KMAN
PUBLISHING INSTITUTE

Article history:
Received 05 January 2026
Revised 15 March 2026
Accepted 22 March 2026
Published online 01 April 2026

Quality of Life and Health Sciences

Volume 2, Issue 2, pp 1-16

Quality of Life Among Patients With Heart Failure: A Qualitative Study of Symptom Monitoring, Functional Limitation, and Psychological Uncertainty

Arben. Krasniqi[1], Ryan. MacDonald[2]*

[1] Department of Psychology, University of Prishtina, Prishtina, Kosovo
[2] Department of Sports Psychology, Acadia University, Wolfville, Canada

*** Corresponding author email address**: ryan.macdonald@acadiau.ca

Article Info

Article type:
Original Research

How to cite this article:
Krasniqi, A., & MacDonald, R. (2026). Quality of Life Among Patients With Heart Failure: A Qualitative Study of Symptom Monitoring, Functional Limitation, and Psychological Uncertainty. *Quality of Life and Health Sciences, 2*(2) 1-16.
http://dx.doi.org/10.61838/kman.qlhs.5768

ABSTRACT

Objective: This study aimed to explore the quality of life experiences of patients with heart failure in Canada, with particular attention to how symptom monitoring, functional limitation, and psychological uncertainty shaped daily functioning, emotional well-being, self-management, and perceived autonomy.

Methods and Materials: This qualitative descriptive study was conducted among 26 adult patients with clinically diagnosed heart failure recruited from outpatient cardiology and heart failure clinics in Canada through purposive sampling. Participants were selected to ensure variation in age, sex, duration of diagnosis, functional status, hospitalization history, and treatment experience. Data were collected using a demographic and clinical information form, semi-structured individual interviews, and researcher field notes. Interviews focused on patients' experiences of living with heart failure, daily symptom monitoring, physical and social limitations, treatment-related routines, emotional responses, uncertainty about disease progression, and coping strategies. Interviews were audio-recorded, transcribed verbatim, anonymized, and analyzed using conventional qualitative content analysis. Meaning units were extracted, coded inductively, grouped into subcategories and categories, and then abstracted into main themes. Credibility was enhanced through team-based review, member checking, reflexive notes, and an audit trail.

Findings: The analysis identified three main themes explaining quality of life among patients with heart failure. The first theme, living under continuous symptom monitoring, showed that participants constantly observed breathing, swelling, fatigue, weight change, dizziness, and treatment effects, which created both perceived control and emotional vigilance. The second theme, restriction of daily function and social participation, indicated that reduced walking capacity, difficulty climbing stairs, activity pacing, dependence on family members, occupational changes, and social withdrawal weakened autonomy and identity. The third theme, psychological uncertainty and emotional burden, revealed persistent fear of sudden deterioration, hospitalization, disease progression, and mortality. Adaptive coping strategies, including acceptance, family support, spiritual coping, communication with healthcare providers, and prioritizing meaningful activities, moderated but did not eliminate these burdens.

Conclusion: Quality of life among patients with heart failure was shaped by the interaction of symptom vigilance, functional restriction, and psychological uncertainty, indicating the need for patient-centered care that integrates self-management education, emotional support, family involvement, rehabilitation, and early supportive care.

Keywords: *Heart failure; Quality of life; Symptom monitoring; Functional limitation; Psychological uncertainty; Self-management; Qualitative study; Patient experience.*

1. Introduction

Heart failure is a chronic, progressive, and clinically complex cardiovascular syndrome that substantially alters patients' physical functioning, emotional stability, social participation, and perceived control over daily life. Beyond its pathophysiological definition as impaired cardiac function associated with inadequate circulatory performance, heart failure is increasingly understood as a long-term lived condition that requires constant adaptation to symptoms, treatment regimens, bodily changes, and uncertainty about disease progression. Contemporary reviews emphasize that heart failure is shaped by diverse etiological pathways, neurohormonal and hemodynamic mechanisms, diagnostic complexity, pharmacological management, lifestyle modification, and emerging therapeutic approaches, but these biomedical dimensions alone do not fully explain how patients experience the disease in everyday life (Elendu et al., 2024). For many patients, quality of life becomes one of the most meaningful indicators of disease burden because it reflects not only survival or clinical stability but also the ability to breathe comfortably, move independently, sleep adequately, maintain relationships, fulfill family or occupational roles, and preserve emotional security. Recent scientific statements have therefore positioned quality of life as a central concern in heart failure care rather than a secondary or optional outcome (Volterrani et al., 2025).

