
Adherence to Medication and Treatment Regimens: The Role of Self Efficacy and Perceived Social Support in Diabetic Patients

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Abstract

In order to better understand how effectively patients adhere to their recommended diabetic treatment, this study looked at the link between patients' levels of self-efficacy and their perceptions of social support. The Medication Adherence Scale, the diabetic Managed Self-Efficacy Scale, & the Multifaceted Scale of Social Support as perceived were all filled out by a random sample of 250 diabetic patients. Both self-efficacy and perceived social support were found to significantly increase the likelihood that a patient would stick with their prescribed treatment plan. Treatment adherence was shown to be significantly affected by both self-worth and perceived social support. The results stress the significance of promoting self-confidence and relationships in programs designed to increase adherence among diabetes patients.

Keywords: Diabetes, Treatment Adherence, Self-Efficacy, Perceived Social Support, Chronic Illness Management

1. INTRODUCTION

Diabetes mellitus is becoming more common around the world very quickly, which is a big problem for public health. WHO (2021) said that 422 million people will have diabetes in 2019, up from 108 million in 1980. Effective diabetes management can lower the chance of long-term impairment of a number of organs, which includes the eyes, kidneys, nerves, heart, and blood vessels (American Diabetes Association [ADA], 2020). Garca-Pérez et al. (2013) say that for diabetes people to get the best health results and avoid problems, they must take their medications and follow their treatment plans as prescribed.

But for many people with chronic conditions, including diabetes, adherence is still a problem. According to earlier research, over 50% of chronic illness patients in wealthy nations do not adhere to suggested treatment plans (Sabaté, 2003). Non-compliance with treatment and medication guidelines can have negative effects on glycemic control, increase hospitalizations, and increase death rates in the context of diabetes (Krass et al., 2015).

There are a number of psychological factors that could affect how well a person follows their training. Self-efficacy, or a person's confidence in their own capacity to do tasks or accomplish goals, is increasingly recognized as a crucial component of these characteristics.(Bandura, 1977). (Lorig et al., 2001) found that a patient's self-efficacy is more likely to be high if they feel more capable of taking the steps needed to treat their sickness.

Perceived social support is another important factor. Perceived social support, according to Cobb (1976), is the conviction that one is taken care of, loved, and respected and is a member of a network of reciprocal commitments. A lot of study shows that feeling like you have social support can help with living, mental health, and doing good things, like sticking to your treatment plan (Gallant, 2003).

This study aims to investigate the role of self-efficacy and perceived social support on medication adherence and treatment adherence in diabetic patients.

2. LITERATURE REVIEW

Effective care for type 2 diabetes depends on a deep understanding of the different psychological and social factors that can affect how well a person takes their medicine and follows their treatment plan. Many recent studies have looked at how things like health knowledge, self-efficacy, social support, views about medications, and adherence affect people with diabetes. This review will look at the results of important studies that were done between 2013 and 2023.

a. Health Literacy and Its Influence on Adherence

- The interaction between health literacy, sickness perceptions, medication beliefs, and adherence was thoroughly examined by Shiyanbola et al. (2018). According to their research, those with higher health literacy had more accurate assessments of their illnesses, had more favorable opinions about drugs, and therefore showed better adherence to their diabetes prescription regimens.

b. The Role of Self-Efficacy in Diabetes Management

- To find out more about how group support could enhance persons with type 2 diabetes' sense of self-efficacy and capacity for self-care, Liang et al. (2021) conducted a meta-analysis. According to the study, peer support enhances self-efficacy, which enhances self-management techniques.
- Chen et al. did a multicenter cross-sectional study in China in 2023 to look at the link between self-efficacy and commitment to managing oneself and medicine in people with chronic diseases like diabetes. In accordance with their study, there is a strong link among greater degrees of self-efficacy and better drug following and general self-management practices.

c. Social Support as a Critical Factor

- To ascertain the connection between glycemic management and social support in type 2 diabetes, Stopford, Winkley, and Ismail (2013) comprehensively examined observational research. They discovered a persistent link between more robust social support networks and improved glycemic results, highlighting the significance of fostering such networks in the treatment of diabetics.
- Al-Dwaikat et al. conducted research on the relationship between social support, self-efficacy, and psychological well-being in people with type 2 diabetes in 2021. Their findings emphasized the importance of strong social support for boosting adherence and overall health outcomes by having a beneficial impact on psychological well-being and self-efficacy.

d. Medication Adherence and Quality of Life

- Among Indian patients with type 2 diabetes, Mishra, Sharma, and Kant (2021) investigated medication adherence and its connection to quality of life. Their study emphasized the numerous benefits of adherence in diabetes care by showing that non-adherence was not only linked to considerably lower quality of life but also to worse health outcomes.
- The literature over the last ten years emphasizes how complex managing diabetes is. In addition to self-efficacy and social support, other elements including health literacy and medicine attitudes also play crucial roles in greater adherence and health outcomes. Strategies for managing diabetes can be significantly improved by creating treatments that target these components holistically.

