

# Connotation and Mechanism of Family Support for Patients with Chronic Diseases Under the Perspective of Health Promotion—A Scoping Review of Reviews

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**Objective:** A scoping review was conducted to explore the connotation and mechanism of action of family support for patients with chronic diseases under the perspective of health promotion.

**Methods:** English databases of PubMed, Medline, Embase, Web of Science, and Google Scholar were searched, as well as China Knowledge Network (CNKI), Wan Fang Database, and Wipu (China Science and technology Journal). Database). The literature search timeframe was from the time of database construction to May 2024, and the literature was screened according to the inclusion and exclusion criteria to extract the information of the included studies.

**Results:** A total of 34 papers were included. Key findings from these reviews indicate that family support—encompassing specific, emotional, counseling, and esteem support—exerts a significant positive impact on chronic disease patients' health promotion via family dynamics and psychological-behavioral mechanisms, with its effectiveness shaped by ecological, psychological, and methodological factors.

**Conclusion:** This study constructed the connotation and mechanism of action of family support for chronic disease patients under the perspective of health promotion. It provides a basis for the future development of family chronic disease management, family support intervention, and family health promotion.

**Keywords:** health promotion, non-communicable diseases, family care, influencing factors, scoping review

## Introduction

The prevalence of chronic non-communicable diseases (NCDs), including diabetes mellitus (DM), cardiovascular and cerebrovascular diseases, and cancers, is increasing annually.<sup>1</sup> These NCDs, characterized by high morbidity and mortality, low levels of awareness, poor management, and substantial economic costs, represent a significant public health challenge and a leading global health threat.<sup>2</sup> They impact not only individuals' physical health<sup>3</sup> but also their economic productivity and mental well-being.<sup>4,5</sup> Consequently, there is an urgent need to identify effective, broadly applicable, and easily promoted strategies for controlling and preventing the spread of NCDs.

The importance of family support in the context of chronic disease management has been a recurring theme in current research, with studies highlighting its potential impact on various aspects of health, including care, prevention, and health promotion.<sup>6–9</sup> However, the development of a simple, comprehensive, and scalable family support program remains an open question. Merely collecting and identifying the current clinical practice status of family support is insufficient to



solve the problem. In order to explore the key issues and priority topics for family support to improve the self-management of patients with NCDs, it is necessary to delve into the theoretical and mechanistic levels. In addition, the connotation of family support must be studied, as well as its development process and the mechanism by which it affects the daily behavior of patients with NCDs. Finally, the most direct, effective and convenient mode of action to improve patient behavior must be identified.

Recent research in the field has yielded a range of findings from various stages and varying depths. In terms of correlations, research has shown that the level of perceived family support is negatively correlated with the level of depression in patients with NCDs.<sup>6,7</sup> The higher the level of family care, the better the self-management level of elderly patients with schizophrenia.<sup>7,8</sup> For patients with diabetes, family support has a positive impact on their health outcomes,<sup>10,11</sup> and the higher the level of family support, the better the self-management effect of the patients.<sup>12,13</sup> In terms of practical effects, a study by Junrong et al has demonstrated that self-management programs for patients with NCDs, when incorporating family members, can enhance compliance and completion rates, as well as attain superior health improvement outcomes.<sup>14–16</sup> A review indicates that family support can improve both health behaviors and clinical indicators for patients with cardiometabolic diseases and their families.<sup>17</sup> With regard to intervention mechanisms, patients suffering from NCDs express a preference for receiving remote support from family members via mobile phone voice messages<sup>18,19</sup> The training of family members in supportive communication skills has been demonstrated to be an effective strategy for enhancing the management of symptoms and health behaviors in patients with NCDs.<sup>20</sup> In theoretical models, the Comprehensive Model of Health Literacy (CMHL) posits that family support is the most significant influencing factor for health promotion.<sup>21</sup>

However, the aforementioned fragmented evidence is unable to provide direct answers to the aforementioned issues. It is imperative that a scoping review is conducted to comprehensively examine the relevant studies, extract advantageous viewpoints and practices, and utilize them as the theoretical basis and practical support for constructing the simplest and most implementable family support program. The present study therefore aims to undertake a systematic review of the extant evidence in the field of family support for NCDs using a scoping review approach. The proposed program will integrate the theoretical framework of the CMHL, distill operable intervention elements and implementation pathways, and ultimately develop a family support program that is both scientific and universally applicable.

## Methods

A scoping review is a systematic and comprehensive way of organizing published articles on a broad topic. This scoping review is conducted by an interdisciplinary research team with expertise in clinical medicine and psychology. There are no clear requirements or standards for scoping reviews. This study refers to the widely used Arksey framework<sup>22</sup> and conducts research through the following five stages: (1) defining the research question, (2) identifying relevant studies, (3) study selection, (4) creating data charts, (5) collating, summarizing, and reporting results.

## Databases and Search Strategies

To ensure comprehensive retrieval of relevant literature, this study systematically searched both English and Chinese databases. The English databases included PubMed, Medline, Embase, Web of Science, and Google Scholar, while the Chinese databases comprised CNKI, Wan Fang Database, and VIP (China Science and Technology Journal Database).

The core search terms were “Family Support”, “Chronic Disease Management”, and “Health Promotion”. For each conceptual term, a combination of MeSH terms and free-text words was adopted, with Boolean operators (AND/OR) used to link relevant terms for precise and extensive retrieval.

The detailed search strategies for both English and Chinese databases are presented in [Table 1](#). The literature search was conducted from the establishment date of each database up to 31 May 2024, with no restrictions imposed on language or publication year.

