

Understanding psychological well-being in type 2 diabetes patients during times of uncertainty: A qualitative study

Comprensión del bienestar psicológico en pacientes con diabetes tipo 2 en tiempos de incertidumbre: un estudio cualitativo

Arina Qona'ah^{1a}, Nursalam^{2a*}, Ninuk Dian Kurniawati^{3a}, Chong Mei Chan^{4b}

SUMMARY

Introduction: Type 2 Diabetes Mellitus (T2DM) is a lifelong condition that often brings not only physical challenges but also emotional and psychological burdens. Patients frequently face uncertainty regarding disease progression, treatment outcomes, and their ability to maintain control, which can lead to emotional distress and impact psychological well-being. This study aims to explore the psychological well-being of patients with T2DM in the face of uncertainty.

Methods: This interpretative phenomenological study involved in-depth interviews with participants diagnosed with T2DM who met the inclusion criteria: DDS-17 score ≥ 2 , age ≥ 18 years, diagnosed for at least 1 year, and willingness to share their experiences related to living with uncertainty. Data were collected

through semi-structured interviews and were analyzed thematically using Braun and Clarke's approach.

Results: Six themes emerged: 1) Emotional turmoil upon diagnosis, 2) Distress in daily diabetes management, 3) Fear of complications and the future, 4) Coping mechanisms and spiritual surrender, 5) Emotional awareness and mind-body connection, and 6) Motivation from family and social bonds. Participants described emotional distress, fear, boredom with daily treatment routines, and the role of family and religious coping in navigating these uncertainties. Uncertainty often increases when self-control fails or when complications are feared.

Conclusion: Uncertainty plays a significant role in shaping the psychological well-being of patients with T2DM. Emotional resilience, mindfulness, and social and spiritual support are key resources for maintaining well-being. Integrating psychological support into diabetes care is crucial for helping patients navigate emotional challenges and enhancing long-term outcomes.

DOI: <https://doi.org/10.47307/GMC.2026.134.S1.26>

ORCID: 0000-0002-1369-9901¹

ORCID: 0000-0002-9052-6983²

ORCID: 0000-0002-9457-3445³

ORCID: 0000-0002-8599-3018⁴

^aFaculty of Nursing, Universitas Airlangga, Surabaya, Indonesia.

^bDepartment of Nursing Science, Faculty of Medicine, Universiti Malaya.

*Corresponding Author: Nursalam

E-mail: nursalam@fkip.unair.ac.id

Recibido: 10 de noviembre 2025

Aceptado: 28 de diciembre 2025

RESUMEN

Introducción: La diabetes mellitus tipo 2 (DM2) es una enfermedad crónica que a menudo conlleva no solo desafíos físicos, sino también cargas emocionales y psicológicas. Los pacientes a menudo enfrentan incertidumbre sobre la progresión de la enfermedad, los resultados del tratamiento y su capacidad para mantener el control, lo que puede generar angustia emocional y afectar su bienestar psicológico. Este

estudio busca explorar el bienestar psicológico de los pacientes con DM2 ante la incertidumbre.

Métodos: Este estudio fenomenológico interpretativo incluyó entrevistas exhaustivas con participantes diagnosticados con DM2 que cumplían los criterios de inclusión: puntuación ≥ 2 en la escala DDS-17, edad ≥ 18 años, diagnóstico al menos un año antes y disposición para compartir sus experiencias relacionadas con la convivencia con la incertidumbre. Los datos se recopilaron mediante entrevistas semiestructuradas y se analizaron temáticamente utilizando el enfoque de Braun y Clarke.

Resultados: Se identificaron seis temas: 1) Trastorno emocional tras el diagnóstico, 2) Angustia en el manejo diario de la diabetes, 3) Miedo a las complicaciones y al futuro, 4) Mecanismos de afrontamiento y entrega espiritual, 5) Conciencia emocional y conexión mente-cuerpo, y 6) Motivación familiar y social. Los participantes describieron angustia emocional, miedo y aburrimiento ante las rutinas diarias del tratamiento, así como el papel de la familia y la religión en el manejo de estas incertidumbres. La incertidumbre suele aumentar cuando falla el autocontrol o se temen complicaciones.

Conclusión: La incertidumbre desempeña un papel importante en el bienestar psicológico de los pacientes con DM2. La resiliencia emocional, la atención plena y el apoyo social y espiritual emergen como recursos clave para mantener el bienestar. Integrar el apoyo psicológico en la atención diabética es crucial para ayudar a los pacientes a afrontar los desafíos emocionales y mejorar los resultados a largo plazo.

Palabras clave: Diabetes mellitus tipo 2, bienestar psicológico, incertidumbre, estudio cualitativo.