Quality of life in heart failure is multidimensional and influenced by the interaction of symptoms, functional capacity, psychological distress, social support, self-care ability, and treatment burden. Quantitative studies have shown that physical symptoms, psychosomatic mechanisms, and emotional factors are strongly associated with reduced quality of life among patients with chronic heart failure (Wang et al., 2023). Predictive modeling research has also attempted to identify clinical, behavioral, and psychosocial determinants of quality of life in this population, demonstrating that quality of life is influenced by more than disease severity alone (Park et al., 2022). These findings are consistent with broader cardiovascular research indicating that self-efficacy is associated with better quality of life among patients with cardiovascular diseases, suggesting that patients' confidence in managing symptoms, treatment routines, and daily limitations may shape how they experience their condition (Lu et al., 2026). However, although such evidence is valuable for identifying measurable predictors, it cannot fully capture the subjective meaning of living with heart failure, particularly the daily interpretive work patients perform when deciding whether breathlessness, fatigue, swelling, or dizziness signals ordinary fluctuation or clinical deterioration.

Symptom monitoring is one of the most demanding aspects of living with heart failure. Patients are often instructed to observe changes in breathing, body weight, edema, fatigue, exercise tolerance, appetite, and medication response. These behaviors are clinically important because early recognition of worsening symptoms can reduce avoidable deterioration and hospitalization. Nevertheless, symptom monitoring may also transform everyday life into a continuous process of bodily surveillance. A scope review of symptom clusters and measurements in heart failure highlights the complexity of symptom experiences and the need to understand how symptoms co-occur, fluctuate, and influence patient outcomes (Li et al., 2025). Qualitative evidence on breathlessness among individuals with self-reported heart failure further shows that breathlessness is not merely a physiological symptom but an experience that can restrict movement, provoke fear, and alter self-management decisions (Seckin et al., 2024). Similar concerns have been observed in cardiac rhythm conditions, where patient-reported symptoms are closely linked with psychological burden and clinical care needs (Sandhu et al., 2021; Timmers et al., 2021). These findings suggest that symptom monitoring in heart failure should be examined not only as a self-care behavior but also as an embodied experience that affects autonomy, vigilance, and emotional security.

Functional limitation is another major pathway through which heart failure reduces quality of life. Breathlessness, fatigue, reduced exercise tolerance, and weakness often interfere with walking, climbing stairs, household activities, employment, travel, and social participation. The loss of functional independence may be especially distressing because it changes patients' sense of identity and their role within the family and community. Research on quality of life across cardiovascular and chronic disease contexts has repeatedly shown that symptom burden and physical limitation are inseparable from psychological and social consequences (Cilli et al., 2022). Studies involving patients selected for cardiac procedures, such as ablation or minimally invasive valve surgery, also indicate that symptom relief and functional improvement are meaningful because they are closely connected to perceived quality of life and daily capability (Marinescu et al., 2025; Timmers et al., 2021). In heart failure, functional restriction may become especially burdensome because patients often have to pace activities, avoid exertion, rely on caregivers, or abandon previous responsibilities. This makes quality of life a dynamic process of adjustment rather than a static clinical score.

Self-management is central to heart failure care, yet it can also contribute to treatment burden. Patients are expected to adhere to complex medication regimens, restrict sodium and fluid intake, monitor weight, attend follow-up visits, recognize warning signs, and communicate appropriately with healthcare providers. Narrative reviews on chronic disease self-management in heart failure identify persistent gaps between recommended self-care behaviors and patients' ability to perform them consistently in real-life contexts (Nelogal et al., 2025). Tele-empowerment interventions have therefore been proposed to improve self-care behaviors, reduce uncertainty, and prevent readmission among patients with heart failure (Khanipour-Kencha et al., 2023). However, self-management tasks may also increase psychological pressure when patients fear making incorrect decisions or when instructions conflict with social routines, financial constraints, comorbidities, or personal preferences. This tension is particularly relevant in older adults and patients with cardiovascular multimorbidity, for whom pragmatic trial designs and real-world care models are needed because conventional clinical frameworks may not adequately represent the complexity of everyday treatment decisions (Bonanad et al., 2026).

