

Review Article



Family Support for Diabetes Mellitus Care in Southeast Asia: A Scoping Review

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Abstract

Introduction: The past decade has witnessed a sharp increase in diabetes cases, a serious health threat triggering severe complications such as microvascular damage (retinopathy, nephropathy, and neuropathy) and diabetic foot ulcers. Diabetes has become a leading cause of death, claiming millions of lives annually. This study investigated family assistance for loved ones with diabetes mellitus in Southeast Asia.

Methods: PubMed, Cochrane, ProQuest, EBSCO, Garuda, ScienceDirect, Scopus, SAGE Journals, Global Index Medicus, DOAJ, and Google Scholar were searched for English and Indonesian articles published in 2014-2024. Articles examining family support for diabetes (type 1 or 2) care in Southeast Asian populations were included, whereas studies focusing solely on healthcare provider interventions, non-Southeast Asian settings, non-English/Indonesian publications, editorials, commentaries, and articles without full-text access were excluded from the investigation.

Results: Nineteen studies (12, 3, 3, and 1 cases performed in Indonesia, Malaysia, Thailand, and Vietnam) covering both diabetes types underwent analysis. Primary family support forms included informational support, emotional support, family warmth, and direct caregiving. It was found that family support enhances glycemic control, wound healing, healthy lifestyle adoption, medication adherence, and patient self-efficacy. Barriers encompassed residential distance, illness perceptions, economic constraints, insufficient information, and strained family relationships.

Conclusion: Overall, family support manifests through distinct forms in Southeast Asian diabetes care, improving clinical outcomes and self-care behaviors. However, effectiveness is moderated by geographic distance, economic constraints, and knowledge deficits. Healthcare providers should systematically assess family dynamics during care planning, while policymakers should implement family-inclusive programs to optimize diabetes management outcomes.

Keywords: Diabetes, Diabetes mellitus, Family role, Family support, Southeast Asia



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Introduction

Diabetes mellitus (MD) has become a global health concern. The International Diabetes Federation defines diabetes as a chronic condition that occurs when the pancreas can no longer produce insulin or the body cannot use insulin effectively (1). Over the past decade, there has been a steady rise in diabetes cases, and projections indicate that 1 in 8 adults, or approximately 783 million people, will have the disease by 2045. Nearly 90% of individuals with diabetes suffer from type 2 diabetes (T2DM). In 2021, the number of deaths due to MD reached over 6.7 million 20–79-aged people who died from diabetes-related causes. Experts estimate that the number of diabetes cases in Asian countries will reach 113 million and 151 million by 2030 and 2045, respectively (1). The projected increase in

these cases serves as a serious warning.

If not properly managed, MD can cause various complications. The prevalence of microvascular diabetes complications is 37.9%, with retinopathy, nephropathy, and neuropathy accounting for 24.8%, 16.1%, and 8.1%, respectively (2). Around 25–40% of patients with T1DM and 34% of patients with T2DM experience diabetic ketoacidosis (3). The prevalence of foot ulcer cases in diabetic patients reaches 20.7% (4). Therefore, it is necessary to explore effective methods to reduce diabetes complications.

Many previous reviews have addressed the care of patients with MD. Some of them have focused on diet, physical activities, erectile dysfunction, eating disorder management, disease perceptions, medication



adherence, and practical interventions to prevent disease complications. However, no study, to the best of our knowledge, has so far investigated the role of family dynamics and support systems in facilitating these behaviors (5-10). This gap is particularly significant in the Southeast Asian context, where family-centered care is culturally the norm. A scoping review is considered the most appropriate approach for this study because it allows us to systematically map the breadth of evidence across diverse study designs, identify research gaps, and explore emerging themes in family support for diabetes care. Unlike systematic reviews that focus on specific research questions with homogeneous study designs, scoping reviews are ideal for examining complex, multifaceted topics where the literature is heterogeneous in terms of methods, populations, and outcomes (11). Given the varied nature of family support interventions and the limited prior synthesis in the Southeast Asian context, a scoping review also enables us to provide a comprehensive overview of existing knowledge.

This review is grounded in social support theory, which posits that support from significant others, particularly family members, plays a crucial role in managing chronic illnesses (12). This theory identifies four types of support: emotional (empathy and care), informational (advice and information), instrumental (tangible aid), and appraisal (feedback for self-evaluation) support. In the context of chronic disease management, family support has been shown to influence treatment adherence, self-care behaviors, and health outcomes (13). Accordingly, understanding family support through this theoretical lens allows us to systematically examine how different forms of support contribute to diabetes care.

The family plays a crucial role in implementing health practices, especially in providing support to members who have chronic illnesses. Similarly, the family's ability to provide health care will have an impact on their overall health. A family can perform health-related tasks, thereby minimizing or resolving health issues experienced by each member (14). It is important to find out the form of support that families provide to their members who suffer from diabetes.

Therefore, this review aims to investigate how families in Southeast Asia support their family members with MD by systematically examining the forms of support provided to individuals with MD in Southeast Asia, the challenges families face in providing this support, and the impact of family support on diabetes management outcomes. By synthesizing evidence from Southeast Asian countries, it is sought to provide insights that can inform family-centered interventions and health policies tailored to the region's cultural context. It is hoped that this review will provide a comprehensive overview of family support in caring for family members with diabetes in Southeast Asia.