INTRODUCTION

Type 2 diabetes mellitus (T2DM) is a complex, chronic metabolic disorder requiring ongoing self-management that significantly impacts patients' psychological well-being (1,2). The demands of managing T2DM, including adhering to complex medication regimens, maintaining blood glucose levels, and making significant lifestyle changes, can cause substantial psychological distress (3). Psychological well-being in people with diabetes tends to decline with increasing disease duration, with the longer the duration of T2DM, the lower the level of psychological well-being (4). Mental health status is strongly correlated with physical disease management in patients with T2DM (5). Furthermore, patients often struggle with uncertainty about the disease's unpredictable

course, its progression, and the potential for long-term complications such as blindness, organ failure, and amputation. This uncertainty can significantly contribute to feelings of anxiety, disappointment, and fear, which negatively affect patients' quality of life and their ability to practice effective self-care behaviors (6).

DM has become a global health pandemic, with the International Diabetes Federation (IDF) reporting that an estimated 590 million adults worldwide were living with the condition in 2024, a number projected to increase to over 850 million by 2050 (7). This burden is particularly heavy in Indonesia, which ranks fifth globally with over 20.4 million adults affected, where more than 70 % of cases are undiagnosed. This substantial physical burden is compounded by significant psychological challenges, as a high percentage of patients experience diabetes distress, an emotional state of burnout, and fear directly related to managing the disease (8). A study in Indonesia found that over a third of patients had moderate-to-high levels of distress, underscoring a critical need to address these psychological well-being issues, which are often overlooked in the clinical setting but are known to negatively impact self-care and disease outcomes (9).

Living with T2DM creates an ongoing psychological burden that is distinct from general mental health issues like depression. This concept, known as diabetes distress, is directly related to the emotional and mental exhaustion of managing the disease itself (10). High levels of distress are consistently linked to poorer glycemic control, reduced adherence to treatment plans, and an overall decline in psychological well-being (11). While quantitative studies have successfully identified the prevalence and impact of psychological distress in this population, there is a lack of qualitative research that explores the lived experience of psychological well-being in T2DM patients, especially in the context of persistent uncertainty. Understanding how patients perceive, navigate, and cope with this psychological burden in their own words is crucial for developing targeted and effective interventions (1).

Understanding psychological well-being in T2DM is crucial due to the significant psychological burden imposed by this chronic

condition, a challenge often compounded by a profound sense of uncertainty (12). The daily demands of self-management, including continuous blood glucose monitoring, strict dietary adherence, and regular exercise, can lead to emotional exhaustion and feelings of frustration and distress, known as diabetes distress (10). Beyond these daily challenges, patients are also faced with a persistent sense of uncertainty regarding the unpredictable nature of the disease's progression and the looming threat of long-term complications, such as cardiovascular disease, neuropathy, and kidney failure. This ongoing state of psychological tension can significantly impair patients' quality of life and undermine their ability to engage in effective self-care behaviors, underscoring the critical need for a deeper qualitative understanding of how patients perceive and navigate their psychological well-being amid such pervasive uncertainty (11).

This study aims to explore the psychological well-being of patients with T2DM in the context of illness-related uncertainty. Using an interpretative phenomenological approach, it seeks to understand the causes and consequences of uncertainty and how patients perceive, experience, and cope with it to maintain their psychological well-being. The findings are expected to provide in-depth insights to inform clinical practice and support the development of holistic, patient-centered care models that address both the psychological and physical aspects of diabetes management.

METHODS

This study employed a qualitative design with an interpretative phenomenological approach to explore the lived experiences of psychological well-being among patients with T2DM during periods of uncertainty (13-15). This approach was chosen to gain an in-depth understanding of how patients perceive, experience, and make meaning of uncertainty in relation to their psychological well-being.

It involved 21 adult participants diagnosed with Type 2 Diabetes Mellitus (T2DM), recruited through purposive sampling. The

sampling process was conducted at a primary healthcare center. Screening was carried out by distributing the Diabetes Distress Scale (DDS-17) questionnaire to patients with T2DM and reviewing their medical records to obtain HbA1c values. Patients who met the inclusion criteria: having a DDS-17 score of ≥ 2 , managing diabetes for at least one year, being aged 18 years or older, being able to communicate in Bahasa Indonesia, and being willing to share their experiences—were invited to participate in the study.

Data were collected from June to August 2025 at two primary healthcare centers in Lamongan Regency, East Java, Indonesia. These centers were selected because they provide regular diabetes care services and have an established registry of patients with T2DM.