## Inclusion and Exclusion Criteria

The PICO (Population, Intervention, Comparison, and Outcomes) framework was adopted as the reference for inclusion: (1) Population: Patients with NCDs, including cardiovascular disease, DM, cancer and kidney disease. (2) Interventions:

**Table 1** Search Strategies

Search Deadline	May 30, 2024
Database	
English	PubMed, Medline, Embase, Web of Science, Google Scholar
Chinese	CNKI, Wan Fang Database, VIP
Search Terms	Family Support, Chronic Disease Management, Health Promotion
Search strategy for PubMed	((Cardiovascular diseases) OR (cerebrovascular diseases) OR (cancer) OR (endocrine disorders) OR (metabolic disorders) OR (gastrointestinal disorders) OR (kidney disease) OR (central nervous system health) OR (musculoskeletal disorders) OR (respiratory diseases) OR (reproductive disorders) OR (dermatological disorders) OR (Alzheimer) OR (coronary heart disease) OR (obes) OR (over weight) OR (diabetes) OR (metabolic syndrome) OR (sarcopenia) OR (osteoporosis) OR (Chronic Noncommunicable Diseases) OR (Noncommunicable Diseases)) AND (Health promotion) AND ((Family support) OR (Family centered)) AND ((review) OR (Scoping review) OR (Systematic Review))
Search strategy for Wan Fang Database	Subject: (Cardiovascular Diseases OR Cerebrovascular Diseases OR Neoplasms OR Endocrine Diseases OR Metabolic Disorders OR Digestive System Diseases OR Kidney Diseases OR Central Nervous System Health OR Musculoskeletal System Diseases OR Respiratory System Diseases OR Reproductive System Diseases OR Skin Diseases OR Alzheimer's Disease OR Coronary Heart Disease OR Obesity OR Overweight OR DM OR Metabolic Syndrome OR Sarcopenia OR Osteoporosis OR Chronic NCDs OR NCDs) AND Subject: (Health Promotion) AND Subject: (Family Support OR Family-Centered) AND Subject: (Review OR Scope Review OR Systematic Review)

**Abbreviations:** CNKI, Chinese databases including China National Knowledge Infrastructure; VIP, China Science and Technology Journal Database; DM, diabetes mellitus; NCDs, non-communicable diseases.

Family-centered health interventions or those focused on family support, as well as interventions that do not primarily focus on family support but include related measures or factors. (3) This study only focuses on published review articles. A Scoping Review of Review (SRR) is a systematic assessment that organizes and analyzes published review literature, avoiding the direct analysis of a large number of primary studies, thus saving time and resources. From this perspective, it allows a broader view of the research, leading to more methodologically consistent research conclusions.<sup>23</sup> (4) Outcomes: All outcomes related to health promotion.

Exclusion criteria: (1) The study population consists of patients suffering from chronic psychiatric illnesses. (2) The study does not specify the details of the support or intervention methods. (3) Support is available for family members who live outside the household. (4) Book reviews, commentaries and editorials. (5) Physiological variables related to health promotion are not included in outcome indicators.

## Data Extraction and Synthesis

Three authors with backgrounds in clinical medicine and psychology and trained in writing review articles, carried out independent literature searches, screenings, and data extractions in this scoping review. In cases of disagreement between two reviewers, the third reviewer was responsible for resolving the conflict and making the final decision. The data extracted included two categories of information: (1) Basic characteristics: first author, year of publication, types of chronic conditions (classified and defined according to Egger and Dixon<sup>24</sup>), number of primary studies included in the review, types of reviews, concepts of family support, specific forms of family support, types of family support (according to the research by Cutrona et al, family support can be categorized as specific support, emotional support, counselling support and esteem support<sup>25</sup>), health promotion outcome variables, providers of family support and whether family support were the main aim of the article. (2) Advanced characteristics: research objectives, conclusions, differences between family support and other types of support, mechanisms and influencing factors were included. Data were extracted and included through the integration of electronic documents. Quantitative data were described using frequencies, while qualitative data were described using narrative text.<sup>26</sup> Generally, the aim of the SRR is to demonstrate the extensiveness of the literature. Therefore, it is not recommended to conduct a methodological critical appraisal of the SRR.<sup>27</sup> Therefore, this study does not involve tests for publication bias or other effects.

## Literature Screening Process

The literature screening process strictly followed the PRISMA 2020 guidelines (Page et al, 2021),<sup>27</sup> with the detailed flow presented in Figure 1.

