Journal of Child, Family, and Consumer Studies Vol. 4, No. 1
Jan 2025, p: 1-11, e-ISSN: 2829 – 650 DOI: https://doi.org/10.29244/jcfcs.4.1.1-11

IMPACT OF FAMILY AND NURSE SUPPORT ON SELF-CARE BEHAVIOR IN DIABETES MELLITUS PATIENTS

Gita Angrini[1], Mikawati[2]*, Evi Lusiana[3], Julianus Ake[4], Hidayati Ismail[5]

[1,2,4,5] Bachelor of Nursing Study Program & Professional Nurse Program, STIKES Panakkukang, Makassar, Indonesia
[3.4]Diploma in Nursing Study Program, STIKES Panakkukang, Makassar, Indonesia

[*)] *Email: mikawati.skp@gmail.com*

Abstract

Diabetes mellitus is a metabolic disease characterized by increased blood glucose levels (hyperglycemia). This study aims to analyze the relationship between social support and nurse support with self-care behavior in diabetes mellitus patients in the working area of Samata Community Health Center, Gowa Regency. This research employs a quantitative approach with an analytical observational design using a cross-sectional study. The sample was selected using a non-probability sampling method with a purposive sampling approach, resulting in a total of 66 respondents. Data collection instruments included questionnaires for social support, nurse support, and the Summary of Diabetes Self-Care Activities (SDCA) for self-care behavior. The results showed that 89 percent of respondents received social support, 80 percent received nurse support, and 76% demonstrated self-care behavior. Statistical analysis using the Chi-square test, specifically the Continuity Correction test, yielded a p-value of 0.009 (p-value < α = 0.05). The findings indicate a significant relationship between social support and self-care behavior among diabetes mellitus patients in the working area of Samata Community Health Center, Gowa Regency. Additionally, nurse support was found to be significantly associated with self-care behavior, as nurses play a crucial role as educators by providing accurate information to diabetes mellitus patients. Future research is encouraged to explore other variables to expand the reference framework.

Keywords: diabetes patient, nurse support, self-care, social and family support

DAMPAK DUKUNGAN KELUARGA DAN PERAWAT TERHADAP PERILAKU SELF-CARE PADA PASIEN DIABETES MELITUS

Abstrak

Diabetes melitus adalah penyakit metabolik yang ditandai dengan peningkatan kadar glukosa dalam darah (hiperglikemia). Penelitian ini bertujuan untuk menganalisis hubungan antara dukungan sosial dan dukungan perawat dengan perilaku *self-care* pada pasien diabetes melitus di wilayah kerja Puskesmas Samata, Kabupaten Gowa. Penelitian ini menggunakan pendekatan kuantitatif dengan desain analitik observasional melalui studi *cross-sectional*. Sampel dipilih menggunakan metode *non-probability sampling* dengan pendekatan *purposive sampling*, menghasilkan total 66 responden. Instrumen pengumpulan data berupa kuesioner untuk mengukur dukungan sosial, dukungan perawat, serta *Summary of Diabetes Self-Care Activities* (SDCA) untuk perilaku *self-care*. Hasil penelitian menunjukkan bahwa 89 persen responden mendapatkan dukungan sosial, 80 persen mendapatkan dukungan perawat, dan 76 persen menunjukkan perilaku self-care. Analisis statistik menggunakan uji *Chi-square* dengan *Continuity Correction* menunjukkan nilai p sebesar 0,009 (*p-value* < α = 0,05). Hasil ini menunjukkan adanya hubungan yang signifikan antara dukungan sosial dan perilaku self-care pada pasien diabetes melitus di wilayah kerja Puskesmas Samata, Kabupaten Gowa. Selain itu, dukungan perawat juga memiliki hubungan yang signifikan dengan perilaku self-care, karena perawat berperan penting sebagai edukator dalam memberikan informasi yang tepat kepada penderita diabetes melitus. Penelitian selanjutnya disarankan untuk meneliti variabel lain guna memperluas referensi.

Kata kunci: dukungan keluarga dan sosial, dukungan perawat, pasien diabetes, perawatan diri

INTRODUCTION

The relationship between family social support and nurse support with self-care behavior in diabetes mellitus patients is a critical area of research, particularly in the context of rising diabetes prevalence globally. Diabetes Mellitus (DM) is a chronic metabolic disorder characterized by hyperglycemia, resulting from defects in insulin secretion, insulin action, or both. The World Health Organization (WHO) estimates that over 422 million people worldwide have diabetes, with projections indicating that this number could exceed 700 million by 2045 if current trends continue (Malini et al., 2020). The burden of diabetes is particularly pronounced in low- and middle-income countries, where nearly 80% of diabetes-related deaths occur (Ravi et al., 2018). In Indonesia, diabetes prevalence is rising, with South Sulawesi reporting significant cases, highlighting the urgent need for effective management strategies (Hu et al., 2022).

Self-care behavior is essential for managing diabetes effectively, as it encompasses a range of activities including diet management, physical activity, medication adherence, and regular monitoring of blood glucose levels. Studies have shown that social support, both from family and healthcare providers, plays a pivotal role in enhancing self-care behaviors among diabetes patients. For instance, Malini et al. found a positive correlation between social support and self-management, indicating that better social support leads to improved self-management practices (Hill et al., 2018). Similarly, Ravi et al. emphasized that supportive family behaviors significantly promote diabetes self-management, particularly in resource-limited settings (Habebo et al., 2020). This suggests that the presence of a supportive social network can mitigate the challenges faced by patients in adhering to their self-care regimens.