Psychological uncertainty is a central but often underexplored feature of living with heart failure. The disease trajectory is frequently unpredictable, with periods of relative stability interrupted by sudden symptom worsening, emergency visits, or hospitalization. Uncertainty may involve not knowing whether symptoms are serious, whether the condition is progressing, how long stability will last, or how much independence can be maintained. Studies in heart failure have shown that uncertainty can mediate the relationship between physical symptoms and self-care, particularly among older adults (Yu & Lee, 2024). Evidence from other chronic conditions similarly indicates that uncertainty in illness and fatigue are associated with poorer health-related quality of life (Cho et al., 2022). Research among heart transplant recipients further suggests that uncertainty in illness may mediate the relationship between social support and quality of life, while psychological resilience may buffer this process (Gao et al., 2025). These findings demonstrate that uncertainty is not simply a cognitive lack of information; it is an emotional and existential condition that can shape self-care behavior, social relationships, and perceived quality of life.

The psychological burden of cardiovascular illness extends beyond general worry. Patients may experience anxiety, depressive symptoms, fear of symptom recurrence, fear of hospitalization, and fear of death. Psychosocial risk factors in heart disease have been described as clinically important and requiring more active integration into cardiovascular care (Kupper et al., 2023). Protocols for digital cognitive behavioral therapy after acute coronary syndrome also reflect increasing recognition that cardiac anxiety can persist after acute events and may require targeted psychological intervention (Johnsson et al., 2025). Related work in symptomatic atrial fibrillation and pulmonary arterial hypertension demonstrates that physiological symptoms and mental health problems often interact to reduce quality of life (Fuge et al., 2026; Skúladóttir, 2024). Although these populations differ from patients with heart failure, they illustrate a broader cardiovascular pattern: symptoms that are perceived as threatening or unpredictable can produce sustained psychological distress. Similarly, research on fear of recurrence in oncology shows that uncertainty about future health can generate distinct psychological profiles and intervention needs, a concept that is relevant to heart failure patients who fear recurrent decompensation or hospitalization (Qi et al., 2025).

Social context also plays an important role in shaping quality of life among patients with heart failure. Family members may provide emotional reassurance, medication support, transportation, dietary assistance, and help with household activities. However, reliance on family can also create guilt, role changes, and fear of becoming a burden. Studies of family caregivers of patients with heart failure show that the disease affects not only patients but also caregivers' quality of life, highlighting the relational nature of heart failure burden (Kim et al., 2022). Palliative care literature further emphasizes that advanced heart failure often generates complex needs involving symptom control, decision-making, emotional support, family communication, and end-of-life planning (Rivera et al., 2023; Wamukobole et al., 2023). Position statements on palliative and hospice care for heart failure patients similarly argue that supportive care should be integrated into heart failure management to address suffering, communication needs, and patient-centered goals (Lee et al., 2025). Although palliative care is often associated with advanced illness, its principles are relevant across the disease trajectory because quality of life concerns may appear long before the final stage of disease.

Heart failure also intersects with comorbidity, life stage, and broader illness contexts. Cardiovascular disease may occur alongside pulmonary hypertension, cancer treatment, kidney disease, metabolic disorders, and reproductive health conditions, each of which can intensify symptom burden and uncertainty. The management of pulmonary hypertension in special conditions illustrates the clinical complexity that emerges when cardiovascular symptoms occur in vulnerable or medically complicated populations (Preston et al., 2024). Cardio-oncology surveillance pathways have also been developed to monitor cardiac events among breast cancer patients, demonstrating the need for early recognition of cardiovascular complications and integrated follow-up (Cronin et al., 2024). Studies of women with heart disease in the postpartum period show that quality of life and mental health are shaped by clinical communication, treatment, and contextual vulnerabilities (Liu et al., 2024; liu et al., 2023). Although these studies focus on specific subgroups, they reinforce the broader point that cardiovascular quality of life is not reducible to cardiac function; it emerges from the interaction of symptoms, life responsibilities, uncertainty, and care relationships.

A patient-centered understanding of quality of life is also supported by literature outside adult heart failure. Pediatric palliative care in heart disease emphasizes the importance of communication, family-centered support, developmental context, and quality of life across the life span (Blume et al., 2023). Work on cardiac disorders in rehabilitation and psychological contexts highlights that cardiac illness can affect functioning, adjustment, and participation in ways that extend beyond medical treatment (Ehly & Estrada-Hernández, 2023). Qualitative studies of other chronic and rare diseases show that symptoms can alter identity, daily routines, family life, and emotional well-being in ways that may not be visible in clinical indicators alone (Williams-Hall et al., 2022). Even evidence from non-heart-failure populations, such as athletes affected by the COVID-19 pandemic, demonstrates how health-related disruption can affect physical capability, mental well-being, routines, and perceived quality of life (Rzymski et al., 2022). These bodies of evidence support the value of qualitative inquiry for understanding how individuals interpret illness-related limitations and reconstruct normality under conditions of uncertainty.

