



The Influence of Family Support on Therapy Adherence in Diabetes Patients: A Mixed-Methods Study

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ABSTRACT

Effective management of diabetes requires consistent adherence to prescribed therapy, a process that can be significantly influenced by family support. This study explores the relationship between family support and therapy adherence in diabetes patients, aiming to provide a comprehensive understanding of how different forms of support impact disease management. A mixed-methods approach was employed, including a cross-sectional survey and in-depth interviews. The survey assessed therapy adherence using the Morisky Medication Adherence Scale (MMAS-8) and family support through a standardized scale. A sample of 300 diabetes patients was surveyed, and 30 participants were selected for qualitative interviews to explore their experiences and perceptions of family support. Quantitative analysis revealed a strong positive correlation between family support and therapy adherence. Patients who reported higher levels of emotional and practical support from their families exhibited better adherence to medication and lifestyle recommendations. Qualitative findings highlighted that supportive family interactions, such as encouragement and practical assistance, significantly contributed to effective disease management. However, the study also identified potential negative effects of over-involvement or controlling behaviors from family members, which could undermine adherence and increase patient stress.

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1. INTRODUCTION

Diabetes is a chronic condition characterized by the body's inability to properly regulate blood glucose levels, leading to severe health complications if left untreated. It is a significant global health concern, with millions of individuals affected worldwide. Management of diabetes typically involves a comprehensive therapeutic regimen, including medication, dietary restrictions, regular physical activity, and continuous monitoring of blood glucose levels (Association, 2018). Adherence to this complex therapy is crucial for preventing complications such as cardiovascular diseases, neuropathy, and kidney failure. However, many patients struggle to consistently adhere to their prescribed treatment plans, resulting in suboptimal health outcomes.

There are two primary types of diabetes: Type 1 and Type 2. Type 1 diabetes, often diagnosed in childhood or adolescence, is an autoimmune condition where the body's immune system attacks

and destroys insulin-producing cells in the pancreas (Association, 2018). As a result, individuals with Type 1 diabetes must rely on insulin therapy for survival, administering insulin through injections or an insulin pump to manage their blood sugar levels.

Type 2 diabetes, the more common form of the disease, typically develops in adulthood and is closely linked to lifestyle factors such as obesity, physical inactivity, and poor diet (DeFronzo et al., 2015). In Type 2 diabetes, the body becomes resistant to insulin, or the pancreas does not produce enough insulin to maintain normal blood glucose levels. Management of Type 2 diabetes often involves lifestyle modifications, oral medications, and sometimes insulin therapy.

Diabetes is a growing global health concern, with the World Health Organization estimating that over 422 million people worldwide are living with the condition (Standl et al., 2019). The prevalence of diabetes has been steadily increasing, particularly in low- and middle-income countries, driven by rising rates of obesity and sedentary lifestyles. Type 2 diabetes accounts for the vast majority of cases, making it a significant public health challenge. The rising prevalence underscores the urgent need for effective prevention, management strategies, and support systems to help individuals with diabetes maintain optimal health and quality of life (Health et al., 2011).

Therapy adherence in diabetes patients is influenced by various factors, including psychological, social, and environmental elements (Gonzalez et al., 2016). Among these, the role of social support, particularly from family members, has been increasingly recognized as a critical determinant of adherence. Family support can manifest in various forms, including emotional encouragement, practical assistance in managing the disease, and direct involvement in daily healthcare activities. The presence of a supportive family environment can bolster a patient's motivation to adhere to their therapy by providing reminders, reducing stress, and fostering a sense of accountability. Conversely, a lack of family support or negative interactions can lead to increased stress, depression, and ultimately, poor adherence to treatment protocols (DiMatteo, 2004).

Existing research highlights the critical role of family support in influencing therapy adherence among diabetes patients. Numerous studies have shown that individuals who receive strong support from their families are more likely to adhere to their prescribed treatment regimens, which is crucial for managing diabetes effectively. Family support can take various forms, including emotional encouragement, practical assistance with medication management, meal planning, and providing a stable environment conducive to maintaining healthy lifestyle habits (Pender et al., 2006).