### Screening Steps

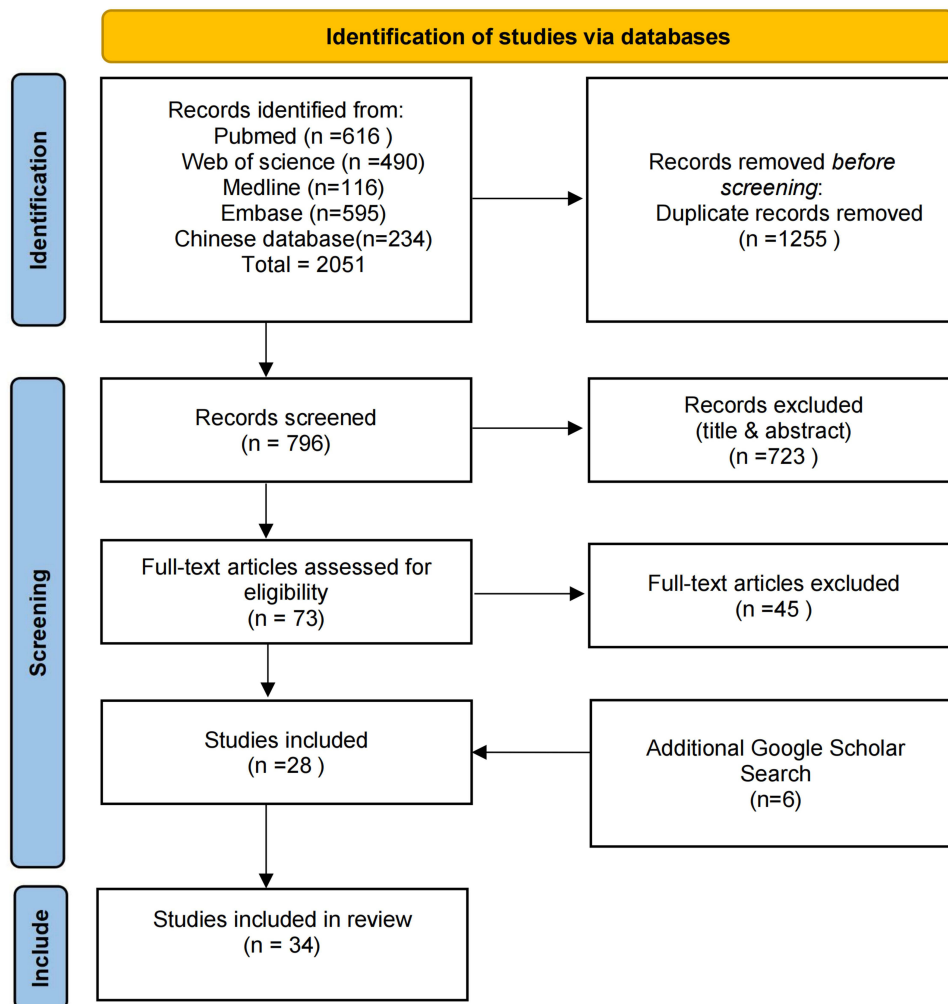
**Initial retrieval:** A total of 2051 studies were retrieved through the aforementioned English and Chinese databases.

**Duplicate removal:** Using EndNote software, 1255 duplicate studies were identified and excluded, leaving 796 studies for further screening.

**Title and abstract screening:** Two independent reviewers screened the titles and abstracts of the remaining 796 studies against the inclusion and exclusion criteria. A total of 723 studies irrelevant to the research topic (eg, non-review articles, studies focusing on chronic psychiatric illnesses) were excluded, resulting in 73 studies eligible for full-text review.

**Full-text screening:** The 73 studies were read in full by the two reviewers. Forty-five studies that failed to meet the inclusion criteria (eg, unclear intervention details, support for non-cohabiting family members) were excluded, leaving 28 eligible studies.

**Supplementary retrieval:** To avoid missing potential relevant literature, Google Scholar was used for supplementary retrieval (as a supplementary search source for grey literature). Six additional eligible studies were identified after screening the first 100 pages of search results sorted by relevance, in line with the predefined inclusion and exclusion criteria.



**Figure 1** PRISMA flow diagram.

## Final Inclusion

After the above five-step screening process, a total of 34 eligible review articles were included in this scoping review for subsequent data extraction and synthesis.

## Results

A total of 34 eligible reviews were included after systematic literature retrieval and screening.<sup>28–61</sup>

### Basic Characteristics

Characteristics of the included studies are shown in [Table 2](#). The earliest review on family support for individuals with chronic NCDs was published in 2008, and the latest in 2023. The highest number of reviews, four, were published in 2021, 2022 and 2023. There were no reviews published in the years 2009 to 2011, nor in 2019. See [Figure 2](#) for details. The vast majority of review articles (82.35%) reported the number of studies included, ranging from a minimum of 7 to a maximum of 129 across reviews. [Figure 3](#) shows the specific characteristics of the studies included in the reviews.

### Advanced Characteristics

#### Study Objectives

The main research objectives of the included literature were to improve the condition of patients with chronic diseases and to promote health. For example, Ellis et al discussed research on methods to improve health promotion behaviors such as diet and physical activity among adult cancer survivors.<sup>39</sup> Additionally, several studies have discussed improvements in different aspects of DM care, including self-care, health behaviors, and weight management among individuals with DM.<sup>42–45</sup> Furthermore, some studies have discussed weight management strategies for individuals who are overweight or obese, focusing on promoting physical activity and healthy eating habits.<sup>29–31,37,40,46</sup> Based on the specific content of the reviews, they can be divided into two categories: one category examines effective variables or interventions for health promotion in chronic diseases, among which family support is identified as a key component,<sup>28–33,36,37,41,45,47–51</sup> and the other category determines the effectiveness of family support or related family interventions.<sup>33,35,37,44,46,52–58</sup>

#### Study Conclusions

The vast majority of the included reviews recognize the critical and significant role of family factors. Some studies have highlighted the importance of family and social relationships in managing diabetes symptoms.<sup>28</sup> The etiquette and routines of family life positively influence the health and adjustment of both patients and their family members.<sup>33</sup> In addition, lacking support from family members can reduce the effectiveness of self-management efforts.<sup>42</sup> Thus, all these studies indicate that family support significantly influences the health promotion of individuals with chronic diseases. This conclusion is consistent with the findings of previous reviews on existing diseases, where family support was confirmed to improve self-management behaviors and clinical outcomes.<sup>62,63</sup>

#### The Connotation of Family Support

The reviews included in this study have limited discussion of the connotation of family support, focusing primarily on the “concept of family support”, “categories of family support”, “outcomes of family support” and “principles of family support”. In defining the “concept of family support”, Eccleston et al states it as a process involving multiple family members that can alter health outcomes through changes in family functions and perceptions.<sup>38</sup> Two reviews emphasized that the context of family support is a good family environment, together with the support provided by the involvement of family members.<sup>30,58</sup> The review by Rad et al defines family support from a psychological perspective as an interpersonal effect that can predict and improve health behaviors.<sup>54</sup> All included studies can be categorized according to Cutrona’s definition, which classifies family support into specific support, emotional support, counseling support, and esteem support.<sup>25</sup> Three studies focused specifically on the role of family support in actual health outcomes, considering family support as a process that provides both physical and mental health,<sup>40,53</sup> as well as tools that promotes health outcomes.<sup>56</sup>