Data were collected through in-depth, semi-structured interviews, using open-ended questions to elicit participants' experiences (16). The interview guide was pilot-tested with one participant to ensure clarity and relevance to the study aim. Sample questions included "*Can you describe how living with diabetes has affected your emotions and overall well-being?*" and "*How do you cope with feelings of uncertainty or worry about possible complications and your future with diabetes?*" Additional probing questions were used to explore participants' perceptions, coping strategies, and sources of psychological strength in greater depth. All interviews were audio-recorded with participants' consent and transcribed verbatim for analysis.

Data Analysis

Data analysis was guided by Braun and Clarke's thematic analysis framework, which consists of six iterative steps: 1) familiarization with the data through repeated reading and annotation, 2) generating initial codes, 3) identifying themes from the coded data, 4) reviewing and refining themes, 5) defining and naming themes, and 6) producing the final report. This process ensured a systematic and rigorous exploration of participants' experiences while allowing themes to emerge inductively from the data (17).

RESULTS

Characteristic Participants

A total of 21 participants participated in the study. The average age was 51.95 years, with the majority (71.42 %) aged 51-60 years. Most of participants were female (95.23 %), and only one participant (4.76 %) was male. The majority of participants had a primary school education (42.85 %), and most were unemployed (61.90 %). Most participants were married (80.95 %), with a smaller proportion being widowed/widowed (14.28 %) or divorced (4.76 %). More than half (52.38 %) of participants reported a monthly income of less than 3 million rupiah, while 23.80 % had no income, and another 23.80 % had more than 3 million rupiah per month. Approximately half (47.61 %) of participants had a diabetes diagnosis of more than 10 years, followed by 33.33 % who had diabetes for between 1 and 5 years, and 19.04 % who had diabetes for between 6 and 10 years. The majority of participants used oral antidiabetic medications (71.42 %), while a smaller proportion used a combination of oral medications and insulin injections (19.04 %). Most participants had hypertension as a comorbid condition (52.38 %). Mean fasting blood glucose was 227.8 mg/dL, and mean HbA1c was 10.15 %, indicating poor glycemic control. The mean Diabetes Distress Scale (DDS-17) score was 3.11, reflecting high levels of diabetes distress among the participants (Table 1).

Six major themes reflect the psychological well-being of patients with type 2 diabetes mellitus (T2DM) in times of uncertainty: 1) Emotional turmoil upon diagnosis, 2) Distress in daily diabetes management, 3) Fear of complications and the future, 4) Coping mechanisms and spiritual surrender, 5) Emotional awareness and mind-body connection, and 6) Motivation from family and social bonds.

Theme 1: Emotional Turmoil upon Diagnosis

This theme describes the intense psychological reactions experienced by patients with type 2 diabetes when they first learn their diagnosis.

This theme emerged from several codes reflecting anxiety, sadness, fear, and disbelief. Participants described how overwhelmed they felt by suddenly realizing they were living with an incurable chronic disease. After diagnosis, emotions of shock and denial were reflected in the subtheme “Shock and Disbelief.” Because they considered themselves healthy before medical confirmation, some participants initially found the diagnosis difficult to accept.

“I was shocked. I thought I was still healthy, but the doctor said I have diabetes” (P21)

“When I heard that diabetes can’t be cured and I have to take medicine for life, I was shocked” (P17).

The subtheme, “Sadness and Guilt,” emerged from codes indicating emotional distress and self-blame. Participants described crying, difficulty sleeping, and regret as they considered the possible causes of their illness. These emotional reactions demonstrate an internalized sense of responsibility for their health condition. Participants’ expressions highlighted a profound sense of personal failure and emotional vulnerability, demonstrating how guilt is intertwined with grief in the early stages of adaptation.

“I couldn’t sleep all night; I cried and thought, ‘Oh my God, how come I have this disease?’” (P21).

“I feel guilty; how could I get this illness at my age?” (P21).

The subtheme, “Fear and Anxiety,” encompassed participants’ understandings of death, complications, and lifelong care. These emotions reflected a profound sense of the future and concerns about potential future death. Participants’ statements indicated that fear was related not only to physical decline but also to the psychological burden of lifelong dependence on medication.

“I’m scared because so many people with diabetes around me have died suddenly” (P16).

“It’s scary to think I’ll have to take medicine until I die” (P19).

Table 1. Demographic Characteristics.