Methods

To design this study's search strategy, the population concept context approach was adopted, which involves identifying the population (individuals with MD),

the concept (family support in diabetes care), and the context (geographic and social aspects in Southeast Asia). Considering these three key elements, a focused search question was formulated to identify relevant literature supporting the research objectives. In this process, the Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-SCR) extension was used to perform data extraction, optimize reporting, and enhance the validity of this scope. This study protocol was registered in the Open Science Framework (<https://osf.io/fdx72/>). Moreover, the review was conducted following the guidelines of scoping review frameworks developed by Arksey and O'Malley (11). It should be noted that PRISMA-SCR improves validity and optimizes reporting (15).

Stage 1: Research Questions

This scoping review raised the following research question:

- How does family support manifest in the care of individuals with MD?
- What are the obstacles families face in caring for relatives with MD?
- What are the impacts of family caregiving on family members with MD in Southeast Asia, including Indonesia, Malaysia, Singapore, Thailand, the Philippines, Vietnam, Myanmar, Cambodia, Laos, Brunei Darussalam, and Timor Leste?

Stage 2: Relevant Studies and Search Terms

This review investigated family support for Southeast Asian family members living with MD. Eleven database-based searches were used in this scoping review. An initial search was conducted to gather titles, abstracts, and content, with the aim of identifying terms and keywords. In addition, Google Scholar was utilized as a database to find additional articles that might have been missed by the previous database search. The search data are provided in Table 1.

The inclusion and exclusion criteria for this review were based on the population concept context. Our review scope was defined as (1) population, including individuals diagnosed with MD (type 1 or 2) of any age, (2) concept, namely, family support in diabetes care, encompassing all forms of assistance, involvement, and caregiving provided by family members, and (3) context, that is, Southeast Asian countries, including Indonesia, Malaysia, Singapore, Thailand, Philippines, Vietnam, Myanmar, Cambodia, Laos, Brunei Darussalam, and Timor Leste. It should be noted that our search was limited to full-text articles published in English and Indonesian between 2014 and 2024. In this review, articles from the last decade were selected based on the increasing discussion during that period regarding the importance of family involvement in caring for family members with diabetes. A database search was conducted in 11 databases in 1 June 2024.

Stage 3: Study Selection

Study Extraction From Databases

Figure 1 shows the process of filtering results and the

Table 1. Keywords for Database Search

No.	Database	Keywords	Articels	Access Date
1	PubMed	((Diabetes mellitus OR diabete OR diabetes management OR diabetes care) AND (family role OR caregiver role OR family involvement OR family support)) AND (Asia tenggara OR Indonesia OR Malaysia OR Singapura OR Thailand OR Filipina OR Vietnam OR Myanmar OR Kamboja OR Laos OR Brunei Darussalam OR Timor Leste)	533	June 1, 2024
2	Cochrane	THE ROLE OF THE FAMILY IN DIABETES MELLITUS CARE	174	June 1, 2024
3	ProQuest	(Diabetes mellitus OR diabete OR diabetes management OR diabetes care) AND (family role OR caregiver role OR family involvement OR family support) AND (southeast Asia)	294	June 1, 2024
4	EBSCO	Diabetes mellitus OR diabete OR diabetes management OR diabetes care AND family role OR caregiver role OR family involvement OR family support	64	June 1, 2024
5	Garuda	Dukungan keluarga diabetes melitus	18	June 1, 2024
6	ScienceDirect	Family support in diabetes mellitus treatment care in southeast asia	114	June 1, 2024
7	Scopus	(ALL (diabetes AND mellitus OR diabete OR diabetes AND management OR diabetes AND care) AND ALL (family AND role OR caregiver AND role OR family AND involvement OR family AND support) AND ALL (southeast AND asia)) AND PUBYEAR > 2013 AND PUBYEAR < 2025 AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (EXACTKEYWORD, "Human")) OR LIMIT-TO (EXACTKEYWORD, "Humans") OR LIMIT-TO (EXACTKEYWORD, "Article"))	265	June 1, 2024
8	Sage jurnal	The role of the family in diabetes mellitus care in southeast asia	17	June 1, 2024
9	Global Index Medicus	(Family role OR caregiver role OR family involvement OR family support) AND (Diabetes mellitus OR diabete OR diabetes management OR diabetes care)	15	June 1, 2024
10	DOAJ	Family support in diabetes mellitus	5	June 1, 2024
11	Google Scholar	Dukungan keluarga dalam perawatan diabetes melitus di asia tenggara	3	June 1, 2024

criteria for manuscript extraction after the completion of the initial search based on the inclusion and exclusion criteria in this review. Overall, 1,495 articles were obtained from 11 databases. A total of 1,464 articles remained after duplicate removal using Mendeley. These articles were then entered into the Rayyan platform for further deduplication, resulting in 1,454 articles. Next, the articles were filtered based on their titles, leaving 31 articles. The screening continued with the abstracts, resulting in 23 articles. From the 23 remaining articles, full-texts of 19 cases were screened and then subjected to extraction.