The impact of family support on diabetes management cannot be overstated. Family members often serve as primary caregivers and motivators, influencing patients' attitudes towards their health and encouraging adherence to treatment plans. Research indicates that patients who perceive higher levels of family support are more likely to engage in positive self-care behaviors (Carpenter et al., 2019). Conversely, a lack of support can lead to emotional distress and a decline in self-care practices, as noted by Hill et al., who reported that low social support is associated with disengagement from healthcare services (Alanzi, 2018). This highlights the importance of fostering a supportive family environment to enhance diabetes management outcomes.

In addition to family support, the role of healthcare providers, particularly nurses, is crucial in facilitating effective self-care among diabetes patients. Nurses are often the frontline healthcare workers who provide education, support, and monitoring for patients with diabetes. Their involvement can significantly influence patients' self-efficacy and motivation to manage their condition. A study by Paulsamy et al. demonstrated that nurse support is significantly associated with improved self-care behaviors and glycemic control among diabetes patients (Paulsamy et al., 2021). This underscores the necessity for healthcare systems to prioritize nurse-led interventions that focus on empowering patients through education and support.

Moreover, the integration of social support into diabetes care models has been shown to improve health outcomes. For example, interventions that incorporate family and community support have been linked to better adherence to diabetes self-management practices (Lee et al., 2021). The importance of addressing social determinants of health, including social support, is further emphasized by Frier et al., who argue that understanding the social context of patients is essential for effective diabetes management (Abbott et al., 2021). This perspective aligns with the growing recognition that diabetes care must extend beyond clinical interventions to include strategies that enhance social support networks.

Despite the established benefits of social support, gaps remain in the understanding of how different types of support—emotional, informational, and instrumental—affect self-care behaviors in diabetes patients. Research by Wang et al. suggests that while social support is beneficial, the specific dimensions that most significantly impact self-management behaviors require further exploration (Aschalew et al., 2019). Additionally, the variability in social support structures across different cultural contexts may influence the effectiveness of support interventions, as highlighted by Alabbas et al. in their systematic review (Wallace et al., 2018). This indicates a need for culturally tailored approaches to enhance the effectiveness of diabetes management strategies.

Furthermore, the COVID-19 pandemic has introduced additional challenges to diabetes management, exacerbating existing disparities in access to care and support. Many patients have reported disruptions in their self-management routines due to social isolation and reduced access to healthcare services (Yous et al., 2023). This situation has underscored the importance of leveraging technology and social media to maintain support networks and facilitate diabetes education (Liu et al., 2018). As healthcare systems adapt to these challenges, integrating virtual support mechanisms may prove essential in sustaining patient engagement and adherence to self-care practices.

The relationship between family social support and nurse support with self-care behavior in diabetes mellitus patients is multifaceted and critical for effective disease management. The evidence suggests that both family and healthcare provider support significantly enhance self-care behaviors, leading to improved health outcomes. However, further research is needed to delineate the specific types of support that are most effective and to develop culturally appropriate interventions that address the diverse needs of diabetes patients. As the prevalence of diabetes continues to rise, addressing these gaps will be vital in improving the quality of care and outcomes for individuals living with this chronic condition.

METHODS

The current study employs a quantitative research methodology characterized by a correlative descriptive design and a cross-sectional approach, aimed at elucidating the relationship between family social support and nurse support in relation to self-care behaviors among diabetes mellitus patients within the jurisdiction of the Samata Health Center in Gowa Regency. This approach is particularly relevant given the increasing recognition of the multifaceted nature of diabetes management, which necessitates not only medical intervention but also robust support systems that encompass family and healthcare providers (Forde et al., 2020; Holloway et al., 2023). The target population for this research comprises diabetes mellitus patients recorded in the Integrated Recording and Reporting System for Puskesmas (SP2TP) at Samata, with a total of 190 cases documented between January and May 2023. This demographic is critical as it reflects a significant cohort of individuals who are likely to benefit from enhanced support mechanisms, thereby improving their self-care practices and health outcomes (Carrera et al., 2024; Wang et al., 2019).

Data collection was executed through a structured questionnaire designed to assess the interplay between family social support, nurse support, and self-care behaviors among the diabetic patients. The utilization of a questionnaire is supported by existing literature, which emphasizes the importance of standardized instruments in capturing the nuances of patient experiences and support systems (Evert et al., 2019; Maimela et al., 2018). The data collection procedures encompassed both primary and secondary data sources, employing univariate and bivariate analysis techniques to derive meaningful insights from the gathered data. This methodological rigor is essential in ensuring that the findings are both valid and reliable, thereby contributing to the broader discourse on diabetes management (Al-Alawi & Johansson, 2020; Alotaibi et al., 2018). The statistical analysis was conducted using the Chi-Square Test, with a significance level set at $\alpha=0.05$, a standard practice in health research to ascertain the strength of associations between variables (Changsieng et al., 2023; Sechabe et al., 2019).