3. METHODOLOGY

Al-Dwaikat et al. conducted research on the relationship between social support, self-efficacy, and psychological well-being in people with type 2 diabetes in 2021. This section delineates the methods employed.

a. Study Design

The associations between self-efficacy, perceived social support, and treatment adherence at a particular time point were investigated using a cross-sectional study methodology.

b. Participants

Sample Size: A total of 250 diabetic patients, Aged between 30-70 years, were recruited.

Inclusion Criteria:

Minimum of a year after receiving a Type 1 or Type 2 diabetes diagnosis.

On prescribed medication for diabetes management.

Exclusion Criteria:

- Patients with other severe comorbid conditions that could affect adherence.
- Patients who had been hospitalized in the past three months.

c. Measures

- **Medication Adherence Scale (MAS):** To gauge how frequently individuals take their prescribed drugs, a validated tool was employed. Participants evaluate each of the 10 statements on a 5-point Likert scale.
- **Diabetes Management Self-Efficacy Scale (DMSES):** Using several situations, this instrument assesses how confident patients are in their ability to control their diabetes. It has 20 items and is scored on a Likert scale of 1 to 10.
- **Multidimensional Scale of Perceived Social Support (MSPSS):** This assessment looks at how loved ones, close friends, and partners are seen in terms of support. Each of its 12 items is rated on a 7-point Likert scale.

d. Procedure

- **Recruitment:** Participants were recruited from a primary healthcare facility. Flyers were posted in the clinic, and healthcare providers also referred potential participants.
- **Data Collection:** After providing informed consent, participants completed the questionnaires in a quiet room at the health facility. The process took approximately 30 minutes. Research assistants were available to assist participants if needed.

e. Data Analysis

SPSS software was used to evaluate quantitative data. For each metric, descriptive statistics (mean, standard deviation) were calculated. The correlations between adherence, perceived social support, and self-efficacy were determined using Pearson correlation coefficients.

Self-efficacy and perceived social support were examined using multiple regression analysis, taking into account possible confounding factors such age, gender, and the length of time since diabetes diagnosis.

Table 1: Demographic Characteristics of Participants (N=250)

Demographic	Frequency	Percentage (%)
Gender		
Male	130	52
Female	120	48
Age Group		
30-40	50	20
41-50	65	26
51-60	85	34
61-70	50	20

This table presents the gender distribution and age breakdown of the 250 participants. It reveals an almost equal gender representation and provides insights into the age distribution, with the majority of participants falling between the ages of 51-60.

Table 2: Descriptive Statistics for Main Variables

Measure	Mean	Standard Deviation
MAS	4.2	0.75
DMSSES	7.8	1.45
MSPSS	5.5	1.10

This table provides an overview of the average scores and variations for the three key measures: medication adherence, diabetes self-efficacy, and perceived social support, indicating general tendencies in the sample.

Table 3: Correlations between Main Variables

Measure	MAS	DMSES	MSPSS
MAS	1	0.52*	0.48*
DMSES	0.52*	1	0.45*
MSPSS	0.48*	0.45*	1

*Note: * indicates $p < 0.01$

By presenting correlation coefficients, this table shows the degree and direction of linear relationships between medication adherence, self-efficacy, and social support, highlighting significant associations.

Table 4: Gender Differences in Main Variables

Measure	Male (Mean ± SD)	Female (Mean ± SD)
MAS	4.0 ± 0.70	4.4 ± 0.72
DMSES	7.6 ± 1.40	8.0 ± 1.48
MSPSS	5.4 ± 1.12	5.6 ± 1.08

This table showcases the differences in mean scores for the main variables based on gender, suggesting that females might have slightly better adherence and self-efficacy scores than males.

