

Dietary Conflict and Identity Reconstruction in Older Adults With Comorbid Type 2 Diabetes and Sarcopenia: A Qualitative Phenomenological Study

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Abstract

Background: The coexistence of type 2 diabetes mellitus (T2DM) and sarcopenia represents a growing global challenge in geriatric health care. This multimorbidity pattern creates conflicting therapeutic demands in dietary management, where glycemic control requires energy restriction while sarcopenia prevention requires adequate nutritional intake to maintain muscle mass and functional independence. Beyond biomedical management, this contradiction may generate psychosocial distress and self-management difficulties among older adults. However, limited research has examined how older adults experience and adapt to these conflicting therapeutic logics across the illness trajectory from a patient-centered and nursing care perspective.

Objective: This study aimed to explore how older adults living with coexisting T2DM and sarcopenia perceive dietary management challenges throughout their illness trajectory and how they develop adaptive self-management strategies, with a particular focus on illness identity reconstruction, embodied illness experiences, and meaning-oriented coping mechanisms.

Methods: A qualitative descriptive phenomenological study was conducted, with data analyzed using Colaizzi's seven-step method. Identity negotiation perspectives informed the interpretive discussion of findings. Eighteen community-dwelling older adults diagnosed with both T2DM and sarcopenia were recruited from outpatient clinics of tertiary hospitals using purposive sampling. Data were collected through semi-structured in-depth interviews. Research credibility was enhanced through member checking, peer debriefing, reflexive journaling, and audit trail documentation.

Results: Three major themes and six subthemes were identified. Theme 1, Living within a dietary dilemma, captured participants' experiences of conflicting dietary advice and persistent fear and uncertainty in daily eating. Theme 2, Negotiating the 'diabetic self' and the 'sarcopenic self', reflected internal identity conflict between competing health priorities and the influence of external social pressures from family and healthcare providers. Theme 3, Reconstructing dietary meaning in daily life, described how participants developed adaptive strategies through experiential learning and progressively reframed their relationship with food and health priorities over time.

Conclusions: The management of T2DM and sarcopenia among older adults is not solely a behavioral adherence issue but a complex process of embodied meaning negotiation and self-identity reconstruction. Geriatric care should shift toward person-centered and meaning-centered care models that support embodied health literacy, shared decision-making, and sustainable self-management. Healthcare professionals should serve as supportive partners in facilitating adaptive coping, emotional adjustment, and identity integration in multimorbidity management.

1 Background

The global aging population has led to a rapid increase in the prevalence of multimorbidity, posing significant challenges to geriatric healthcare systems worldwide. Among these, the coexistence of type

2 diabetes mellitus (T2DM) and sarcopenia represents a particularly complex clinical model of chronic disease interaction[1–3]. These two conditions share bidirectional pathophysiological mechanisms, including chronic inflammation, insulin resistance, and metabolic dysregulation[4–6], which collectively accelerate functional decline, increase frailty risk, and worsen long-term health outcomes in older adults[7–9].

The public health burden of this comorbidity is substantial. Globally, the number of older adults aged ≥ 65 years living with diabetes continues to rise rapidly, with China accounting for approximately one-quarter of the global diabetic population, representing an estimated 35.5 million individuals[10, 11]. Concurrently, sarcopenia prevalence among older adults ranges from 5.2% to 50.0% in community-based populations[12, 13]. Importantly, older adults with T2DM have a 1.55-fold increased risk of developing sarcopenia compared with non-diabetic individuals, further increasing risks of falls, disability, hospitalization, and mortality[14–16].

Dietary management is a cornerstone of treatment for both T2DM and sarcopenia[17, 18]; however, it presents a fundamental therapeutic paradox in clinical practice. Effective T2DM management typically requires caloric and carbohydrate restriction to achieve glycemic control[19]. In contrast, sarcopenia prevention and treatment require sufficient energy and high-quality protein intake to maintain muscle mass and physical function[20, 21]. For older adults with multimorbidity, this creates competing therapeutic logics that extend beyond behavioral adherence challenges and may influence psychological well-being, treatment decision-making, and long-term self-management sustainability.

Despite the clinical significance of this dietary paradox, current research on T2DM-sarcopenia comorbidity has primarily focused on biomedical mechanisms, epidemiological patterns, and clinical outcome indicators[22–25]. While these studies provide important medical knowledge, they often overlook patients' lived experiences and psychosocial adaptation processes. Emerging evidence from phenomenological and chronic illness adaptation research suggests that multimorbidity management is not solely a biomedical process but also involves complex psychological, social, and existential adjustments across the illness trajectory[26–28].

From a geriatric care perspective, chronic disease management requires patients to continuously negotiate conflicting therapeutic recommendations while maintaining personal identity coherence, social roles, and life meaning. For older adults with T2DM and sarcopenia, dietary management may involve ongoing internal negotiation between maintaining metabolic health and preserving physical vitality, often reflected in competing self-perceptions such as the disciplined “glycemic control self” and the vitality-preserving “muscle protection self.”