The significance of family and nurse support in enhancing self-care behaviors among diabetes patients cannot be overstated. Research indicates that strong family support can lead to improved adherence to treatment regimens and better overall health outcomes (Lawler et al., 2019; Shin et al., 2020). Similarly, the role of nurses as facilitators of education and support for diabetes self-management has been well-documented, highlighting their critical position in promoting patient engagement and empowerment (Nikitara et al., 2019; Daly et al., 2019). The integration of these support systems is particularly vital in the context of chronic disease management, where self-care behaviors directly influence disease progression and quality of life (Molayaghobi et al., 2022; Matrook et al., 2024). Furthermore, the findings of this study are expected to align with existing literature that underscores the positive correlation between social support and self-care behaviors, thereby reinforcing the need for healthcare systems to adopt a holistic approach to diabetes management that encompasses both familial and professional support (Holton et al., 2022; Permana & Hilmi, 2021).

This study aims to contribute to the growing body of evidence that supports the integration of family and nurse support in diabetes care. By employing a robust quantitative methodology, the research seeks to elucidate the dynamics of support systems and their impact on self-care behaviors among diabetes patients in Gowa Regency. The anticipated outcomes are expected to inform future interventions and policy decisions aimed at enhancing diabetes management through comprehensive support frameworks that leverage both familial and professional resources (Araújo et al., 2018; Lee et al., 2021).

RESULTS

The results of the research in the working area of the Samata Health Center of Gowa Regency are described as follows: Table 1 presents the demographic characteristics of diabetes mellitus patients in the working area of the Samata Health Center, Gowa Regency, in 2023. The majority of respondents fall within the age group of 20–40 years, accounting for 37 individuals (56%), while the remaining 29 respondents (44%) are in the 41–59 age category. This indicates that diabetes mellitus is prevalent among younger adults, which may be influenced by lifestyle factors and dietary habits.

Regarding gender distribution, most respondents are female (76%, n=50), whereas only 24% (n=16) are male. This suggests a higher representation of female patients in diabetes mellitus cases within this population.

In terms of educational background, the largest proportion of respondents, 31 individuals (47%), have completed high school (SMA), followed by junior high school (SMP) graduates at 23% (n=15) and elementary school (SD) graduates at 20% (n=13). Only a small fraction, 10% (n=7), have attained higher education.

With respect to occupation, the majority of respondents, 58% (n=38), belong to the "Other" category, which may include homemakers, retirees, or informal sector workers. Farmers account for 18% (n=12), followed by private employees (12%, n=8), civil servants/military/police officers (9%, n=6), and entrepreneurs (3%, n=2). The dominance of non-formal workers suggests that economic factors could influence healthcare access and diabetes management.

Table 1 Distribution of Respondent Frequency Based on Demographic Data of Diabetes Mellitus Patients in the Working Area of the Samata Health Center, Gowa Regency in 2023

Variable	Frequency	Percentage
Age		
20-40	37	56
41-59	29	44
Gender		
Man	16	24
Woman	50	76
Education		
SD	13	20
JUNIOR	15	23
SMA	31	47
Higher Education	7	10
Work		
PNS/TNI/POLRI	6	9
Private Employees	8	12
Entrepreneurial	2	3
Farmer	12	18
Others	38	58

Source: primary data august 2023

Table 2 illustrates the level of family social support among respondents. The majority, 89% (n=59), report having high family social support, while only 11% (n=7) experience low family support. This suggests that family plays a significant role in providing emotional, financial, and practical assistance to diabetes mellitus patients in this setting.

Table 2 Distribution of Respondent Frequency Based on Family Social Support in the Working Area of the Samata Health Center, Gowa Regency in 2023

Family Social Support	Number	Percentage
Tall	59	89
Low	7	11
Total	66	100

Source: primary data august 2023

Table 3 presents data on the level of support received from nurses. A substantial proportion of respondents, 80% (n=57), report always receiving support from nurses, while the remaining 20% (n=13) indicate that they never receive such support. This highlights the critical role of nursing care in diabetes management and the need for consistent support for all patients.

Table 3 Distribution of Respondent Frequency Based on Nurse Support in the Working Area of the Samata Health Center, Gowa Regency in 2023

Nurse Support	**Number**	**Percentage**
Always	57	80
Never	13	20
Total	66	100

Source: primary data august 2023

Table 4 reveals the distribution of self-care behavior among respondents. The findings indicate that 76% (n=50) exhibit good self-care practices, while 24% (n=16) demonstrate poor self-care behavior. These results suggest that most diabetes patients in this study adhere to self-care practices, which are essential for managing their condition effectively.

Table 4 Distribution of Respondent Frequency Based on Self Care Behavior in the Work Area of the Samata Health Center, Gowa Regency in 2023

Self Care *Behavior*	**Number**	**Percentage**
Good	50	76
Less	16	24
Total	66	100

Source: primary data august 2023

Table 5 examines the relationship between family social support and self-care behavior among diabetes mellitus patients. Of the 59 respondents with high family social support, 48 individuals (72.7%) exhibit good self-care behavior, while 11 respondents (16.7%) have poor self-care behavior. Conversely, among those with low family social support (n=7), only 2 respondents (3%) have good self-care behavior, whereas 5 respondents (7.6%) show poor self-care behavior.

Statistical analysis using Fisher's Exact Test yields a p-value of 0.007, which is less than the significance threshold ($\alpha = 0.05$). This indicates a significant association between family social support and self-care behavior. The findings suggest that strong family support contributes positively to diabetes self-management, reinforcing the importance of involving family members in diabetes care interventions.