Variable	Category	Frequency (f)	Percentage (%)	Mean
Age				51.95
	40–50 years	6	28.57	
	51–60 years	15	71.42	
Gender				
	Male	1	4.76	
	Female	20	95.23	
Education				
	Elementary School	9	42.85	
	Junior High School	7	33.33	
	Senior High School	5	23.8	
Occupation				
	Government Employee	1	4.76	
	Private Employee	2	9.52	
	Entrepreneur	3	14.28	
	Unemployed	13	61.9	
	Farmer	2	9.52	
Marital Status				
	Married	17	80.95	
	Divorced	1	4.76	
	Widowed	3	14.28	
Income				
	No income	5	23.8	
	< 3 million IDR/month	11	52.38	
	> 3 million IDR/month	5	23.8	
Duration of Diagnosis				
	1–5 years	7	33.33	
	6–10 years	4	19.04	
	>10 years	10	47.61	
Therapy Type				
	Oral anti-diabetic	15	71.42	
	Insulin injection	1	4.76	
	Oral and insulin injection	4	19.04	
	Oral, insulin, and alternative therapy	1	4.76	
Comorbidities				
	No complications	9	42.85	
	Hypertension	11	52.38	
	Others	1	4.76	
Fasting Blood Glucose (mg/dL)				227.8
HbA1c (%)				10.15
DDS-17 Score				3.11
	<2.0 (little or no distress)	0	0	
	2.0–2.9 (moderate distress)	6	28.57	
	≥3.0 (high distress)	15	71.42	

Theme 2: Distress in Daily Diabetes Management

The second theme describes the ongoing psychological struggles patients face in adhering to their diabetes care routines. This theme emerged from data codes expressing boredom,

exhaustion, frustration, and gradual acceptance as participants learned to integrate diabetes management into their daily lives. In contrast to the acute emotional upheaval experienced at diagnosis, this theme describes the chronic

emotional strain associated with lifestyle adjustments and ongoing medical adherence.

Monotony and exhaustion are subthemes reflecting participants' experiences of boredom and exhaustion resulting from repetitive self-care routines, such as taking medications and adhering to dietary restrictions. Patients reported feeling trapped in a never-ending cycle of treatment and dietary adjustments, which often led to emotional exhaustion. Participant statements revealed how the monotony of care contributed to emotional exhaustion and reduced motivation to maintain consistent self-management.

"I get tired of taking pills every morning and evening. It feels endless" (P1).

"It's difficult to avoid sweet foods. Sometimes I just want to taste them" (P6).

The subtheme, "Frustration and Helplessness," emerged from data codes describing the emotional burden of unpredictable blood sugar levels and the perceived ineffectiveness of self-care efforts. Participants felt discouraged when their efforts didn't yield consistent results, leading to feelings of hopelessness and anger.

"Even when I control my diet and take medicine, my sugar keeps going up and down" (P10).

"I'm careful with food, and I take the pills, but my sugar won't go down. It makes me angry" (P6).

Acceptance of lifelong management as a subtheme emerged as some participants gradually developed an understanding and ability to adapt to their condition. Over time, they realized that diabetes requires consistent care and a long-term commitment. These participants' reflections signal a transition from emotional denial to practical acceptance. Demonstrating that acceptance plays a key role in reducing daily stress and improving psychological well-being.

"I finally realized I must take medicine regularly; otherwise, my sugar spikes" (P11).

"At first it was hard, but now I just do it as part of my routine" (P13).

Theme 3: Fear of Complications and the Future

The theme "Fear of complications and the future" highlights the deep anxiety felt by T2DM patients regarding the progression of their disease and potential complications. This theme emerged from codes reflecting concerns about physical decline, fear of death, concern for family, and doubts about the effectiveness of treatment. Participants revealed that negative anticipations often threatened their psychological well-being regarding their future health and the burden of chronic disease.

The subtheme "Fear of worsening condition" describes participants' concerns about the possibility of developing severe complications such as organ failure or amputation. Their fears were often reinforced by observing others with similar conditions experiencing poor outcomes.

"I'm afraid of losing a toe or leg like my neighbor, who didn't control her sugar" (P8).

"I'm scared because my mother also died from diabetes" (P12).

"Fear of family's future" is a subtheme reflecting emotional stress associated with social and familial responsibilities. Participants were concerned about how their disease might affect their loved ones, particularly their children. This fear extended beyond the physical to concerns about being unable to fulfill family roles. Concern for family and fear of dependency contributed to the development of psychological distress.

"I'm worried about my children; they still need me" (P10).

"I don't want to make my children worry or take care of me all the time" (P20).

The subtheme "uncertainty about disease progression" emerged from expressions of doubt and loss of confidence in medical care. Participants questioned whether their therapy was effective and whether recovery or stability was possible. The fatigue and doubts brought on by treatment increased feelings of hopelessness and fear, heightening the emotional vulnerability of living with a chronic illness, as evidenced by statements shared by participants.

"I've taken medicine for years, but my sugar never stays stable" (P18).

"Sometimes I think the medicine doesn't really help" (P18).