Reliability of Extraction Study

To systematically filter the articles retrieved from our search database, all identified articles were exported to Mendeley to eliminate duplicates, then proceeded to Rayyan, which is a web-based screening tool that facilitates collaborative article selection and decision management during the filtering process. Two reviewers (Septianto Marannu Sapan and Dedi Krismiadi) randomly selected 25 articles based on predetermined inclusion and exclusion criteria. Of these 25 articles, 4 (16%) did not meet the eligibility criteria; this issue was resolved through open discussion until 100% consensus was achieved, ensuring that only articles that truly met the predetermined inclusion criteria were selected for inclusion in the review. With this meticulous approach, the validity, consistency, and relevance of the applied articles were guaranteed, providing a solid foundation for accurate research results.

All identified articles from the article search were exported to the Mendeley reference management software, where the results underwent deduplication. Subsequently, the articles were exported to the Rayyan software platform, where a filtering process was conducted

to remove any articles that successfully passed through Mendeley's filter. Two reviewers (Septianto Marannu Sapan and Dedi Krismiadi), taking into account the exclusion and inclusion criteria of this review, randomly sampled 25 articles to ensure consistency in evaluating the article filtering process. Disagreements on 4 articles (16%) emerged from the combined review results of 25 articles. The reviewers resolved this disagreement through discussions, reaching a 100% consensus at each stage of the sampling process.

Stage 4: Data

The results were extracted to obtain data on the author's name, year of the article, objectives, research location, research design, measured samples, findings, family support, benefits of family support, and family barriers to providing support (Table 2).

Stage 5: Thematic Summary and Key Findings

Inductive thematic analysis was conducted following the six-phase framework set by Braun and Clarke (35), including (1) familiarizing ourselves with the data through repeated reading, (2) generating initial codes systematically across the entire dataset, and (3) searching for themes by collating codes into potential themes. The other phases encompassed (4) reviewing themes to ensure they form coherent patterns, (5) defining and naming themes, and (6) producing the final report with vivid examples.

Ethical Considerations

This review study was conducted in accordance with applicable regulations. Proper references were provided to all authors of the analyzed articles, adhering to copyright law. The data were presented reliably.