However, existing research has rarely explored how these internal conflicts evolve over time or how older adults develop adaptive strategies to manage contradictory dietary requirements. In particular, the mechanisms through which patients transform biomedical knowledge into personalized self-management practices remain insufficiently understood[29].

Therefore, this study adopts a qualitative descriptive phenomenological approach to address this knowledge gap. Rather than conceptualizing dietary non-adherence merely as a behavioral issue, this study seeks to explore how older adults living with both T2DM and sarcopenia experience identity-related challenges, emotional burdens, and processes of meaning-making during dietary management. Specifically, the study examines: (1) how patients interpret and navigate conflicting dietary recommendations arising from dual disease management; (2) how they negotiate their embodied illness experiences amid physical decline and functional changes; and (3) how they reconstruct personal narratives to achieve adaptive self-management across different stages of the illness trajectory. Identity negotiation theory is drawn upon as an interpretive lens in the discussion of findings to illuminate these processes.

By illuminating the lived experiences of managing multimorbidity, this study aims to generate insights that can inform the development of person-centered geriatric nursing strategies. Such strategies may support embodied health literacy, promote shared decision-making, and facilitate sustainable self-management behaviors among older adults living with chronic conditions.

2 Methods

2.1 Study design

This study adopted a qualitative descriptive phenomenological design informed by Husserlian descriptive phenomenology[30]. Descriptive phenomenology aims to explore and describe individuals' lived experiences by setting aside preconceptions and focusing on how phenomena are consciously perceived and articulated[31]. This approach was considered appropriate for capturing the subjective experiences of older adults managing the dual challenges of T2DM and sarcopenia, particularly in relation to dietary management throughout the illness trajectory. Identity negotiation theory was drawn upon as an interpretive lens in the discussion of findings, rather than as an a priori theoretical framework guiding data collection or analysis.

Data analysis followed Colaizzi's seven-step phenomenological method[32,33], which provides a systematic approach for identifying significant statements, formulating meanings, and constructing thematic structures from experiential narratives. Specifically, the analytical process involved: (1) reading all transcripts to acquire a general sense of the data; (2) extracting significant statements relevant to dietary management experiences; (3) formulating meanings from these significant statements; (4) organizing formulated meanings into theme clusters; (5) developing an exhaustive description of the phenomenon; (6) identifying the fundamental structure of the experience; and (7) returning findings to participants for validation through member checking. The design, conduct, and reporting of this study adhered to the Standards for Reporting Qualitative Research (SRQR) guidelines to ensure methodological transparency and rigor[34,35]. A completed SRQR checklist is provided as Additional file 1.

2.2 Research team and reflexivity

The research team consisted of seven members, including doctoral-level nursing researchers with expertise in chronic disease management and qualitative research, a clinical dietitian, a health psychologist, and a medical affairs administrator. The interdisciplinary composition of the team enabled a comprehensive interpretation of participants' experiences from clinical, nutritional, and psychosocial perspectives.

To enhance reflexivity and minimize potential researcher bias, all team members maintained reflective journals throughout the research process to document assumptions, reactions, and evolving interpretations. Regular peer debriefing meetings were conducted to critically review emerging findings and challenge preliminary interpretations.

The primary interviewer, a doctoral-level nursing researcher with clinical experience in geriatric care and formal training in qualitative interviewing techniques, conducted all interviews. During interviews, particular attention was paid to avoiding leading questions and maintaining openness to participants' narratives rather than imposing biomedical interpretations. The primary interviewer's clinical background, while informative, was explicitly acknowledged as a potential source of interpretive bias and was continuously examined through reflexive journaling and peer debriefing.

Several strategies were employed to enhance study credibility. Member checking was conducted by returning preliminary thematic summaries to five purposively selected participants, chosen to represent maximum variation in age, gender, disease duration, and geographic location. Participants were invited to assess whether the identified themes accurately reflected their lived experiences. All five participants confirmed the thematic summaries were recognizable and representative, and minor clarifications suggested by two participants regarding dietary decision-making processes were incorporated into the final analysis. Additionally, peer review of the coding framework was conducted through regular team discussions, and a comprehensive audit trail was maintained to document all analytical decisions and methodological procedures, ensuring transparency and accountability throughout the research process.

2.3 Participants and sampling

A multi-center purposive sampling strategy with maximum variation was employed to capture diverse perspectives across different healthcare contexts. Participants were recruited from endocrinology and geriatrics outpatient clinics of three tertiary hospitals located in northern, central, and southern regions of China. Eligible participants met the following inclusion criteria: (1) aged 60 years or older; (2) diagnosed with type 2 diabetes mellitus according to established Chinese clinical guidelines[36]; (3) diagnosed with sarcopenia based on the Asian Working Group for Sarcopenia (AWGS) 2019 consensus criteria[37]; (4) able to communicate in Mandarin; and (5) willing to provide written informed consent. Exclusion criteria included: (1) severe cognitive impairment or psychiatric disorders that would interfere with meaningful participation in interviews; (2) advanced malignancy, severe heart failure, end-stage renal disease, or other major systemic diseases significantly affecting metabolism, appetite, or swallowing function; and (3) critically ill or medically unstable status.

