

## Family functionality in self-care for people with diabetes mellitus in primary care: scoping review

*Funcionalidade familiar no autocuidado à pessoa com diabetes mellitus na atenção primária: revisão de escopo*

*Funcionalidad familiar en el autocuidado de personas con diabetes mellitus en atención primaria: una revisión de alcance*

Received: 18/02/2024 Accepted: 14/08/2024 Published: 11/10/2024

 Samanta Frey Borges<sup>1</sup>,  Juliana Graciela Vestena Zillmer<sup>2</sup>,  Aurelia Danda Sampaio<sup>3</sup>,  Eda Schwartz<sup>4</sup>  
 Aline Luara Danda Sampaio<sup>2</sup>

### Abstract:

**Objective:** to map and describe the scientific production on family functionality in promoting self-care for people with diabetes mellitus in primary health care. **Methods:** scoping review following the methodology proposed by the Joanna Briggs Institute. The search was carried out in the Virtual Health Library, Scielo, PubMed and SCOPUS, using the descriptors “diabetes mellitus”, “family”, “primary health care”, in Portuguese, Spanish and English, without a specific time frame, until June 2022. The Rayann program was used in the selection. Numerical descriptive analysis and thematic construction of categories were applied. **Results:** Eight articles were considered, of which only one was Brazilian. The h-index of the studies ranged from 15 to 103 and the JCR index ranged from 0.15 to 0.79. The analysis of the studies formed three thematic categories: *Factors that stimulate self-care; Creation of a social support network as a facilitating process in coping/promotion of self-care; and Hindering factors in self-care promotion.* **Conclusion:** the bond between family members, patients and health professionals enables the development of activities and increases adherence to diabetes mellitus treatment.

**Keywords:** Diabetes mellitus; Family; Primary health care.

### Resumo:

**Objetivo:** mapear e descrever a produção científica sobre a funcionalidade familiar na promoção do autocuidado da pessoa com diabetes mellitus na atenção primária à saúde. **Método:** *scoping review* seguindo a metodologia proposta pelo Joanna Briggs Institute. Foi realizada a busca Biblioteca Virtual em Saúde, Scielo, PubMed e SCOPUS, utilizando os descritores “diabetes mellitus”, “família”, “atenção primária a saúde”, nos idiomas português, espanhol e inglês, sem recorte temporal, até o mês de junho de 2022. Na seleção, foi utilizado o programa *Rayann*. Foi aplicada a análise descritiva numérica e a construção temática de categorias. **Resultados:** Considerou-se oito artigos, dos quais apenas um era brasileiro. O índice *h* dos estudos variou de 15 a 103 e o índice JCR variou de 0.15 a 0.79. A análise dos estudos formou três categorias temáticas: *Fatores promotores de autocuidado; Formação da rede social de apoio como processo facilitador de enfrentamento/promoção de autocuidado; e Fatores que dificultam a promoção para o autocuidado.* **Conclusão:** o vínculo entre familiares, pacientes e profissionais de saúde possibilita o desenvolvimento de atividades e aumenta a adesão ao tratamento do diabetes mellitus.

**Palavras-chave:** Diabetes mellitus; Família; Atenção primária à saúde.

### Resumen:

**Objetivo:** mapear y describir la producción científica sobre la funcionalidad de la familia en la promoción del autocuidado de las personas con diabetes mellitus en la atención primaria de salud. **Método:** *scoping review* siguiendo la metodología propuesta por el Instituto Joanna Briggs. Se realizaron búsquedas en la Biblioteca Virtual de Salud, Scielo, PubMed y SCOPUS, utilizando los descriptores “diabetes mellitus”, “familia”, “atención primaria”, en portugués, español e inglés, sin marco temporal, hasta junio de 2022. Para la selección se utilizó el programa *Rayann*. Se aplicó el análisis descriptivo numérico y la construcción temática de categorías. **Resultados:** Se consideraron ocho artículos, de los cuales sólo uno era brasileño. El índice *h* de los estudios osciló entre 15 y 103 y el índice JCR entre 0,15 y 0,79. El análisis de los estudios formó tres categorías temáticas: *Factores que promueven el autocuidado; Formación de la red social de apoyo como proceso que facilita el afrontamiento/promoción del autocuidado; y Factores que dificultan la promoción del autocuidado.* **Conclusión:** el vínculo entre familiares, pacientes y profesionales de la salud posibilita el desarrollo de actividades y aumenta la adherencia al tratamiento de la diabetes mellitus.

**Palabras-clave:** Diabetes mellitus; Familia; Atención primaria de salud.

Corresponding Author: Aurelia Danda Sampaio – aurelia.sampaio@hotmail.com

1. Hospital Tacchini. Universidade Federal de Pelotas, Pelotas/RS, Brazil

2. Undergraduate Nursing Program, Universidade Federal de Pelotas, Pelotas/RS, Brazil

3. Postgraduate Nursing Program, Universidade Federal de Pelotas, Pelotas/RS, Brazil

4. Postgraduate Nursing Program and Professional Master's Degree in Family Health, Universidade Federal de Pelotas, Pelotas/RS, Brazil

## INTRODUCTION

Over the years, the family structure has undergone several changes, and its needs vary according to the times, resulting in different family arrangements that are influenced by socioeconomic and cultural contexts, creating diverse family models<sup>1</sup>. There is diversity in the definition and classification of family. Among them: *a group of people who have a bond by blood or even emotional ties, bringing to the group beliefs and cultures of other generations*<sup>2,3</sup>.

This study uses the definition of family by Wright and Leahey<sup>4:68</sup>, who says that “*family is who they say they are*”, regardless of level of kinship or blood ties, they simply consider themselves family: “I feel like I belong”. The concept of family functionality, on the other hand, refers to the way people behave and make everyone within this sociability assimilate this behavior. Family is a personal relationship and, therefore, has its own identity, distinct for each family<sup>5</sup>. In this context, several family models have emerged, including families composed only of one parent and children, families composed of two mothers or two fathers, couples who choose not to have children and consider their pets as family members, among others, making it necessary to consider functionality as a promoter of self-care and illness in the case of chronic diseases such as diabetes mellitus<sup>6</sup>.

