Sport Science and Health, 8 (4), 2026, 554-569
ISSN: 2715-3886 (online)
DOI: 10.17977/um062v8i42026p554-569

The Effect of Social Support on Stress Levels Among Adult and Elderly Patients with Diabetes Mellitus Receiving Outpatient Care: A Systematic Review

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Paper received: 08-06-2026; revised: 22-06-2026; accepted: 01-07-2026

Abstract

Diabetes mellitus (DM) is a chronic disease that can cause psychological stress due to the demands of ongoing disease management. Social support plays a crucial role in helping patients cope with the various pressures they experience during treatment. To analyze the effect of social support on stress levels in adult and elderly patients with diabetes mellitus undergoing outpatient care. This systematic review method using the PRISMA flowchart. Articles were retrieved from the PubMed, ScienceDirect, Scopus, ProQuest, and Semantic Scholar databases for the years 2022–2026. The data selection and extraction process was conducted using the RAYYAN application, while article quality was evaluated using the Joanna Briggs Institute (JBI) assessment tool. A total of 13 articles meeting the inclusion criteria were analyzed using the PICOS framework. The results indicate that social support is associated with reduced stress levels in adult and elderly patients with diabetes mellitus receiving outpatient care. The higher the level of social support received, the better the patients' psychological condition and quality of life. The involvement of family, friends, caregivers, and healthcare providers needs to be enhanced as part of a holistic approach in the care of DM patients to help reduce stress, improve psychological well-being, and support successful long-term disease management.

Keywords: social support, stress level, diabetes mellitus, adult patients, elderly patients, and outpatient care.

Abstrak

Diabetes Mellitus (DM) merupakan penyakit kronis yang dapat menimbulkan stres psikologis akibat tuntutan pengelolaan penyakit yang berkelanjutan. Dukungan sosial berperan penting dalam membantu pasien menghadapi berbagai tekanan yang dialami selama menjalani perawatan. Menganalisis pengaruh dukungan sosial terhadap tingkat stres pada pasien Diabetes Mellitus dewasa dan lansia yang menjalani perawatan rawat jalan. Tinjauan sistematis dengan diagram alur PRISMA. Artikel diperoleh dari database PubMed, ScienceDirect, Scopus, ProQuest, dan Semantic Scholar pada rentang tahun 2022–2026. Proses seleksi dan ekstraksi data dilakukan menggunakan aplikasi RAYYAN, sedangkan kualitas artikel dievaluasi menggunakan instrumen penilaian dari Joanna Briggs Institute (JBI). Sebanyak 13 artikel yang memenuhi kriteria inklusi dianalisis menggunakan kerangka PICOS. Hasil menunjukkan bahwa dukungan sosial berhubungan dengan penurunan tingkat stres pada pasien Diabetes Mellitus dewasa dan lansia yang menjalani perawatan rawat jalan. Semakin tinggi dukungan sosial yang diterima, semakin baik kondisi psikologis dan kualitas hidup pasien. Keterlibatan keluarga, teman, caregiver, dan tenaga kesehatan perlu ditingkatkan sebagai bagian dari pendekatan holistik dalam perawatan pasien Diabetes Mellitus untuk membantu menurunkan stres, meningkatkan kesejahteraan psikologis, serta mendukung keberhasilan pengelolaan penyakit dalam jangka panjang.

Kata kunci: dukungan sosial, tingkat stres, diabetes melitus, pasien dewasa, pasien lansia, perawatan rawat jalan.

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1. Introduction

Diabetes Mellitus (DM) is a chronic metabolic disease characterized by elevated blood glucose levels due to impaired insulin secretion, impaired insulin action, or a combination of both. This disease is one of the growing global health problems and has a significant impact on patients' quality of life, the healthcare system, and the economic burden on society (Moreira et al., 2025). In addition to causing physical complications, Diabetes Mellitus (DM) is also associated with various psychological issues such as anxiety, depression, diabetes distress, and chronic stress, which can affect the success of disease management (Erdoğan & Heja, 2025; C. Zhang et al., 2025).