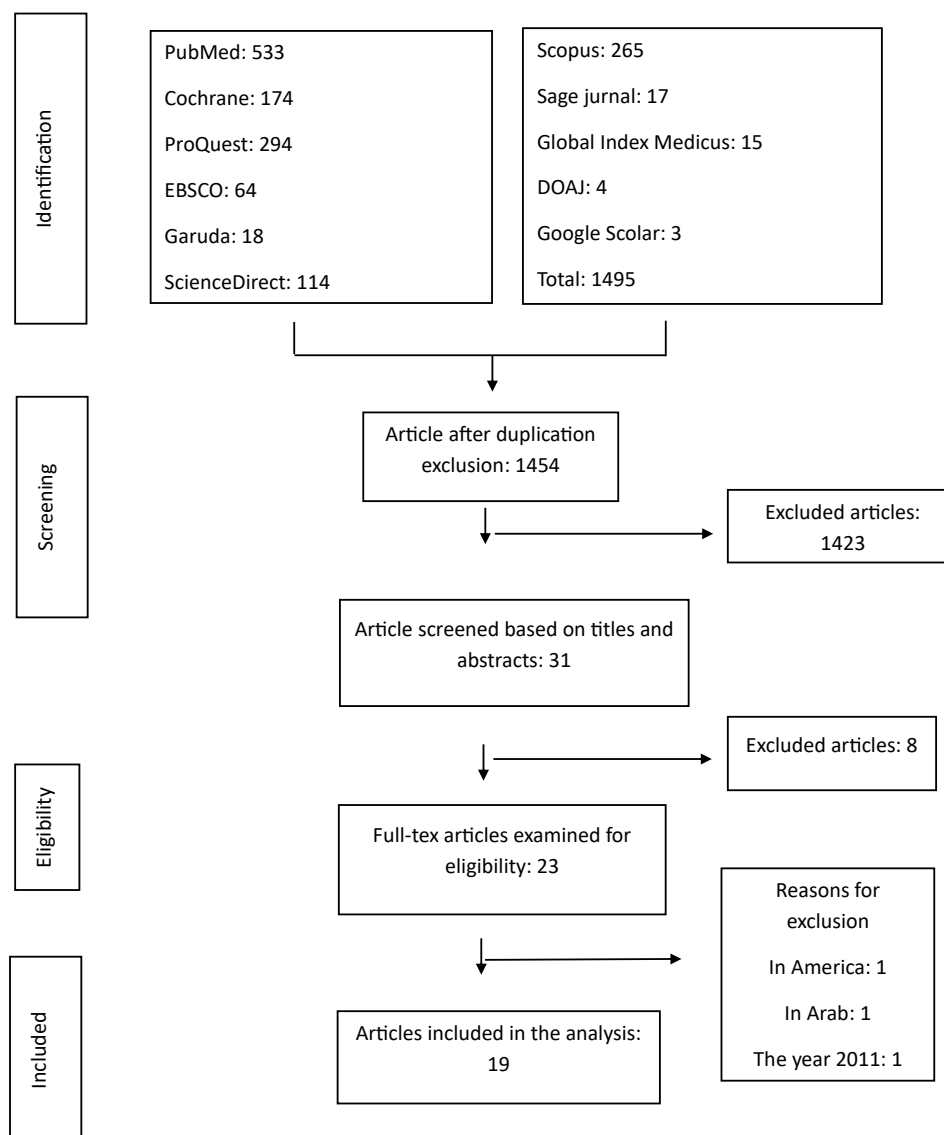


Figure 1. PRISMA Flowchart

Note. PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-analyses

Characteristics of Study

Of the nineteen studies analyzed in this review, 12 (63 %) took place in Indonesia (16, 17, 34, 19, 22-28), and three studies were conducted in Malaysia (18, 29, 30). Moreover, three studies were performed in Thailand (20, 21, 32), and one study (31) was conducted in Vietnam. Out of the nineteen studies, the sample size was the largest (354 samples). Furthermore, 18 studies (94%) used a quantitative design (16-28, 30-34), and one article (29) employed a qualitative design.

Results

Theme 1: Types of Family Support

Our analysis identified seven distinct types of family support provided to DM individuals for diabetes management in Southeast Asia across the reviewed studies. Informational support (7 studies) involved family members providing education, health information, and

advice about diabetes management, treatment protocols, and self-care practices (15, 19, 20, 22, 23, 30, 31). Moreover, emotional support (7 studies) was equally prevalent, with families offering empathy, encouragement, affection, and psychological comfort to patients dealing with diabetes (15, 18, 19, 22, 23, 30, 31). Additionally, instrumental or caregiving support (8 studies) represented the most frequently reported form, encompassing practical assistance, such as accompanying patients to healthcare appointments, helping with daily living activities, and providing direct physical care (15, 18, 19, 22, 23, 27, 30, 31). Furthermore, dietary support (4 studies) included family members assisting with meal planning, food preparation, and monitoring dietary compliance according to diabetic dietary recommendations (24, 27, 28, 29). Further, treatment support (3 studies) involved families providing medication reminders, monitoring blood glucose checking, and ensuring treatment

Table 2. Data Extraction

Author	Objective	Method	Participants and Country	Findings	Family Support	Benefits of Family Support	Family Obstacles
Appil et al, 2022 (16)	To assess the impact of family empowerment via educational interventions on HbA1c levels and the advancement of DFU recovery	Quantitative	33 patients Indonesia	Wound healing was more desirable in the intervention group (4.71 ± 7.74) compared to the control group (17.25 ± 17.06).	Social support aids in promoting the healing of wounds in ailing family members.	Glycemic control in diabetes and the wound healing process.	-
Mailangkay et al, 2017 (17)	To comprehend the correlation between motivation and family support in the context of self-care for patients with type 2 diabetes mellitus (T2DM)	Quantitative	47 patients Indonesia	The results obtained from 27 respondents with low support demonstrated that 16 respondents had poor foot care, while 11 respondents had excellent foot care. Meanwhile, among the 20 respondents with excellent support, there were 6 with poor foot care, whereas 14 of them received excellent foot care.	We provide family support in treatment, including reminders to take medication and blood sugar checks.	There is no significant relationship between family support and self-foot care.	No longer living with other family members, and work
Shahar et al, 2016 (18)	Family support is a highly influential factor in the care of family members with DM. Therefore, in every healthcare service, it is advisable to involve the family to achieve optimal results.	Quantitative	35 patients Malaysia	Only 8.6% of subjects adhered to dietary counseling, which is considered low. Furthermore, good glycemic control was low, with only 17.1% of subjects having normal fasting blood glucose levels. Researchers at PPUKM and Ampangan Health Center found that family support and self-motivation relate to diet adherence, but not to glycemic control in subjects with T2DM.	Family support in self-management for diabetes patients, such as adhering to the recommended diet for those living with diabetes, is crucial.	Family members influence adult diabetes sufferers' self-management and dietary compliance, playing a critical role in maintaining lifestyle changes and optimizing diabetes management.	-
Agustini et al, 2019 (19)	To comprehend the correlation between family support and resilience in teenagers afflicted with T1DM	Quantitative, A quasi-experimental design	43 teenagers with diabetes Indonesia	The amount of received family support was mostly high (55.8%).	Family support includes informational, emotional, esteem, and instrumental support.	Family support can increase adolescent resilience by 4.67 times. Parents' or families' support system plays a crucial role in assisting adolescents in developing effective coping strategies to handle physical and psychosocial challenges. Family is significantly related to adherence to diabetes therapy	-
Poonprapai et al, 2022 (20)	To assess the impact of pharmacists' family support-based mobile applications on clinical outcomes, family behavior, diabetes knowledge, self-management practices, and medication adherence in elderly patients with T2DM	Quantitative, a randomised controlled trial	166 patients Thailand	There was a decrease in HbA1c levels.	Family support provides information on diabetes care and self-management for family members living with diabetes.	Helping elderly individuals with diabetes achieve better glycemic control.	-
Withidpanyawong et al, 2019 (21)	To determine the effectiveness of family interventions for T2DM and examine predictors of glycemic control	Quantitative, prospective randomised controlled trial	196 patients Thailand	The intervention group showed a significant decrease in HbA1c compared to the control group, with partners or female family members being strong predictors of improved glycemic control.	The family provides positive support and is involved in providing health education to family members who have diabetes.	The patient is experiencing a decrease in HbA1c levels, an increase in self-efficacy, medication adherence, and self-management.	A family approach that provides negative support (e.g., nagging and arguing with individuals with diabetes to adhere to self-care practices) is discussed.