Family functionality refers to the grouping of interpersonal relationships that occur in each family, which gives them their own identity<sup>7</sup>. Thus, each family model has its own way of acting and thinking. With this in mind, family functionality is described as the way in which individuals proceed in a certain situation, whether through companionship, adapting their routine to an eventual chronic disease or not, which can directly affect the family's quality of life<sup>8</sup>. Caring for the family and the people that are part of it has been happening over the last few centuries. However, with the implementation of Family Health Strategy (FHS) teams, the multidisciplinary team began to have a broader view of this group of people, carrying out actions and interventions with families, expanding this care beyond just one member<sup>9</sup>.

Primary Health Care (PHC) in Brazil is characterized by a set of health actions, at individual and collective levels, which encompasses health promotion and protection, disease prevention, diagnosis, treatment, rehabilitation and health maintenance. It is developed through the execution of health management and participatory practices, through teamwork, aimed at populations in determined territories, where this multidisciplinary team that makes up the FHS take on health responsibility, considering the peculiarities in the territory in which these people live<sup>10</sup>.

Diabetes mellitus (DM) was considered for this study because it is a chronic and non-communicable disease with high incidence and prevalence, which has an impact on the health system<sup>11</sup> and on families. Furthermore, care for people with diabetes mellitus requires actions aimed at preventing the disease and possible complications, as well as actions that enhance self-care<sup>12</sup>. In Brazil, DM is associated with poor diet, an increase in the number overweight individuals, and a sedentary lifestyle, as well as an increase in the survival of these individuals, which also affects this prevalence rate<sup>11</sup>.

For the World Health Organization (WHO), self-care is the ability of individuals, families, and communities to promote well-being, prevent illness, preserve health, and cope with conditions of illness and disability, regardless of the assistance of a health professional<sup>13</sup>. In this context, the importance of discussing this issue is justified, since the family is a main component of the social support network, which can affect health, illness, and care processes of a family member who has some comorbidity<sup>14</sup>.

This study is justified by the growing importance of family functionality in promoting self-care for individuals with diabetes mellitus, especially in the context of PHC. With the evolution of family arrangements and their diverse configurations, influenced by socioeconomic and cultural factors, it is crucial to understand how different family structures impact the management of chronic diseases. Given the high prevalence of DM and its significant impact on the health system, exploring family functioning as a determinant of health can provide valuable insights for the development of effective intervention strategies, improving the quality of life of individuals affected by this condition.

Thus, this study aimed to map and describe the scientific production on family functioning in promoting self-care for people with diabetes mellitus in primary health care.

## **METHODS**

This is a scoping review following the methodology proposed by the Joanna Briggs Institute (JBI)<sup>15</sup>. It also complies with the recommendations of the Preferred Reporting Items for Systematic and Meta-Analyses - Extension for Scoping Reviews (PRISMA-ScR)<sup>15</sup>. This type of review is characterized by synthesizing information found in research, mapping publications on family functionality in promoting self-care for people with DM in PHC.

The search for articles took place between May and September of 2022. The selection criteria included studies with people with diabetes mellitus aged between 18 and 70 years and their families, developed in the context of PHC. The types of studies selected included: systematic reviews; dissertations; research on subgroup analyses of contexts, concepts and

populations; as well as experimental, randomized and non-randomized controlled studies; observational studies, case-control studies and cross-sectional studies, including case studies and qualitative studies. Studies including case series, case reports, descriptive cross-sectional studies, qualitative studies and descriptive observational studies were considered. The following exclusion criteria were considered: research protocols, researches not available in full for free reading, and opinion articles. The research question was formulated as "*What are the factors for protecting and maintaining the family health of people with diabetes in primary health care?*" and "*What scientific publications have been written about family functioning and self-care for people with diabetes in primary health care?*", created from the acronym P (population), C (concept), C (context), in which the population is composed of patients aged between 18 and 70 years, with diabetes mellitus and their family, the concept is family functioning and the context is studies found in primary health care services.

This strategy was based on an initial search on the Virtual Health Library (VHL), Scielo, PubMed (National Library of Medicine) and SCOPUS search platforms to identify articles and platforms, accessible via CAFE Access (Community Linked Academy), which selects them by means of words contained in the text and included in the title<sup>8</sup>. The keywords used were adapted according to the research site used for data collection. The descriptors "diabetes mellitus", "*familia*" (family), "*atenção primária à saúde*" (primary health care) cite the population of interest. Studies in Portuguese, Spanish and English were selected, with no specific time frame, up to June of 2022.

The Rayann program was used to select the works. The selection of documents was done blindly by two researchers who agreed to include the studies that met the inclusion and exclusion criteria. In case of doubt, a third researcher defined the inclusion or exclusion of the studies. To analyze the documents, data extraction was performed based on the creation of a questionnaire in the Google Forms platform, with the following criteria: author's name, study title, objective of research, concept of family, concept of family functionality, concept of self-care, study approach, theoretical framework used, population/participant, study location, type of sample, total number of study participants, data collection technique, computer program, type of analysis, ethical aspects, main results, recommendations, implications for care practice.

After extraction from the selected articles, the data were organized into tables and coded to construct the categories presented in the results and discussion phases. This study has a descriptive numerical and thematic analysis, in which a descriptive summary of the results found or mapped is presented, showing the characteristics of the production and how the results related to the objective and the research question. This research is based on Resolution

No. 510/2016, which establishes that studies conducted with previously published literature do not require approval from an ethics committee.

## RESULTS

Figure 1 shows the steps for selection of the studies for this Scoping Review. The initial search found 204 articles, of which 8 were considered eligible. Of these, 4 were in English, 3 in Spanish and 1 in Portuguese. Most studies were developed in Mexico (3 articles – 37/5%), followed by those developed in the United States of America (USA) (2 articles - 25%) and Brazil, Chile and the United Kingdom (one article each – 12.5%).

The summary of the articles included in the scoping review according to title, country, year of publication, journal, objectives, bibliometric analysis, and methodology are presented in Charts 1, 2 and 3, according to the thematic categories. In the analysis of the studies, three thematic categories were determined: 1) *Factors that stimulate self-care*; 2) *Creation of a social support network as a facilitating process in coping/promotion of self-care*; and 3) *Hindering factors in self-care promotion*.