In Indonesia, Diabetes Mellitus is a health issue that continues to rise. The International Diabetes Federation (IDF) reports that the number of people with diabetes in Indonesia will reach 19.5 million by 2025, placing Indonesia fifth in the world in terms of the number of people with DM (International Diabetes Federation, 2025). Data from the 2023 Indonesian Health Survey (SKI) shows a prevalence of DM among the population aged 15 years and older of 11.7%, an increase from 10.9% in 2018 (Kementerian Kesehatan RI, 2023). This situation indicates that diabetes poses a serious challenge to the healthcare system in Indonesia, particularly if not balanced by optimal control efforts (Farahani et al., 2025).

Various studies have shown that people with diabetes mellitus are prone to stress, anxiety, and even depression due to the demands of consistent self-management. Stress is one of the most common psychological issues found in patients with diabetes mellitus (Najeeb et al., 2024). Stress in diabetic patients can arise from the demands of managing a complex disease, dietary restrictions, long-term medication use, routine blood glucose monitoring, and concerns about potential complications (Kanny et al., 2025; Mangoulia et al., 2024). This condition is known as diabetes distress, which refers to emotional distress specifically associated with living with diabetes. Recent meta-analysis research indicates that diabetes distress is correlated with poor glycemic control, low treatment adherence, increased rates of complications, and a decline in patients' quality of life (Marti, 2025; Williams et al., 2025).

Adults and older adults receiving outpatient care are a population highly vulnerable to stress. Among adults, stress is often influenced by work demands, family responsibilities, and the financial burden of medical costs (Marti, 2025; Pinho & Afonso, 2025). Meanwhile, among older adults, stress is influenced by declining physical function, limited mobility, dependence on family members, and an increased risk of complications from chronic diseases (Verma et al., 2025). Research on elderly patients with diabetes indicates that patients' quality of life is influenced not only by the condition itself but also by the involvement and support provided by family members in the daily care process (Zan et al., 2024).

Various studies have shown that people with diabetes mellitus are prone to experiencing stress, anxiety, and even depression due to the demands of consistent self-management (Liu, 2025; Young-hyman et al., 2024). Chronic stress that is not properly managed can disrupt hormonal balance, impair glycemic control, increase the risk of complications, and significantly reduce patients' quality of life (Hatamova et al., 2026). This situation underscores the importance of addressing psychological aspects in the management of chronic diseases such as diabetes.

Social support plays a crucial role as a protective factor against psychological stress. One protective factor proven to significantly reduce stress levels in diabetic patients is social

support (Chen et al., 2025). Social support is defined as the assistance an individual receives from their social environment, which can take the form of emotional, informational, instrumental, or appreciative support (Eshtaya et al., 2025). This support can come from family, partners, peers, the community, or healthcare providers. Theoretically, the Stress Buffering Theory explains that social support can reduce the negative impact of stress by enhancing an individual's coping abilities, sense of security, and confidence in addressing the health issues they face (Puig-garcía et al., 2025; Wang et al., 2023).

Although numerous studies have demonstrated that social support is associated with psychological outcomes among patients with diabetes mellitus, the available evidence remains fragmented. Previous studies have predominantly focused on specific psychological outcomes such as diabetes distress, depression, self-efficacy, or quality of life, while only a limited number of studies have comprehensively synthesized the relationship between social support and stress levels among adult and elderly patients receiving outpatient care. Moreover, previous reviews generally combined various chronic diseases, inpatient populations, or different age groups without specifically addressing outpatient diabetes management. Considering that outpatient care requires continuous self-management and long-term psychosocial adaptation, understanding the role of social support in reducing stress among this population is particularly important. Therefore, this systematic review aims to synthesize the latest evidence regarding the effect of social support on stress levels among adult and elderly patients with diabetes mellitus receiving outpatient care and to identify the mechanisms through which social support contributes to better psychological outcomes. Therefore, this systematic review was conducted to synthensively evaluate the current evidence regarding the effect of social support on stress levels among adult and elderly patients with diabetes mellitus receiving outpatient care. The findings are expected to provide evidence-based recommendations for integrating psychosocial interventions into diabetes management programs.

2. Methods

This study used a systematic review method that followed the systematic literature review reporting guidelines recommended by the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA). The researcher applied the PICOs (*Population, Intervention, Comparison, Outcome, and Study Design*) framework to achieve the research objectives. Furthermore, the reviewed articles went through an analysis and *appraisal* process using the *Joanna Briggs Institute (JBI)* guidelines. Aspects assessed included the methodological quality of the article to determine the extent to which the study addressed potential bias in its design, conduct, and analysis.