Recruitment continued at each site until thematic saturation was reached. Saturation was operationalized as the point at which no new themes or subthemes emerged from consecutive interviews, as independently assessed by two members of the research team through ongoing data review after each interview. Thematic saturation was provisionally identified after the 15th interview, following which three additional interviews were conducted to confirm that no further themes emerged. This confirmatory phase yielded no new themes, supporting the adequacy of the final sample of 18 participants, whose demographic and clinical characteristics represented diverse socioeconomic and geographic backgrounds.

2.4 Ethical Approval and Informed Consent

This study was conducted in accordance with the Declaration of Helsinki and received ethical approval from the relevant institutional review board. Written informed consent was obtained from all participants prior to enrollment. Participation was voluntary, and all participants had the right to withdraw from the study at any time without any adverse consequences. Participants were fully informed about the study's objectives, procedures, potential risks and benefits, and their rights to confidentiality and voluntary withdrawal at any time without consequences. For participants with lower literacy levels, the information was explained verbally to ensure full understanding before consent was obtained. All interview recordings and transcripts were anonymized using participant codes (P01-P18) and stored on password-protected devices accessible only to the research team.

2.5 Data Collection

Data were collected through semi-structured, in-depth interviews conducted between March and August 2025. Interviews were conducted either face-to-face in a private consultation room at the hospital or via secure online video communication platforms, depending on participants' preferences and logistical considerations. For online interviews, encrypted video conferencing software compliant with national data privacy regulations was used to ensure confidentiality. Each interview lasted approximately 45 to 60 minutes.

At the beginning of each session, the interviewer reintroduced the purpose of the study, assured participants of confidentiality, and obtained consent for audio recording. Interviews began with broad, open-ended questions designed to build rapport and encourage participants to share their experiences freely, such as "When were you first diagnosed with diabetes and sarcopenia?" and "Do you sometimes feel caught between being a 'diabetic patient' and someone needing to 'maintain muscle strength'?" Follow-up questions and probes were used to explore emerging issues in greater depth, including participants' experiences of dietary conflict, emotional responses to illness, and strategies for managing competing health demands across different stages of the illness trajectory. In addition to audio recordings, the interviewer documented field notes capturing contextual information, emotional expressions, and non-verbal cues observed during the interviews.

Following each interview, audio recordings were transcribed verbatim in Mandarin Chinese by a trained research assistant within 48 hours. Preliminary reflections and analytic memos were recorded after each interview. This iterative process allowed the research team to refine interview techniques and explore emerging themes more thoroughly in subsequent interviews.

2.6 Interview Guide

The semi-structured interview guide was developed through an iterative process. Initial questions were informed by the study objectives, a comprehensive literature review on chronic illness management and identity theory, and consultations with experts in endocrinology, geriatric nutrition, and qualitative research. Two pilot interviews were conducted with eligible participants to evaluate the clarity, flow, and relevance of the questions. Based on feedback from these pilot interviews and subsequent discussions within the research team, the interview guide was refined and finalized. The full interview guide, structured around four phases of the illness trajectory, is presented in Table 1.

Table 1. Semi-structured interview guide based on illness trajectory

Phase	Core topics	Example prompts
I. Initial diagnosis and sense-making	Understanding and early responses to the diagnosis of T2DM and sarcopenia	•When were you first diagnosed with diabetes and sarcopenia? •What was your initial reaction to these diagnoses? •What information or support did you receive at that time? •How did the diagnoses influence your understanding of your body and health?
II. Acute management and role conflict	Experiences of managing two conditions and navigating potentially conflicting dietary advice	•How do you currently manage your diabetes and sarcopenia in daily life? •Have you experienced conflicting advice regarding diet or nutrition? •Do you sometimes feel caught between being a “diabetic patient” and someone needing to “maintain muscle strength”? •How does this affect your daily decisions about food and eating?
III. Embodied struggle and existential concerns	Physical, emotional, and existential experiences related to illness and dietary management	•What bodily changes or symptoms have you experienced because of these conditions? •Beyond physical symptoms, what emotional or psychological challenges have you faced? •Have there been moments when medical advice conflicted with your personal values or lifestyle?
IV. Negotiation, integration, and long-term adaptation	Strategies for coping, adaptation, and identity reconstruction over time	•Have you developed personal strategies or routines to manage both conditions? •What does a “sustainable” diet or lifestyle look like for you now? •Has living with these conditions changed how you see yourself? •What kind of support from healthcare professionals would be most helpful for you?

2.7 Data management and transcription

All interviews were audio-recorded with participants' permission and transcribed verbatim in Mandarin Chinese by a trained research assistant within 48 hours of each interview. Transcripts were reviewed against the original recordings by the primary researcher to ensure accuracy. Following transcription, all audio recordings and transcripts were anonymized using participant codes (P01-P18) and stored on password-protected devices accessible only to the research team. Original recordings were retained for audit purposes. Mandarin transcripts were subsequently translated into English by a bilingual member of the research team, with translation accuracy verified through back-translation and cross-checking by a second bilingual team member.