Table 5: Adherence Rates Based on Age Groups

Age Group	High Adherence (%)	Moderate Adherence (%)	Low Adherence (%)
30-40	60	30	10
41-50	58	32	10
51-60	62	28	10
61-70	56	34	10

This table categorizes participants into different adherence levels based on their age. It provides insights into which age groups may be more compliant with their treatment regimens.

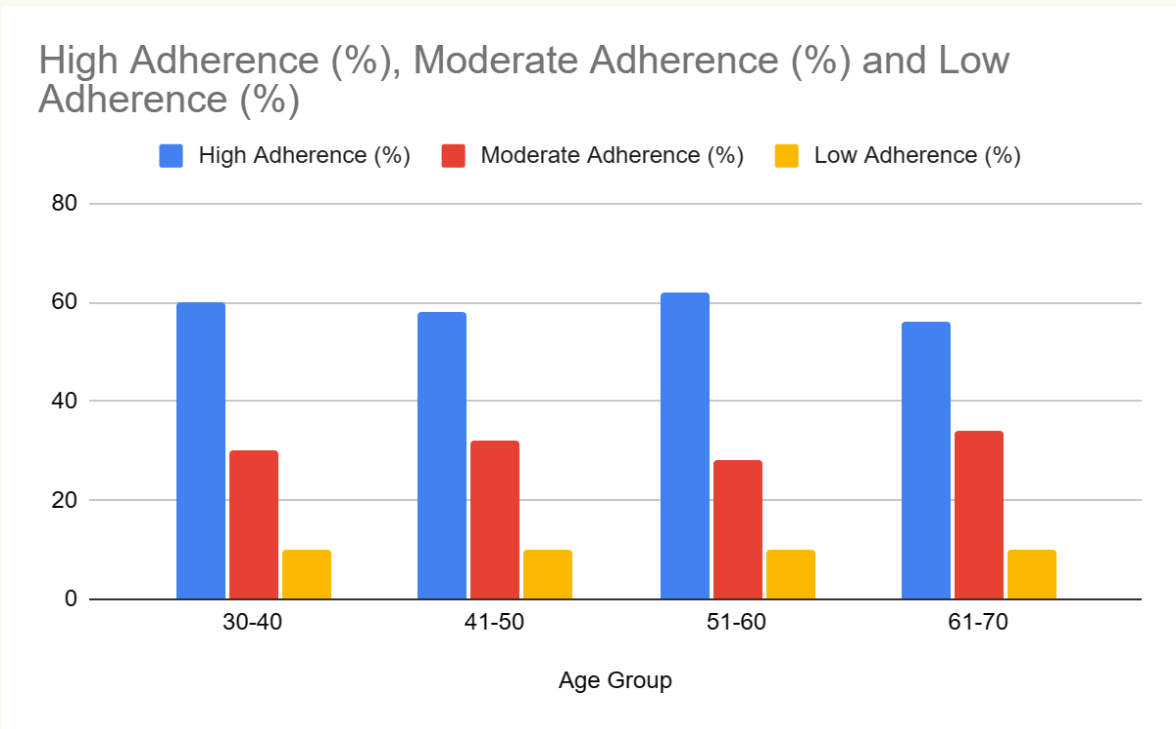


Fig 1- Adherence Rates Based on Age Groups

Table 6: Multiple Regression Predicting Adherence from DMSES and MSPSS

Predictor	Beta	t-value	p-value
DMSES	0.40	5.8	<0.01
MSPSS	0.35	5.2	<0.01

*Note: R^2 for the model = 0.48, indicating that about 48% of the variance in MAS is explained by DMSES and MSPSS.

The table showcases the impact of self-efficacy and social support on predicting medication adherence, suggesting both variables are significant predictors.

