeping their glycated hemoglobin (A1c) below 8%.</td>
</tr>
<tr>
<td>A7 19</td>
<td>Impact of the intervention to improve diabetes management on the practices of health professionals in Brazil.</td>
<td>To evaluate the results of a structured intervention in primary care to improve the management and follow-up of type 2 diabetics.</td>
<td>Information was collected by interviewing health professionals.</td>
<td>Educational activities were carried out in groups, with talks on the disease and the prevention of complications. The results demonstrated that the intervention needs to be re-evaluated. There was a difference in the interventions in small towns in the control.</td>
</tr>
<tr>
<td>A8</td>
<td>The use of focus groups to learn about the planning and implementation of culturally appropriate health promotion actions aimed at type 2 diabetics from the Arab community by primary care health professionals.</td>
<td>To identify the barriers to achieving glycemic control among the Arab population with diabetes in Israel, as perceived by members of the Arab community, and by the care team working with them.</td>
<td>Conducting focus groups with people with type 2 diabetes and with healthcare professionals.</td>
<td>People with diabetes find it difficult to recognize the seriousness of the disease, to change cultural patterns and the lack of resources to buy medicines. Health professionals recognize that these facts make it difficult for professionals to bond with diabetics.</td>
</tr>
<tr>
<td>A9</td>
<td>A prospective randomized controlled trial of a virtual clinic integrating primary and specialist care for patients with type 2 diabetes mellitus.</td>
<td>To evaluate the effectiveness of a virtual diabetes clinic to improve diabetes care as primary care by developing clinical management plans for patients with poor or complex metabolic control.</td>
<td>Comparison between virtual and face-to-face groups receiving guidance on diabetes care.</td>
<td>The data collected over 12 months shows equivalence between the virtual clinic and glycemic control groups, with reductions in glycated hemoglobin HbA1c of 8 mmol/mol and 10 mmol respectively. The virtual clinic group showed superiority over the blood pressure control group. There were no differences in cholesterol values, weight, or kidney function.</td>
</tr>
</tbody>
</table>
| A10 | Effectiveness and feasibility | To investigate the use of the EMPATHy software used | People with type 2 diabetes have difficulty adhering to... |...
<table>
<thead>
<tr>
<th><strong>EMPATHy</strong> study protocol for a randomized controlled trial</th>
<th><strong>EMPATHy</strong> by CHWs with type 2 diabetics, before medical consultation in primary care, to identify difficulties in managing the disease.</th>
<th><strong>EMPATHy</strong> by CHAs speeds up the care of diabetics in primary care.</th>
<th>treatment and communicating with doctors (Mexican American origin, low income). The CHAs make contact to raise difficulties, and after the consultation, pass on information and follow up.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A11 Care Management Medical Home Center Program, to improve the quality of care for diabetics.</td>
<td>To measure the impact of the Care Management Medical Home Center (CMMHC) on improving access and quality of care for type 2 diabetics.</td>
<td>The CMMHC provides for telephone calls to be made to people with diabetes before they see a doctor, to gather information about their treatment.</td>
<td>The information optimizes care, care management and more patients receive regular care. The centralized telephone service makes advance calls to people with diabetes who have scheduled appointments, surveying the patient's situation, providing clinical information, optimizing appointments, guaranteeing preventive services and the treatment of chronic diseases.</td>
</tr>
</tbody>
</table>

Source: Research data

The scientific productions analyzed show that pharmacists, doctors, and community health workers are the professionals who carry out the highest number of educational activities with diabetics. Nurses are only mentioned in one of the studies as the health
professional who receives the most investment in education about diabetes management and one of the most active professionals when discussing cases at team meetings.

**DISCUSSION**

Of the 11 studies, nine (81%)\(^{13, 14-18, 20-23}\) resort to the use of programs or protocols and technologies, and two studies (19%)\(^{18, 19}\) address educational actions aimed at people with type 2 DM. All the studies analyzed demonstrate robust methodological suitability for this study. This methodological diversity enriches our understanding of the panorama of health promotion interventions and strategies adopted to care for people with diabetes.

PHC health services orient their activities based on public policies created at the federal level. The care programs or protocols contain the guidelines for the actions to be carried out in caring for the population, and are considered health technologies, as well as medicines, equipment, technical procedures, organizational, educational and support systems.\(^{24}\) Health programs or protocols are important technological tools for health professionals, built by categories, collectively, for assistance, control and/or care.\(^{25}\)

When it comes to preventing DM, health professionals give informative and prescriptive talks and guidance to groups on how to prevent and control the disease. The Let's Prevent Diabetes program, developed in PHC by health professionals, was evaluated in a study\(^{13}\). The researchers identified the reasons for participants' absences as being due to the program's actions, difficulties with schedules and commitments to family or work. The health professionals recognize the challenges related to time and the diversity of the topics on offer, as well as citing the difficulties in carrying out individual appointments for those who are unable to attend the meetings.\(^{13}\)