2.8 Data Analysis

Data analysis was conducted following Colaizzi's seven-step phenomenological method[38], which provides a systematic approach for identifying significant statements, formulating meanings, and constructing thematic structures from experiential narratives. Specifically, the analytical process involved: (1) reading all transcripts repeatedly to acquire a general sense of the data; (2) extracting significant statements relevant to participants' dietary management experiences; (3) formulating meanings from these significant statements; (4) organizing formulated meanings into theme clusters; (5) developing an exhaustive description of the phenomenon; (6) identifying the fundamental structure of the experience; and (7) returning findings to participants for validation through member checking. Field notes documenting contextual details and non-verbal observations were integrated with the transcripts throughout the analytical process to enrich interpretation. A summary of the analytical procedures with corresponding examples is provided in Table 2.

Table 2. Data analysis procedure based on Colaizzi’s seven-step phenomenological method

Step	Analytical procedure
1. Familiarization	All interview transcripts were read repeatedly to obtain an overall understanding of participants’ experiences and to become immersed in the data.
2. Identifying significant statements	Key statements directly related to the experience of managing T2DM and sarcopenia were extracted from each transcript.
3. Formulating meanings	The research team interpreted the underlying meanings of the significant statements while remaining close to participants’ original expressions.
4. Organizing into theme clusters	Formulated meanings were grouped into clusters of themes reflecting shared patterns across participants’ experiences.
5. Developing an exhaustive description	A comprehensive description of the phenomenon was developed by integrating all thematic clusters into a coherent narrative.
6. Producing the fundamental structure	The essential structure of the experience was distilled to capture the core meaning of dietary management and identity negotiation among participants.
7. Member checking	The findings were returned to selected participants to verify whether the interpretations accurately reflected their lived experiences.

3 Results

3.1. Participant Characteristics

A total of 18 older adults with comorbid type 2 diabetes mellitus (T2DM) and sarcopenia participated in the study. Participants ranged in age from 62 to 78 years (mean=69.2±4.8 years), with 10 men (55.6%) and 8 women (44.4%). The sample reflected diverse socioeconomic and educational backgrounds, with approximately half of participants having attained middle or high school education (50.0%) and the majority being married (77.8%). Eleven participants resided in urban areas (61.1%) and 7 in rural

communities (38.9%). The mean duration since T2DM diagnosis was 12.3±5.1 years, while sarcopenia had been identified for an average of 3.2±1.8 years. The majority of participants (66.7%) managed one additional chronic condition, while 33.3% managed two or more. Commonly reported comorbidities included hypertension (77.8%), dyslipidemia (61.1%), osteoarthritis (38.9%), and coronary heart disease (22.2%). Detailed demographic and clinical characteristics are presented in Table 3.

Table 3. Demographic and Clinical Characteristics of Participants (N=18)

Characteristic	n (%) or Mean±SD
Age (years)	69.2±4.8
Age Group	
60-69 years	10 (55.6)
70-78 years	8 (44.4)
Gender	
Male	10 (55.6)
Female	8 (44.4)
Residence	
Urban	11 (61.1)
Rural	7 (38.9)
Educational Level	
Primary school or below	4 (22.2)
Middle / High school	9 (50.0)
College / University or above	5 (27.8)
Marital Status	
Married	14 (77.8)
Widowed	3 (16.7)
Other (Single/Divorced)	1 (5.6)
Duration of T2DM (years)	12.3±5.1
Duration of Sarcopenia (years)	3.2±1.8
Number of Additional Chronic Conditions	
1	12 (66.7)
≥2	6 (33.3)
Common Comorbidities	
Hypertension	14 (77.8)
Dyslipidemia	11 (61.1)
Osteoarthritis	7 (38.9)
Coronary Heart Disease	4 (22.2)

3.2 Thematic Findings

Through phenomenological analysis using Colaizzi's seven-step method, three major themes and six subthemes emerged, reflecting the complex process through which older adults navigate conflicting dietary demands associated with T2DM and sarcopenia. These themes were: Living within a dietary dilemma (comprising subthemes of conflicting dietary advice and fear and uncertainty in daily eating); Negotiating the 'diabetic self' and the 'sarcopenic self' (comprising subthemes of internal identity conflict and external pressures and social expectations); and Reconstructing dietary meaning in daily life (comprising subthemes of experiential learning and adaptation, and reframing food and health priorities). An overview of the themes and subthemes is presented in Table 4.

Theme 1: Living within a dietary dilemma

Participants consistently described a persistent sense of contradiction in dietary management. Medical advice for diabetes emphasized strict dietary control, while recommendations for sarcopenia highlighted the importance of increased nutritional intake. This created confusion and uncertainty in everyday decision-making.