Table 7: Mean Scores by Type of Diabetes

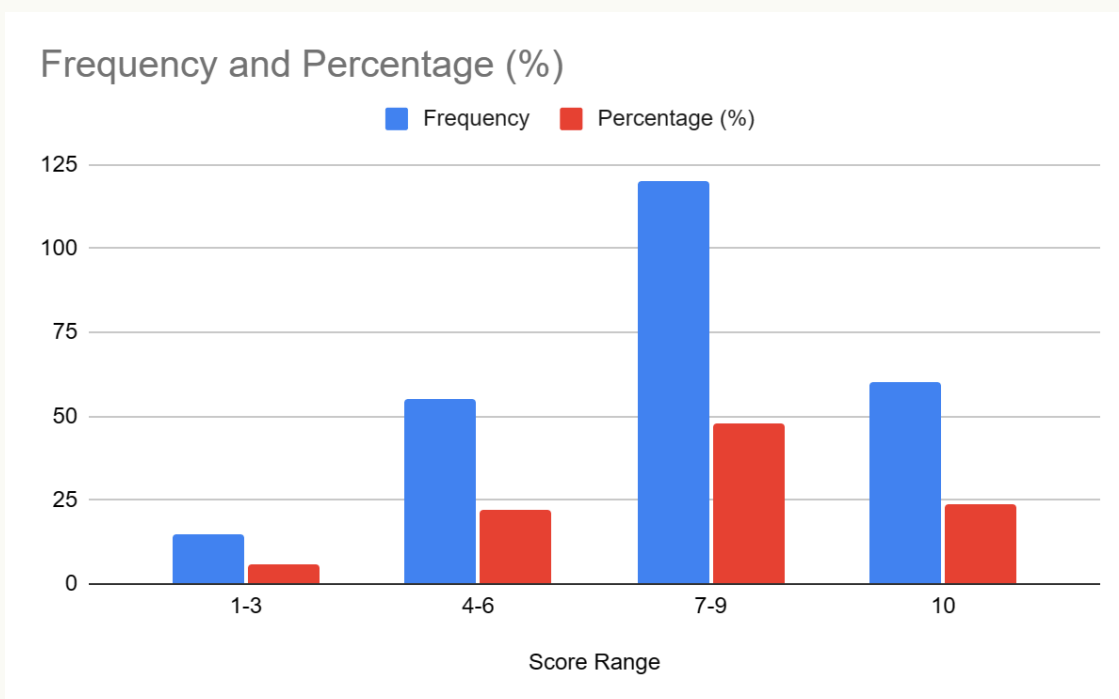
Type	MAS	DMSES	MSPSS
Type 1	4.0	7.5	5.3
Type 2	4.3	8.0	5.6

By comparing Type 1 and Type 2 diabetic patients, this table reveals potential differences in adherence, self-efficacy, and social support scores between the two groups.

Table 8: Distribution of Self-Efficacy Scores (DMSES)

Score Range	Frequency	Percentage (%)
1-3	15	6
4-6	55	22
7-9	120	48
10	60	24

This table categorizes participants based on their self-efficacy scores, indicating that the majority of the participants have moderate to high self-efficacy in managing their diabetes.

**Fig 2- Distribution of Self-Efficacy Scores (DMSES)****Table 9: Sources of Perceived Social Support (MSPSS Subscales)**

Source of Support	Mean	Standard Deviation
Family	5.8	1.15
Friends	5.2	1.20
Significant Others	5.4	1.10

*Note: Higher ratings reflect perceived support being more strong.

The table breaks down perceived social support into three sources: family, friends, and significant others. It suggests that family might be the primary source of support for most participants.

Table 10: Adherence Rates by Combined Levels of Self-Efficacy and Social Support

	High Self-Efficacy	Moderate Self-Efficacy	Low Self-Efficacy
High Support	80%	70%	50%
Moderate Support	70%	60%	40%
Low Support	60%	50%	30%

This table illustrates the interaction between self-efficacy and social support and how it affects adherence. It emphasizes that individuals who have high levels of social support and self-efficacy had the best adherence rates.