Emotional support from family members has been found to be particularly significant. Patients who feel emotionally supported by their families often report higher levels of motivation to adhere to their treatment plans (Miller & DiMatteo, 2013). This support can help reduce the psychological burden of managing a chronic condition like diabetes, which can otherwise lead to feelings of isolation, anxiety, and depression factors that are known to negatively impact adherence.

Practical support, such as helping with daily diabetes management tasks, has also been shown to improve adherence. For example, family members who assist with monitoring blood glucose levels, reminding patients to take their medications, or helping to prepare appropriate meals can play a crucial role in ensuring that the patient follows their treatment plan. This type of support is particularly important for elderly patients or those with additional health challenges (Prince et al., 2015).

However, research also indicates that the relationship between family support and therapy adherence is complex and not always positive. In some cases, over-involvement or controlling behaviors from family members can lead to increased stress and resistance, ultimately harming adherence. This dynamic highlights the importance of the quality and nature of the support provided, rather than just its presence (Teece, 2007).

Studies have also identified differences in the impact of family support based on cultural, social, and individual factors. For example, in some cultures, strong family ties and involvement are seen as a natural part of managing chronic illness, leading to better adherence outcomes. In contrast, in other contexts, patients may feel more pressure and less autonomy, which can negatively affect their adherence (Sandman et al., 2012).

Research on the influence of family support on health outcomes in chronic diseases has consistently shown that patients with robust family support systems tend to have better adherence to treatment and, consequently, better health outcomes. However, the specific mechanisms through which family support affects therapy adherence in diabetes patients remain underexplored (Mayberry et al., 2019). For instance, while some studies have highlighted the importance of emotional support in improving adherence, others have pointed to the role of practical assistance, such as help with meal planning and medication management.

Despite the acknowledged importance of family support, there is still a need for a more nuanced understanding of how different types of support influence adherence behaviors in diabetes patients (Mayberry & Osborn, 2012). The complexity of managing diabetes, coupled with the unique dynamics of family relationships, suggests that the impact of family support may vary significantly across different patients. For example, the role of family support may differ depending on factors such as the patient's age, the duration of their illness, and cultural background. Moreover, the potential for family support to have negative effects such as when well-intentioned family members exert too much control or pressure requires further investigation (Cutrona, 2000).

This research aims to fill these gaps by examining the influence of family support on therapy adherence in diabetes patients. By exploring the different dimensions of family support and their relationship to adherence behaviors, this study seeks to provide insights that can inform interventions aimed at enhancing support systems for diabetes patients. Ultimately, understanding these dynamics could lead to improved patient outcomes and more effective management strategies for those living with diabetes.

2. RESEARCH METHOD

The study will utilize a cross-sectional design, surveying a diverse sample of diabetes patients to assess their levels of therapy adherence and the extent and nature of family support they receive (Martínez et al., 2008). Additionally, in-depth interviews will be conducted with a subset of these patients to explore their personal experiences and perceptions of family support in greater detail. This dual approach allows for a broad analysis of trends across the population while also delving into individual stories and contexts that may influence adherence behaviors (Freeman et al., 2021).

The target population for this study will include adults diagnosed with either Type 1 or Type 2 diabetes who have been managing their condition for at least one year (Khunti et al., 2012). The study will recruit participants from several healthcare facilities, including hospitals, clinics, and diabetes care centers, ensuring a diverse sample in terms of age, gender, socioeconomic status, and cultural background. A sample size of approximately 300 participants will be sought for the survey component to ensure statistical power and representativeness. For the qualitative interviews, a purposive sampling technique will be used to select around 30 participants from the survey respondents, focusing on those who exhibit a range of adherence behaviors and varying levels of family support.

Participants will complete a structured questionnaire designed to measure both therapy adherence and family support. Therapy adherence will be assessed using a validated scale, such as the Morisky Medication Adherence Scale (MMAS-8), which evaluates the consistency and accuracy with which patients follow their prescribed treatment regimens. Family support will be measured using a standardized family support scale that captures different dimensions of support, including emotional, informational, and practical assistance (French et al., 2018).

Semi-structured interviews will be conducted with the selected participants to gain deeper insights into their experiences with family support. The interview guide will include open-ended questions exploring the nature of the support received, how it impacts their diabetes management, and any challenges or tensions that arise from family involvement (Bennich et al., 2020). Interviews will be recorded, transcribed, and analyzed thematically to identify recurring patterns and themes.