Despite growing attention to quality of life in heart failure, important gaps remain. Much of the existing evidence is quantitative, intervention-focused, or clinically oriented. Such studies are essential for identifying predictors, outcomes, and treatment effects, but they may not fully explain how patients themselves make sense of symptom monitoring, how they negotiate functional limitation in daily life, or how uncertainty shapes emotional experience and self-care decisions. Heart failure patients may use clinical terms such as fatigue, edema, dyspnea, and medication adherence, but their lived experiences often involve more complex meanings, including fear, vigilance, loss of independence, disrupted identity, dependence on others, and attempts to preserve dignity. A qualitative approach is therefore necessary to examine the subjective and contextual dimensions of quality of life in greater depth. Understanding these experiences can inform more responsive clinical communication, self-management education, psychosocial support, and patient-centered care planning.

Therefore, this study aimed to explore the quality of life experiences of patients with heart failure in Canada, with particular attention to how symptom monitoring, functional limitation, and psychological uncertainty shape their daily lives, emotional well-being, self-management practices, and sense of autonomy.

2. Methods and Materials

2.1. Study Design and Participants

This study was conducted using a qualitative descriptive design to explore the quality of life experiences of patients living with heart failure, with particular attention to symptom monitoring, functional limitation, and psychological uncertainty. The qualitative descriptive approach was selected because it allows direct examination of participants' lived experiences, daily challenges, and subjective interpretations without imposing a predetermined theoretical framework. The study was carried out in Canada among adult patients receiving care for heart failure in outpatient cardiology and heart failure clinics. Participants were recruited through purposive sampling to ensure variation in age, sex, duration of diagnosis, functional status, and treatment history. The final sample consisted of 26 patients with clinically diagnosed heart failure. Eligibility criteria included being 18 years of age or older, having a confirmed diagnosis of heart failure for at least six months, being clinically stable at the time of interview, being able to communicate in English, and having sufficient cognitive ability to participate in an in-depth interview. Patients with acute decompensated heart failure requiring hospitalization at the time of recruitment, severe cognitive impairment, or severe psychiatric instability that could interfere with participation were excluded. Recruitment continued until data saturation was achieved, meaning that no substantially new themes or categories emerged from the final interviews. All participants received information about the purpose and procedures of the study, and written informed consent was obtained before data collection. Participation was voluntary, confidentiality was maintained throughout the research process, and participants were informed that they could withdraw from the study at any stage without any effect on their medical care.

2.2. *Measures*

Data were collected using a demographic and clinical information form, a semi-structured interview guide, and field notes recorded by the researcher. The demographic and clinical information form was developed to describe the characteristics of the participants and included age, sex, marital status, educational level, employment status, living arrangement, duration of heart failure diagnosis, comorbid conditions, history of hospitalization, current treatment status, and self-reported functional limitations. This information was used to contextualize participants' narratives and to support maximum variation in sampling. The main data collection tool was a semi-structured interview guide designed specifically for this study. The guide included open-ended questions addressing patients' experiences of living with heart failure, perceived changes in quality of life, daily symptom monitoring, responses to worsening symptoms, limitations in physical and social functioning, emotional reactions to disease progression, uncertainty about future health, and experiences of dependence on family members or healthcare providers. Examples of guiding questions included: “Can you describe how heart failure has affected your daily life?”, “How do you monitor your symptoms at home?”, “What activities have become difficult for you since your diagnosis?”, and “How do you feel about the uncertainty of your condition?” Probing questions were used when necessary to obtain deeper explanations and clarify participants' meanings. The interview guide was reviewed by experts in cardiovascular nursing, health psychology, and qualitative research to ensure content relevance and clarity. Before the main interviews, the guide was pilot tested with two patients who met the inclusion criteria; these interviews helped refine the wording and sequence of questions but were not included in the final analysis. Field notes were also used to document nonverbal expressions, emotional reactions, contextual observations, and the researcher's immediate reflections after each interview. Interviews were conducted individually in a private room at the clinic or through a secure online platform, depending on participant preference and health condition. Each interview lasted approximately 35 to 70 minutes and was audio-recorded with permission. Audio recordings were transcribed verbatim, and all identifying information was removed from the transcripts before analysis.