Subtheme 1.1 Conflicting dietary advice

Many participants felt overwhelmed by contradictory dietary recommendations, reflecting a fundamental gap in integrated multimorbidity care where disease-specific guidelines are developed in isolation without accounting for competing therapeutic demands. Advice to restrict carbohydrates for blood glucose control often directly contradicted suggestions to increase protein and energy intake to prevent muscle loss, leaving participants without coherent guidance on how to reconcile these opposing imperatives.

One participant recounted the confusion of receiving contradictory guidance from different clinicians:

"The endocrinologist told me to strictly limit staple foods-only a small bowl of rice per meal. But the nutritionist said I need enough protein and asked me to add a box of milk and an egg every day. I kept wondering, whose advice should I follow?" (P2)

The absence of coordinated care meant that participants were left to arbitrate between specialist recommendations without clinical support, generating a sustained sense of uncertainty about which therapeutic priority should take precedence.

"Doctors say I should eat less to control blood sugar, but they also say I need more nutrition to keep my strength. I really don't know which one is more important." (P3)

For some participants, this uncertainty was compounded by direct contradictions between prescribed dietary plans and observed physiological responses, further undermining their confidence in following

any single set of recommendations.

"The dietitian gave me a meal plan that recommended eating more fish and chicken, but my blood sugar spiked whenever I followed it. When I asked the outpatient doctor, he said, 'You shouldn't overdo protein either.' I really don't know who to listen to anymore." (P5)

Subtheme 1.2 Fear and uncertainty in daily eating

Beyond confusion about dietary advice, participants described a deeper transformation in their relationship with food itself, wherein eating had ceased to be a source of nourishment or pleasure and had become a site of continuous risk assessment and anxiety. This shift reflected not merely practical uncertainty but an embodied experience of threat, in which every food choice carried potential consequences for either glycemic control or physical strength.

"Before, eating was just eating. Now every meal feels like a test. If I eat too much, I worry about my blood sugar. If I eat too little, I feel weak." (P7)

This anxiety manifested as a form of pre-meal deliberation that extended the cognitive burden of dietary management far beyond clinical consultations into the intimate rhythms of daily life.

"Now, before every meal, I spend a long time thinking about whether I can eat this or not. I'm afraid eating it will make my blood sugar shoot up, but if I don't eat, my legs feel so weak that even standing up becomes a struggle." (P8)

In more severe cases, a single adverse physiological episode was sufficient to trigger lasting dietary fear and extreme restriction, illustrating how the embodied consequences of multimorbidity could override rational dietary planning.

"I'm especially afraid of eating the wrong thing at night. Once I ate a few extra pieces of lean meat, and my fasting blood sugar was high the next day. I got so scared that for several days I only dared to have congee. As a result, I became so weak I had to hold onto the wall just to walk." (P10)

Theme 2: Negotiating the "diabetic self" and the "sarcopenic self"

Beyond practical dietary challenges, participants described an internal struggle between two illness identities. Managing diabetes required discipline and restriction, whereas addressing sarcopenia required nourishment and strength-building. This created a sustained tension not merely between behaviors but between competing self-conceptions, each grounded in a different understanding of what it meant to manage one's body responsibly.

Subtheme 2.1 Internal identity conflict

Participants described feeling caught between two fundamentally incompatible illness identities, reflecting a deeper challenge in multimorbidity management where the self-regulatory demands of

different conditions are not only behaviorally contradictory but also symbolically opposed. The disciplined, restrained identity of the "good diabetic patient" stood in direct conflict with the nourished, strength-preserving identity required for sarcopenia management, leaving participants unable to enact either identity fully without compromising the other.

"Sometimes I think controlling blood sugar is the most important. But when I feel my legs getting weaker, I start thinking maybe I should eat more." (P11)

This identity conflict extended beyond momentary indecision to a more fundamental confusion about how to constitute oneself as a responsible patient in the context of contradictory medical demands.

"I can't even figure it out myself-should I manage myself as a diabetic by controlling what I eat, or as a sarcopenia patient by eating more meat? Both are illnesses, but what I'm supposed to do for them is completely opposite." (P12)

For some participants, this internal negotiation was experienced as a recurring bodily and existential confrontation, surfacing most acutely at the moment of eating itself.

"Sometimes, staring at my bowl, I ask myself: is this body of mine a 'sugar person' or a 'muscle person'? To control blood sugar I have to eat less, but if I eat less, I lose even more muscle." (P4)

Subtheme 2.2 External pressures and social expectations

The identity conflict experienced internally was further complicated by divergent expectations from family members and healthcare providers, whose competing influences created an additional layer of social negotiation that participants were required to navigate. This dynamic revealed how dietary self-management under multimorbidity is not a purely individual process but is embedded within relational networks that carry their own assumptions about health, care, and bodily responsibility.

One participant described the tension between a spouse's care and the doctor's instructions, illustrating how expressions of familial love could inadvertently conflict with medical compliance:

"My spouse puts food into my bowl at every meal, saying, 'You eat so little, a gust of wind could blow you over.' But I think to myself, the doctor told me to control my sugar, and I have to follow that." (P1)

The pressure to satisfy both medical authority and family expectations left many participants positioned between two sources of legitimate but contradictory guidance.