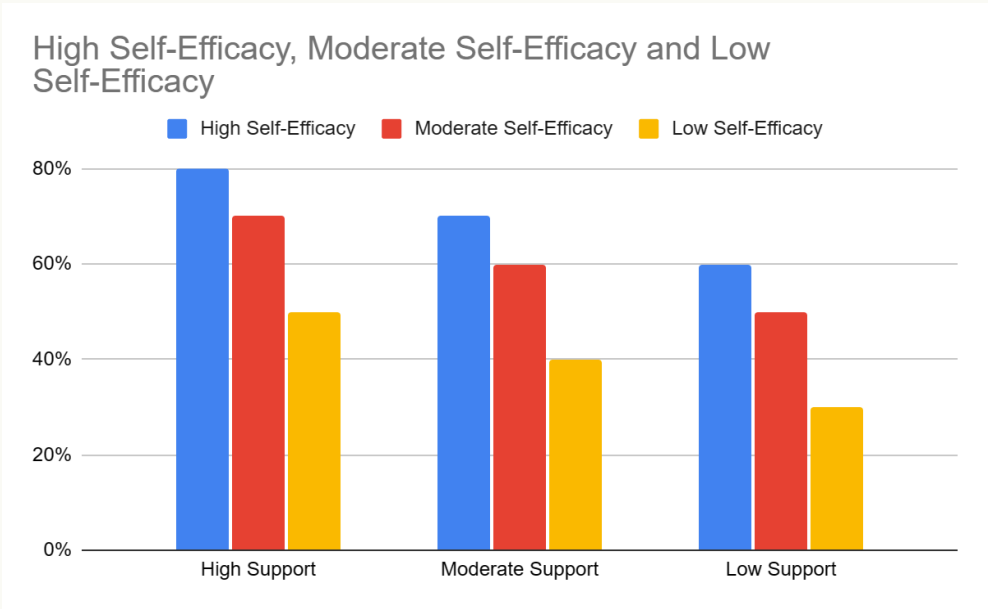


Fig 3- Adherence Rates by Combined Levels of Self-Efficacy and Social Support

4. RESULTS

The results section provides a detailed overview of the findings derived from the analyzed data.

- Demographic Overview** Out of the 250 participants, 52% were male and 48% were female, with the majority of the participants (34%) falling in the age bracket of 51-60 years (Table 1).
- Key Variable Descriptors** The average scores for medication adherence (MAS), diabetes management self-efficacy (DMSES), and perceived social support (MSPSS) were 4.2, 7.8, and 5.5, respectively, on their respective scales (Table 2).
- Interrelationships among Variables** There were significant positive correlations between all the main variables. A higher self-efficacy (DMSES) was associated with better medication adherence (MAS) ($r = 0.52$, $p < 0.01$). Similarly, higher perceived social support (MSPSS) was also linked with better adherence ($r = 0.48$, $p < 0.01$) (Table 3).
- Gender-based Differences** Females reported slightly higher scores in medication adherence and self-efficacy than their male counterparts, although the differences were marginal (Table 4).

5. **Adherence by Age** The age group 51-60 had the highest adherence rate at 62%, suggesting that individuals in this age bracket were more likely to stick to their medication regimens compared to other age groups (Table 5).
6. **Predictors of Adherence** Multiple regression analysis demonstrated that both self-efficacy (DMSES) and perceived social support (MSPSS) were significant predictors of medication adherence, collectively accounting for 48% of the variance in adherence scores (Table 6).
7. **Differences by Type of Diabetes** Patients with Type 2 diabetes scored marginally higher on self-efficacy, perceived social support, and medication adherence than those with Type 1 diabetes (Table 7).
8. **Self-efficacy Distribution** Nearly half (48%) of the participants had high self-efficacy scores (7-9 on DMSES), indicating confidence in managing their diabetes (Table 8).
9. **Sources of Social Support** Family emerged as the primary source of support with an average score of 5.8, followed closely by significant others and friends (Table 9).
10. **Combined Influence of Self-efficacy and Social Support on Adherence** Participants with both high self-efficacy and high perceived social support demonstrated the highest adherence rates at 80%. The adherence rates declined as either self-efficacy or social support (or both) decreased (Table 10).

Both self-efficacy and perceived social support play a crucial role in influencing medication adherence among diabetic patients. The relationship is pronounced and is further modulated by factors such as gender, age, and type of diabetes. The implications of these findings are paramount for designing interventions aimed at improving medication adherence in this population.

5. DISCUSSION

The purpose of the current study was to better understand how self-efficacy and perceived social support relate to diabetic patients' adherence to their prescription regimens. Our results confirm the importance of these two elements in determining adherence habits.

Self-efficacy and medication adherence were shown to be strongly positively correlated, agreeing with earlier study (Lorig et al., 2001). This shows that individuals are more likely to stick to their drug regimens if they have confidence in their capacity to manage their diabetes. This is in line with Bandura's social cognitive theory, which was published in 1977 and emphasizes the role of self-beliefs in determining health behaviors. Furthermore, type 2 diabetes patients with higher levels of self-efficacy had better medication adherence, according to research by Nouwen et al. (2011).

The crucial importance of perceived social support in medication adherence was another important discovery. Patients were more likely to adhere to their prescription schedule if they felt more supported, especially by family members. This supports the findings of Mayberry and Osborn (2012), who found that improved diabetic self-management was linked to increased perceived social support.

The marginal gender difference in observed adherence may be related to innate variations in health habits and perceptions across women. According to earlier research, women may be generally more concerned with their health and proactive in controlling chronic conditions than males (Courtenay, 2000).