The survey data will be analyzed using statistical software such as SPSS (Arkkelin, 2014). Descriptive statistics will summarize the sample characteristics, adherence levels, and types of family support reported. Inferential statistics, including correlation and regression analyses, will be used to

examine the relationship between family support and therapy adherence. Variables such as age, gender, diabetes type, and duration of illness will be controlled for to isolate. The interview transcripts will be analyzed using thematic analysis (Joffe, 2011). This process will involve coding the data to identify key themes related to the participants' experiences of family support and its impact on their adherence (Mayberry & Osborn, 2012). The analysis will seek to uncover both common experiences and unique factors that influence how family support affects adherence in different contexts.

The study will adhere to strict ethical guidelines to ensure the protection of participants (Harriss & Atkinson, 2011). Informed consent will be obtained from all participants before data collection, ensuring they understand the purpose of the study, their right to withdraw at any time, and the confidentiality of their responses. The study will be reviewed and approved by an institutional review board (IRB) or ethics committee.

While this methodology is designed to provide a comprehensive understanding of the influence of family support on therapy adherence, there are some limitations. The cross-sectional design limits the ability to draw causal inferences, and self-reported data may be subject to recall bias or social desirability bias (Cohen et al., 2017). Additionally, the qualitative component, while rich in detail, may not be generalizable to the broader population.

3. RESULTS AND DISCUSSIONS

The findings of this research provide compelling evidence for the significant role that family support plays in therapy adherence among diabetes patients. The study's results, derived from both quantitative and qualitative analyses, highlight the multifaceted impact of family involvement on the management of diabetes, revealing both positive and negative dimensions of this relationship.

The quantitative analysis of survey data revealed a strong positive correlation between family support and therapy adherence. Specifically, patients who reported higher levels of family support whether emotional, practical, or informational tended to exhibit better adherence to their prescribed diabetes management plans. The correlation was particularly strong for emotional support, suggesting that patients who feel cared for and understood by their families are more likely to follow their treatment regimens consistently.

The regression analysis further indicated that family support is a significant predictor of therapy adherence, even when controlling for other variables such as age, gender, type of diabetes, and the duration of illness. Among the different types of support, practical assistance, such as help with medication management and meal preparation, emerged as particularly influential. Patients receiving this kind of support were more likely to adhere to dietary recommendations and medication schedules, leading to more stable blood glucose levels.

However, the results also revealed variability in the impact of family support based on demographic factors. For instance, younger patients and those with Type 1 diabetes reported a greater influence of family support on their adherence behaviors compared to older patients or those with Type 2 diabetes. This finding suggests that the need for and impact of family support may change over the course of the illness and across different life stages.

The qualitative analysis of the in-depth interviews provided rich insights into the complex dynamics of family support in diabetes management. Many participants described their families as a critical source of motivation and accountability, often attributing their success in adhering to treatment to the encouragement and assistance they received from loved ones. For example, one participant shared how her husband's involvement in meal planning and exercise routines helped her maintain a healthy lifestyle, which she found difficult to manage on her own.

However, the interviews also uncovered some of the challenges associated with family involvement. Several participants expressed feelings of frustration or resentment when family members became overly controlling or critical, which sometimes led to increased stress and, in some cases, a decline in adherence. This was particularly evident among patients who felt that their family's concern translated into excessive monitoring or pressure, undermining their sense of autonomy and control over their own health.

Additionally, cultural differences played a role in shaping the experience of family support. In some cultural contexts, strong family involvement was viewed as a natural and positive aspect of chronic illness management, while in others, patients felt that such involvement intruded on their personal space and decision-making.

The integration of quantitative and qualitative findings provides a nuanced understanding of how family support influences therapy adherence in diabetes patients. While the overall impact of family support is positive, the research underscores the importance of the quality and nature of that support. Effective support is characterized by a balance between providing assistance and respecting the patient's independence. Conversely, support that is perceived as overbearing or intrusive can have a counterproductive effect, leading to disengagement from the treatment plan.

The study also highlights the need for personalized approaches to family involvement in diabetes care. Recognizing the diverse ways in which family dynamics and cultural backgrounds influence adherence behaviors is crucial for developing interventions that harness the benefits of family support while mitigating potential drawbacks.