Data collection was conducted by searching five electronic databases, namely PubMed, ScienceDirect, Scopus, ProQuest, and Semantic Scholar. The search strategy was developed using Boolean operators (AND, OR) and adapted to the indexing terms and search features of each database. The primary search string was: ("Diabetes Mellitus" OR "Type 2 Diabetes Mellitus" OR T2DM) AND ("Social Support" OR "Family Support" OR "Peer Support" OR "Perceived Social Support") AND ("Stress" OR "Stress Level" OR "Psychological Stress" OR "Perceived Stress") AND ("Outpatient Care" OR Outpatients OR "Ambulatory Care" OR "Outpatient Clinic"). The search was further refined by applying the inclusion criteria of adult and elderly patients with diabetes mellitus receiving outpatient care. Only original research

articles published between 2023 and 2025 in English or Indonesian were included in this review.

Studies were selected using the PICOS framework. The inclusion criteria were: adult and elderly patients diagnosed with diabetes mellitus, outpatient setting, studies evaluating social support as the primary independent variable, psychological stress or related psychological outcomes as dependent variables, observational quantitative studies published in English, full-text articles published between 2022 and 2026. Exclusion criteria included: review articles, conference abstracts, case reports, qualitative studies, duplicated publications, studies without full text, studies not directly evaluating social support.

All retrieved references were exported into Rayyan software to facilitate duplicate removal and independent screening. Two reviewers independently assessed titles, abstracts, and full-text articles according to the eligibility criteria. Disagreements were resolved through discussion until consensus was achieved. Data extracted from eligible studies included authors, publication year, country, study design, sample characteristics, measurement instruments, outcomes, and principal findings. Methodological quality was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist appropriate for cross-sectional studies.

Data collection in this study was carried out by searching for articles in a predetermined database. The selection of databases uses various sources such as Pubmed, Scopus, ScienceDirect, ProQuest and Semantic Scholar. The literature was systematically conducted according to the reporting items using PRISMA. Researchers searched for English language studies according to terms and keywords: Social support, Stress level, Diabetes mellitus, Adult patients, Elderly patients, and Outpatient care. The identification results in the database did not retrieve books, historical articles, systematic reviews, and literature; articles only displayed abstracts.

Subsequently, the studies identified in the database search were exported as ris. The reference management files were then exported to RAYYAN for duplicate, title, abstract and full-text screening. The researchers screened all articles' titles and abstracts for eligibility against the inclusion criteria. Articles were selected based on searches that used English, research conducted in developed and developing countries, available *full text*, and PICOs. Where Population (P): Adult and elderly patients with diabetes mellitus (DM) receiving outpatient care, Intervention (I): Social support, Comparative (C): Patients with low social support, Outcome (O): Stress levels. The exclusion criteria of this systematic review are those that do not match the PICOs and articles that are not available in *full text* or errors when downloading articles.One thousand seven hundred two articles from various databases were collected from search results from 2022-2026. Subsequently, 41 articles were submitted for eligibility review. In the end, only 13 articles were extracted the article search process in the *Prism Flow Diagram in* Figure 1.