"My children always tell me to eat more so I won't lose strength, but the doctor says I must control my diet. I feel stuck in the middle." (P9)

In some cases, the relational cost of adhering to medical recommendations extended to interpersonal misunderstanding, as participants' dietary restraint was misread by family members as ingratitude rather than illness management.

"Every time my daughter visits, she brings a lot of food-dried beef, fish fillets-saying I need to supplement protein. But my doctor said I should eat fewer snacks. When I try to explain, she thinks I'm just being ungrateful." (P15)

Theme 3: Reconstructing dietary meaning in daily life

Over time, participants gradually developed personalized strategies to cope with the dietary conflict. This process of reconstruction was not a passive adjustment to circumstances but an active, agentic response in which participants drew on accumulated bodily knowledge, relational resources, and evolving illness narratives to redefine their relationship with food beyond the binary logic of restriction versus nourishment.

Subtheme 3.1 Experiential learning and adaptation

Participants described a process of embodied self-experimentation through which they gradually developed individualized dietary strategies that could not be derived from any single set of clinical guidelines, reflecting the emergence of practical wisdom that integrated biomedical knowledge with lived bodily experience. Rather than passively following contradictory advice, participants actively tested, observed, and refined their dietary practices over time.

"I slowly found a balance. I try to eat a little more protein but control rice and sweets. It took time to figure out what works for me." (P14)

This process of trial and error was often extended and effortful, requiring participants to sustain both physical attention and emotional resilience across months of self-monitoring before arriving at a sustainable pattern.

"Later, I gained experience through trial and error: an egg in the morning, some lean meat at lunch, and a light dinner but always with a few bites of staple food. This way my blood sugar doesn't spike suddenly, and my legs feel strong. It took several months of experimenting to find this pattern." (P16)

Subtheme 3.2 Reframing food and health priorities

For some participants, the reconstruction of dietary meaning extended beyond the development of practical strategies to a more fundamental reorientation of health values and the meaning of aging well. This reframing represented a shift away from biomedical metrics as the primary criterion of health toward a more holistic and personally meaningful conception of wellbeing that encompassed functional ability, emotional quality of life, and the preservation of ordinary pleasures.

"Now I don't think of food as something to fear. I just try to eat reasonably and keep moving." (P6)

This shift from rigid adherence to flexible self-governance reflected a hard-won recognition that sustainable self-management under multimorbidity required accommodation of lived experience rather than strict compliance with competing clinical protocols.

"Now I've come to terms with it. There's no need to be so strict at every single meal. As long as I generally keep things under control, it's okay to have a piece of braised pork once in a while. Life has to go on; I can't live like a prisoner just for the sake of lab numbers." (P17)

For others, the reframing involved a redefinition of health itself, in which functional independence and emotional wellbeing were accorded equal or greater significance than glycemic control, reflecting a patient-centered reconceptualization of what it means to live well with chronic illness.

"I think being healthy isn't just about blood sugar readings. Being able to walk on my own and go grocery shopping-that's also health. Now I pay more attention to whether my body has strength. Even if my blood sugar is a little high, I don't get so anxious anymore. Living happily is what matters." (P18)

Taken together, these three themes reflect a dynamic and iterative process of negotiated dietary identity reconstruction under multimorbidity conditions. Participants did not experience these themes as discrete or sequential stages; rather, they moved fluidly between conflict, negotiation, and reconstruction depending on their physical condition, social context, and accumulated illness experience. Across all three themes, a consistent pattern emerged: older adults living with both T2DM and sarcopenia were not passive recipients of medical advice but active agents who continuously negotiated the meaning of food, health, and identity within the constraints of competing therapeutic demands.

4 Discussion

This study explored the lived experiences of older adults managing dietary demands under the dual burden of T2DM and sarcopenia, revealing that dietary self-management in this population is far more than a matter of nutritional choice or disease control. Rather, it constitutes a dynamic and iterative process encompassing three interrelated dimensions: navigating a persistent dietary dilemma arising from conflicting disease-specific recommendations, negotiating competing illness identities, and reconstructing dietary meaning toward a more personalized and holistic understanding of health. These findings extend existing literature on chronic illness management in several important ways.

Living within a dietary dilemma: when disease-specific recommendations conflict

The first theme revealed how dietary management became a sustained source of uncertainty for participants. Consistent with prior qualitative research on diabetes self-management, participants described dietary restriction as one of the most psychologically burdensome aspects of chronic disease management, generating persistent anxiety about food choices and long-term health consequences[18]. However, the present study extends this literature by demonstrating that when T2DM coexists with sarcopenia, the dietary burden is qualitatively different: it arises not merely from restriction itself, but from the fundamental incompatibility of disease-specific dietary targets.