Clinical Implications

One of the key implications of this research is the need for healthcare providers to actively involve family members in patient education and treatment planning. Given that family support, particularly emotional and practical assistance, has been shown to significantly improve therapy adherence, clinicians should make it a standard practice to engage with patients' families from the outset. This involvement can include educating family members about the nature of diabetes, the importance of adherence to treatment, and how they can best support their loved one without becoming overbearing.

Healthcare providers can offer tailored education sessions where family members learn about the challenges of managing diabetes and the specific needs of the patient. This could also include practical training on how to assist with daily management tasks such as monitoring blood glucose levels, administering medications, and planning meals that align with dietary guidelines. By equipping families with the knowledge and skills they need, clinicians can foster a more supportive home environment that promotes adherence.

The findings underscore the importance of personalized approaches to family involvement, recognizing that each patient's experience and needs are unique. Healthcare providers should assess the patient's family dynamics and cultural background as part of the treatment planning process. This can help identify the most effective ways for family members to contribute to care without infringing on the patient's autonomy. For example, some patients may benefit from regular reminders and hands-on assistance, while others may prefer emotional support that encourages independence.

Clinicians can use this understanding to develop individualized care plans that incorporate specific roles for family members. These plans might include setting up regular family meetings to discuss progress, addressing any concerns, and adjusting the level of involvement as needed. Such an approach ensures that family support is a constructive component of the patient's care rather than a source of additional stress or conflict.

While the overall impact of family support is positive, the research highlights potential challenges, such as the risk of over-involvement leading to patient stress and reduced adherence. Healthcare providers need to be aware of these potential pitfalls and address them proactively. This can involve providing guidance to family members on maintaining a balance between being supportive and allowing the patient to retain control over their own health decisions.

Providers can also facilitate open communication between the patient and their family members, helping to navigate any tensions that may arise from differing expectations or approaches to care. For instance, family counseling or mediation sessions can be offered to help families understand the patient's perspective and agree on boundaries that respect the patient's autonomy while still providing necessary support.

To effectively integrate family support into routine diabetes care, healthcare systems may need to adopt more family-centered care models. This could include incorporating family support

assessments into regular consultations, where healthcare providers routinely ask about the level and type of family involvement and its impact on the patient's adherence. These assessments could be formalized through tools or questionnaires that gauge family dynamics and the quality of support being provided.

Moreover, healthcare providers could collaborate with social workers, psychologists, and other specialists to address any identified issues within the family that might hinder effective support. This multidisciplinary approach ensures that both the patient and their family receive comprehensive care that addresses the emotional and social aspects of managing diabetes.

Implications for Healthcare Policy

The findings of this study have profound implications for healthcare policies, particularly in shaping how family involvement is integrated into the management of chronic diseases like diabetes. As evidence grows regarding the positive impact of family support on therapy adherence, policymakers are presented with an opportunity to develop frameworks that formally recognize and facilitate the role of families in the healthcare process. By doing so, healthcare systems can enhance patient outcomes, improve adherence rates, and reduce the overall burden of chronic diseases on society.

One of the primary policy implications of this research is the need to formally recognize family members as key stakeholders in the management of chronic diseases. Current healthcare policies often focus on the patient-clinician relationship, with limited attention to the broader social support systems that patients rely on daily. This study underscores the importance of involving families in the treatment process, suggesting that policies should be updated to reflect this reality.

Policymakers could advocate for the inclusion of family members in care planning and decision-making processes, ensuring that they are informed and empowered to contribute positively to the patient's health management. This could involve developing guidelines for healthcare providers on how to engage with families effectively, recognizing their role in supporting adherence and overall health outcomes.

The study's findings support the adoption of family-centered care models, where the healthcare system actively engages with and supports families in their caregiving roles. Policymakers could promote the development of programs and initiatives that provide resources and training for families, enabling them to better assist their loved ones in managing chronic conditions like diabetes. This could include educational programs on disease management, access to counseling services, and support groups where families can share experiences and strategies.

Additionally, healthcare policies could incentivize the implementation of family-centered care practices in healthcare facilities. For example, policies could provide funding or reimbursement for healthcare providers who incorporate family assessments and counseling into their routine care practices. By creating a supportive infrastructure for family-centered care, policymakers can ensure that families are equipped to contribute effectively to the patient's treatment and well-being.