**Figure 1.** Flowchart of identification, selection and inclusion of studies, prepared based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendation. Pelotas/RS, Brazil, 2022.

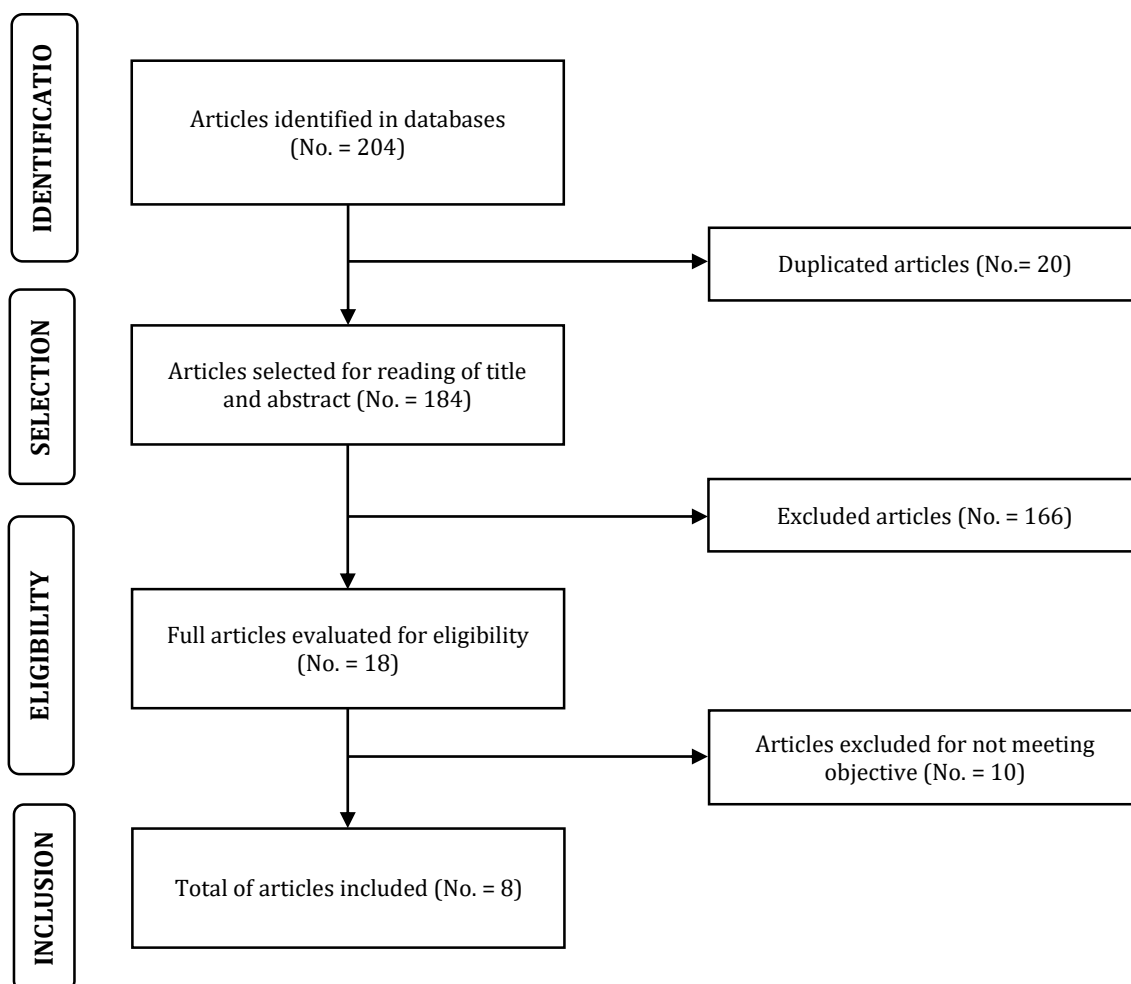


Chart 1 presents the identification and description of the selected studies.

**Chart 1.** Description of selected studies: Authors, year, title of the study, country of development of the study, journal and objective.

Pelotas/RS, Brazil, 2023.

Authors/year	Title	Country	Journal	Objective
Stone, M. <i>et al.</i> (2005) <sup>16</sup>	Empowering patients with diabetes: a qualitative primary care study focusing on South Asians in Leicester, UK	United Kingdom	Family Practice	To explore the experience and actions of primary care patients with diabetes living in a UK community with a high proportion of South Asian patients of Indian origin, with particular reference to patient empowerment
Zanetti, M. L. <i>et al.</i> (2007) <sup>17</sup>	The care for the diabetic patient and family repercussion	Brazil	Revista Brasileira de Enfermagem	Understanding the impact on the family of the assistance provided after implementing a diabetes education program
García-Huidobro, D. <i>et al.</i> (2011) <sup>18</sup>	Family intervention to control type 2 diabetes: a controlled clinical trial	Chile	Family Practice	To evaluate the effectiveness of a culturally sensitive, family-oriented intervention designed to improve metabolic control in primary care patients with uncontrolled Type 2 DM
Katerndahl, D. <i>et al.</i> (2013) <sup>19</sup>	Effects of family presence on the content and dynamics of the clinical encounter among diabetic patients.	United States	Journal of Evaluation In Clinical Practice	To determine the effect of the presence of a family member on the content and dynamics of the visit of diabetic patients in Family Medicine settings
Kaltmann, S. <i>et al.</i> (2015) <sup>20</sup>	Type 2 Diabetes and Depression - Patient, Family Member, and Primary Care Provider Perspectives on the Development of an Integrated selfmanagement Intervention	United States	The Diabetes Educator	Engage a local primary care clinical community serving the Latin immigrant population to obtain their input on the design and implementation of a proposed integrated behavioral intervention that will simultaneously target self-management of Type 2 DM and depression in this high-risk patient population
García, M. I. A. <i>et al.</i> (2016) <sup>21</sup>	Quality in diabetes mellitus control in Primary Care Units in Mexico. A study of the perspectives of the patient's family	Mexico	Atención Primaria	Identify the perspectives of the family of patients on the quality of diabetes mellitus control
Mar-García, J. <i>et al.</i> (2017) <sup>22</sup>	<i>Relación entre automanejo y percepción de funcionalidad familiar en personas con diabetes mellitus tipo 2</i> (Relationship between self-management and perception of family functionality in people with type 2 diabetes mellitus)	Mexico	Enfermería Universitaria	Analyze the relationship between self-management and the perception of family functionality in people with type 2 diabetes who receive care in Jurisdiction health centers no. 2 of Tampico, Tamaulipas, Mexico
Ramírez-Girón, N. <i>et al.</i> (2020) <sup>23</sup>	Effect of the context, routines and functioning on the health of Mexican families with type 2 diabetes	Mexico	Ciencia y Enfermería	Explain the effect of the context, routines and family functioning in the health care of Mexican families where a member suffers Type 2 DM