Comprehensive care should be the focus of health professionals in promotion and prevention approaches; action planning should cover aspects in the biopsychosocial, cognitive, and emotional dimensions, with evaluation parameters carried out after each activity, discussion of the most complex cases and individual approaches. The overload of activities centered on a few members of the team makes the quality of the activities unfeasible.\(^{26}\) Studies have found that the biomedical model coexists among the members of the Family Health Strategy ("FHS"), making it difficult to break away from the care paradigm and develop interdisciplinary health promotion actions.\(^{27-28}\)

The analysis of scientific productions reveals that pharmacists, doctors and community health agents emerge as the professionals most engaged in the development of educational actions aimed at people with diabetes. This underscores the importance...
of these professionals in promoting health and disseminating relevant information for the effective management of the diabetic condition. Notably, nurses are mentioned in only one of the studies as the health professional who receives the most investment in education on diabetes management. In addition, they stand out as one of the most active professionals during case discussions at team meetings. This singularity in the approach and investment in nurses highlights the relevance of this professional in the context of the multidisciplinary team, highlighting their crucial role in continuous education and comprehensive diabetes management.

The Dietitians Helping Patients Care for Diabetes (EnHANCED) program, used in a partnership between general practitioners and nutritionists, has been evaluated in terms of its results. People with type 2 DM who receive EnHANCED intervention show a slight improvement in adherence to treatment. Information Technology (IT) has been incorporated into health services, enabling rapid access to patients, and facilitating interventions in treatment and glycemic control. The living conditions of patients living in remote areas are improved by telecare; the quality of care and the interaction between health professionals and patients become more effective.

One study evaluated the use of the Short Message Service (SMS) in PHC, sending text messages about foot care to people with type 2 DM. The communication is well accepted, and health professionals address the prevention of possible sequelae of the disease, among other subjects, such as diet, physical exercise, medication, blood glucose levels and motivational topics, which can be forwarded via message, guiding people with type 2 DM and helping them to adhere to treatment.

The development of the academic-community partnership Medication Therapy Management (MTM), with guidance and medication delivered by pharmacists to people with DM and hypertension, is subject to evaluation. Authors evaluated the program for dispensing medicines by pharmacists to people with type 2 DM, as well as the educational actions carried out by the professionals. The telephone calls made via the program to individuals receiving medication for continuous use resulted in 237 medication adjustments and 1,102 health interventions carried out by the professionals. Having obtained positive results from the partnership, it is suggested that further studies be carried out with different populations and environments.

Data collected on health promotion interventions from 816 FHSs were analyzed, along with demographic and territorial aspects of the 336 municipalities in the state of Rio Grande do Sul, Brazil. In municipalities with a higher level of FHSs, people with DM are more likely to receive educational activities; furthermore, DM is a chronic disease that
requires changes in eating and living habits, adherence to treatment and help from the family. In a state with a high deficit in the number of FHSs, IT is the key tool for carrying out community-oriented health promotion actions. The use of cell phone apps, SMS messaging and teleconsultations as strategies that can be used by health professionals to monitor diabetes, send information on healthy attitudes (diet, exercise, not drinking, not smoking), reminders about appointments, exams, medication, among others, can guarantee an agile form of interaction between professionals and people with diabetes, as well as reducing health costs.

Authors analyzed data from people with type 2 DM enrolled in the Comprehensive Care Program (CCP) and people with type 2 diabetes receiving care in PHC, according to the Health Effectiveness Data and Information Set (HEDIS) markers. People with DM cared for in PHC show better results in the HEDIS markers.

Every year, PHC health services produce data, but there are few initiatives by health professionals to analyze it, either for research or to guide actions to prevent chronic diseases such as DM. The use of telephones allows any health professional to access the community, evaluate and infer an intervention in real time. However, PHC professionals continue to approach the community from a Cartesian, reductionist viewpoint, using the biomedical model of care based on the existence of the disease.

FHS professionals carry out a structured intervention with people with type 2 DM to stabilize glycemic levels. The researchers identify that adherence to the proposal is higher in the control group, which receives care from the clinical doctor, guidance, referrals, and requests for tests. The comparison group is attended by nurses and CHAs. The intervention applied is based on the biomedical model; interdisciplinary participation in both groups offers tools for transformative actions in the community; the need to use internationally recognized evaluation indicators to validate these interventions is also highlighted.

Educational actions carried out in focus groups with people with DM, also aimed at controlling glycemic levels, were the focus of a study. The language barrier and cultural aspects are the difficulties encountered in the interaction between patients and health professionals. The HP strategy used is not the most appropriate for approaching patients and has been rethought by the team. Initially, the planning of actions needs to promote the construction of a bond between those involved in the educational activities so that it is possible to guarantee an adjustment in communication. The organization of health care, re-dimensioning the health service delivery system, organized information
systems, getting closer to the families of people with DM and ways of promoting self-care are interesting strategies for facilitating prevention and transformations.\textsuperscript{36}

The researchers found that healthcare professionals provide care to people with type 2 diabetes in two ways: virtual care and face-to-face care.\textsuperscript{21} To improve glycemic control, virtual clinics provide care via telemedicine, while other clinics opt for face-to-face care. Both types of care have had positive results, especially for people with diabetes treated by telemedicine.