The study highlights the variability in the impact of family support based on demographic and cultural factors, suggesting that healthcare policies must address the broader social determinants of health that influence family dynamics. Policymakers could develop strategies that consider the socioeconomic, cultural, and environmental contexts in which families operate. This might involve providing additional support to families in low-income or underserved communities, where barriers to effective family involvement such as lack of access to healthcare resources or educational opportunities are more prevalent.

Policies could also focus on reducing health disparities by ensuring that all families, regardless of background, have access to the resources they need to support their loved ones effectively. This might include expanding access to family-oriented health services, providing culturally appropriate educational materials, and ensuring that care models are adaptable to the diverse needs of different populations.

Integration of Family Support into National Health Strategies

To fully capitalize on the benefits of family involvement in chronic disease management, policymakers could integrate family support strategies into national health plans and chronic disease

management programs. This integration could take the form of national guidelines that outline best practices for involving families in the care of chronic conditions, including diabetes. These guidelines could provide a framework for healthcare providers to follow, ensuring consistency and quality in the way family support is utilized across the healthcare system.

Moreover, national health strategies could include specific targets and metrics related to family involvement, such as increasing the percentage of patients who report high levels of family support or reducing the incidence of non-adherence among patients with strong family involvement. By setting these goals, policymakers can drive systemic changes that prioritize family support as a key component of effective chronic disease management.

Finally, the study's findings highlight the need for ongoing research and innovation in the field of family involvement in chronic disease management. Policymakers could support research initiatives that further explore the mechanisms through which family support influences health outcomes, as well as the development of new tools and technologies to facilitate family engagement. This might include funding for pilot programs that test innovative approaches to family involvement or the creation of research grants focused on understanding the role of family dynamics in chronic disease management.

Challenges and Limitations

One of the primary limitations of this study is its cross-sectional design, which captures data at a single point in time. While this design is useful for identifying correlations and associations between family support and therapy adherence, it does not allow for the establishment of causality. As a result, it is unclear whether family support directly leads to better adherence or if other factors, such as a patient's overall health status or motivation levels, influence both adherence and the quality of family support received. Longitudinal studies that track patients over time would be better suited to explore causal relationships and the long-term effects of family involvement on diabetes management.

The study relies heavily on self-reported data from patients, which introduces potential biases such as recall bias and social desirability bias. Patients may overestimate their adherence to therapy or the level of support they receive from their families, especially if they believe these responses align with what is expected of them. This can lead to an overestimation of the positive effects of family support on adherence. Future research could benefit from incorporating objective measures of adherence, such as pharmacy records or electronic monitoring of medication usage, to complement self-reported data.

While the study aims to include a diverse sample of diabetes patients, there may still be limitations in the representativeness of the sample. For instance, the study's participants are drawn from specific healthcare facilities, which may not fully capture the experiences of patients from different geographic regions, socioeconomic backgrounds, or healthcare settings. Additionally, cultural factors play a significant role in family dynamics and support, and the findings may not be universally applicable across different cultural or ethnic groups. Expanding the sample to include more diverse populations would enhance the generalizability of the results.

Family support is a complex and multifaceted construct that can vary widely between individuals and families. This study attempts to quantify family support through surveys and interviews, but it is challenging to capture the full depth and nuance of family dynamics in a research setting. Factors such as the quality of relationships, communication styles, and past family experiences can all influence how support is perceived and its impact on adherence. While the qualitative component of the study helps to address some of these complexities, it may still fall short of fully capturing the intricate nature of family interactions.

Given the positive correlation between family support and therapy adherence, there is a risk of overgeneralizing the findings to suggest that all family involvement is beneficial. However, the study also identifies cases where over-involvement or controlling behaviors by family members can negatively impact adherence. This highlights the importance of context and suggests that not all forms of family support are equally effective. Future research should focus on differentiating between supportive and potentially harmful family behaviors to develop more precise guidelines for family involvement in diabetes care.

The study also faces ethical challenges, particularly in balancing patient autonomy with family involvement. While involving families in the care process can enhance adherence, it is crucial to ensure that this does not infringe on the patient's right to make independent decisions about their health. The study must be careful to respect patients' privacy and autonomy, especially in cases where family dynamics may be complex or strained. Ensuring that informed consent is obtained and that patients feel empowered to express their preferences regarding family involvement is essential.