Chart 2 provides information about the authors, the first author's institution, the country in which the study was developed, the journal published, the h-index and the JCR. The h-index assesses the impact of the research individually, according to the number of works published and cited by other studies<sup>24</sup>. The JCR (Journal Citation Indicator) refers to the index of journals according to their publications and citation count<sup>25</sup>. The h-index ranged from 15 to 103 and the JCR index ranged from 0.15 to 0.79.

**Chart 2.** Studies selected according to the impact factor, containing information about the author, institution of the first author, country of development of the study, published journal, h-index and JCR, Pelotas/RS, Brazil, 2023.

Author/year	Institution of first author	Journal	H Index	JCR
Stone, M. et al.(2005) <sup>16</sup>	University of Leicester	Family Practice	103	0.79
Zanetti, M. L. et al. (2007) <sup>17</sup>	Universidade de São Paulo	Revista Brasileira de Enfermagem	24	0.28
García-Huidobro, D. et al. (2011) <sup>18</sup>	Pontificia Universidad Católica de Chile	Family Practice	103	0.79
Katerndahl, D. et al. (2013) <sup>19</sup>	University of Texas Health Science Center	Journal of Evaluation In Clinical Practice	79	0.66
Kaltmann, S. et al. (2015) <sup>20</sup>	Georgetown University Medical Center	The Diabetes Educator	0	0
García, M. I. A. et al. (2016) <sup>21</sup>	Universidad Juárez Autónoma de Tabasco	Atención Primaria	40	0.28
Mar-García, J. et al. (2017) <sup>22</sup>	Universidad Autónoma de Tamaulipas	Enfermería Universitária	-	-
Ramírez-Girón, N. et al. (2020) <sup>23</sup>	Fundación Universidad de las Américas Puebla	Ciencia y Enfermería	15	0.15

Regarding the impact factor, there are: Family Practice (0.79), Journal of Evaluation In Clinical Practice (0.66), The Diabetes EDUCATOR (0) which make up the area of Health Sciences. The journals Ciencia y Enfermería (0.15) and Revista Brasileira de Enfermagem (0.28) are from Nursing area, and the journal Atención Primaria (0.28) from Public Health. One journal, Enfermería Universitaria, did not present the impact factor.

As for the languages of the publications, four studies were in Spanish<sup>16,21-23</sup>, three in English<sup>18-20</sup> and one in Portuguese<sup>17</sup>. Two are also available in English<sup>16,17</sup>. As for the discipline of knowledge of the journals, the three studies cover the area of Nursing<sup>17,22,23</sup>.

Chart 3 shows the methodological characteristics of the studies. Four had a qualitative approach<sup>16,17,20,21</sup> and four had a quantitative approach<sup>18,19,22,23</sup>. As for the theoretical framework used, four studies did not mention their framework<sup>16,20-22</sup>. As for data collection techniques, seven used interviews<sup>16-26,24</sup> and one used a questionnaire<sup>22</sup>. Regarding the type of interview, it was observed that the semi-structured interview was the most frequent, being present in six studies<sup>16-18,20,21</sup>.

The participants surveyed corresponded to patients with type 2 diabetes mellitus in seven studies<sup>16,18-20,22,23</sup>, one study was composed of family members<sup>21</sup>. Another aspect identified in this research was the scarcity of use of programs for data management and organization, which was evidenced in four studies. Furthermore, regarding the type of data analysis, two used thematic analysis<sup>16,17</sup>, one used statistical analysis of variance<sup>18</sup>, one used descriptive statistical analysis<sup>22</sup>, one used power analysis<sup>24</sup> and three did not present the type of analysis<sup>19-21</sup>.



**Chart 3.** Methods of selected studies. Pelotas/RS, Brazil, 2023.

Authors	Study approach	Referencial or theoretical framework	Participants	Place of study	Type of sampling	Data analysis technique	Program	Type of analysis
Stone, M. <i>et al.</i> (2005) <sup>16</sup>	Qualitative	-	South Asian and white people with Type 2 DM	United Kingdom	-	Semi-structured interview	—	Thematic
Zanetti, M. L. <i>et al.</i> (2007) <sup>17</sup>	Qualitative	Systems theory	Family members of patients with Type 2 DM	Brazil	Convenience sample	Semi-structured interview	—	Thematic
García-Huidobro, D. <i>et al.</i> (2011) <sup>18</sup>	Quantitative	Innovative Care for Chronic Conditions Framework	243 patients with Type 2 DM aged 18–70 years with HbA1c $\geq 7\%$ in the past 3 months who lived with at least one family member >15 years	Chile	Random sample	Semi-structured interview	SPSS	Statistic
Katerndahl, D. <i>et al.</i> (2013) <sup>19</sup>	Quantitative	Information and chaos theories	Patients with Type 2 DM attending primary care clinic	United States	Random sample	Interview	ORBDE	—
Kaltmann, S. <i>et al.</i> (2015) <sup>20</sup>	Qualitative	-	Patients with Type 2 DM with depression	United States	-	Semi-structured interview	NVivo	—
García, M. I. A. <i>et al.</i> (2016) <sup>21</sup>	Qualitative	-	Family members of patients with Type 2 diabetes mellitus	Mexico	Non probabilistic sample	Semi-structured interview	—	—
Mar-García, J. <i>et al.</i> (2017) <sup>22</sup>	Quantitative	The Partners in Health Scale and Family APGAR instruments are functional	Patients with Type 2 DM over 18 years with a previous diagnosis >3 months	Mexico	Non-probability convenience sample	Questionnaire with the Partners in Health Scale and Family APGAR instruments	SPSS	Descriptive statistic
Ramírez-Girón, N. <i>et al.</i> (2020) <sup>23</sup>	Quantitative	Family Health Model	Family dyads (patients with Type 2 DM and family caregiver)	Mexico	Convenience sample	Interview Questionnaire Family Rutine Scales in Health (TFHR) instrument Family Functioning, Family Health and Social Support (FAFHES)	—	Power analysis

The results and main conclusions are presented in Chart 4.