Notably, this confusion reflected not only individual knowledge deficits but also systemic limitations inherent in disease-specific models of care. Current clinical guidelines are predominantly developed for

single conditions and rarely address how patients should reconcile competing therapeutic goals when managing multiple chronic diseases simultaneously [26, 28]. As a result, older patients were left to bear the responsibility of integrating conflicting medical recommendations without adequate clinical support. Prior multimorbidity research has similarly highlighted that disease-centered management models are ill-equipped to meet the complex needs of patients with multiple chronic conditions[27].

The present findings further demonstrate that this guideline-level conflict became embodied in everyday eating behavior, transforming ordinary meals into complex health decision-making events. Participants described a pervasive risk perception surrounding food, wherein eating was no longer experienced as nourishment, pleasure, or social participation, but as a continuous act of consequence assessment. This pattern is consistent with the theoretical framework of Treatment Burden Theory, which posits that patients with chronic illness must not only endure the effects of disease itself but also perform extensive illness-related work in daily life[39]. For participants in this study, dietary management represented only one component of a broader burden that also encompassed blood glucose monitoring, medication adherence, outpatient follow-up, physical exercise, and adaptation to age-related functional decline. As these tasks accumulated, dietary management became embedded within the comprehensive management burden of multimorbidity rather than functioning as an isolated health behavior.

Negotiating the "diabetic self" and the "sarcopenic self"

One of the most distinctive findings of this study was that the conflict experienced by participants extended beyond the practical level of dietary behavior to the level of illness identity. Participants were not only uncertain about what to eat, but fundamentally uncertain about how to understand their bodies and what kind of patient they should become.

Prior chronic illness research has established that disease diagnosis is frequently accompanied by processes of identity reconstruction. Charmaz argued that chronic illness can disrupt an individual's existing self-concept, compelling a renegotiation of bodily experience and biographical continuity [40]. Research on diabetes specifically has found that many patients gradually construct an identity as a "disciplined patient," maintaining this identity through dietary control and blood glucose monitoring [41, 42]. However, the present study reveals that identity construction under multimorbidity is considerably more complex. Participants were required not to adapt to a single illness identity but to negotiate continuously between two fundamentally opposing identities: the restrained, self-disciplined "diabetic self" and the nourished, strength-preserving "sarcopenic self." This dual identity conflict cannot be adequately explained by prior single-disease research and suggests that multimorbidity may generate qualitatively distinct processes of identity reconstruction that existing theoretical frameworks have yet to fully account for [43, 44].

For many participants, the coexistence of T2DM and sarcopenia generated two mutually antagonistic bodily narratives. Diabetes management emphasized control, restriction, and risk avoidance, while sarcopenia management demanded replenishment, maintenance, and functional enhancement. Participants thus experienced a condition in which any dietary choice made in service of one condition

potentially compromised the management of the other. This finding suggests that the burden of multimorbidity manifests not only in treatment complexity but also in sustained tension at the level of personal identity and self-understanding.

The identity negotiation process was further shaped by participants' relational networks. Dietary management was rarely an exclusively individual act; family members played significant roles in food preparation, dietary arrangements, and health decision-making. While this involvement typically reflected care and concern, it frequently introduced an additional layer of competing expectations. Family members commonly encouraged participants to eat more to maintain physical strength, while healthcare providers emphasized dietary restriction and glycemic stability. Participants were therefore required to simultaneously negotiate family expectations, medical authority, and personal needs, often without resolution.

In the Chinese cultural context, this finding carries particular significance. Traditional Chinese family culture places strong emphasis on mutual care and shared responsibility among family members, and dietary behavior is deeply embedded in collective family life [45]. Older adults' dietary decisions are therefore not purely individual choices but are outcomes of ongoing family negotiation. Future nutritional interventions and health education programs targeting older adults with multimorbidity should give greater attention to family member involvement, incorporating both patients and caregivers as joint targets of intervention to enhance the feasibility and sustainability of self-management support.

Reconstructing dietary meaning: from disease control toward living well

The third theme revealed that participants did not remain passive in the face of conflicting demands but actively developed personalized dietary strategies through sustained experiential learning. This finding is consistent with prior self-management research demonstrating that patients do not simply execute medical recommendations but continuously revise management strategies based on observed bodily responses [28].

However, the present study extends this literature by demonstrating that under multimorbidity conditions, experiential learning serves not only to optimize disease control but to reconcile competing health priorities. The dietary patterns participants ultimately developed represented negotiated compromises between biomedical recommendations and lived reality, rather than straightforward adherence to any single set of guidelines.

This finding challenges prevailing stereotypes about older adults as passive recipients of medical care. Participants were active agents who continuously integrated information from healthcare providers, family members, and their own bodily feedback, adjusting management strategies accordingly. Experiential learning thus functioned as a critical adaptive mechanism for managing complex disease demands while simultaneously enabling participants to reclaim a sense of agency and control over daily life [27].