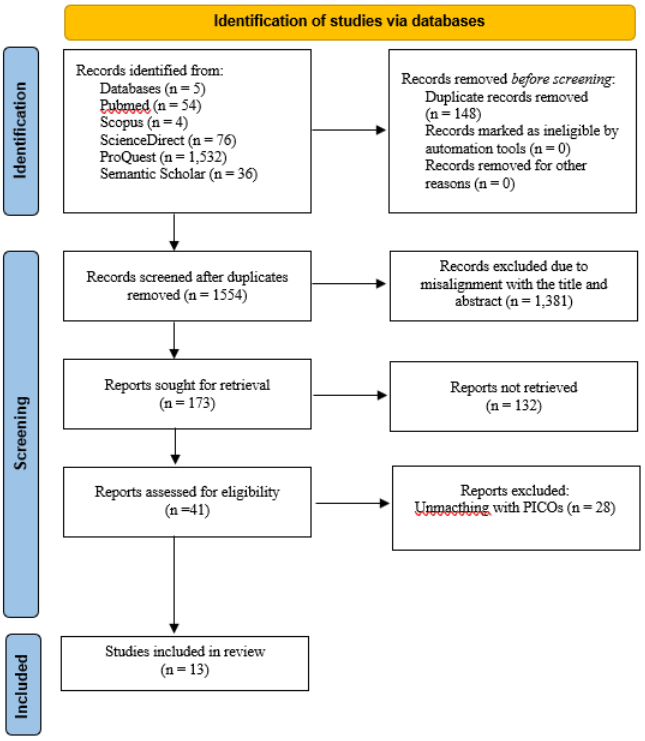


Figure 1. PRISMA Flow Chart

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3. Results and Discussion

The analysis was conducted on 13 articles selected based on their methodological relevance to social support and stress levels among adult and elderly patients with Diabetes Mellitus receiving outpatient care, following the PRISMA procedure. Each article underwent a screening and eligibility assessment process based on the study design, population characteristics, instruments used, and reported outcomes related to social support and psychological well-being.

All included studies employed a cross-sectional design and were conducted in various countries, including China, Indonesia, and other developing regions. Six studies focused on adult patients with Type 2 Diabetes Mellitus, while seven studies examined elderly patients with Diabetes Mellitus.

Table 1. Synthesized results of articles that are the main references in the research

No	Age Group	Authors/year	Title	Methods	Sample	Instruments	Outcome of the study	Results
1.	Adult	(H. Zhang & Li, 2023)	The Mediating Role of Diabetes Stigma and Self-Efficacy in Relieving Diabetes Distress among Patients with Type 2 Diabetes Mellitus	Cross-Sectional	431 patients with type 2 diabetes	PSSS, DDS, DSAS-2, Self-Efficacy Scale	Diabetes Distress, Self-Efficacy, Stigma Diabetes	Higher levels of social support are associated with lower levels of diabetes distress. This effect is mediated by self-efficacy and diabetes stigma. Patients who receive support from family, friends, and healthcare providers demonstrate better coping skills with chronic illness and experience lower levels of psychological distress compared to patients with low social support.
2.	Adult	(Wang et al., 2023)	The Associations Between Social Support, Self-	Cross-Sectional	244 patients with type 2 diabetes	Social Support Rating Scale	Self-Regulatory Fatigue, Health-	Social support acts as a protective factor that helps patients reduce

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			Regulatory Fatigue, and Health-Promoting Behaviors among People with Type 2 Diabetes Mellitus				Promoting Behaviors	psychological fatigue during long-term treatment. Patients with high levels of social support demonstrate better health behaviors, higher treatment adherence, and lower stress levels.
3.	Adult	(C. Zhang et al., 2025)	Symptoms of Depression, Perceived Social Support, and Medical Coping Modes among Middle-aged and Elderly Patients with Type 2 Diabetes	Cross-Sectional	275 middle-aged and elderly patients with diabetes	MSPSS, SDS	Depresi, Medical Coping	High levels of social support are associated with a reduction in depressive symptoms and an increase in positive coping strategies. Patients who feel they receive emotional and practical support from their families are better able to manage the stress associated with diabetes.
4.	Adult	(Pandan Enggarwati, Debie Dahlia, 2024)	Social Support, Depression, and Self-Care among Adults with Type 2 Diabetes	Cross-Sectional	200 adult patients with diabetes	MSPSS	Self-Care, Depresi	Social support improves diabetes patients' ability to manage their own care, including adherence to diet, physical activity, and medication. Improved self-care contributes to a reduction in depression and psychological stress.
5.	Adult	(Sarwono et al., 2025)	Social Support, Psychological Distress, and Quality of Life	Cross-Sectional	60 community-based diabetes patients	MSPSS, K10	Psychological Distress, Quality of Life	Patients who receive strong social support experience lower levels of psychological distress and enjoy a better

			among Patients with Diabetes Mellitus					quality of life. Social support helps patients cope with the burden of chronic illness and any complications that may arise.
6.	Adult	(Sowwam et al., 2025)	The Relationship Between Social Support and Self-Concept in Patients with Diabetes Mellitus	Cross-Sectional	57 patients with diabetes	Social Support Questionnaire	Self-Concept	There is a significant association between social support and self-concept ($p = 0.003$; $r = 0.384$). The higher the level of social support, the more positive the patient's self-concept.
7.	Elderly	(Idda Fauziyyah, Eppy Setiyowati, Erna Ni'matus Sa'diyyah, 2024)	Social Support and Quality of Life Among Older Adults with Diabetes Mellitus	Cross-Sectional	32 older adults with diabetes	MSPSS dan DQOL	Quality of Life	Older adults who receive a high level of social support have a better quality of life. Family support helps older adults cope with the physical and psychological limitations caused by diabetes and reduces feelings of loneliness and stress.
8.	Elderly	(Zan et al., 2024)	Factors Associated with Quality of Life among Elderly Patients with Type 2 Diabetes Mellitus: The Role of Family Caregivers	Cross-Sectional	30 elderly people with diabetes	DDS and Family Support Questionnaire	Quality of Life	Research shows that family factors, caregiver competence, and family support significantly contribute to the quality of life of older adults with type 2 diabetes. Strong family support helps patients manage their chronic