**Chart 4.** Studies on results and main conclusions. Pelotas/RS, Brazil, 2023.

Title/Country/Year	Results	Main conclusions
Empowering patients with diabetes: a qualitative primary care study focusing on South Asians in Leicester, UK. United Kingdom (2005) <sup>16</sup>	High regard for education was associated with a positive attitude towards empowerment through knowledge, but also sometimes low motivation to become partners in diabetes management	Educational initiatives that aim to promote self-management in chronic diseases such as diabetes need to be designed with awareness of the complexity of social and cultural issues, the experiences and attitudes of target communities
The care for the diabetic patient and family repercussion (2007) <sup>17</sup>	The results indicate that the educational program had a positive impact on the family, expanding their knowledge about the treatment	Family support is essential for adherence to treatment
Family intervention to control type 2 diabetes: a controlled clinical trial. Chile (2011) <sup>18</sup>	The intervention was fully administered to only 34% of patients in the intervention clinic. The reduction in HbA1c from baseline to 12 months was not significantly different between clinics. During the second 6-month period, when the intervention was more intensive, patients in the intervention clinic significantly improved their HbA1c ( $p < 0.001$ ) compared with control patients	A family intervention for Type 2 DM control was associated with a significant reduction in HbA1c when the intervention was provided
Effects of family presence on the content and dynamics of the clinical encounter among diabetic patients. USA (2013) <sup>19</sup>	When family members were present, 90-second sequences of preventive services and assessment/feedback were observed, while 90 seconds of discussion about exercise occurred when family members were absent. Visits without family members tended to include more conversation, discussion about adherence, and nutritional counseling, while those with family members included more patient questions and assessment/feedback. Finally, the sequence of history-planning-to-assessment was observed when family was absent, but assessment-to-planning-to-history when family was present	The presence of a family member was associated with increased linearity and recurring patterns that focused more on assessment/feedback, preventive services, and patient questions, and less on conversation, exercise, adherence, and nutrition in encounters with people with diabetes.
Type 2 Diabetes and Depression - Patient, Family Member, and Primary Care Provider Perspectives on the Development of an Integrated selfmanagement Intervention (2015) <sup>20</sup>	Commonly reported challenges in managing diabetes included struggling with healthy eating and sharing information after diagnosis. Type 2 DM and depression were seen as interrelated and described by many as having a cyclical relationship. Key informants and focus group participants were uniformly supportive of the proposed intervention and recommended involving family members	The results of this study support the need and acceptability of individualized behavioral interventions that target Type 2 DM and depression simultaneously
Quality in diabetes mellitus control in Primary Care Units in Mexico. A study of the perspectives of the patient's family (2016) <sup>21</sup>	Two family members present a highly critical position towards the patient. Some seem justified and others have cultural, historical and, to some extent, disconcerting knowledge. It was pronounced with respect to health care and in the context in which patients and	The perspectives of family members reveal what they feel about diabetes mellitus. It is important to observe the content of their expressions, which are full of ignorance about the disease and lack of support. Their speeches contain criticism, myths, false beliefs and fears of being future

	family members want it, in both cases also with expressed criticism	carriers of the disease. The patient is compassionate, but resists taking care of him/her and does not want a life with diabetes. The family is the patient's closest support network and an invaluable resource for health services
<i>Relación entre automanejo y percepción de funcionalidad familiar en personas con diabetes mellitus tipo 2</i> (Relationship between self-management and perception of family functionality in people with type 2 diabetes mellitus) (2017) <sup>22</sup>	The results show a significant correlation between the total family APGAR and the Self-Management Index	Based on the results, it is concluded that the relationship between self-management and perception of family functionality should be explored in greater detail, as it could be an element of great importance in the design of strategies to combat diabetes, not exclusively from the nursing work, but also in collaboration with the multidisciplinary health team
Effect of the context, routines and functioning on the health of Mexican families with type 2 diabetes (2020) <sup>23</sup>	Women predominated (64.2%), aged 47.5 ( $\pm 11.5$ ) years, with 7.2 years of education ( $\pm 4.4$ ), people diagnosed 11.5 years ago ( $\pm 8.4$ ), in treatment for 9.2 years ( $\pm 8.6$ ). Significant interrelationships were found between the context variables (age, years of study, time since diagnosis and treatment), routines and functioning with family health (all between $p \leq 0.0001$ and $p \leq 0.005$ ). Functioning explained 39.1% and routines 18.8% of the variance in family health (adjusted $R^2=0.391$ ; $F(1,118)= 77.4$ $p \leq 0.0001$ ; adjusted $R^2=0.188$ ; $F(1,118)= 28.6$ $p \leq 0.0001$ ). Functioning explained the variance of routines by 19.3% ( $R^2= 0.193$ ; $F(1,118)= 28.1$ $p \leq 0.0001$ )	Family health is significantly related to the context, routines and functioning of family dyads living with Type 2 DM; furthermore, family health is significantly influenced by family routines and functioning

## DISCUSSION

The studies presented examine the relationship between family support and the management of type 2 diabetes mellitus (Type 2 DM), highlighting the importance of educational interventions and the family context. Education plays a significant role in empowering patients, although motivation for self-management may be low. In Brazil, including the family in the educational program increased knowledge about treatment, while in Chile, intensive family interventions resulted in significant improvements in HbA1c.