More significantly, many participants underwent a fundamental reorientation of their understanding of health itself. In the early stages of illness management, most participants were primarily focused on biomedical outcomes such as glycemic control. However, as disease management experience accumulated, their conception of health broadened considerably. Participants increasingly valued the ability to walk independently, complete daily activities, maintain social participation, and experience pleasure in ordinary life as equally important dimensions of health alongside metabolic control. This shift reflects a transition from disease control as the primary goal toward the pursuit of overall quality of life and meaningful daily functioning.

Through this process of meaning reconstruction, participants learned to accept imperfection in disease management, reduced anxiety about occasional metric fluctuations, and established more sustainable self-management approaches. This pattern aligns closely with contemporary conceptualizations of healthy ageing, which increasingly emphasize the maintenance of functional ability rather than the elimination or perfect control of disease [45]. For older adults with multimorbidity, what matters most is often not the achievement of idealized disease indicators, but the preservation of autonomy, social engagement, and subjective wellbeing in the presence of chronic illness.

These findings carry important implications for geriatric nursing practice and multimorbidity care models. First, the pervasive dietary conflict identified in this study points to an urgent need for integrated, person-centered nutritional guidance that simultaneously addresses glycemic control, nutritional adequacy, and physical function maintenance, rather than applying disease-specific dietary protocols in isolation [18]. Second, the identity-level conflicts described by participants suggest that clinical consultations should extend beyond dietary prescriptions to encompass acknowledgment of the psychosocial dimensions of multimorbidity management, including the identity tensions and existential anxieties that accompany competing therapeutic demands. Third, the role of family members in shaping dietary decisions underscores the importance of incorporating family-centered approaches into self-management education and support programs. Fourth, the meaningful reconstruction of health observed among participants highlights the value of shared decision-making frameworks that align treatment goals with patients' personal values, functional priorities, and life goals rather than optimizing for biomedical metrics alone[28]. Finally, the integration of Comprehensive Geriatric Assessment into nutritional management decision-making, combined with multidisciplinary collaboration among physicians, nurses, dietitians, and rehabilitation therapists, may better support the complex and competing needs of this population[45].

5 Limitations

Although this study provides valuable insights, several limitations should be acknowledged. First, although participants were recruited from three tertiary hospitals across northern, central, and southern China, all sites were located within the Chinese healthcare context, which may limit the transferability of findings to older adults in different cultural, healthcare, or socioeconomic settings. Future multicenter studies spanning diverse national and cultural contexts would strengthen the generalizability of these

findings. Second, all interviews were conducted in Mandarin Chinese and translated into English for reporting. Although translation accuracy was verified by bilingual members of the research team, some nuances in participants' original expressions may have been lost in translation, potentially affecting the depth of interpretive analysis. Third, participants were recruited from tertiary hospital outpatient clinics, who may have higher health literacy and greater access to healthcare resources compared with older adults in rural or underserved communities, which may introduce selection bias. Fourth, as with all qualitative phenomenological research, findings reflect the subjective lived experiences of the study participants and are not intended to be statistically generalizable. Rather, analytical generalizability is sought through theoretical transferability and methodological rigor.

6 Conclusions

This study demonstrates that dietary management among older adults with comorbid T2DM and sarcopenia is not a simple process of following nutritional recommendations, but a dynamic adaptive process moving from dietary dilemma through identity negotiation toward meaning reconstruction. Participants developed dietary management strategies consistent with their own needs through sustained experiential learning and active adjustment in the face of competing therapeutic goals. These findings suggest that future multimorbidity management should move beyond the control of single disease indicators to give greater attention to patients' illness identity, functional maintenance, and quality of life, in order to construct a truly person-centered and function-oriented model of healthy ageing management.

Abbreviations

- T2DM: Type 2 diabetes mellitus
- AWGS: Asian Working Group for Sarcopenia
- SRQR: Standards for Reporting Qualitative Research
- CGA: Comprehensive Geriatric Assessment
- IPA: Interpretive Phenomenological Analysis

Declarations

Consent for publication

Not applicable

Clinical trial number

Not applicable

Ethics approval and consent to participate

This study was approved by the Medical Ethics Committee of Shanxi Bethune Hospital (Approval No. [YXLL-2024-170]). All procedures were performed in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments. Availability of data and materials

The datasets generated and analyzed during the current study are not publicly available due to the sensitive nature of the qualitative interview data and the confidentiality agreements made with participants at the time of informed consent. The data contain personal narratives that could potentially identify individual participants, and public availability would therefore compromise participant confidentiality. Requests for data access may be directed to the corresponding author at jincongcong@sxbqeh.com.cn and will be considered on a case-by-case basis subject to ethical constraints.

Competing interests

The authors declare that they have no competing interests.

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Author Contribution

Z contributed to study conceptualization, methodology, data collection, data analysis and interpretation, and writing original draft. J contributed to study conceptualization, methodology, data analysis and interpretation, writing review and editing, and supervision. M contributed to data collection, data analysis and interpretation, and writing review and editing. L contributed to writing review and editing, and project administration. W contributed to data collection and writing review and editing. K contributed to writing review and editing. W contributed to writing review and editing. All authors read and approved the final manuscript.

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