Theme 4: Coping Mechanisms and Spiritual Surrender

Coping mechanisms and spiritual self-expression reflect the adaptive strategies used by T2DM patients to manage emotional distress and maintain psychological balance during intimate encounters. This theme emerged from data codes describing religious and spiritual coping, emotion regulation through positive distraction, and reliance on social support. For many participants, spirituality and relationships with others were important resources in maintaining well-being and fostering acceptance of their current condition.

The subtheme "Religious and Spiritual Coping" illustrates how participants turned to faith for comfort and acceptance. They viewed illness as a divine test, finding strength in surrendering to God's will and maintaining hope through prayer. Spiritual surrender provided emotional relief and meaning, transforming fear into acceptance and helping participants maintain optimism amidst the challenges.

"God gave me this test, so I just accept it and keep praying" (P11).

"I leave everything to Allah. I just follow the treatment and pray to get better" (P10).

The next subtheme, "positive distraction and relaxation," emerged from participants' descriptions of engaging in calming activities to reduce stress and avoid overthinking their illness. For participants, relaxation and light activities served as self-soothing techniques to manage anxiety and emotional burdens. Active emotion regulation demonstrates how small, everyday practices can restore mental calm and enhance well-being.

"When I feel stressed, I pray, chant, or take a nap to relax my mind" (P6).

"I try to stay cheerful and make myself happy, so I don't overthink it" (P6).

"Social support as coping" is a subtheme that highlights the role of family and community support in maintaining motivation and fulfillment. Participants described receiving encouragement from their children and the positive impact of health groups, such as Prolanis (Program Pengelolaan Penyakit Kronis, in English, Chronic Disease Management Program), in which support systems play a crucial role in enhancing coping capacity. Prolanis is a program from BPJS Kesehatan (Indonesia's national health insurance agency) designed to help participants with chronic illnesses—especially type 2 diabetes mellitus and hypertension—so their conditions can be better controlled and their quality of life can remain good. This program was created because chronic disease cases in Indonesia continue to rise and require long-term, structured management.

"My daughter always reminds me to take medicine or tells me not to eat sweets" (P12).

"The Prolanis program helps a lot; they visit my home and check my sugar" (P4).

Theme 5: Emotional Awareness and Mind–Body Connection

The theme "Emotional Awareness and Mind–Body Connection" illustrates participants' growing awareness that emotions can directly affect their physical health, particularly blood sugar levels. This theme emerged from data codes on awareness of emotional triggers, self-reflection, and mindfulness-based emotional regulation. As participants experienced managing their illness, they began to understand that psychological stability and physical health are closely linked.

The subtheme "Recognizing Emotional Triggers" reflects participants' awareness that stress, worry, and negative emotions can lead to fluctuations in blood glucose levels. Negative emotional states impact physical health. Participants learned how to internalize the mind–body connection, enabling them to regulate their emotions as part of diabetes management.

“When I’m calm, my sugar goes down, but when I’m worried, it rises” (P12).

“The doctor said, and I also feel it, that my high sugar comes from too much thinking” (P10).

“Self-Reflection and Mindfulness” is a subtheme that illustrates how participants learned to observe their emotional and physical states to maintain stability. Many participants made deliberate efforts to calm their minds and recognize when stress affected their bodies. These patient statements demonstrate the process of mindful self-monitoring, where patients cultivate awareness to prevent emotional distress from developing into physical symptoms.

“I try not to overthink because I know stress makes my body worse” (P10).

“I can feel when my body starts shaking, or my sugar is high, so I rest and breathe” (P12).

The subtheme “Regulating Emotions Through Mindfulness” demonstrates participants’ deliberate efforts to maintain calm and control their emotions to support their well-being. Emotional regulation becomes a skill learned through daily experience and family support. These statements demonstrate how emotional self-awareness gives rise to behavioral strategies, linking psychological well-being with physiological stability.

“When I’m upset, my husband tells me to sit down and take a deep breath” (P6).

“I try to stay calm because if I get angry, my sugar level shoots up” (P12).

Theme 6: Motivation from Family and Social Bonds

The theme, Motivation from Family and Social Ties, highlights the important role of family relationships and social ties in maintaining patients’ motivation to manage T2DM. This theme emerged from codes describing affection and responsibility toward family, encouragement from significant others, and support from health programs. Emotional and social relationships

serve as sources of strength, encouraging adherence to self-care and fostering psychological resilience.

The subtheme “Motivation for loved ones” reflects participants’ desire to remain healthy for their family members, particularly children and grandchildren. Family serves as a primary motivator, giving meaning to patients’ efforts to manage their disease. Family affection and responsibility generate intrinsic motivation for self-care, transforming diabetes management from a personal chore into an act of devotion and commitment.

“I want to stay healthy, so I can watch my grandchildren grow up” (P1).

“I want to be healthy because my children still depend on me” (P10).