In the United States, the presence of family members in consultations impacted clinical dynamics, favoring more structured assessments and feedback. Studies also indicate the need for integrated approaches to Type 2 DM and depression, and highlight the criticality of family perceptions about disease management in Mexico. In summary, the results suggest that family support is essential for the effective management of Type 2 DM, recommending the development of health strategies that consider family and cultural dynamics.

Three categories were constructed from the studies surveyed: *Factors that stimulate self-care*; *Creation of a social support network as a facilitating process in coping/promotion of self-care*; and *Hindering factors in self-care promotion*.

### ***Factors that stimulate self-care***

Lifestyle changes, adherence to treatment provided, and family involvement in daily activities or even in encouraging and modifying family behavior were identified as factors that promote self-care<sup>16,17</sup>. In addition, sharing information about patients with their families allows them to gain knowledge about their own condition and involve families in self-care for diabetes mellitus<sup>17</sup>.

The involvement of patients and their families in the decision-making process and actions such as lifestyle changes were cited in studies as important for the self-care process<sup>16,17,19</sup>. Adherence to treatment and treatment planning are presented as factors that influence the care and attitudes of patients with diabetes after diagnosis<sup>19,21</sup>. Thus, educating family members and people with diabetes about behaviors and care that should be observed to avoid complications were also cited in studies<sup>16,21</sup> as factors that promote self-care.

Changes in diet were considered a significant factor in the lives of people with diabetes and their families, and dietary reeducation<sup>16,17</sup>. This dimension was considered significant because the eating habits adopted by these people are part of their daily lives<sup>19,26</sup>. However, evidence shows that family members who get involved in preparing food end up changing their own eating habits to support the family member with diabetes, creating and maintaining healthy eating habits<sup>20</sup>. In some cases, eating was pointed out as a difficulty related to unfavorable financial conditions and also due to dependence on other family members to prepare meals<sup>21</sup>.

The way family functionality is described and the way family members act and show interest in the chronic condition of the person with diabetes helps in controlling the disease<sup>17,18</sup>. Another dimension that requires the involvement of family members and depends on family functioning is care with medications, observation of possible cases of diabetes decompensation, in addition to management of signs and symptoms<sup>22,24</sup>.

In this context, including family members in interventions and guiding them regarding the use of medications is an important factor for people with diabetes, since, through these practices, family members can help control the disease<sup>18-20</sup>. Family members can also positively influence the development of healthy habits to promote self-care<sup>21,23</sup>. These practices corroborate another study<sup>17</sup>, which reports that when the family is a source of support for

patients, adherence to drug treatment and the inclusion of healthy practices in daily life are more effective.

Family caregivers or caregivers are an essential resource for health professionals, as they enable the promotion of self-care for people with diabetes mellitus, and it is through them that patients can change their routine and control the disease. Therefore, they need to be included in health practices, interventions and education<sup>20,27</sup>.

Family functionality was significantly relevant for patients with diabetes, increasing the effectiveness of emotional and informational support<sup>27</sup>. It is important to emphasize that, for family support to be functional, it is necessary to include the family in the patient's care process, since the family is part of the individual's life.

### ***Creation of a social support network as a facilitating process in coping/promotion of self-care***

Self-care is promoted mainly through the formation of a social support network, formed by family members of these individuals. It is through this support network that people receive emotional support and exchange experiences and knowledge<sup>16,17,20</sup>. Thus, the more support a person with diabetes mellitus receives, the more effective their self-care will be<sup>22</sup>.

The emotional and informational support generated by the family function are highlighted as essential for promoting self-management in individuals with diabetes<sup>17,20</sup>. Emotional support is one of the means of coping with the disease at diagnosis and in daily life<sup>16</sup>.

However, this type of support is understood in different ways depending on the individual's culture. South Asians understand that emotional support is complemented by spiritual support offered by religion and traditions<sup>16</sup>, just as others describe that emotional support can be offered through peer groups (people with diabetes) through the exchange of experiences<sup>20</sup>. This social support network can be formed by family members such as spouses, children, siblings or other people who live in the same household, as well as professionals who live in the same territory<sup>17</sup>.

One of the ways to promote self-care through family functionality is to disseminate knowledge about the disease<sup>16,17</sup>. This knowledge enhances the understanding of patients and family members about diabetes mellitus, helping them from diagnosis to disease control actions, increasing the individual's autonomy<sup>17</sup>.

It is essential that people with diabetes have a social support network that offers emotional support through encouragement and motivation from family members, in addition to informational support from health professionals, as well as the development of activities that promote and stimulate self-care<sup>16,17,20,22</sup>.

### ***Hindering factors in self-care promotion***

Factors such as beliefs<sup>16,17</sup> and lack of information about diabetes and treatment among diabetics can become barriers to self-care<sup>20</sup>. Lack of information, health literacy and financial conditions make it difficult to promote self-care, for example, preventing people with diabetes mellitus from using transportation to get to appointments or support groups, as well as maintaining an adequate diet<sup>20,21</sup>.

Another factor that makes it difficult to promote self-care is the lack of understanding and support from the family, which leads them to not interfere in habits and routines. This fact is justified by the difficulty of communicating with a family member with diabetes mellitus due to stubbornness, which results in inadequate nutrition, in addition to not taking medication at the prescribed times<sup>23</sup>.

With regard to medications, people with diabetes mellitus have difficulty taking their medications at the correct time, which can be explained by the need to change their habits and routines, in addition to the fact that some patients depend on their family members to control their medications<sup>17</sup>. Interactions between people with diabetes mellitus and their family members, as well as health professionals, can significantly influence the effectiveness of medication management, involving them in the family nucleus during care and assisting in self-care<sup>28</sup>.

Family diet is culturally driven and can be considered one of the factors that hinder the promotion of self-care, which can be explained by the need to change eating habits<sup>16,17</sup>. In India, for example, people with diabetes mellitus are unable to follow an adequate diet when they visit their family members<sup>16</sup>. Latin culture is another example, where foods rich in carbohydrates and fried foods are part of culinary customs, and families consume fewer vegetables<sup>20</sup>. However, culture can be a factor that helps health professionals in the process of caring for people with diabetes, because when treatment is offered comprehensively, covering customs and family members in the health-disease process, it can positively influence adherence to treatment and acceptance of their health condition<sup>26</sup>.