Table 5 Relationship between Family Social Support and Self-Care Behavior in Diabetes Mellitus Patients in the Working Area of the Samata Health Center, Gowa Regency in 2023

Family Social Support	**Self *Care* Behavior**						***P***
	Good		**Less**		**Total**		
	N	**%**	**N**	**%**	**N**	**%**	
Tall	48	72.7	11	16.7	59	89.4	0.007
Low	2	3	5	7.6	7	10.6	
Total	50	75.8	16	24.2	66	100	

Source: primary data august 2023

Table 6 explores the relationship between nurse support and self-care behavior. Among respondents who always receive nurse support (n=53), 44 individuals (66.7%) demonstrate good self-care behavior, while 9 respondents (13.6%) exhibit poor self-care behavior. In contrast, among those who never receive nurse support (n=13), only 6 respondents (9.1%) engage in good self-care, whereas 7 individuals (10.6%) have poor self-care behavior.

The statistical test using Fisher's Exact Test produces a p-value of 0.010, which is lower than the significance threshold ($\alpha = 0.05$). This confirms a significant association between nurse support and self-care behavior.

These results emphasize the critical role of nursing staff in providing guidance, motivation, and education to diabetes patients, highlighting the need for continuous professional support in diabetes care.

Table 6 Relationship between Nurse Support and Self Care in Diabetes Mellitus Patients in the Working Area of the Samata Health Center, Gowa Regency in 2023

Nurse Support	Self *Care* Behavior						*P*
	Good		Less		Total		
	N	%	N	%	n	%	
Always	44	66,7	9	13,6	53	80,3	
Never	6	9,1	7	10,6	13	19,7	0.010
Total	50	75,8	16	24,2	66	100	

Source: primary data august 2023

The findings from this study demonstrate that both family social support and nurse support are significantly associated with self-care behavior among diabetes mellitus patients in the working area of the Samata Health Center, Gowa Regency. The data suggest that patients who receive strong support from their families and healthcare providers are more likely to engage in effective self-care practices, which are essential for managing diabetes and preventing complications. These results underscore the importance of a supportive environment in diabetes care, advocating for interventions that strengthen both familial and professional support systems to enhance patient outcomes.

DISCUSSION

The relationship between family social support, nurse support, and self-care behavior among diabetes mellitus patients is a critical area of research, particularly in the context of the Samata Health Center in Gowa Regency. The findings from the demographic analysis reveal a significant prevalence of diabetes among younger adults, particularly females, which aligns with global trends indicating that lifestyle factors and dietary habits are increasingly contributing to diabetes onset in younger populations (Sarpooshi et al., 2021; Karimy et al., 2018). This demographic insight is crucial as it underscores the need for targeted interventions that address the unique challenges faced by younger diabetes patients, including their social support systems.

Family social support emerged as a predominant factor influencing self-care behavior among the study's respondents. A significant proportion of participants reported high levels of family support, which correlates strongly with effective self-care practices. Specifically, those with high family support exhibited better self-care behavior compared to those with low family support (Oh & Ell, 2018; Malini et al., 2020). This finding is consistent with existing literature that emphasizes the role of family dynamics in chronic disease management. Studies have shown that family support not only provides emotional and practical assistance but also enhances patients' self-efficacy, thereby fostering better self-management behaviors (Qi et al., 2021; Al-Dwaikat et al., 2020). The statistical significance of this relationship, evidenced by a p-value of 0.007, highlights the imperative for healthcare providers to engage family members in diabetes care strategies (Gurmu et al., 2018).

In addition to family support, the role of nurse support cannot be overstated. The data indicates that a substantial number of respondents consistently received support from nursing staff, which significantly correlated with improved self-care behaviors. Among those who reported always receiving nurse support, a high percentage engaged in good self-care practices, compared to those who did not receive such support (Kim et al., 2022; Çelik et al., 2021). This reinforces the critical role of healthcare professionals in providing not just medical care but also emotional and educational support to patients. The findings align with the literature suggesting that nurse-led interventions can enhance patient engagement in self-care activities, ultimately leading to better health outcomes (Wang et al., 2021; Beverly et al., 2020).

The interplay between family and nurse support creates a robust framework for diabetes management. The combined influence of these support systems fosters an environment conducive to effective self-care behaviors. For instance, patients who perceive high levels of social support are more likely to adhere to dietary guidelines, engage in regular physical activity, and monitor their blood glucose levels effectively (Ellis et al., 2021; Soltero et al., 2021). This is particularly relevant in the context of diabetes, where self-management is paramount to preventing complications and improving quality of life (Litchman et al., 2019; El-Radad et al., 2022). The evidence suggests that interventions aimed at enhancing both family and nurse support could significantly improve self-care behaviors among diabetes patients, thereby reducing the burden of the disease on healthcare systems.

Moreover, the demographic characteristics of the respondents, including their educational background and occupational status, further illuminate the context in which these support systems operate. With a significant portion of respondents having only completed high school, there may be barriers to understanding diabetes management that could be mitigated through enhanced educational support from both family and healthcare providers (Almutairi et al., 2020; Holmes-Truscott et al., 2020). The predominance of non-formal workers among the respondents also suggests that economic factors may influence access to healthcare and the ability to engage in self-care practices (Gray et al., 2018). This highlights the need for culturally sensitive and economically feasible interventions that consider the unique circumstances of the patient population.