**Table 2** Characteristics of the 34 Included Studies

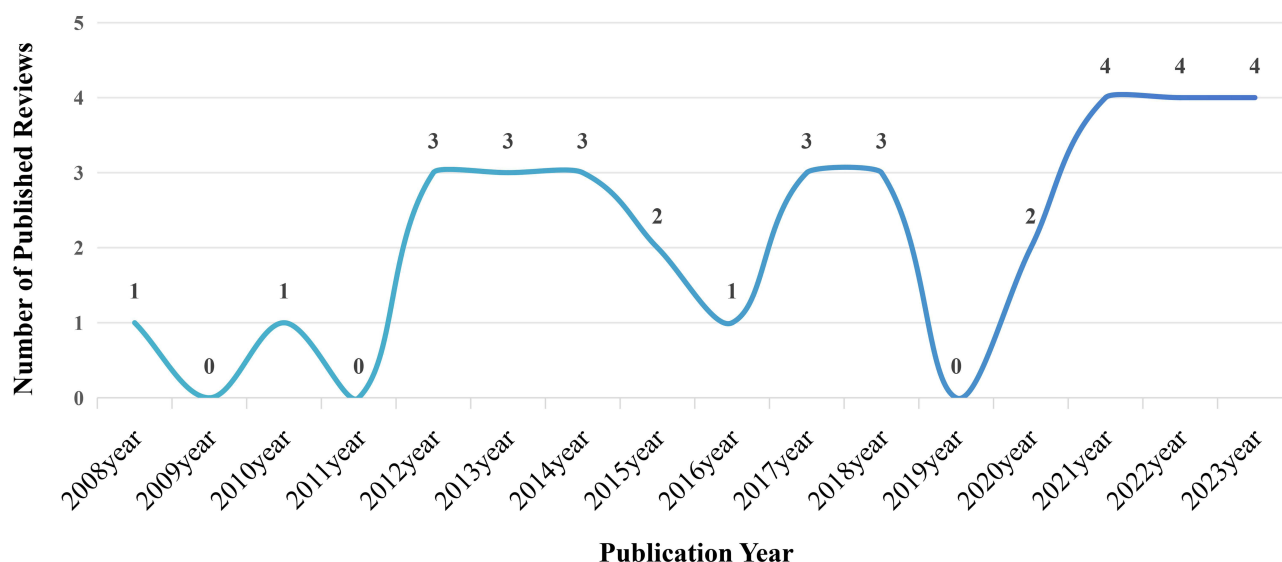
Author	Disease	People	Number of Primary Studies	Type of Review	Specific Family Support	Types of Family Support	Health Promotion Outcome	Family Support Provider	Is Family Support the Main Measure
Blasco-Blasco et al, 2020 <sup>28</sup>	diabetes	Latin America and the Caribbean	60	Systematic review	Family support	/	Incidence rate	Family members	N
Boff et al, 2017 <sup>29</sup>	excess weight	Adolescents	26	Systematic review	Family support and family therapy	Emotional support	Eating maintenance and exercise practice	Parent	N
Burchett et al, 2018 <sup>30</sup>	excess weight	Children	11	Systematic review	Family involvement	Esteem support	Weight management	Parent	Y
Chen et al, 2024 <sup>31</sup>	excess weight	Children	31	Systematic review	Family support	Concrete and emotional support	Physical activity	Parent	N
Connell et al, 2008 <sup>32</sup>	hypertension	Adults	27	Narrative review	Family support	/	Hypertension control	Family members	N
Crespo et al, 2013 <sup>33</sup>	chronic disease	All ages	39	Review	Family routines and rituals	Concrete and emotional support	Health behavior	Family members	Y
Cross et al, 2020 <sup>34</sup>	cancer	Children and young people	12	Systematic review	Parental participation and encouragement	Concrete and emotional support	Physical activity	Parent	N
Deek et al, 2016 <sup>35</sup>	chronic disease	Adults	10	Systematic review	Family-centred approaches	Concrete and emotional support	Quality of life, self-care, and medication adherence	Family members	Y
Donachie et al, 2022 <sup>36</sup>	cancer	Male	12	Scoping review	Family support	Emotional support	Active surveillance	Family members	N
Du, 2023 <sup>37</sup>	excess weight	Adolescents	36	Review	Family sense of coherence	Concrete and emotional support	Weight management	Family members	N
Eccleston et al, 2015 <sup>38</sup>	chronic disease	Children and adolescents	47	Meta analysis	Family therapy	Emotional support	Parenting behaviour of parents	Parent	Y
Ellis et al, 2022 <sup>39</sup>	cancer	Adults	16	Scoping review	Family context	Concrete and advice support	Diet, physical activity, and/or weight-related outcomes	Family members	Y
Farnesi et al, 2012 <sup>40</sup>	excess weight	Children	24	Integrative review	Family–health professional relations	/	Weight management	Parent	Y
Fish et al, 2015 <sup>41</sup>	cancer	Male	40	Systematic synthesis	Family support	Emotional support	Help-seeking behaviour	Family members	N