The studies, therefore, provide elements that describe the importance of family functionality in different cultures, as family members are part of a support network for the person with diabetes mellitus, together with health professionals. Health professionals, such as nurses, provide information and various forms of support (informational, emotional, instrumental, affective, positive social interaction) so that people can enhance care and self-care<sup>29</sup>.

## CONCLUSION

The studies found present factors that promote self-care, as well as the formation of a family support network as a facilitating resource for coping with and promoting self-care, as well as factors that hinder the promotion of self-care considering the family functioning of people with diabetes mellitus.

The concept of family functioning appeared in two studies, although the studies did not present the concepts of family and care, and some did not provide complete information on the method used to develop the study. It is important to emphasize that the number of studies found was minimal and the scarcity of studies in Portuguese was evident, as most were in English and Spanish. These findings show the need for new studies on the subject with a deeper understanding of the relationship between family functioning and self-care.

Although an attempt was made to develop a comprehensive search strategy, it is possible that some studies were missed, such as government documents or proceedings of scientific events, which were not investigated and could have provided some additional relevant information.

It is concluded that the development of the study on family functionality in promoting self-care for patients with diabetes mellitus in primary care is of utmost importance for the practices of health professionals, especially for nurses who deal directly with families, as it is through them that interventions can be developed that assist people with diabetes mellitus in the self-care process for control and complications.

## REFERENCES

1. Benatti AP, Campeol ÂR, Machado MS, Pereira CRR. Famílias monoparentais: uma revisão sistemática da literatura. *Psicol Ciência e Profissão* [Internet]. 2021; 41(spe3). [cited in 14 Dec 2023; Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1414-98932021000700115&tlng=pt](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-98932021000700115&tlng=pt)
2. Mantelo CHP, Santos KS, Vendrameto MM, Marcon SS. Modelo Calgary de avaliação da família: experiência em um projeto de extensão. *Cogitare Enferm.* [Internet]. 2014 [cited in 14 Dec 2023]; 19(3):536–44. Available from: <https://www.redalyc.org/pdf/4836/483647662015.pdf>
3. Marion J, Pereira CRR. Família na visão dos psicólogos do CRAS. *Gerais Rev Interinstitucional Psicol.* [Internet]. 2021 [cited in 14 Dec 2023];14(0):1-23. DOI: <https://doi.org/10.36298/gerais202114e16285>

4. Wright IM, Leahey M. Enfermeiras e famílias: um guia para avaliação e intervenção na família. 4 ed. Roca, editor. São Paulo; 2008. 302 p.
5. Friedemann ML, Paavilainen E. Development of a Family Assessment Instrument for Transcultural Use. *J Transcult Nurs*. 2003;14(2):90–9.
6. Borges SF. Funcionalidade familiar na promoção do autocuidado de pacientes com diabetes mellitus na atenção primária à saúde: revisão de escopo. [trabalho de conclusão de curso]. Pelotas, RS: Universidade Federal de Pelotas/UFPel; 2022. 52p.
7. Friedman MM. *Family nursing: theory and practice*. 3a. Norwalk CT: Appleton & Lange; 1992.
8. Sampaio AD, Zillmer JGV, Schwartz E. Funcionalidade familiar de pacientes com Diabetes mellitus no contexto dos serviços de atenção à saúde: protocolo de revisão de escopo. *Res Soc Dev*. [Internet] 2021 [cited in 16 Dec 2023];10(13):e96101320332. DOI: <http://dx.doi.org/10.33448/rsd-v10i13.20332>
9. Souza GJ, Gomes C, Zanetti VR. Estratégia da Saúde da Família: a dimensão articuladora do território. *Barbarói* [Internet] 2020 [cited in Jan 2024]; 6;141-63. Available from: <https://online.unisc.br/seer/index.php/barbaroi/article/view/14643>
10. Starfield B. Atenção Primária: equilíbrio entre necessidades de saúde, serviços e tecnologia. Ministério da Saúde. 2002. p. 726.
11. Sociedade Brasileira de Diabetes. Diretrizes Sociedade Brasileira de Diabetes 2019-2020. Clannad, editor. p. 491.
12. Suplici SER, Meirelles BHS, Lacerda JT, Silva DMGV. Self-care among people with Diabetes Mellitus and quality of care in Primary Health Care. *Rev Bras Enferm* [Internet]. 2021; [cited in Jan 2024] 74(2). Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0034-71672021000200193&tlng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672021000200193&tlng=en)
13. World Health Organization. WHO Guideline on self-care interventions for [Internet] 2022 [cited in Jan 2024] 1-49. Available from: <https://app.magicapp.org/#/guideline/Lr21gL>
14. Borges CAP, De Souza J, Scorsolini-Comin F. Rede de apoio de famílias que adotaram crianças com quadro de adoecimento crônico. *Rev RENOME* [Internet]. 2021 [cited in Jan 21] 9(2):21-33. Available from: <https://www.periodicos.unimontes.br/index.php/renome/article/view/3140>
15. Peters MDJ, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. *JBIEvid Synth*. [Internet] 2020 [cited in Dec 2023] Oct;18(10):2119-26. DOI: <http://dx.doi.org/10.11124/JBIES-20-00167>