Table 2. Continued.

Author	Objective	Method	Participants and Country	Findings	Family Support	Benefits of Family Support	Family Obstacles
Fridolin et al, 2020 (22)	To pinpoint the role of family healthcare in the treatment of elderly individuals with DM	Quantitative, descriptive	44 families Indonesia	Of the 28 respondents, 63.6% of households did not perform the family health care function.	Only 36.4% of families provide healthcare for family members with diabetes by supporting their treatment.	We are improving glycemic control and monitoring for signs of complications	The family views diabetes as harmless, and their economic problems have an impact.
Anita and Daniel Hasibuan (23)	To examine the relationship between family support and blood sugar control in type 2 diabetes patients undergoing treatment at Aminah Hospital	Quantitative, descriptive correlation	48 patients Indonesia	Approximately 88% of the respondents with good family support had controlled blood sugar levels.	The family accompanies the person with diabetes for treatment, reminds them to take their medication, advises them to monitor their diet, and suggests checking their blood sugar levels.	Blood sugar levels can be controlled.	-
Marlinda et al, 2019 (24)	To study the correlation between family support and self-care activities among patients suffering from T2DM in Puskesmas II Denpasar Barat	Quantitative, analitik korelatif,	99 patients Indonesia	Overall, 59 respondents (59.6%) had family support in the sufficient category, and 77 (77.8%) respondents had self-care activities in the good category.	The family plays an active role in the treatment and care of family members with diabetes.	Individuals with diabetes perform good self-care activities.	The busyness of family members often leads them to rarely being at home and seldom spending time with the patient to keep them company, chat, supervise, or provide information about the patient's health, resulting in a lack of attention.
Rahmadani et al, 2019 (25)	To analyze the relationship between family social support and self-care behavior of type 2 diabetes clients in the working area of the Kaliwates Health Center, Jember	Quantitative, observational analytic design	84 patients Indonesia	A total of 82 people (97.6%) exhibited good family social support.	We provide emotional, esteem, instrumental, and informational support.	There are improvements in self-care behavior	Families often lack the necessary knowledge about diabetes.
Widya Hendrawati et al, 2022 (26)	To improve the understanding and abilities of families in providing at-home care for patients with DM	quantitative	10 families Indonesia	Improving the skills and knowledge of families regarding the care of family members with diabetes at home was a priority.	We provide assistance in meal preparation, oversee dietary compliance, and inspire patients to stay motivated in their homes.	Dietary patterns, treatments, and signs of complications are monitored.	-
Windani Mambang Sari et al, 2016 (27)	To determine how a family-based foot care education program affects the foot care habits of individuals with diabetes	Quantitative, quasi Eksperimental	72 patients and families Indonesia	Patients with diabetes were improving their foot care habits.	Family members with diabetes require assistance with foot care.	The behavior of diabetes patients regarding foot care has improved.	-
Yuwono et al, 2023 (28)	To comprehend the attitudes and motivations of families in the Adimulyo Health Center's working area, as they care for family members with MD	Quantitative deskriptif	80 families Indonesia	The family's attitudes and motivation were in the positive (73.8%) and strong (65%) categories, respectively.	Family support includes providing motivation and a positive attitude in caring for family members with diabetes.	Diabetics can implement the 5 main pillars of diabetes management, helping them determine the direction and goals they want to achieve (e.g., controlling blood sugar levels and maintaining a satisfactory quality of life).	-

Table 2. Continued.