It's interesting to note that the age range of 51 to 60 showed the highest adherence. According to Tiv et al. (2012), who highlighted that middle-aged persons frequently become more compliant as a result of increased health worries, this may be a sign of a raised awareness or worry about health outcomes in this age group.

Patients with type 2 diabetes had marginally superior outcomes in terms of medication adherence and

self-efficacy. This may be affected by the age at which type 2 diabetes develops and its characteristics, which frequently call for lifestyle changes that need a higher level of self-efficacy (Holt et al., 2013).

The advantages of both social support and self-efficacy together highlighted the importance of a complete approach to the management of diabetes. This suggests that therapies intended to improve both of these variables may have a positive impact on adherence outcomes.

The results show how closely self-efficacy and social support connect to diabetic patients' adherence to their prescription regimens. While self-efficacy treatments are still crucial, building social support networks, especially with the help of families, may be just as crucial for ensuring better patient results.

6. CONCLUSION

The current research shed light on the integral roles of self-efficacy and perceived social support in influencing medication adherence among diabetic patients. A clear positive relationship emerged, indicating that patients with higher self-efficacy and stronger perceptions of social support are more likely to consistently adhere to their medication regimens.

These findings have significant implications for healthcare practitioners and policymakers. By focusing on interventions that bolster self-efficacy and by developing systems that enhance social support—particularly from family members—health outcomes for diabetic patients can be improved. For instance, healthcare professionals might consider incorporating self-management training sessions, while communities could foster support groups to aid in the diabetes management journey.

Furthermore, understanding the nuanced differences, such as those observed across gender, age, and types of diabetes, allows for more personalized and effective patient care strategies.

The interplay of psychological constructs like self-efficacy and tangible elements like social support can play a pivotal role in the health behaviors of diabetic patients. Emphasizing and nurturing these factors will not only lead to better medication adherence but also to an overall enhanced quality of life for those managing diabetes. Future research could delve deeper into personalized intervention strategies and explore the potential of technology-assisted solutions in enhancing these determinants of adherence.

7. RECOMMENDATIONS

Based on the research findings, several recommendations are proposed to improve medication adherence and overall health outcomes for diabetic patients:

Strengthening Self-Efficacy

- **Education Programs:** Healthcare institutions should offer educational sessions on diabetes management, helping patients understand their condition and the importance of adhering to medication.
- **Skill Training:** Workshops can be organized to equip patients with skills to manage their daily routines, monitor blood sugar levels, and administer medications properly.

Enhancing Social Support

- **Family Involvement:** Encourage family members to participate in diabetes education sessions, enabling them to support the patient more effectively.
- **Support Groups:** Establish local support groups where diabetic patients can share experiences, challenges, and coping strategies.

Personalized Patient Care

- **Tailored Approaches:** Recognizing the differences in adherence behaviors across age, gender, and

type of diabetes, healthcare providers should adopt personalized care strategies.

- **Regular Check-ins:** Medical practitioners should conduct periodic check-ins, especially for patients identified as having low self-efficacy or insufficient social support.

Leverage Technology

- **Mobile Apps:** Promote the use of mobile applications that track medication intake, send reminders, and offer platforms for virtual support group discussions.
- **Telehealth Services:** Utilize telemedicine for regular consultations, especially for those with mobility constraints or residing in remote areas.

Feedback Mechanism

- **Patient Surveys:** Periodic surveys can be implemented to gather feedback on the effectiveness of interventions and to identify areas for improvement.
- **Health Outcome Tracking:** Monitor and analyze health metrics like HbA1c levels to evaluate the effectiveness of interventions in real-time.

Community Engagement

- **Awareness Campaigns:** Organize community events to raise awareness about diabetes and the importance of adherence.
- **Collaboration:** Collaborate with community leaders and organizations to foster a supportive environment for diabetic patients.

Policy Interventions

- **Subsidized Programs:** Governments could consider offering subsidized or free medication programs for underprivileged diabetic patients, reducing financial barriers to adherence.
- **Healthcare Collaboration:** Facilitate collaborations between hospitals, clinics, and community health centers to ensure that patients have access to consistent and coordinated care.

Incorporating these recommendations will require a multifaceted approach, integrating the efforts of healthcare professionals, families, communities, and policymakers. Ensuring that diabetic patients are equipped with the necessary tools and support will pave the way for better health outcomes and improved quality of life.

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