The findings from this study advocate for a multi-faceted approach to diabetes care that integrates family involvement and professional support. The evidence strongly suggests that enhancing family dynamics and nurse-patient relationships can lead to improved self-care behaviors and, consequently, better health outcomes for diabetes patients (Warshaw et al., 2019; "Predicting Type 2 Diabetes Care Results with Social Psychological Factors", 2018). Future research should explore the specific mechanisms through which family and nurse support influence self-care behaviors, as well as the potential for developing targeted interventions that leverage these support systems effectively (Parviniannasab et al., 2024; Kiarie et al., 2023).

Lastly, the relationship between family social support, nurse support, and self-care behavior among diabetes mellitus patients in the working area of the Samata Health Center is significant and multifaceted. The data underscores the importance of a supportive environment in diabetes management, advocating for interventions that strengthen both familial and professional support systems. By fostering these relationships, healthcare providers can enhance patient engagement in self-care practices, ultimately leading to improved health outcomes and quality of life for individuals living with diabetes.

Managerial Implications

The findings of this study highlight the critical role of both family and nurse support in enhancing self-care behaviors among diabetes mellitus patients. Healthcare institutions should integrate structured family involvement programs within diabetes care plans, ensuring that families are educated about their roles in supporting patients. Additionally, hospitals and clinics should strengthen nurse-led interventions, including patient counseling, diabetes education, and follow-up support, to improve self-management practices. Policymakers should consider incorporating community-based support systems and mobile health applications to enhance accessibility to educational resources and peer support networks.

Theoretical Implications

This study contributes to the growing body of literature on diabetes self-management by reinforcing the importance of social support systems in influencing self-care behaviors. It supports theories of health behavior that emphasize the role of external support in fostering adherence to self-management practices. Future research could further refine these theoretical models by exploring the differential impacts of various types of support—emotional, informational, and instrumental—on diabetes self-care.

Limitations of the Study

Several limitations should be acknowledged. First, the study employs a cross-sectional design, limiting the ability to infer causal relationships between support systems and self-care behaviors. Second, the study focuses on a specific geographic area, which may restrict the generalizability of the findings to other regions with different socioeconomic and cultural contexts. Third, self-reported data may be subject to recall bias, potentially affecting the accuracy of responses. Future studies should consider longitudinal designs and incorporate objective measures of diabetes self-care to strengthen the validity of findings.

CONCLUSIONS AND SUGGESTIONS

This study highlights the pivotal role of family and nurse support in shaping self-care behaviors among individuals with diabetes mellitus. The findings indicate that family support exerts a more dominant influence than professional healthcare support, underscoring the necessity of integrating familial involvement into diabetes management strategies. The prevalence of diabetes among younger adults further emphasizes the urgency of proactive and sustained interventions. A holistic approach that combines structured nurse-led education with active family engagement is essential to enhancing adherence to self-care practices. By fostering a collaborative ecosystem between patients, families, and healthcare professionals, long-term disease management can be significantly improved, ultimately leading to better glycemic control, reduced complications, and an overall improvement in quality of life.

Healthcare providers must enhance nurse-led diabetes education programs by incorporating personalized counseling, behavioral coaching, and culturally tailored interventions. Continuous patient follow-up through scheduled check-ins, remote monitoring, and digital health solutions can further reinforce adherence to self-care behaviors. Additionally, integrating multidisciplinary teams, including dietitians and psychologists, can provide comprehensive patient support.

Policymakers should implement community-based diabetes support initiatives that emphasize family education and leverage technology-driven support mechanisms. Developing accessible and scalable digital health interventions, such as mobile health applications and telemedicine services, can bridge gaps in diabetes care and ensure sustained patient engagement. Moreover, policies that incentivize preventive care, such as subsidized health screenings and diabetes self-management training, can significantly enhance disease prevention and control efforts.

Future research should prioritize longitudinal studies to assess the sustained impact of social support on diabetes self-care behaviors over time. Investigating the effectiveness of digital health interventions, such as AI-driven personalized coaching and remote patient monitoring, can provide insights into optimizing diabetes management. Furthermore, exploring socioeconomic and cultural determinants of self-care adherence can guide the development of more inclusive and targeted intervention strategies.

Families play an indispensable role in diabetes management and should be actively involved in patient care through structured education on dietary modifications, medication adherence, and lifestyle adjustments. Establishing family-centered diabetes education programs can empower caregivers with the necessary knowledge and skills to support patients effectively. Encouraging open communication and emotional support within households can also enhance motivation and resilience in managing the disease. By fostering a strong support network, families can significantly contribute to improving long-term health outcomes for individuals with diabetes.

REFERENCES

Abbott, L., Slate, E., Graven, L., Lemacks, J., & Grant, J. (2021). Fatalism, social support and self-management perceptions among rural African Americans living with diabetes and pre-diabetes. *Nursing Reports, 11*(2), 242-252. https://doi.org/10.3390/nursrep11020024

Al-Alawi, K., & Johansson, H. (2020). "Yes to discuss different models of care between primary care physicians and diabetes-practice nurses, but not to complete implementation yet": Explorative qualitative study at diabetes clinics in primary health care centres in Muscat, Oman. *International Journal of Healthcare, 6*(1), 72. https://doi.org/10.5430/ijh.v6n1p72

Alanzi, T. (2018). Role of social media in diabetes management in the Middle East region: Systematic review. *Journal of Medical Internet Research, 20*(2), e58. https://doi.org/10.2196/jmir.9190