Author	Objective	Method	Participants and Country	Findings	Family Support	Benefits of Family Support	Family Obstacles
Low et al, 2016 (29)	To comprehend the impact of social networks, including family members, friends, peers, and healthcare providers, on the help-seeking behavior of patients with T2DM in both government and private primary care services	Qualitative	39 healthcare workers, patients, and families Malaysia	Diabetes patients sought assistance with treatment-related decisions.	The family support includes emotional support, affection, and social interaction.	The process of making decisions about treatment, diet, and accepting treatment-related information undergoes changes.	A less close family relationship will influence diabetes patients' decisions about their treatment.
Rashid et al, 2018 (30)	To report the social support and self-efficacy of T2DM patients in Malaysia, as well as their correlation	Quantitative, cross-sectional	329 patients Malaysia	Social support enhanced patients' self-efficacy in managing their own treatment.	The family provides social support through emotional support, affection, and social interaction.	The patient's confidence in the treatment they are receiving has increased.	
Ha et al, 2021 (31)	To understand the relationship between family support, nutrition, and health education provided by health workers, and the status of overweight and obesity in patients with T2DM undergoing outpatient treatment at the hospital	Quantitative, descriptive cross-sectional	280 patients Vietnam	Patients who had never or rarely received family support or counseling from healthcare professionals were more vulnerable to being overweight and obese compared to patients who frequently received support and counseling (OR = 1.41 vs. 2.06; $P < .05$).	Family members with diabetes receive assistance in managing their diet.	Individuals with diabetes can benefit from changing their eating habits and exercising.	
Thongduang et al, 2022 (32)	To ascertain the impact of family caregivers' diabetes knowledge and behavior on the quality of life of elderly patients suffering from DM	Quantitative cross-sectional study	354 patients Thailand	Social support for family caregivers could improve diabetes management practices and patients' quality of life.	Information, support, and care related to diabetes experienced by family members are provided.	The focus is on improving self-care practices for individuals with diabetes.	Caregivers lack knowledge about DM.
Rizky et al, 2022 (33)	To provide nursing care to families with, focusing on the issues of ineffective health maintenance and anxiety	Case study	1 patient Indonesia	The family experienced an increase in knowledge, skills, and motivation to improve health status by fulfilling the five family health tasks.	Family support in diet planning and foot exercises is crucial.	The patient can perform self-care activities, such as foot exercises and anxiety management.	-
Bukhari et al, 2023 (34)	To understand the relationship between family nursing behavior and DM at Puskesmas 1 Juli, Juli District, Bireuen Regency	Quantitative, cross-sectional analytical	55 patients Indonesia	The family care behavior of individuals with DM demonstrated numerous positive behaviors. Therefore, the working hypothesis was accepted, indicating a relationship between family care behavior and DM status in Juli I District, Bireuen Regency.	Family support encompasses warmth and hospitality, as well as emotional support related to glucose monitoring, diet, and exercise.	Positive diabetes management behavior is observed.	

Note. HbA1c: Hemoglobin A1c; DFU: Diabetic foot ulcer; OR: Odds ratio.

adherence (16, 20, 21). In addition, social support (3 studies) involved companionship, social interaction, and integration within family activities (17, 26, 32). Finally, specialized care support (2 studies) focused on specific assistance with foot care routines and foot exercises to prevent diabetic complications (25, 34). As mentioned, family support in diabetes management in Southeast Asia encompasses seven distinct forms, with instrumental/nursing, informational, and emotional support being the most prevalent. These findings underscore the crucial role of the family as the primary support system for diabetes patients in the region.

Theme 2: Benefits of Family Support

Family support was associated with multiple positive outcomes across clinical, behavioral, and psychosocial domains. It was revealed that family support has a significant positive impact on various aspects of diabetes management, which can be categorized into three main dimensions. In terms of clinical outcomes (9 studies), family support contributes to improved glycemic control and reduced hemoglobin A1c levels (16, 21, 25, 26, 30, 31), improved wound healing, especially for diabetic foot ulcers (17), and improved monitoring and early detection of signs of complications (19, 23). In the behavioral

outcome dimension (13 studies), family support has been shown to improve medication adherence (15, 20, 21, 26, 30), self-care and diabetes self-management behaviors (22, 29), adoption of healthier eating habits and dietary adherence (27, 28, 32), physical activity and exercise patterns (32), and improved foot care behaviors (24, 25). Meanwhile, from the perspective of psychosocial outcomes (7 studies), family support promotes increased self-efficacy in diabetes management (21, 26, 30), quality of life (25), resilience, especially among adolescents with T1DM (15), better anxiety management (34), and the development of positive caregiving behaviors within the family (18). These findings indicate that family support provides a holistic impact encompassing biological, behavioral, and psychosocial aspects in diabetes care.

Theme 3: Barriers and Challenges to Family Support

Despite the positive impacts of family support, several significant barriers were identified across the studies that hindered effective diabetes care provision. Physical distance (1 study) emerged as a challenge when geographic separation due to work obligations created difficulties in providing daily support and monitoring (17). Likewise, negative family interactions (1 study) were observed in cases where families provided support in counterproductive ways (e.g., nagging, arguing, or criticizing patients about self-care), which hindered rather than helping diabetes management (30). Moreover, illness perception issues (1 study) arose when family members who did not perceive diabetes as a serious illness provided inadequate or inconsistent support (19). Further, economic constraints (1 study) limited families’ abilities to provide necessary resources for diabetes care, including medications, proper nutrition, and healthcare access (19). Time constraints (1 study) from competing responsibilities and busy schedules also reduced family members’ availability to provide support (21). Furthermore, knowledge deficits (2 studies) represented a recurring barrier, as insufficient understanding of diabetes management and care requirements among family members limited the quality and appropriateness of support provided to DM patients (22, 29). Ultimately, weak family relationships (1 study), characterized by a lack of emotional closeness or strained family dynamics, undermined support effectiveness (27). These barriers highlight the complex interplay of practical, relational, and knowledge-based factors that can impede family support delivery in diabetes care.

Figure 2 presents a conceptual model synthesizing our findings, illustrating the three main themes: (1) seven types of family support (center), (2) multi-level benefits across clinical, behavioral, and psychosocial domains (right), and (3) seven categories of barriers (left). Arrows indicate the relationships between support types and outcomes, while barriers are factors that can impede the support-outcome pathway.