The subtheme “Family encouragement and reminders” reflects the daily support that participants receive from family members. Emotional and practical reminders from children or partners reinforce positive behaviors and satisfaction with treatment. The supportive role of close family members, who serve as emotional anchors and active partners in diabetes care, helps patients maintain consistency in self-management.

“My kids always tell me, ‘Mom, don’t drink iced drinks; remember your sugar’ (P13).

“My husband keeps saying, ‘Stay strong, don’t give up, you can do this’ (P21).

“Social program participation” is a subtheme that examines the influence of positive community-based health initiatives, such as Prolanis, on motivation and feelings of isolation. Participants explained how these programs offer not only medical support but also social connections and shared experiences. Participatory groups help patients maintain psychological well-being through mutual support and shared learning.

“Prolanis gives me motivation; the staff always check my progress” (P6).

“I like joining Prolanis because I meet other patients and don’t feel alone” (P4).

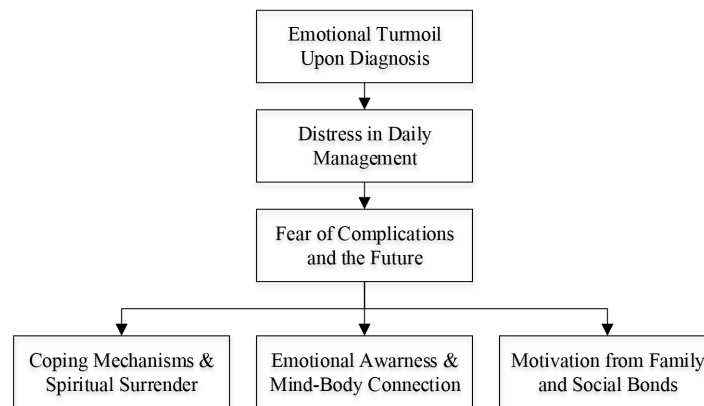


Figure 1. Six Themes of the research: Understanding Psychological Well-Being in Type 2 Diabetes Patients during Times of Uncertainty.

The findings reveal a dynamic process in which initial negative emotions gradually transform into adaptive coping strategies that help patients maintain psychological well-being while living with diabetes. The journey begins with emotional turmoil at diagnosis—feelings of shock, sadness, and denial—followed by distress in daily self-management and fear of future complications. Over time, patients develop adaptive pathways through spiritual acceptance, enhanced emotional awareness and self-regulation, and the supportive motivation of family and social networks, which collectively enable them to navigate uncertainty and sustain mental resilience (Figure 1).

DISCUSSION

This study explored the psychological well-being of patients with type 2 diabetes mellitus (T2DM) during times of uncertainty. The findings highlight a gradual emotional adaptation process that reflects how patients respond to the ongoing challenges of living with diabetes. Emotional turbulence in T2DM patients represents the initial phase of psychological adaptation, where acceptance has not yet developed, and uncertainty dominates patients' perceptions of life with diabetes. During data collection, many participants described profound emotional

reactions upon diagnosis, including shock, sadness, and disbelief. Some reported sleepless nights and persistent thoughts of “why me?”, reflecting feelings of guilt and fear about the future. These experiences indicate that the diagnosis moment becomes a psychological turning point, challenging patients' sense of control and identity. This finding aligns with previous studies showing that newly diagnosed individuals often experience emotional shock, grief, and fear, which can hinder self-management and delay acceptance of the illness (18-20). Early-stage distress, if left unaddressed, may progress into chronic diabetes distress and depression, as noted in other qualitative research (21,22). Therefore, early psychosocial assessment and emotional support are crucial to help patients process their diagnosis, develop adaptive coping mechanisms, and prevent long-term psychological burden.

As patients move beyond diagnosis, daily management itself becomes a source of emotional burden. Participants expressed frustration with strict routines of diet, medication, and physical activity, often describing fatigue, forgetfulness, or boredom. This resonates with other research showing that adherence challenges are common and strongly linked to psychological distress in T2DM (18). Even when patients adhere to recommendations, fluctuating glucose readings

create further uncertainty and diminish confidence in self-management. This reflects the idea that uncertainty is not only about the distant future but also embedded in everyday practices.

The fear of long-term complications such as amputation was also prominent, shaping both emotional experiences and health behaviors. For some participants, fear became a motivator to improve adherence, while for others it intensified anxiety and self-blame. Prior research has noted that perceived threat of complications can either enhance motivation or exacerbate diabetes distress, depending on how patients interpret their capacity for control (23). These findings highlight the delicate balance between using complication risk as a motivational tool versus unintentionally instilling fear that undermines well-being.