Al-Dwaikat, T., Rababah, J., Al-Hammouri, M., & Chlebowy, D. (2020). Social support, self-efficacy, and psychological wellbeing of adults with type 2 diabetes. *Western Journal of Nursing Research, 43(4)*, 288-297. https://doi.org/10.1177/0193945920921101

Almutairi, N., Hosseinzadeh, H., & Gopaldasani, V. (2020). The effectiveness of patient activation intervention on type 2 diabetes mellitus glycemic control and self-management behaviors: A systematic review of RCTs. *Primary Care Diabetes, 14(1)*, 12-20. https://doi.org/10.1016/j.pcd.2019.08.009

Alotaibi, A., Gholizadeh, L., Al-Ganmi, A., & Perry, L. (2018). Factors influencing nurses' knowledge acquisition of diabetes care and its management: A qualitative study. *Journal of Clinical Nursing, 27*(23-24), 4340-4352. https://doi.org/10.1111/jocn.14544

Araújo, E., Silva, L., Moreira, T., Almeida, P., Freitas, M., & Guedes, M. (2018). Nursing care to patients with diabetes based on King's theory. *Revista Brasileira de Enfermagem, 71*(3), 1092-1098. https://doi.org/10.1590/0034-7167-2016-0268

Aschalew, A., Yitayal, M., Minyihun, A., & Bisetegn, T. (2019). Self-care practice and associated factors among patients with diabetes mellitus on follow-up at University of Gondar Referral Hospital, Gondar, Northwest Ethiopia. *BMC Research Notes, 12*(1). https://doi.org/10.1186/s13104-019-4630-4

Beverly, E., Ritholz, M., & Dhanyamraju, K. (2020). The buffering effect of social support on diabetes distress and depressive symptoms in adults with type 1 and type 2 diabetes. *Diabetic Medicine, 38(4)*. https://doi.org/10.1111/dme.14472

Carpenter, R., DiChiacchio, T., & Barker, K. (2019). Interventions for self-management of type 2 diabetes: An integrative review. *International Journal of Nursing Sciences, 6*(1), 70-91. https://doi.org/10.1016/j.ijnss.2018.12.002

Carrera, C., Mabasa, C., Jasmin, R., Brosola, D., Anacito, M., Palcon, M., … & Paje, V. (2024). Diabetes nursing education: Its implication towards an improved quality of life of persons with diabetes—A systematic review. *World Journal of Nursing Research, 3*(1), 86-97. https://doi.org/10.31586/wjnr.2024.1142

Çelik, S., Yılmaz, F., Celik, S., Anataca, G., & Bülbül, E. (2021). Alexithymia in diabetes patients: Its relationship with perceived social support and glycaemic control. *Journal of Clinical Nursing, 31(17-18)*, 2612-2620. https://doi.org/10.1111/jocn.16088

Changsieng, P., Pichayapinyo, P., Lagampan, S., & Lapvongwatana, P. (2023). Implementation of self-care deficits assessment and a nurse-led supportive education program in community hospitals for behavior change and HbA1c reduction: A cluster randomized controlled trial. *Journal of Primary Care & Community Health, 14*. https://doi.org/10.1177/21501319231181106

Daly, B., Arroll, B., & Scragg, R. (2019). Trends in cardiovascular management of people with diabetes by primary healthcare nurses in Auckland, New Zealand. *Diabetic Medicine, 36*(6), 734-741. https://doi.org/10.1111/dme.13940

El-Radad, H., Ahmed, H., & Eldahshan, N. (2022). The relationship between self-care activities, social support, and glycemic control in primary healthcare patients with type 2 diabetes. *Diabetology International, 14(1)*, 65-75. https://doi.org/10.1007/s13340-022-00598-7

Ellis, D., Cutchin, M., Templin, T., Carcone, A., Evans, M., Weissberg-Benchell, J., … & Worley, J. (2021). Effects of family and neighborhood risks on glycemic control among young Black adolescents with type 1 diabetes: Findings from a multi-center study. *Pediatric Diabetes, 22(3)*, 511-518. https://doi.org/10.1111/pedi.13176

Evert, A., Dennison, M., Gardner, C., Garvey, W., Lau, K., MacLeod, J., … & Yancy, W. (2019). Nutrition therapy for adults with diabetes or prediabetes: A consensus report. *Diabetes Care, 42*(5), 731-754. https://doi.org/10.2337/dci19-0014

Forde, R., Arente, L., Ausili, D., Backer, K., Due-Christensen, M., Epps, A., … & Forbes, A. (2020). The impact of the COVID-19 pandemic on people with diabetes and diabetes services: A pan-European survey of diabetes specialist nurses undertaken by the Foundation of European Nurses in Diabetes Survey Consortium. *Diabetic Medicine, 38*(5). https://doi.org/10.1111/dme.14498

Gray, K., Hoerster, K., Reiber, G., Bastian, L., & Nelson, K. (2018). Multiple domains of social support are associated with diabetes self-management among veterans. *Chronic Illness, 15(4)*, 264-275. https://doi.org/10.1177/1742395318763489

Gurmu, Y., Gela, D., & Aga, F. (2018). Factors associated with self-care practice among adult diabetes patients in West Shoa Zone, Oromia Regional State, Ethiopia. *BMC Health Services Research, 18(1)*. https://doi.org/10.1186/s12913-018-3448-4