He et al, 2023 <sup>42</sup>	diabetes	All ages	/	Review	/	/	Self-care behavior	/	N
Hedeager Momsen et al, 2021 <sup>43</sup>	diabetes	Female	18	Overview of reviews	Family support	/	Incidence rate	Family members	N
Heo & Braun, 2014 <sup>47</sup>	chronic disease	Korean Americans	21	Systematic review	/	/	Health behavior	/	N
Huang et al, 2022 <sup>59</sup>	diabetes	Adolescents	/	Review	Family-centered care	Concrete, advice, esteem and emotional support	Self-management behavior	Parent	Y
Kragelund Nielsen et al, 2018 <sup>44</sup>	diabetes	Female	/	Narrative review	Family context	Concrete and emotional support	Healthy lifestyle	Family members	Y
Lamore et al, 2017 <sup>52</sup>	chronic disease	Adults	40	Systematic review	Family support	Concrete, advice and emotional support	Active treatment decision-making	Family members	Y
Liu & Wei, 2022 <sup>53</sup>	chronic disease	All ages	/	Review	Family resources	Emotional support	Chronic disease management	Family members	Y
Maula et al, 2021 <sup>45</sup>	diabetes	All ages	49	Realist synthesis	Family setting	Emotional support	Weight management	Family members	N
Mogul et al, 2014 <sup>46</sup>	pediatric obesity	Children	7	Systematic review	Family Communication	Concrete and advice support	Weight management	Parent	Y
Murray et al, 2012 <sup>48</sup>	cardiovascular events	All ages	33	Qualitative literature review	Family support		Lifestyle change	/	N
Rad et al, 2013 <sup>54</sup>	diabetes	All ages	47	Narrative review	Family support	Concrete, advice and emotional support	Self-care behavior	Family members	N
Rosland & Piette, 2010 <sup>55</sup>	chronic disease	Adults	11	Structured review	Family support	Concrete and emotional support	Self-care behavior	Family members	Y
Rosland et al, 2012 <sup>56</sup>	chronic disease	Adults	30	Systematic review	Family behaviors and communication patterns	Concrete, advice and emotional support	Self-management behavior	Family members	Y
Sejie & Mahomed, 2023 <sup>49</sup>	tuberculosis	All ages	36	Systematic review	Family-member directly observed therapy	Concrete support	Take medicine on time	Family members	N
Sudhir, 2017 <sup>61</sup>	cardiovascular disorder and type 2 diabetes	Adults	/	Overview	Family support	Concrete support	HbA1c level	Family members	N

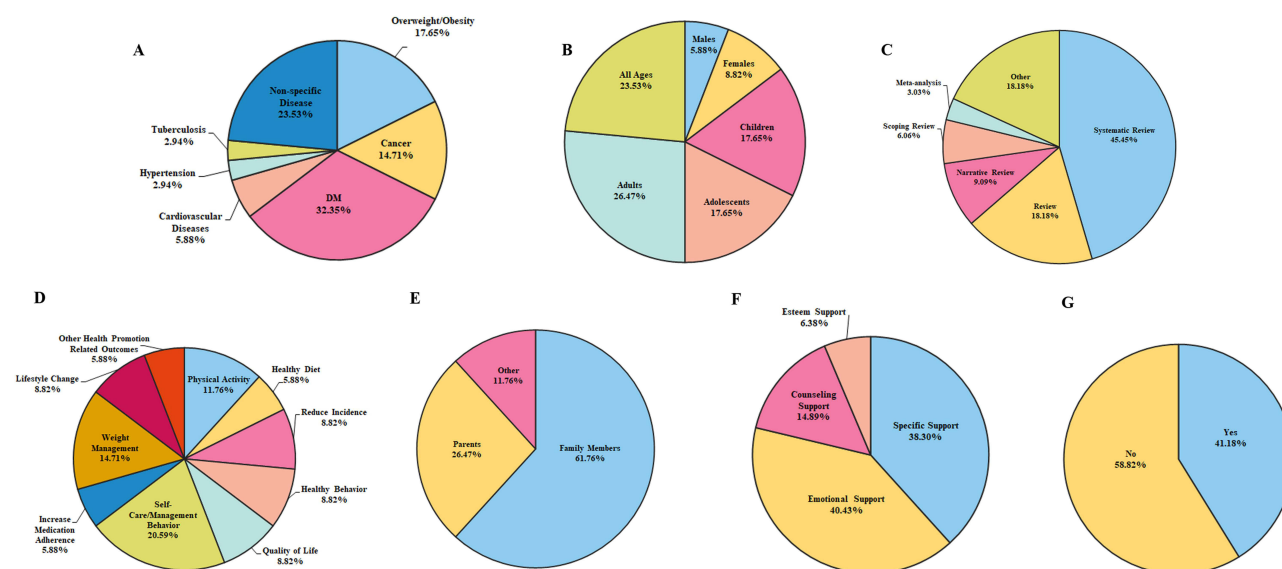
(Continued)

**Table 2** (Continued).

Author	Disease	People	Number of Primary Studies	Type of Review	Specific Family Support	Types of Family Support	Health Promotion Outcome	Family Support Provider	Is Family Support the Main Measure
Thorpe et al, 2013 <sup>50</sup>	diabetes	All ages	129	Systematic review	Family therapy	Emotional support	Healthy coping	/	N
Torenholt et al, 2014 <sup>57</sup>	diabetes	Adults	10	Systematic review	Family intervention	Concrete support	Disease knowledge and lifestyle changes	Family members	Y
Whitehead et al, 2018 <sup>58</sup>	chronic disease	Adults	20	Systematic review	Family support	Concrete, advice, esteem and emotional support	Self-management behavior	Family members	Y
Zhang et al, 2021 <sup>60</sup>	diabetes	Adolescents	/	Review	Family Health Management	Concrete support	Quality of life	Parent	N
Zhao et al, 2022 <sup>51</sup>	cancer	Female	12	Systematic review	Family support	/	Quality of life	Family members	N



**Figure 2** Number of Reviews on Family Support for Individuals with Chronic NCDs (2008–2023).  
**Abbreviation:** NCDs, non-communicable diseases.



**Figure 3** Specific Characteristics of the Studies Included in the Reviews. (A) Types of Chronic NCDs. (B) Population Categories. (C) Types of Reviews. (D) Outcome Variables. (E) Family Support Providers. (F) Types of Family Support. (G) Research Objective Primarily Focused on Family Support.  
**Abbreviations:** NCDs, non-communicable diseases; DM, diabetes mellitus.