Despite these challenges, participants demonstrated resilience through coping mechanisms and spiritual surrender. Many described regulating emotions through distraction, rest, or prayer, while others emphasized accepting the disease as part of God's will. Spirituality provided meaning and helped participants tolerate uncertainty, consistent with findings from Indonesian and global studies that show that spiritual coping enhances psychological well-being in diabetes (18,24). This suggests that integrating spiritual or mindfulness-based strategies into diabetes care may support patients' emotional adaptation.

Equally important was participants' awareness of the connection among emotions, lifestyle choices, and blood glucose levels. They recognized that stress, diet, and irregular routines directly influenced their condition, reflecting a form of mind-body awareness. Such recognition is crucial for fostering self-efficacy, as it helps patients feel more in control of their illness and motivates behavior change. Recent studies confirm that emotion regulation and awareness are linked to improved self-care and glycemic outcomes (25).

Finally, social bonds, particularly family ties, emerged as a powerful source of motivation. Many participants described their desire to remain alive and healthy to care for or witness milestones in their children and grandchildren's lives. This

aligns with evidence that family involvement and social support buffer diabetes distress and promote quality of life (24). Family members not only provide emotional reassurance but also reinforce adherence behaviors, making them essential partners in care strategies.

The themes in this study illustrate the multidimensional nature of psychological well-being among patients with type 2 diabetes mellitus (T2DM) during the healthy life stage. Psychological well-being encompasses emotional balance, acceptance, and adaptive functioning in the management of a chronic illness (26,27). The themes of early chaos, stress in daily management, and fear of complications reflect impaired well-being, as patients experience negative emotions, fear, and a perceived loss of control. These early emotional struggles reflect threats to autonomy and self-acceptance described in Ryff's psychological well-being model. In contrast, the themes of spirituality, emotional awareness, and family and social support demonstrate restoration of well-being through meaning-making, mindfulness, and social connectedness. These adaptive processes demonstrate that psychological well-being in diabetes depends not only on the absence of distress but also on the development of resilience, hope, and positive self-regulation (21). Therefore, interventions for type 2 diabetes should integrate emotional, cognitive, and social dimensions of care, such as early counseling, mindfulness-based education, and family involvement, to strengthen patients' adaptive capacity and improve long-term well-being.

CONCLUSION

Psychological well-being in patients with type 2 diabetes throughout the course of their illness is multifaceted, encompassing emotional distress, fear of future complications, and challenges in self-management. It is also strengthened by coping mechanisms, spiritual self-talk, internal awareness, and social bonds. By understanding these dynamics, healthcare interventions can be tailored to reduce distress, increase motivation and self-efficacy, and promote greater overall well-being.

Financial Support

The researcher is funded by Direktorat Penelitian dan Pengabdian kepada Masyarakat, Direktorat Jenderal Riset dan Pengembangan, Kementerian Pendidikan Tinggi, Sains, dan Teknologi for the Penelitian Disertasi Doctor scheme (2395/B/UN3.LPPM/PT.01.03/2025). The funders had no role in the study design, data collection, analysis and interpretation of the findings, manuscript preparation, or the decision to submit the manuscript for publication.