Discussion

This review investigated how families in Southeast Asia support family members with DM.

Family Support

According to the review results in this study, families provided support in the form of information, emotional support, care, dietary support, motivation, and assistance in treatment. The family also created a home environment that could provide warmth for each family member and offered support in foot care. Other studies also supported these findings, showing that family support positively contributes to healthy eating patterns, increased perceptions of support, higher self-efficacy, better psychological well-being, and better glycemic control (37). Similarly, some studies reported that support from partners and family plays a crucial role in reducing negative behaviors while promoting behaviors that support diabetes management (38). Likewise, on study revealed that the role of family and social factors is crucial in diabetes management, particularly in overcoming internal family conflicts and ensuring the availability of adequate social support (39). This issue aligns with the theory that emphasizes the role of internal family functions and the importance of family involvement in providing holistic support, encompassing physical, emotional, social, and spiritual aspects, thereby strengthening these findings (14, 40). Accordingly, understanding the role of the family in providing support to individuals with chronic illnesses is essential to improving the quality of care and patient outcomes, as well as ensuring long-term success in their health management.

Family support is one of the most crucial aspects for every family member, especially for those experiencing chronic health issues. Additionally, it has a significant impact on life achievements and can serve as motivation for patients to improve the family care process (41-43). Therefore, family support (e.g., emotional support, information, diet, motivation, medication, and care, as well as warmth and foot care) can help individuals with diabetes improve their quality of life and adherence to

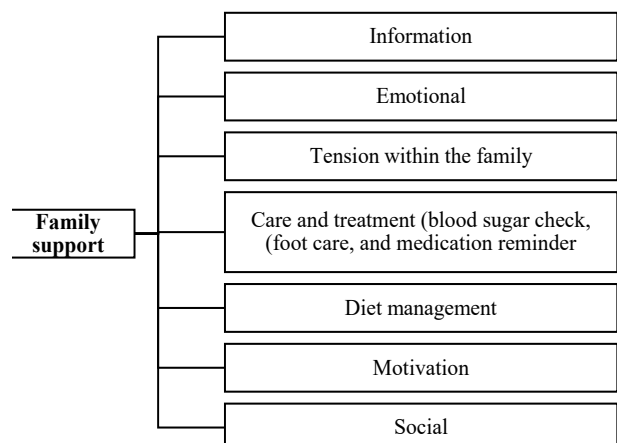


Figure 2. A Comprehensive Conceptual Model of Different Types of Family Support

treatment and dietary restrictions. Moreover, support from all elements within the community where individuals with diabetes live, as well as local health institutions, is crucial to assist families in providing optimal care for those with diabetes. Thus, families should be equipped with the latest evidence-based understanding and skills.

The forms of family support identified in our review reflect the collectivist cultural orientation characteristic of Southeast Asian societies, where interdependence and family obligation are central values (Hofstede, 2001). The prominence of instrumental support, including accompanying patients to appointments and providing direct care, may be more prevalent in Southeast Asia compared to individualistic Western cultures where personal autonomy is emphasized. However, our findings also revealed variability within the region, with Indonesian studies reporting more diverse support types compared to studies from other countries, possibly reflecting Indonesia's larger research output rather than true cultural differences. Notably, the effectiveness of different support types appears context-dependent. Emotional support was consistently associated with improved self-efficacy and medication adherence, suggesting its universal importance. Nonetheless, informational support was occasionally provided in negative ways (e.g., nagging), indicating that the manner of delivery matters as much as the support itself. This finding has important implications for family education programs, which should address not only what information to provide but how to communicate supportively.

Therefore, it is essential to develop educational and training programs using up-to-date resources for families in an effort to enhance their ability to provide support to members living with DM. Health professionals, especially those working in community health centers, need to involve families in the care process and provide guidance on the forms of support required by individuals with DM. In addition, it is crucial for the government and related institutions to provide social and psychological support services that families and individuals with diabetes can access.

Benefits of Family Support

The results of the article review in this study indicated that there is control over blood sugar levels, wound healing, dietary compliance, lifestyle changes, increased self-efficacy, and adherence to treatment. Families that can perform healthcare functions can resolve health issues and will influence the quality of life of families living with DM (14, 44). As a result, the family becomes the first place for ill members to receive care, and has a key role to success in providing treatment. Further, the family's support greatly influences the control of blood sugar levels.

Individuals with DM closely link their lifestyle adjustments to the support of their families. The family also makes modifications to the lifestyle of its diabetic members, such as regulating their eating patterns and the recommended diet for diabetics. The changes in lifestyle

undertaken by DM individuals result in better control of blood sugar levels, leading to improved vascularization in areas of the body that have sustained injuries and facilitating a more effective wound healing process. Moreover, receiving positive support from family boosts the confidence of DM individuals in undergoing their treatment process and makes them more enthusiastic about living their lives.