In addition, a review focusing on the principles underpinning family support suggests that a family-centered model of care includes eight principles: respect, support, flexibility, collaboration, information, empowerment and strength.<sup>59</sup>

### Differences in Family Support

The extant research on the differences between family support and other support systems is limited, and that which does exist can be categorized into three types. The first type of support is characterized by an oversight of the distinctiveness of family support, regarding it as a form of psychological or social support without further distinguishing it from other types of social support.<sup>28,32,34,36,38,43,44,47,48,51,53,54</sup>

The second type also includes studies that focus on the uniqueness of family support. For example, one study found that it is too simple to consider family support as just one aspect of social support.<sup>57</sup> Another study explored the

interaction between school, community and family support.<sup>31</sup> Three studies explored the idea that family support may be more effective in promoting health than other forms of support.<sup>42,49,50</sup> He et al believed that lacking family support can lead to a reduction in the concerns of nurses, doctors, and patients in hospitals regarding diseases and health.<sup>42</sup> Compared to other interventions, direct observation by family members causes minimal inconvenience to patients.<sup>49</sup> Family therapy is more effective than other behavioral and psychological treatments in certain specific diseases.<sup>50</sup>

The third type of research discusses the different effects of support from various family members. For instance, research suggests that patients receive more perceived support from their partners than from other family members,<sup>54</sup> and that parental support is vital for the management of chronic diseases in adolescents.<sup>60</sup>

### Mechanisms of Family Support

The mechanisms of family support are primarily focused on two aspects: family dynamics and psychological-behavioral mechanisms. In terms of family dynamics, study from Farnesi et al encouraged the establishment of a collaborative partnership between health professionals and families.<sup>40</sup> There is a need to integrate health systems and family backgrounds into disease prevention programs,<sup>43</sup> and to encourage collaboration between family members and medical teams, thereby promoting recovery.<sup>52</sup> A study considers the family as a strategic health resource that can positively influence the health and adaptation outcomes of patients and family members.<sup>33</sup> Furthermore, Ellis et al found that promoting healthy behaviors among cancer survivors within their family environment can leverage existing support systems and improve the well-being of family members who play supportive roles.<sup>39</sup>

In terms of psychological-behavioral mechanisms, direct contact with family members can improve a patient's commitment to health,<sup>36</sup> and family support can provide the confidence needed to face challenges and difficulties related to illness.<sup>37</sup> The family health model and the socio-ecological model attribute the influence of the family on individual health outcomes to behaviors, values, choices and routines. Family support, seen as based on close or intimate relationships, helps to facilitate or improve individual health management.<sup>39</sup> From the Health Belief Model (HBM) perspective, patients decide whether to maintain health behaviors based on their perceived susceptibility.<sup>44</sup> Furthermore, the study by Mogul et al found that disease information education is a driving force in promoting healthy behavior in patients through stigma reduction and encouragement.<sup>46</sup> Family support improves individual autonomy and promotes better patient involvement in healthy behaviors by integrating changes in motivation and self-concept.<sup>56</sup>

### Influence Factors of Family Support

In the reviews incorporated within the study, the influencing factors of family support were primarily categorized into three distinct categories: the ecological factors of family members, the personality psychological characteristics and behaviors of family members, and the theoretical methods of family support.

In terms of ecological factors, studies have discussed the impact of education, culture, gender, age, race, and income on family support.<sup>52,53,56,57,59</sup>

From a behavioral perspective, research has identified parental involvement and encouragement are considered as key predictive factors for physical activity,<sup>34</sup> and participation in decision making has been identified as an important process in family support.<sup>36</sup>

In terms of psychological characteristics, parental authority and role modelling,<sup>30,46</sup> overall family communication and cohesion<sup>39,46,58</sup> are considered as relatively common influential factors in research.

There is only one review that discusses the impact of the theoretical approaches on family support.<sup>57</sup> However, some reviews are not optimistic about the promotional effects of family support and recommend that further research is needed.<sup>55,59</sup> See S3 for more details.

## Discussion

### The Connotation of Family Support

Based on current research, we define the connotation of family support for chronic disease patients from a health promotion perspective. It is a process that uses the collective structure of the family to fully utilize family resources. Through collaboration and interaction, it adheres to the principles of respect and autonomy for the patient, providing

concrete support, psychological support and communication advice for the patient's recovery, cure, health care and health promotion.

This study hypothesizes that the effects of family support are exerted through the overall structure and interactions of family members. Therefore, the concept of family support encompasses all members of the family unit, including parents, spouses, and children. The overall structure of the family has been demonstrated to have a significant impact on family support.<sup>64</sup> Theory in the field of family support also posits that the collective participation of all family members can provide more comprehensive and coordinated support.<sup>65</sup> The present study proposes a novel classification system for family support, categorizing it into four distinct types. This approach represents a significant advancement over the relatively limited classification systems employed in previous studies.<sup>66</sup> Future research has the potential to further refine these categories<sup>67</sup> and, according to the optimal matching theory, explore the types of support that can achieve the best efficacy in the field of chronic diseases.<sup>68</sup>

Regarding the principles of family support, this study follows the "family-centered" approach to care and integrating the patient-centered philosophy, has proposed the principles of respect and autonomy for the patient. This is because the effectiveness of family support depends not only on the specific content of the support provided, but also on the quality of interaction during the support process and the subjective experience of the patient. The definition and application of family support in the area of chronic disease should be continually explored in the future.<sup>69</sup> Similar to the family-centered care principles in cardiometabolic disease interventions,<sup>63</sup> the respect and autonomy emphasized in our study are key to reducing support-related conflicts and improving patient acceptance.