2.3. *Data Analysis*

Data were analyzed using conventional qualitative content analysis. The analysis began immediately after the first interviews and continued concurrently with data collection. Each transcript was read several times to obtain a comprehensive understanding of the participants' experiences. Meaning units related to quality of life, symptom monitoring, functional limitation, emotional burden, and uncertainty were identified and condensed while preserving the original meaning. These meaning units were then coded inductively, and similar codes were compared, grouped, and organized into subcategories. Through repeated comparison and interpretation, subcategories were further abstracted into broader categories and main themes that reflected the shared experiences of participants with heart failure. The analysis remained close to the participants' own words while also identifying patterns across interviews. To enhance credibility, selected transcripts and codes were reviewed by members of the research team, and disagreements were resolved through discussion until consensus was reached. Member checking was conducted with several participants to confirm whether the preliminary interpretations accurately reflected their experiences. Dependability was supported by maintaining an audit trail that included interview notes, coding decisions, category development, and analytic memos. Confirmability was strengthened through reflexive note-taking, which helped the researchers identify and manage personal assumptions during data interpretation. Transferability was addressed by providing detailed descriptions of the study context, participant characteristics, recruitment process, and data collection procedures. Data management and coding were supported by qualitative data organization procedures, and the final themes were developed through continuous comparison between transcripts, codes, categories, and the overall research aim.

3. Findings and Results

A total of 26 patients with heart failure participated in the study. The participants were recruited from outpatient cardiology and heart failure clinics in Canada and represented a diverse range of clinical and social backgrounds. The participants' ages ranged from 43 to 82 years, with a mean age of 64.73 years. Fourteen participants were male and twelve were female. Most participants were married or living with a partner, while a smaller number were widowed, divorced, or living alone. Regarding educational status, participants varied from high school education to university-level education, which allowed the study to capture experiences across different levels of health literacy and access to information. The duration of heart failure diagnosis ranged from 8 months to 14 years, with many participants describing a gradual transition from initial shock and confusion to a more cautious and symptom-focused daily routine. Seventeen participants reported at least one heart failure-related hospitalization during the previous two years, and most participants reported one or more comorbid conditions, including hypertension, diabetes, chronic kidney disease, chronic obstructive pulmonary disease, or obesity. In terms of functional capacity, participants described different degrees of limitation, ranging from mild fatigue during moderate activities to severe restriction in walking, climbing stairs, household tasks, and social participation. The demographic and clinical variation among participants enriched the data and made it possible to examine how quality of life was shaped not only by physical symptoms but also by monitoring responsibilities, functional dependency, emotional uncertainty, and perceived vulnerability to sudden deterioration.

Table 1

Overview of Main Themes, Categories, Subcategories, and Core Meanings Extracted From the Interviews

Main theme	Categories	Subcategories	Core meaning
Living under continuous symptom monitoring	Symptom awareness and bodily vigilance	Monitoring breathing, tracking swelling, checking fatigue, observing weight changes, noticing dizziness or palpitations	Patients experienced heart failure as a condition that required constant attention to bodily signals and careful interpretation of ordinary physical sensations.
Living under continuous symptom monitoring	Self-management and treatment adjustment	Medication adherence, fluid restriction, salt control, weight measurement, contacting healthcare providers, deciding when symptoms were serious	Symptom monitoring was not only a clinical instruction but also a daily responsibility that affected patients' confidence, independence, and emotional security.
Restriction of daily function and social participation	Physical limitations in everyday life	Reduced walking capacity, difficulty climbing stairs, inability to perform household tasks, need for rest, avoidance of exertion	Functional limitation reduced patients' sense of autonomy and changed their perception of themselves as active and capable individuals.
Restriction of daily function and social participation	Disruption of family, occupational, and social roles	Dependence on family, reduced employment capacity, decreased social visits, avoiding travel, feeling like a burden	Quality of life was strongly affected by the loss of previous roles and the need to reorganize daily routines around physical limitations.
Psychological uncertainty and emotional burden	Fear of deterioration and future unpredictability	Anxiety about sudden symptom worsening, fear of hospitalization, uncertainty about disease progression, worry about death	Patients described heart failure as unpredictable, which created persistent psychological tension and difficulty planning for the future.
Psychological uncertainty and emotional burden	Emotional adaptation and search for control	Acceptance, spiritual coping, prioritizing meaningful activities, relying on family support, developing personal routines	Although uncertainty remained present, some patients developed adaptive strategies that helped them preserve meaning, dignity, and emotional balance.