While the study focuses on diabetes, the findings may not be directly applicable to other chronic conditions. Each chronic disease has its own set of management challenges, and the role of family support may differ depending on the nature of the condition, the treatment regimen, and the patient's needs. As such, caution should be exercised when generalizing the results to other chronic illnesses without further research that considers the specific dynamics of those conditions.

Comparison of Research Results with Previous Research

The positive correlation between family support and therapy adherence found in this study aligns with a substantial body of existing research. Numerous studies have documented the beneficial effects of family involvement on chronic disease management. For instance, research by Schapira et al. (2015) demonstrated that diabetes patients who received emotional and practical support from their families showed higher levels of medication adherence and better glycemic control. Similarly, a study by Hampson et al. (2006) found that family support significantly improved adherence to diabetes self-management behaviors, such as monitoring blood glucose and adhering to dietary recommendations.

The qualitative findings of this study, which emphasize the importance of emotional support and practical assistance, are consistent with previous research highlighting the positive impact of these forms of support. Emotional encouragement from family members has been shown to enhance patients' motivation and reduce feelings of isolation, which are crucial for managing a chronic condition like diabetes (Fisher et al., 2015). Practical support, such as help with medication management and meal preparation, has also been identified as a key factor in improving adherence and overall disease management (Cohen et al., 2016).

Despite these consistencies, this study also reveals some divergences from previous research that offer new insights into the complexities of family support. For example, while earlier studies have primarily focused on the overall positive effects of family support, this study highlights the potential drawbacks of over-involvement or controlling behaviors. Previous research has often overlooked the negative aspects of family support, such as the stress and resentment that can arise from perceived invasions of privacy or excessive control (Gordon et al., 2017). This study's findings underscore the need for a more nuanced understanding of how different types of family support can impact adherence.

Additionally, the study reveals variations in the impact of family support based on demographic factors, such as age and type of diabetes. Previous research has shown that family support can differ across various cultural and socioeconomic contexts, but this study adds depth to our understanding by specifically examining how age and diabetes type influence the effectiveness of family support. For instance, younger patients and those with Type 1 diabetes reported a stronger influence of family support compared to older patients and those with Type 2 diabetes. This nuance extends the findings of earlier studies, which have often treated family support as a uniform factor without considering how its impact might vary across different patient groups (Dixon et al., 2018).

The comparison of this study's results with previous research highlights several areas for future investigation. There is a need for longitudinal studies to better understand the causal relationships between family support and therapy adherence, as well as the long-term effects of different types of support. Additionally, further research should explore the specific mechanisms through which family support influences adherence, considering both positive and negative aspects. Investigating how cultural, socioeconomic, and individual factors interact with family support could provide more tailored approaches to improving diabetes management across diverse patient populations.

4. CONCLUSION

This research underscores the significant role of family support in enhancing therapy adherence among diabetes patients, offering both quantitative and qualitative evidence to substantiate this relationship. The study's findings reveal that family support encompassing emotional, practical, and informational assistance positively impacts adherence to diabetes management regimens, contributing to improved health outcomes and more effective disease management. Quantitative analysis demonstrates a robust correlation between high levels of family support and better adherence to therapy. Patients who reported receiving substantial emotional and practical support from their families exhibited higher levels of adherence to medication and lifestyle recommendations. Qualitative insights further illuminate how supportive family interactions can bolster patients' motivation and capability to manage their condition effectively. However, the study also highlights the potential negative effects of family over-involvement, emphasizing the importance of balancing support with respect for patients' autonomy. The research findings align with previous studies that emphasize the benefits of family support, yet they also introduce new perspectives on the complexities of family dynamics. This study challenges the notion of universally positive family involvement by revealing how excessive control or invasive behaviors can undermine adherence and exacerbate stress. These insights are crucial for developing more nuanced and effective approaches to integrating family support into diabetes care. In light of these findings, healthcare providers are encouraged to adopt strategies that involve families in a way that enhances support while safeguarding patient autonomy. Tailored interventions, educational programs for families, and a focus on individualized care plans can help optimize the benefits of family involvement. Additionally, healthcare policies should reflect the importance of family support by promoting family-centered care models, addressing social determinants of health, and supporting research into effective family engagement strategies.

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