								condition, improves treatment adherence, and reduces the psychological burden associated with diabetes.
9.	Elderly	(Hasaroh et al., 2024)	The Relationship Between Family Support as Caregiver with the Quality of Life of Elderly Diabetes Mellitus Patients in the Outpatient Facility of Haji Adam Malik Hospital Medan	Cross-Sectional	167 elderly people with diabetes	Social Support Scale	Quality of Life	Research shows that family support as caregivers is positively associated with the quality of life of older adults with diabetes. Older adults who receive emotional, instrumental, and informational support, as well as recognition from their families, demonstrate better coping skills with chronic illness, higher medication adherence, and better psychological well-being.
10.	Elderly	(Yuliyanah et al., 2023)	The Relationship Between Social Support and Depression in Older Adults with Type 2 Diabetes in Primary Care	Cross-Sectional	89 elderly people with diabetes	MSPSS dan GDS	Depression	Older adults with low levels of social support have higher rates of depression. Social support acts as a protective factor against the psychological disorders commonly experienced by older adults with diabetes.
11.	Elderly	(Farahdina, 2024)	The Effect of Health Locus of Control, Optimism, and	Cross-Sectional	161 elderly people with diabetes	DQoL and MDQ	Quality of Life	Social support has a significant impact on the quality of life of older adults

			Social Support on the Quality of Life of Elderly Patients with Type 2 Diabetes Mellitus					with diabetes, along with other psychological factors.
12.	Elderly	(Inayati et al., 2024)	The Relationship of Family Support and Self-Efficacy with the Quality of Life of Elderly People with Diabetes Mellitus	Cross-Sectional	50 Elderly People with Diabetes	Family Support Questionnaire	Self-Efficacy, Quality of Life	Strong family support enhances self-efficacy and quality of life among older adults. Older adults who feel supported are more motivated to adhere to their treatment and manage their conditions.
13.	Elderly	(Purba, Rentawati; Barus, 2025)	The Relationship Between Social Support and Quality of Life Among Older Adults with Diabetes Mellitus at Sembiring Deli Tua General Hospital in 2025	Cross-Sectional	68 Elderly People with Diabetes	DASS-Stress	Quality of Life, Stress	The study found a significant association between social support and quality of life among older adults with diabetes. Older adults who received strong emotional, informational, and instrumental support from their families reported a higher quality of life compared to those with low levels of support.

Based on a systematic review of 13 articles that met the inclusion criteria, 6 articles were identified that studied adult patients with diabetes mellitus (DM) and 7 articles that studied elderly patients with DM. All studies used a cross-sectional design, with sample sizes ranging from 30 to 431 respondents. The instruments used in the studies included various standard measurement tools such as the Multidimensional Scale of Perceived Social Support (MSPSS), the Perceived Social Support Scale (PSSS), the Diabetes Distress Scale (DDS), the Self-Rating Depression Scale (SDS), the Geriatric Depression Scale (GDS), the Diabetes Quality of Life (DQOL), the Kessler Psychological Distress Scale (K10), and various other family support questionnaires. Analysis of all articles indicates that social support is a factor consistently associated with reduced psychological stress, diabetes distress, depression, and psychological distress, as well as improved quality of life, self-efficacy, self-concept, and self-care behaviors in patients with Diabetes Mellitus.