Both prevention and health promotion can be developed in various scenarios, for example, education is essential to encourage self-care and risk reduction, promoting transformation in the lives of people with diabetes. Interdisciplinary action advances care and the care model, highlighting the importance of building individual care plans\textsuperscript{37-38}.

Telehealth is used by nutrition professionals as an intervention for people with type 2 diabetes living in remote rural areas. The EMPATHy software is used for contact between CHAs and people of Mexican American origin with type 2 diabetes. Evaluating the use of the software\textsuperscript{22} is important to validate the technology and the reduction in communication difficulties. CHAs use the software to capture patients' doubts and help them understand medical guidelines in a dialogical exchange. Challenges such as socioeconomic conditions, ethnicity, language, and cultural aspects can be tackled with IT and the work of CHAs, which facilitates understanding of the risks of the disease, brings patients closer to treatment and increases individual commitment to treatment.\textsuperscript{14,39}

The authors\textsuperscript{23} note the impact of using telephone technology to access each person with type 2 diabetes before their medical appointment, asking questions and identifying their needs. The information is passed on to the doctor for analysis.\textsuperscript{23} This movement reduces the time of the clinical consultation, reduces absences, optimizes the service, reduces the number of requests for tests and dispensation of medication, as well as bringing people closer to the health units, increasing interaction between members of the health team, and encouraging discussion of cases.\textsuperscript{31,40}

However, the prevention of the disease has not received the same commitment from professionals, even though diabetes prevention should be the focus of PHC actions. Screening for diabetes in the families of diabetic patients is an opportunity to prevent the disease since individuals from the same family tend to repeat cultural behavior patterns. It is important to guarantee tests for the diagnosis and follow-up of new patients, as well as encouraging access to healthy lifestyle and quality of life measures.\textsuperscript{30}

ITs are great communication options and can be used by health professionals in HP\textsuperscript{14,22}. ITs are used by interdisciplinary teams in educational actions based on the
analysis of data produced in primary care, to prevent diabetes and other chronic diseases in pre-diabetic people.

In the results of two articles found in databases on Diabetes in PHC, researchers studied the development of educational actions.

DM is a disease in which education is fundamental to patient treatment and adherence to self-care. Care plans should be drawn up according to the needs of each person with diabetes. Approach techniques and forms of communication need to be constantly evaluated.\(^{21}\)

Finally, in terms of level of evidence, level VI (descriptive and qualitative) was predominant in eight studies.\(^{13, 15-17, 19-20, 22-23}\). The country with the highest number of studies was the United States of America, with a total of five.\(^{14, 16, 18, 22-23}\) As for the period of publication, there was no clear year of publication; the predominance of studies was in 2019\(^{13-15}\), 2018\(^{16-18}\) and 2015.\(^{21-23}\)

The importance of classifying studies is based on the evidence of scientific credibility regarding the quality of the studies; the higher the level of evidence, the higher the credibility of the studies.\(^{12}\)

Limitations in this study include the absence of an assessment of the methodological quality of the studies included, which could affect the validity of the conclusions, and changes in the field of study which, due to the evolution of research, could be outdated over time. In addition, it is considered that the studies included in the review use different methodologies, involve professionals from different areas working in health systems around the world and people living with diabetes with different cultural and social aspects.

The implications of these results for nursing practice in PHC are: highlighting effective interventions in diabetes management, providing valuable information on best practices and professional care strategies. They can also be tools in the development of more effective educational actions for users with diabetes in the health system, helping them to better understand their life and health condition, as well as self-management in their care.

**CONCLUSION**

The scientific papers analyzed show that pharmacists, doctors, and community health workers are the professionals who carry out the most educational activities with diabetics. The CHA is assigned by health professionals to identify difficulties, pass on guidance, and monitor the implementation of clinical recommendations for people with diabetes.
diabetes. Information technology (telemedicine, telephone, SMS) is being used more and more, bringing health professionals and services closer to people with diabetes, optimizing adherence to treatment and improving care management. The results show the use of technology by people with type 2 diabetes, confirming that this practice is used to facilitate clinical care and follow-up in primary care.

Nurses are only mentioned in one of the studies as the health professional who receives the most investment in education on diabetes management and one of the most active professionals when discussing cases at team meetings.

In studies carried out in Brazil, there is a gap in the presence of the Family Health Strategy in municipalities, and diabetics have poor glycemic control.

CONTRIBUTIONS

Investments in the FHS in Brazil are suggested, based on a territorial diagnosis and the profile of residents, with the commitment of health professionals, especially nurses, to health promotion. It is up to health professionals to take on the responsibility of interacting with individuals, families and communities, as the occurrence of diabetes is widespread in any time and space.

Most studies focus on level five. It is therefore proposed that further studies be carried out to assess the efficiency and effectiveness of health promotion strategies for individuals living with diabetes in the FHS.

CONFLICTS OF INTERESTS

Nothing to report.

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