## Differences in Family Support Compared to Other Support Systems

Based on the research findings, this study suggests that there are significant differences between family support systems and other social support systems from a health promotion perspective, and that the effectiveness of support provided by different family members also varies.

Firstly, the effectiveness of different types of social support in promoting health behavior should vary according to the life scenario or type of disease. This may be because family support, compared to other forms of social support, is underpinned by a stronger sense of duty and responsibility, and therefore has a stronger supportive effect. Compared to the support from friends or colleagues, family members have a deeper understanding of the patient's specific circumstances and needs, thus enabling them to provide more personalized and effective support. This is supported by research that there is no correlation between family support and support from friends for patients with DM.<sup>70</sup> For employees, family support is a better predictor of physical activity than support from colleagues and friends.<sup>71</sup> This finding is consistent with Kuhn & Laird's conclusion that family support is distinct from general social support due to its emotional intimacy and long-term commitment,<sup>72</sup> especially in chronic disease management where continuous and personalized care is required.

In the context of family support, the nature of support provided by different family members varies, which may be attributable to the divergent interaction patterns exhibited by family members in their respective roles. For instance, support between partners is frequently characterized by enhanced intimacy and durability. Research has demonstrated that varying degrees of emotional intimacy amongst family members can influence the efficacy of support.<sup>63</sup> From an empirical perspective, research indicates that patients perceive higher levels of support from their partners than from other family members,<sup>17</sup> a finding that is consistent with the results of the current study and T2DM patient experience studies,<sup>62</sup> where spousal support was rated as the most impactful. Future research should explore the interactions between different role supports.

## Mechanisms of Family Support

The present study hypothesizes that the mechanism of family support operates through the interplay among family members during the dynamic evolution of the family, in conjunction with practical support provided from external sources. This interaction influences the patient's cognition and consistently reinforces and encourages healthy behaviors, ultimately promoting health-related actions.

Regarding the internal dynamics of family development, this study believes that the guidance and supervision provided by parents to their children, the emotional support between partners, and the care of elderly parents by their children can offer sustained emotional connections and practical assistance. This contributes to the promotion of self-management and health behavior change among family members. From an external support, guidance from healthcare professionals and support from community networks can provide families with the necessary resources and information to more effectively manage the health of their loved ones. Family systems theory (FST) also describes the complex and emotional interconnections between family members and suggests that the degree of these connections may influence the family's strategies for coping with diseases.<sup>73</sup> This aligns with the mechanism of family-community-healthcare collaboration identified in cardiometabolic disease interventions,<sup>63</sup> where multi-level support enhances intervention effectiveness.

Regarding the psychological and behavioral mechanisms, cognition and behavior are two key variables. Cognition is the first step in the impact of family support on patients. Patients can obtain more health information and knowledge about disease management through interactions and communication among family members. Improving cognition can increase patients' confidence and motivation to manage their health, laying the foundation for subsequent behavioral change. Furthermore, behavior is another key variable in the role of family support. On the basis of cognitive improvement, practical support and encouragement from family members can help patients translate health knowledge into concrete actions. A study from Gillibrand et al has extended the framework of HBM by establishing an internal cyclical model, in which family support shapes the perception of diabetes and subsequently encourages self-care behaviors.<sup>74</sup> Some studies have also found that family support increases patients' confidence in coping with difficulties<sup>37</sup> or increases their autonomy.<sup>56</sup> According to Social Cognitive Theory (SCT), self-efficacy is an important variable in changing a person's behavior. It is suggested that individuals initially change their cognitive approach to health behaviors by deriving self-efficacy from family support. These changes, coupled with the patient's demonstrated health behavior and consistent positive reinforcement from family members, culminate in the maintenance of such behavior.<sup>75</sup> Previous research also supports the conclusion that self-efficacy has an impact on health behavior.<sup>76</sup> Consistent with Ho et al's review, SCT is widely used to explain how family modeling and support enhance patients' self-efficacy, which is a core psychological mechanism across chronic disease types.<sup>77</sup> Our study innovatively integrates FST with SCT to propose a "cyclical reinforcement" mechanism: family dynamics (eg, collaboration) enhances self-efficacy, which promotes healthy behaviors, and positive behaviors further strengthen family cohesion—forming a sustainable cycle. This cyclical explanation supplements the linear mechanism description in previous studies.<sup>63,77</sup> Future research can further explore the underlying and multidimensional mechanisms of family support.

## Influence Factors of Family Support

The factors that influence family support can be categorized into three distinct domains: ecological, psychological, and methodological.

In accordance with the principles of the social ecological model, ecological factors are categorized into two distinct categories: micro-level and macro-level influence factors.<sup>78</sup> The micro-level influence factors include patient and family health behaviors, economic status, gender and educational attainment.<sup>39</sup> These micro-level factors have been shown to directly impact the behavioral interactions among family members in the context of daily family life. The macro-level influencing factors include the cultural and social environment, as well as the policy and regulatory context in which patients and families are operate.<sup>79</sup> Macro-level influencing factors shape the external environment of the family and, in turn, have an indirect effect on the effectiveness of family support. Research has demonstrated that family functioning is enhanced by micro-level and macro-level support.<sup>80</sup> This classification is consistent with the ecological factors identified in family health promotion research,<sup>77</sup> where cultural background and policy context were found to moderate the impact of family support on health outcomes.

Psychological factors also have a significant impact on family support. From a behavioral perspective, communication and shared decision making enable family members and patients to clearly express their needs and feelings, thereby gaining recognition and facilitating the smooth implementation of decisions. From a psychological perspective, family cohesion, marital satisfaction, and parental role modelling can strengthen emotional bonds within the family and enhance

the psychological security of patients. Moreover, the emotional support dimension of family support is closely related to marital satisfaction.<sup>81</sup> Previous research has also suggested that effective communication within the family environment influences people's goals, strategies, and behaviors, thereby promoting the emergence of family support.<sup>82</sup> As reported in T2DM studies,<sup>62</sup> poor communication and emotional distance between patients and families reduce support effectiveness, highlighting the importance of psychological factors.