16. Stone M, Pound E, Pancholi A, Farooqi A, Khunti K. Empowering patients with diabetes: a qualitative primary care study focusing on South Asians in Leicester, UK. *Fam Pract* [Internet]. 2005 [cited in Dec 2023] 1;22(6):647-52. Available from: <http://academic.oup.com/fampra/article/22/6/647/497946/Empowering-patients-with-diabetes-a-qualitative>
17. Zanetti ML, Biagg MV, Santos MA dos, Péres DS, Teixeira CR de S. O cuidado à pessoa diabética e as repercussões na família. *Rev Bras Enferm* [Internet] 2007[cited in Jan 2024]; 61(2):186-92. DOI: <https://doi.org/10.1590/S0034-71672008000200007>
18. García-Huidobro D, Bittner M, Brahm P, Puschel K. Family intervention to control type 2 diabetes: A controlled clinical trial. *Fam Pract.* [Internet] 2011 [cited in Jan 2024]; 28(1):4-11. DOI: <https://doi.org/10.1093/fampra/cm069>
19. Katerndahl D, Parchman M. Effects of family presence on the content and dynamics of the clinical encounter among diabetic patients. *J Eval Clin Pract* [Internet]. 2013 [cited in Jan 2024];19(6):1067-72. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jep.12028>
20. Kaltman S, Talisman N, Serrano A, Cabassa LJ, Magee MF, Pulgar-Vidal O, et al. Type 2 Diabetes and depression: patient, family member, and primary care provider perspectives on the development of an integrated self-management intervention. *Diabetes Educ.* [Internet] 2015 [cited in Jan 2024] 41(6):763-72. DOI: <https://doi.org/10.1177/0145721715608954>
21. Avalos García MI, López Ramón C, Morales García MH, Priego Álvarez HR, Garrido Pérez SMG, Cargill Foster NR. Calidad en el control de la diabetes mellitus en unidades de atención primaria de México. Un estudio desde la perspectiva de la familia de los pacientes. *Atención Primaria* [Internet] 2016 [cited in Jan] ;49(1):21-7. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0212656716301408>
22. Mar-García J, Peñarrieta-de Córdova I, León-Hernández R, Gutiérrez-Gómez T, Banda-González O, Rangel-Torres S, et al. Relación entre automanejo y percepción de funcionalidad familiar en personas con diabetes mellitus tipo 2. *Enfermería Univ* [Internet]. 2017 [cited in Jan 2024]; 14(3):155-61. Available from: <http://www.revista-enfermeria.unam.mx/ojs/index.php/enfermeriauniversitaria/article/view/23>
23. Ramírez-Girón N, Valles-Medina AM, Trujillo-Olivera LE, García-Solano B. Efecto del contexto , rutinas y funcionamiento en la salud de familias mexicanas con diabetes tipo 2. *Cienc y Enfermería* [Internet] 2020 [cited in Jan 2024]; 26. Available from: <https://revistas.udec.cl/index.php/cienciayenfermeria/article/view/2845/2969>

24. Thomaz PG, Assad RS, Moreira LFP. Uso do Fator de impacto e do índice H para avaliar pesquisadores e publicações. *Arq Bras Cardiol.* [Internet] 2011 [cited in Jan 2024] ;96(2):90-3. DOI: <https://doi.org/10.1590/S0066-782X2011000200001>
25. Clarivate. Journal Citation Indicator. Periódicos Capes [Internet]. 2021[cited in Jan 2024]; Available from: <https://bit.ly/3GQbEY>
26. Silva JK, Boery RNSO. Effectiveness of a support intervention for family caregivers and stroke survivors. *Rev Lat Am Enfermagem* [Internet]. 2021 [cited in Jan 2024]; 29. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0104-11692021000100378&tlng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692021000100378&tlng=en)
27. Sousa-Munoz RL, Sá AD. Apoio social, funcionalidade familiar e controle glicêmico de pacientes diabéticos tipo 2. *Rev Med* [Internet]. 2020 [cited in Dec 2023] 10; 99(5):432-41. Available from: <https://www.revistas.usp.br/revistadc/article/view/143945>
28. Lopes P, Junges JR. Gerenciamento do diabetes por profissionais e usuários da Atenção Primária à Saúde. *Physis Rev Saúde Coletiva* [Internet]. 2021[ cited in 31 Dec 2023] ;31(3). Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0103-73312021000300614&tlng=pt](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-73312021000300614&tlng=pt)
29. Megiati HM, Grisante DL, D'Agostino F, Santos VB, Lopes CT. Relação entre apoio social percebido e autocuidado de pacientes com insuficiência cardíaca. *Acta Paul Enferm* [Internet]. 2022 [cited in Jan 2024] 12;35. Available from: <https://acta-ape.org/article/relacao-entre-apoio-social-percebido-e-autocuidado-de-pacientes-com-insuficiencia-cardiaca/>

**Associated Publisher:** Vania Del Arco Paschoal

**Conflict of Interests:** the authors declared there is no conflict of interests

**Financing:** none

**CONTRIBUTIONS:**

Concept- Borges SF, Zilmer JGV, Sampaio AD, Schwartz E

Investigation- Borges SF, Zilmer JGV, Sampaio AD, Schwartz E

Writing – first draft - Borges SF, Zilmer JGV, Sampaio AD, Schwartz E, Sampaio ALD

Writing – revision and editing - Borges SF, Zilmer JGV, Sampaio AD, Schwartz E, Sampaio ALD

**How to cite this article (Vancouver)**

Borges SF, Zillmer JGV, Sampaio AD, Schwartz E, Sampaio ALD. Family functionality in self-care for people with diabetes mellitus in primary care: scoping review. *Rev Fam, Ciclos Vida Saúde Contexto Soc.* [Internet]. 2024 [cited in *insert day, month and year of access*]; 12(4):e7393. DOI: <https://doi.org/10.18554/refacs.v12i4.7393>.

**How to cite this article (ABNT)**

BORGES, S. F.; ZILLMER, J. G. V.; SAMPAIO, A. D.; SCHWARTS, E.; SAMPAIO, A. L. D. Family functionality in self-care for people with diabetes mellitus in primary care: scoping review. **Revista Família, Ciclos Vida e Saúde no Contexto Social**, Uberaba, MG, v. 12, n. 4, e7393, 2024. DOI: <https://doi.org/10.18554/refacs.v12i4.7393>. Access in: *insert day, month and year of access*.

**How to cite this article (APA)**

Borges, S. F., Zillmer, J. G. V., Sampaio, A. D., Schwartz, E., & Sampaio, A. L. D. (2024) Family functionality in self-care for people with diabetes mellitus in primary care: scoping review. *Rev. Fam., Ciclos Vida Saúde Contexto Soc.*, 12(4), e7393. Retrieved in *insert day, month and year of access* from <https://doi.org/10.18554/refacs.v12i4.7393>.



This is an open access article distributed under the terms of the Creative Commons License