Habebo, T., Pooyan, E., Mosadeghrad, A., Babore, G., & Dessu, B. (2020). Prevalence of poor diabetes self-management behaviors among Ethiopian diabetes mellitus patients: A systematic review and meta-analysis. *Ethiopian Journal of Health Sciences, 30*(4). https://doi.org/10.4314/ejhs.v30i4.18

Hill, K., Ward, P., & Gleadle, J. (2018). "I kind of gave up on it after a while, became too hard, closed my eyes, didn't want to know about it"—Adults with type 1 diabetes mellitus describe defeat in the context of low social support. *Health Expectations, 22*(2), 254-261. https://doi.org/10.1111/hex.12850

Holloway, D., James, S., Ekinci, E., & Craft, J. (2023). Systematic review of the effectiveness of nurse-led care in reducing glycated haemoglobin in adults with type 1 or 2 diabetes. *International Journal of Nursing Practice, 29*(6). https://doi.org/10.1111/ijn.13135

Holmes-Truscott, E., Ventura, A., Thuraisingam, S., Pouwer, F., & Speight, J. (2020). Psychosocial moderators of the impact of diabetes stigma: Results from the second Diabetes MILES – Australia (MILES-2) study. *Diabetes Care, 43(11)*, 2651-2659. https://doi.org/10.2337/dc19-2447

Holton, S., Rasmussen, B., Turner, J., Steele, C., Ariarajah, D., Hamblin, S., … & Hussain, I. (2022). Nurse, midwife and patient perspectives and experiences of diabetes management in an acute inpatient setting: A mixed-methods study. *BMC Nursing, 21*(1). https://doi.org/10.1186/s12912-022-01022-w

Hu, L., Trinh-Shevrin, C., Islam, N., Wu, B., Cao, S., Freeman, J., … & Sevick, M. (2022). Mobile device ownership, current use, and interest in mobile health interventions among low-income older Chinese immigrants with type 2 diabetes: Cross-sectional survey study. *JMIR Aging, 5*(1), e27355. https://doi.org/10.2196/27355

Karimy, M., Koohestani, H., & Araban, M. (2018). The association between attitude, self-efficacy, and social support and adherence to diabetes self-care behavior. *Diabetology & Metabolic Syndrome, 10(1)*. https://doi.org/10.1186/s13098-018-0386-6

Kiarie, J., Mambo, S., & Kamundi, G. (2023). A cross-sectional study on the association between varied social support modalities and glycemic levels amongst diabetic patients residing in Machakos County, Kenya. *Pan African Medical Journal, 45.* https://doi.org/10.11604/pamj.2023.45.99.39472

Kim, S., Kim, Y., Choi, S., & Jeon, B. (2022). Evaluation of nurse-led social media intervention for diabetes self-management: A mixed-method study. *Journal of Nursing Scholarship, 54(5)*, 569-577. https://doi.org/10.1111/jnu.12770

Lawler, J., Trevatt, P., Elliot, C., & Leary, A. (2019). Does the diabetes specialist nursing workforce impact the experiences and outcomes of people with diabetes? A hermeneutic review of the evidence. *Human Resources for Health, 17*(1). https://doi.org/10.1186/s12960-019-0401-5

Lee, E., Lee, Y., Chae, D., Lee, K., Hong, S., Kim, S., … & Chung, J. (2021). Pathways linking health literacy to self-management in people with type 2 diabetes. *Healthcare, 9*(12), 1734. https://doi.org/10.3390/healthcare9121734

Lee, M., Walsh, E., Willgerodt, M., & O'Connor, M. (2021). School nurses' diabetes-related attitudes and self-efficacy in diabetes education and management. *The Journal of School Nursing, 39*(6), 487-495. https://doi.org/10.1177/10598405211043126

Liu, Y., Zupan, N., Shiyanbola, O., Swearingen, R., Carlson, J., Jacobson, N., … & Smith, M. (2018). Factors influencing patient adherence with diabetic eye screening in rural communities: A qualitative study. *PLOS ONE, 13*(11), e0206742. https://doi.org/10.1371/journal.pone.0206742

Litchman, M., Walker, H., Ng, A., Wawrzynski, S., Oser, S., Greenwood, D., … & Oser, T. (2019). State of the science: A scoping review and gap analysis of diabetes online communities. *Journal of Diabetes Science and Technology, 13(3)*, 466-492. https://doi.org/10.1177/1932296819831042

Maimela, E., Alberts, M., Bastiaens, H., Fraeyman, J., Meulemans, H., Wens, J., … & Geertruyden, J. (2018). Interventions for improving management of chronic non-communicable diseases in Dikgale, a rural area in Limpopo province, South Africa. *BMC Health Services Research, 18*(1). https://doi.org/10.1186/s12913-018-3085-y

Malini, H., Yeni, F., Pratiwi, C., & Lenggogeni, D. (2020). Associated factors of self-management in type 2 diabetes mellitus at community health center. *Jurnal Keperawatan Soedirman, 15*(2). https://doi.org/10.20884/1.jks.2020.15.2.1229

Matrook, K., Cowman, S., Pertl, M., & Whitford, D. (2024). Nurse-led family-based approach in primary health care for patients with type 2 diabetes mellitus: A qualitative study. *International Journal of Qualitative Studies on Health and Well-Being, 19*(1). https://doi.org/10.1080/17482631.2024.2323060