Additionally, family support demonstrates both immediate clinical benefits and sustained behavioral changes, though the temporal patterns differ across outcome types. Likewise, studies with shorter follow-up periods have shown rapid improvements in glycemic control (16, 31) and medication adherence (20), suggesting that family support can produce measurable clinical benefits relatively quickly. Longer-term outcomes include lifestyle modifications, such as dietary adherence (27, 28, 32) and regular exercise patterns, which require ongoing motivation and environmental support. Based on these findings, family support operates through distinct pathways for acute versus chronic outcomes, providing immediate accountability for medication use while facilitating the gradual internalization of healthy behaviors through ongoing encouragement and environmental improvements.

Therefore, to achieve optimal results, collaboration with those closest to them (e.g., the family of the person with DM) is essential. Furthermore, accessible healthcare services are needed for people with diabetes. Similarly, it is necessary to implement health programs that prioritize not only patients but also involve and empower their families in the care and treatment process. Furthermore, the government should provide community programs (e.g., group exercises) to maintain fitness for people with diabetes.

Obstacles to Providing Family Support

Our review findings revealed that obstacles to caring for family members include lack of living together, economic factors, a lack of understanding about diabetes within the family, employment issues, and a lack of closeness among family members. The family's ability to provide care or maintain health affects the health status of its members, while economic status influences the family's capacity to manage diabetes care (45, 46).

As a result, a sick family member will affect the entire family, particularly if the illness is chronic. In families with a lower-middle economic status, this condition can lead to a serious financial burden. A healthy family will take various measures to care for a sick member, but these efforts typically require a significant amount of money. It should be noted that this financial burden can cause stress and tension in family relationships, and family members may have to sacrifice their personal needs in order to meet a sick family member's healthcare needs. Moreover, families occasionally find themselves compelled to seek financial assistance from relatives or social institutions. This situation can also impact the family's long-term

plans, such as children's education or retirement plans. In addition, financial limitations can restrict families' access to optimal healthcare, and this situation may encourage other family members to pursue jobs with higher earnings. However, sometimes the job requires them not to live under the same roof due to the long distance between the workplace and home, thereby posing new challenges in terms of care and direct support for sick family members. Although it may be financially beneficial, this situation can lead to emotional dilemmas for family members who have to work far away. Additionally, they may feel guilty for not being able to provide daily direct support. In this situation, long-distance communication has become highly essential to maintain family bonds.

To reduce the financial burden on families with members suffering from chronic illnesses, free health insurance provided by the government is necessary. This health insurance system should be designed to cover not only direct medical costs, but also additional expenses, such as transportation to healthcare facilities and home care. Furthermore, it is important to ensure that this health insurance is easily accessible and usable by all segments of society, including those living in remote areas or those who are less fortunate socio-economically.

Comparison With Existing Literature

Our findings are consistent with those of previous research on family support in chronic disease management. The predominance of informational and emotional support identified in our review is in line with systematic reviews from other regions (37), suggesting the universal importance of these support types regardless of cultural contexts. However, our review revealed Southeast Asia-specific patterns, particularly the emphasis on dietary support and family involvement in meal preparation, which may reflect the collectivist cultural values and family-centered food practices prevalent in this region.

The positive association between family support and glycemic control observed across multiple studies (16, 21, 25, 30, 31) corroborates the findings of meta-analyses in Western populations (47), demonstrating that family involvement in diabetes care transcends cultural boundaries. However, our review also identified unique challenges, such as the perception of diabetes as non-serious illness by some Southeast Asian families (19), which has received limited attention in Western literature where disease awareness is generally higher.

The barriers identified in our review, particularly knowledge deficits and economic constraints, parallel the findings of systematic reviews in low-income and middle-income countries (39), indicating that socioeconomic factors may be equally or more influential than cultural factors in shaping family support patterns. The paucity of studies from several Southeast Asian countries (e.g., Singapore, Philippines, Myanmar, Cambodia, Laos, Brunei, and Timor Leste) represents a significant gap compared to diabetes research in other regions, highlighting the need for more geographically diverse

research.

Figure 2 displays a comprehensive conceptual model of different types of family support that synthesizes our findings.

Limitations of the Study

This scoping review had several limitations that should be considered when interpreting the findings. First, our search was restricted to English and Indonesian language publications, potentially excluding relevant studies published in other Southeast Asian languages (Thai, Vietnamese, Malay, and the like), which may have introduced language bias and limited our ability to capture the full scope of research from non-English-dominant countries.

In addition, although 11 databases were searched, gray literature sources (e.g., government reports, conference proceedings, or unpublished theses) were not systematically investigated, which could contain valuable information about family support interventions and programs not captured in peer-reviewed journals. Eventually, the geographic distribution of the included studies was highly uneven, with 63% from Indonesia while excluding studies from six Southeast Asian countries (i.e., Singapore, Philippines, Myanmar, Cambodia, Laos, Brunei Darussalam, and Timor Leste), limiting generalizability across the region.

Conclusion

This scoping review demonstrated that family support in Southeast Asian diabetes care manifests through seven distinct forms—informational, emotional, instrumental, dietary, treatment, social, and specialized care support—each contributing to improved clinical outcomes, enhanced self-care behaviors, and better psychosocial wellbeing. However, the effectiveness of this support is moderated by serious barriers, including geographic distance, economic constraints, knowledge deficits, and maladaptive interaction patterns.

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Competing Interests

The authors declare there is no conflict of interests in writing this work.

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