REFERENCES

- McKenzie C, Bennert K, Kessler D, Montgomery A. The illness-disease dynamic: Psychological well-being in type 2 diabetes: An interpretative phenomenological analysis. *Qual Rep.* 2016;21(5):933-939.
- Sendekie AK, Limenh LW, Bizuneh GK, Kasahun AE, Wondm SA, Tamene FB, et al. Psychological distress and its impact on glycemic control in patients with diabetes, Northwest Ethiopia. *Front Med.* 2025;12:1488023.
- Roberts MZ, Scheiber FA, Moskovich AA, Merwin RM. A Scoping Review of the Relationship Between Psychological (In)flexibility and Living with and Managing Type 1 and Type 2 Diabetes. *Behav Sci (Basel).* 2025;15(6).
- Wesselbaum D. Psychological well-being over time among adults with diabetes: A cross-sectional study. *Acta Diabetol.* 2025;62(5):773-776.
- Zu W, Zhang S, Du L, Huang X, Nie W, Wang L. The effectiveness of psychological interventions on diabetes distress and glycemic level in adults with type 2 diabetes: A systematic review and meta-analysis. *BMC Psychiatry.* 2024;24(1).
- Xiao Y, Song Z, Wei Z, Xie N, Wang Z. The Experience of Fear of Complications Among Patients with Type 2 Diabetes Mellitus: A Qualitative Study. *Patient Prefer Adherence.* 2025;19:2553-63.
- International Diabetes Federation. *IDF Diabetes Atlas.* 2025.
- Fisher L, Hessler D, Polonsky W, Strycker L, Bowyer V, Masharani U. Toward effective interventions to reduce diabetes distress among adults with type 1 diabetes: Enhancing Emotion regulation and cognitive skills. *Patient Educ Couns.* 2019;102(8):1499-1505.
- Alfian SD, A. Wicaksono I, A. Putri N, Abdulah R. Prevalence of diabetes distress and associated factors among patients with diabetes using antihypertensive medications in community health centres in Bandung City, Indonesia. *Pharmaciana.* 2021;11(2):195.
- Peyrot M, Burns KK, Davies M, Forbes A, Hermanns N, Holt R, et al. Diabetes Attitudes Wishes and Needs 2 (DAWN2): A multinational, multi-stakeholder study of psychosocial issues in diabetes and person-centred diabetes care. *Diabetes Res Clin Pract.* 2013;99(2):174-184.
- Kamody R, Berlin K, Rybak T, Klages K, Banks G, Ali J, et al. Psychological Flexibility Among Youth with Type 1 Diabetes: Relating Patterns of Acceptance, Adherence, and Stress to Adaptation. *Behav Med.* 2018;44:271-279.
- Akter J, Islam RM, Chowdhury HA, Selim S, Biswas A, Mozumder TA, et al. Psychometric validation of the diabetes distress scale in the Bangladeshi population. *Sci Rep.* 2022;12(1):562.
- Polit, Denise F, Beck CT. *Essentials of Nursing Research: Appraising Evidence for Nursing Practice.* 7th edition. Wolters Kluwer Health, Lippincott Williams & Wilkins; 2010.
- Moleong LJ. *Metodologi Penelitian Kualitatif.* Bandung: PT Remaja Rosadakarya; 2013.
- Polit & Beck. *Essentials of Nursing Research: Appraising Evidence for Nursing Practice.* 7th edition. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2010.
- Weller SC, Vickers B, Bernard HR, Blackburn AM, Borgatti S, Gravlee CC, et al. Open-ended interview questions and saturation. *PLoS One.* 2018;13(6):e0198606.
- Braun V, Clarke V, Hayfield N. 'A starting point for your journey, not a map': Nikki Hayfield in conversation with Virginia Braun and Victoria Clarke about thematic analysis. *Qual Res Psychol.* 2022;19(2):424-445.
- Mirzazadeh-Qashqaei F, Zarea K, Rashidi H, Haghighizadeh MH. The relationship between self-care, spiritual well-being and coping strategies in patients with type 2 diabetes mellitus. *J Res Nurs.* 2023;28(4):259-269.
- Schabert J, Browne JL, Mosely K, Speight J. Social stigma in diabetes: A framework to understand a growing problem for an increasing epidemic. *Patient.* 2013;6(1):1-10.
- D'Souza MS, Karkada SN, Parahoo K, Venkatesaperumal R, Achora S, Cayaban ARR. Self-efficacy and self-care behaviours among adults with type 2 diabetes. *Appl Nurs Res.* 2017;36:25-32.
- Fisher L, Hessler DM, Polonsky WH, Mullan J. When is diabetes distress clinically meaningful?: Establishing cut points for the Diabetes Distress Scale. *Diabetes Care.* 2012;35(2):259-264.

22. Hilliard ME, Wu YP, Rausch J, Dolan LM, Hood KK. Predictors of deteriorations in diabetes management and control in adolescents with type 1 diabetes. *J Adolesc Heal Off Publ Soc Adolesc Med.* 2013;52(1):28-34.
23. Łukasiewicz A, Kiejna A, Cichoń E, Jodko-Modlińska A, Obrębski M, Kokoszka A. Relations of Well-Being, Coping Styles, Perception of Self-Influence on the Diabetes Course and Sociodemographic Characteristics with HbA1c and BMI Among People with Advanced Type 2 Diabetes Mellitus. *Diabetes, Metab Syndr Obes.* 2022;15:407-418.
24. Setyoadi S, Efendi F, Haryanto J, Rosyidawati F, Dima Kristianingrum N, Srihayati Y, et al. Family Coping Strategies and Quality of Life among Patients with Type 2 Diabetes Mellitus in Primary Health Care in Indonesia. *Nurse Media J Nursing;* 2023;13(3).
25. Wei Y, Zhang J, Tai X, Weng S, Wang Y, Zhu G. Diabetes Distress and Self-Efficacy Mediate the Relationship Between Family Function and Coping in Young and Middle-Aged Patients with Type 2 Diabetes Mellitus. 2025:3283-3295.
26. Ryff CD. Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychother Psychosom.* 2013;83(1):10-28.
27. Keyes CLM. Promoting and Protecting Mental Health as Flourishing: A Complementary Strategy for Improving National Mental Health. *Am Psychol.* 2007;62(2):95-108.