Among adult groups, the study conducted by Zhang and Li (2023) had the largest sample size, comprising 431 patients with type 2 diabetes mellitus. This study found that patients with high levels of social support exhibited significantly lower levels of diabetes distress compared to patients with low social support. Diabetes distress is a condition of emotional stress specifically related to the burden of managing diabetes, such as the necessity of maintaining a healthy diet, engaging in regular physical activity, monitoring blood sugar levels, undergoing medication therapy, and concerns about disease complications. The study results indicate that social support from family, friends, and healthcare providers can reduce this psychological burden by enhancing self-efficacy and reducing diabetes stigma. Patients who receive good social support feel more confident in managing their condition, do not feel alone in facing health issues, and are better equipped to handle the various challenges that arise during treatment. Conversely, patients with insufficient social support tend to experience higher levels of anxiety, frustration, and emotional exhaustion. A study by Wang et al. (2023) involving 244 patients with type 2 diabetes showed that social support is significantly associated with a reduction in self-regulatory fatigue. The results indicated that patients who received high levels of social support were better able to maintain healthy lifestyle behaviors, such as adherence to a diabetes diet, physical activity, weight management, and regular medication use. Patients who received social support from family and their surroundings also showed higher motivation in adhering to treatment compared to patients who did not receive adequate support. Social support helps patients reduce the emotional stress resulting from the lifelong demands of disease management, thereby lowering their stress levels.

Furthermore, a study by Zhang et al. (2025) involving 275 middle-aged and elderly patients with diabetes mellitus showed that social support is closely associated with patients' depressive symptoms and coping strategies. The results indicated that patients who received high levels of social support had lower depression scores compared to those who received low levels of social support. The emotional support provided by family helps patients better accept their condition, reduces feelings of hopelessness, and increases optimism about the future. Additionally, patients who feel supported by their families demonstrate more adaptive coping skills, such as seeking information about the disease, following healthcare professionals' recommendations, and maintaining a healthy lifestyle. A study by Pandan Enggarwati and Debie Dahlia (2024) involving 200 adult patients with diabetes mellitus (DM) showed that social support plays a crucial role in improving self-care behaviors. Patients who received support from their families demonstrated better adherence to dietary guidelines, physical activity, medication use, and routine health check-ups. The study results also indicate that

these improvements in self-care behaviors lead to reduced depression and psychological stress. Patients who receive social support feel more motivated to maintain their health due to the attention and involvement of their families in the treatment process.

A study by Sarwono et al. (2025) involving 60 community-based diabetes patients showed that social support is associated with patients' psychological distress and quality of life. Patients who received good social support exhibited lower levels of psychological distress compared to those who received less support. Additionally, the quality of life among patients in the group with high social support was also better. These findings suggest that social support plays a role in helping patients cope with various pressures arising from chronic illness, including fear of complications, activity limitations, and the necessary lifestyle changes (Li et al., 2025). The results of the study by Sowwam et al. (2025) indicate a significant association between social support and self-concept among diabetes patients, with a p-value of 0.003 and a correlation coefficient of r = 0.384. These results indicate a positive association of moderate strength, meaning that the higher the social support received by patients, the more positive their self-concept becomes. Patients with a positive self-concept tend to be more confident, more optimistic about treatment, and better able to manage stress compared to patients with a negative self-concept. Among the elderly population, all studies indicate that social support plays a crucial role in improving quality of life and psychological well-being. This is because the elderly are a group that is more vulnerable to psychological distress due to declining physical function, limited mobility, dependence on others, and an increased risk of disease complications.

A study by Fauziyyah, Setiyowati, and Sa'diyyah (2024) involving 32 older adults with diabetes mellitus (DM) showed that older adults receiving high levels of social support have a better quality of life compared to those with low social support. Family support helps older adults meet their daily needs, assists them in adhering to their treatment regimens, and provides a sense of security and comfort in coping with chronic illness. Older adults who receive good social support also exhibit lower levels of stress and anxiety compared to those who receive less support. A study by Zan et al. (2024) involving 30 older adults with type 2 diabetes showed that family factors and caregiver competence significantly contribute to patients' quality of life. Older adults who received strong family support demonstrated greater ability to control blood sugar levels, adhere to treatment, and maintain a healthy lifestyle. Additionally, the presence of competent caregivers helps older adults reduce emotional burdens and boost their self-confidence in managing daily life.