Table 1 presents the general thematic structure developed from the qualitative content analysis. The analysis showed that quality of life among patients with heart failure was shaped by three interrelated experiential domains: continuous symptom monitoring, restriction of daily function and social participation, and psychological uncertainty. Participants did not describe quality of life as a single or abstract concept; rather, they understood it through repeated daily encounters with breathlessness, fatigue, swelling, limited mobility, dependence on others, and fear of sudden clinical worsening. The first theme, living under continuous symptom monitoring, reflected the way patients became highly attentive to bodily changes and felt responsible for interpreting symptoms correctly. The second theme, restriction of daily function and social participation, showed that heart failure affected quality of life by limiting ordinary activities and changing social and family roles. The third theme, psychological uncertainty and emotional burden, demonstrated that patients' quality of life was not only reduced by physical symptoms but also by the unpredictability of the disease. Across the interviews, the themes were closely connected: symptom monitoring influenced functional decisions, functional limitation increased emotional vulnerability, and uncertainty intensified the need for monitoring and self-protection.

Table 2

Theme One: Living Under Continuous Symptom Monitoring

Category	Subcategory	Description of finding	Illustrative participant quotation
Symptom awareness and bodily vigilance	Monitoring breathing	Participants frequently assessed their breathing during walking, lying down, speaking, and performing household activities. Breathlessness was often interpreted as the most immediate warning sign of worsening heart failure.	"The first thing I notice is my breathing. If I cannot walk from the bedroom to the kitchen without stopping, I know something is not right."
Symptom awareness and bodily vigilance	Tracking swelling and fluid retention	Swelling in the legs, ankles, and abdomen was viewed as a visible sign of fluid accumulation. Participants often checked their body visually or by touch to decide whether they needed to restrict fluids or seek advice.	"Every morning I look at my ankles. If they are puffy, I start worrying because I know it means fluid is building up again."
Symptom awareness and bodily vigilance	Interpreting fatigue	Fatigue was one of the most difficult symptoms to interpret because participants were unsure whether it reflected normal tiredness, aging, poor sleep, medication effects, or worsening heart failure.	"Sometimes I do not know if I am just tired or if my heart is getting worse. That uncertainty is exhausting by itself."
Symptom awareness and bodily vigilance	Weight monitoring	Daily or regular weight measurement was described as an important but emotionally stressful routine. An increase in weight often created anxiety even before other symptoms appeared.	"The scale decides my mood in the morning. If the number is up, I spend the whole day thinking something bad may happen."
Self-management and treatment adjustment	Medication adherence	Participants emphasized the importance of taking medications on time, but several described difficulties related to side effects, polypharmacy, changes in prescriptions, and fear of missing doses.	"I have pills for my heart, blood pressure, diabetes, and water. I take them because I know I must, but sometimes it feels like my whole life is organized around medication."
Self-management and treatment adjustment	Fluid and salt restriction	Dietary control was experienced as both protective and restrictive. Participants understood the importance of limiting salt and fluids but felt that these restrictions reduced enjoyment of meals and social eating.	"I cannot just eat what everyone else eats. Even family dinners are different now because I am always thinking about salt."
Self-management and treatment adjustment	Deciding when to seek help	Participants described uncertainty about when symptoms required medical attention. Some delayed contacting healthcare providers because they feared unnecessary visits, while others sought help quickly due to previous hospitalizations.	"I always ask myself, is this bad enough to call the clinic, or am I overreacting? It is hard to know."

Table 2 shows that symptom monitoring was a central feature of daily life with heart failure and had both practical and emotional consequences. Participants described a continuous process of observing, interpreting, and responding to bodily signals. Breathlessness, swelling, fatigue, weight changes, dizziness, and palpitations were not experienced as isolated symptoms; instead, they became signs that required immediate judgment and sometimes urgent decision-making. This constant monitoring created a sense of responsibility and vigilance. Patients often felt that they had to become experts in their own bodies, but they also described uncertainty about whether they were interpreting symptoms correctly. Fatigue was especially challenging because it was common, persistent, and difficult to distinguish from other causes. Weight monitoring was viewed as clinically useful, yet many participants experienced it as emotionally stressful because small changes could create fear of fluid retention or hospitalization. Medication adherence, fluid restriction, and salt control were also described as necessary but burdensome forms of self-management. Overall, the findings indicate that symptom monitoring influenced quality of life by turning ordinary daily routines into health-related tasks and by creating a persistent sense of alertness, caution, and vulnerability.