From a methodological perspective, theoretical methods provide a scientific basis and structured framework for the design and implementation of family support, which helps to enhance the effectiveness and sustainability of interventions. For example, the Triple P-Positive Parenting Program, based on the principles of social learning has been extensively researched and validated for its effectiveness.<sup>83</sup> Similar to the interdisciplinary and technology-assisted methods in cardiometabolic disease interventions,<sup>63</sup> adopting evidence-based theoretical frameworks can optimize support delivery and improve outcomes. Our study further clarifies that methodological factors are not just “tools” but core influence factors—interventions without theoretical guidance are less likely to sustain effectiveness—filling the gap of methodological neglect in previous influence factor research.

## Exploration of the Optimal Family Support Model

Based on a review and summary of the literature, existing evidence indicates that a model starting with communication empowerment and supported by functional optimization is the shortest path to enhancing patients' self-management efficacy. This study posits that the family support model with the most direct effect, the greatest impact, and the shortest path should meet the following characteristics: (1) It takes supportive communication skills as the core and directly triggers patients' behavior change through the verbal interaction of family members. (2) It builds a dynamic framework based on family function theory, emphasizing the synergistic effect of family closeness, adaptability, and health prompts. (3) It focuses on immediate intervention elements (such as daily reminders, emotional guidance, and skill collaboration), avoiding complex intermediary links. (4) It is designed in a modular way to meet diverse needs and can be quickly integrated into the chronic disease management process. Consistent with the optimal models identified in cardiometabolic disease research,<sup>63</sup> the modular and technology-integrated design can enhance accessibility and adherence.

The strengths of this model are evident in its modular design and cultural adaptability. On the one hand, it achieves precise empowerment through tiered interventions (basic communication training, core task lists, and adaptive adjustments), thus avoiding the complex intermediary links of traditional interventions. On the other hand, it facilitates adaptable strategy modifications in accordance with family composition (eg, nuclear families or multi-generational households). Illustrative examples include the incorporation of collective decision-making through “family health meetings” or focusing on personalized partner support. Unlike the disease-specific intervention models our model is cross-disease applicable and prioritizes “communication empowerment” as the entry point—this is innovative because previous models often start with practical support (eg, diet planning) without addressing the root cause of support ineffectiveness. Our model also supplements “family function optimization” as a sustained support mechanism, ensuring long-term effectiveness that was lacking in short-term intervention models. Future research can further explore its adaptability to special family structures and verify the optimal support combinations for different chronic diseases.

## The Development Directions of Family Support Strategies

In order to optimize the family support system in patient health management, it is necessary to construct an integrated support framework based on the Biological-Psychological-Social Model and centered on the patient. This would allow support categories to be refined and relevant theoretical basis to be integrated. Plans should be formulated according to the specific type of disease, environmental context, and feasibility (for example, prioritizing family support for chronic diseases). Personalized plans should be customized based on family member roles (for example, partners providing emotional support and parents and children taking charge of health management), supplemented by targeted training. It is important to enhance both internal and external linkage. The enhancement of members' capabilities and joint decision-making processes can be achieved through health education and family meetings, which are to be implemented internally. In addition, it is essential to establish close connections with medical and community resources, as well as to provide behavioral training and implement health behaviors through the encouragement and reward mechanisms of family

members. In order to achieve the most favorable outcomes, it is necessary to concentrate on the family ecology at the micro level (for example, the provision of economic/educational support, communication decision-making training, and psychological services for low-income families), to promote supportive social policies at the macro level in order to reduce inequality, and to continuously assess and optimize the support mechanism through empirical research in order to ensure continuous improvement of effectiveness. As emphasized in adolescent mental health research,<sup>72</sup> future strategies should also prioritize diverse support forms and target high-need groups to maximize effectiveness.

## Limitations and Prospects

The present study explores the connotations and mechanisms of family support for chronic disease patients from the perspective of health promotion through a scoping review. There are several issues that need to be improved. Firstly, it is imperative to refine the theoretical framework in future studies. A scoping review should be conducted on the basis of an integrated theoretical model in order to facilitate a scientifically rigorous, broadly comprehensive and systematic investigation of family support. Secondly, there is a necessity to expand the scope of chronic diseases. Whilst some scholars have defined mental illness as a chronic disease,<sup>84</sup> this scoping review did not include mental illness in its research scope. It is recommended that future research focus on the further refinement of the definition and classification of chronic diseases, and on the understanding of the role of family support across different types of chronic diseases. Finally, the present paper encompassed literature of differing linguistic types in accordance with the characteristics of scoping reviews. This may have resulted in an increase in heterogeneity and bias. It is imperative that future research adopts appropriate methods with a view to reducing heterogeneity and bias, and enhancing the authority of scoping reviews.

## Conclusion

The objective of this scoping review is to systematically explore the connotations and mechanisms, differences, and influencing factors of family support for patients with chronic diseases from the perspective of health promotion, and to provide a theoretical and practical basis for constructing scientifically applicable family support models and optimizing family-centered chronic disease management. The present review is distinguished by an analysis of the characteristics of the included literature, which serves to highlight the differences in current review-type studies. The study has obtained insights into the connotations of family support, the differences between family support and other support systems, the mechanisms of family support, and the influencing factors of family support. The study further explores the optimal pathways and future directions for family support. This scoping review can provide a foundation for the future development of family chronic disease management, family support interventions, and family health promotion.

## Data Sharing Statement

All data are included within the manuscript.

## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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The authors declare no conflicts of interest in relation to this study.

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