A study by Hasaroh et al. (2024) involving 167 older adults found that family support as caregivers has a positive association with patients' quality of life. Older adults who receive emotional, informational, instrumental, and appreciative support from their families have better psychological well-being and are better able to adapt to their illnesses. This support helps older adults reduce feelings of helplessness, increase motivation to undergo treatment, and strengthen their belief that their illness can be managed. A study by Yuliyanah et al. (2023) found that older adults with low social support had higher levels of depression compared to those with high social support. These findings suggest that social support acts as a protective factor against psychological disorders in older adults with diabetes. Older adults who receive attention and support from their families tend to have more stable emotional states and are better able to cope with various health issues. Farahdina's (2024) study indicates that social support is one of the factors that significantly influences the quality of life of older adults with

diabetes. Older adults who receive good social support demonstrate higher levels of life satisfaction, better adaptability to the disease, and more stable psychological conditions compared to those who receive less support. Research by Inayati et al. (2024) shows that family support has a positive relationship with self-efficacy and quality of life among older adults. Older adults who feel supported by their families have greater confidence in managing their illnesses, are more compliant with treatment, and are more optimistic about their daily lives. This increase in self-efficacy contributes to reduced stress and improved quality of life for patients. Meanwhile, a study by Purba and Barus (2025) involving 68 older adults with diabetes showed that there is a significant relationship between social support and quality of life. Older adults who receive good emotional, informational, and instrumental support from their families have a higher quality of life compared to older adults with low social support. This support helps older adults cope with various challenges arising from chronic illness, including physical limitations, dependence on others, and concerns about diabetes complications (Feleke & Ashager, 2025).

Overall, the results of the 13 articles show a consistent pattern that social support is an important factor influencing the psychological well-being of patients with diabetes mellitus in both adult and older adult groups. In the adult group, social support is associated with reduced diabetes distress, depression, and psychological distress, as well as improved self-concept, self-care, and disease management skills. Meanwhile, in the elderly group, social support is associated with improved quality of life, reduced depression, increased self-efficacy, and the ability to adapt to chronic illness. These findings indicate that the higher the level of social support received by patients with Diabetes Mellitus, the better their psychological condition and quality of life, and the lower the level of stress experienced during treatment and disease management.

The consistent findings across all included studies can be explained through the Stress Buffering Theory proposed by Cohen and Wills, which suggests that social support functions as a protective resource that reduces individuals' perceptions of stressful events. Patients receiving emotional support from family members, friends, or healthcare professionals perceive diabetes-related challenges as more manageable, thereby reducing psychological burden. Emotional encouragement enhances optimism and resilience, while informational support improves patients' understanding of disease management and reduces uncertainty. Instrumental support further decreases treatment burden by assisting patients with medication management, transportation, financial concerns, and daily diabetes care.

In addition, Social Cognitive Theory provides another explanation for these findings. According to Bandura, social support enhances self-efficacy, enabling patients to believe that they are capable of managing diabetes successfully. Higher self-efficacy improves treatment adherence, dietary compliance, blood glucose monitoring, physical activity, and medication adherence. Consequently, improved self-management reduces diabetes-related stress and psychological distress over time.

The synthesis also indicates that social support indirectly improves psychological outcomes through several mediating pathways, including increased coping ability, reduced diabetes stigma, improved self-concept, enhanced self-care behaviors, and greater treatment adherence. These mechanisms collectively contribute to lower stress levels and improved quality of life among patients with diabetes mellitus.

Interestingly, the influence of social support appears to be stronger among elderly patients than among adults. Older adults generally experience greater dependence on family members due to declining physical function, multiple chronic conditions, and limited social participation. Consequently, family support becomes the primary determinant of emotional well-being and successful disease management. Conversely, adult patients benefit not only from family support but also from workplace support, peer relationships, and healthcare professionals because they continue to face occupational and social responsibilities. These differences suggest that psychosocial interventions should be tailored according to patients' age and social context.

4. Conclusion

This systematic review demonstrates that social support consistently contributes to reducing stress, diabetes distress, depression, and psychological burden while improving self-efficacy, treatment adherence, self-care behaviors, and quality of life among adult and elderly patients with diabetes mellitus receiving outpatient care. The evidence indicates that family support, peer support, caregiver involvement, and healthcare professionals all play complementary roles in strengthening patients' psychological resilience.

From a practical perspective, healthcare systems should incorporate family-centered psychosocial interventions into routine diabetes management. Diabetes education programs should actively involve family members and caregivers to improve patients' coping strategies and long-term adherence to treatment. Healthcare providers should also routinely assess patients' psychosocial conditions and perceived social support during outpatient visits to identify individuals at higher risk of psychological distress. Strengthening multidisciplinary collaboration among physicians, nurses, psychologists, and family caregivers may further improve long-term diabetes outcomes and patients' overall quality of life.

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