Molayaghobi, N., Abazari, P., Taleghani, F., & Iraj, B. (2022). Lived experiences of diabetes team and patients about diabetes care system after redesigning delivery system and supporting self-management in Iran. *International Journal of Preventive Medicine, 13*(1), 85. https://doi.org/10.4103/ijpvm.ijpvm_238_20

Nikitara, M., Constantinou, C., Andreou, E., & Diomidous, M. (2019). The role of nurses and the facilitators and barriers in diabetes care: A mixed-methods systematic literature review. *Behavioral Sciences, 9*(6), 61. https://doi.org/10.3390/bs9060061

Oh, H., & Ell, K. (2018). Associations between changes in depressive symptoms and social support and diabetes management among low-income, predominantly Hispanic patients in patient-centered care. *Diabetes Care, 41(6)*, 1149-1156. https://doi.org/10.2337/dc17-2000

Paulsamy, P., Ashraf, R., Alshahrani, S., Periannan, K., Qureshi, A., Venkatesan, K., … & Krishnaraju, K. (2021). Social support, self-care behaviour and self-efficacy in patients with type 2 diabetes during the COVID-19 pandemic: A cross-sectional study. *Healthcare, 9*(11), 1607. https://doi.org/10.3390/healthcare9111607

Parviniannasab, A., Faramarzian, Z., Hosseini, S., Hamidizadeh, S., & Bijani, M. (2024). The effect of social support, diabetes management self-efficacy, and diabetes distress on resilience among patients with type 2 diabetes: A moderated mediation analysis. *BMC Public Health, 24(1).* https://doi.org/10.1186/s12889-024-18022-x

Permana, B., & Hilmi, N. (2021). Caring behavior of nurse managers: A literature review. *KNE Life Sciences*, 689-696. https://doi.org/10.18502/kls.v6i1.8743

Qi, X., Xu, J., Chen, G., Liu, H., Liu, J., Wang, J., … & Jiao, M. (2021). Self-management behavior and fasting plasma glucose control in patients with type 2 diabetes mellitus over 60 years old: Multiple effects of social support on quality of life. *Health and Quality of Life Outcomes, 19(1).* https://doi.org/10.1186/s12955-021-01881-y

Ravi, S., Kumar, S., & Gopichandran, V. (2018). Do supportive family behaviors promote diabetes self-management in resource-limited urban settings? A cross-sectional study. *BMC Public Health, 18*(1). https://doi.org/10.1186/s12889-018-5766-1

Sarpooshi, D., Mahdizadeh, M., Jaferi, A., Robatsarpooshi, H., Haddadi, M., & Peyman, N. (2021). The relationship between social support and self-care behavior in patients with diabetes mellitus. *Family Medicine & Primary Care Review, 23(2)*, 227-231. https://doi.org/10.5114/fmpcr.2021.105932

Sechabe, E., Mothiba, T., & Bastiaens, H. (2019). What are the experiences and needs of primary care nurses in caring for patients with type 2 diabetes in a rural village in South Africa? An exploratory study. *Global Journal of Health Science, 11*(7), 90. https://doi.org/10.5539/gjhs.v11n7p90

Shin, L., Bowling, F., Armstrong, D., & Boulton, A. (2020). Saving the diabetic foot during the COVID-19 pandemic: A tale of two cities. *Diabetes Care, 43*(8), 1704-1709. https://doi.org/10.2337/dc20-1176

Soltero, E., Ayers, S., Avalos, M., Peña, A., Williams, A., Olson, M., … & Shaibi, G. (2021). Theoretical mediators of diabetes risk and quality of life following a diabetes prevention program for Latino youth with obesity. *American Journal of Health Promotion, 35(7)*, 939-947. https://doi.org/10.1177/08901171211012951

Wallace, D., Rodriguez, H., Walker, E., Dethlefs, H., Dowd, R., Filipi, L., … & Barrington, C. (2018). Types and sources of social support among adults living with type 2 diabetes in rural communities in the Dominican Republic. *Global Public Health, 14*(1), 135-146. https://doi.org/10.1080/17441692.2018.1444782

Wang, C., Hilliard, M., Carreon, S., Jones, J., Rooney, K., Barber, J., … & Streisand, R. (2021). Predictors of mood, diabetes-specific and COVID-19-specific experiences among parents of early school-age children with type 1 diabetes during initial months of the COVID-19 pandemic. *Pediatric Diabetes, 22(7)*, 1071-1080. https://doi.org/10.1111/pedi.13255

Wang, Q., Shen, Y., Chen, Y., & Li, X. (2019). Impacts of nurse-led clinic and nurse-led prescription on hemoglobin A1c control in type 2 diabetes. *Medicine, 98*(23), e15971. https://doi.org/10.1097/md.0000000000015971

Warshaw, H., Hodgson, L., Heyman, M., Oser, T., Walker, H., Deroze, P., … & Litchman, M. (2019). The role and value of ongoing and peer support in diabetes care and education. *The Diabetes Educator, 45(6)*, 569-579. https://doi.org/10.1177/0145721719882007

Yous, M., Ganann, R., Ploeg, J., Markle-Reid, M., Northwood, M., Fisher, K., … & Tang, F. (2023). Older adults' experiences and perceived impacts of the Aging, Community and Health Research Unit-Community Partnership Program (ACHRU-CPP) for diabetes self-management in Canada: A qualitative descriptive study. *BMJ Open, 13*(4), e068694. https://doi.org/10.1136/bmjopen-2022-068694