Table 3

Theme Two: Restriction of Daily Function and Social Participation

Category	Subcategory	Description of finding	Illustrative participant quotation
Physical limitations in everyday life	Reduced walking capacity	Participants commonly reported that walking distance had decreased after heart failure diagnosis. Many planned their movements carefully and avoided places where they might not be able to rest.	"Before, I could walk anywhere. Now I look for benches before I even start walking."
Physical limitations in everyday life	Difficulty climbing stairs	Stairs were repeatedly described as one of the most difficult daily challenges. Participants living in multi-level homes described needing to pause, avoid stairs, or reorganize their living space.	"The stairs in my house remind me every day that I am not the same person I used to be."
Physical limitations in everyday life	Dependence on rest periods	Participants structured their day around rest. Even simple activities such as showering, cooking, dressing, or cleaning required pauses and energy planning.	"I cannot do everything at once anymore. I shower, then I sit. I cook a little, then I sit again."
Physical limitations in everyday life	Avoidance of exertion	Some participants avoided physical activity because they feared breathlessness, chest discomfort, dizziness, or triggering a worsening episode.	"I know exercise is good, but when my breathing changes, I get scared and stop."
Disruption of family, occupational, and social roles	Dependence on family members	Participants described relying on spouses, children, or other relatives for transportation, shopping, household tasks, medication organization, and clinic appointments.	"My wife does so much for me now. I am grateful, but I also feel guilty because she has become my caregiver."
Disruption of family, occupational, and social roles	Loss of occupational identity	Participants who had stopped working or reduced work hours described a loss of productivity, financial independence, and personal identity.	"Leaving work was not just about money. It felt like losing a part of who I was."
Disruption of family, occupational, and social roles	Reduced social participation	Participants avoided social gatherings because of fatigue, dietary restrictions, fear of symptoms, embarrassment, or concern about being unable to keep up with others.	"I say no to invitations because I do not want people waiting for me or watching me struggle."
Disruption of family, occupational, and social roles	Feeling like a burden	Several participants expressed sadness and guilt about needing help. Dependence on others affected their self-esteem and sense of dignity.	"The hardest part is not asking for help. The hardest part is feeling that people have to plan around my illness."

Table 3 demonstrates that functional limitation was one of the most visible ways heart failure reduced quality of life. Participants reported that ordinary activities, such as walking, climbing stairs, bathing, cooking, cleaning, shopping, and attending appointments, required greater effort and planning. Physical limitation was not described only as reduced capacity; it was experienced as a change in identity and independence. Participants compared their current abilities with their previous lives and often described grief over the loss of strength, spontaneity, and self-sufficiency. The need to rest frequently made daily routines slower and more fragmented. Many participants also avoided physical exertion because symptoms such as breathlessness or dizziness created fear. These limitations extended into family, occupational, and social life. Dependence on family members was often appreciated but also accompanied by guilt and concern about becoming a burden. Participants who had reduced work responsibilities or stopped working described loss of occupational identity and financial confidence. Social participation also declined, particularly when participants feared fatigue, embarrassment, dietary restriction, or the possibility of symptom worsening outside the home. These findings suggest that functional limitation affected quality of life through both physical restriction and social withdrawal, gradually narrowing the range of activities through which patients experienced autonomy, usefulness, and connection with others.

Table 4

Theme Three: Psychological Uncertainty and Emotional Burden

Category	Subcategory	Description of finding	Illustrative participant quotation
Fear of deterioration and future unpredictability	Anxiety about sudden worsening	Participants described fear that symptoms could worsen unexpectedly, even after a stable period. This made them cautious and emotionally alert.	"Even when I feel okay, I know things can change quickly. That thought is always in the back of my mind."
Fear of deterioration and future unpredictability	Fear of hospitalization	Previous hospitalization shaped participants' expectations and created fear of returning to the hospital. Hospital admission was associated with loss of control, dependency, and disease progression.	"I have been hospitalized before, and I do not want to go back. Every time my breathing gets worse, I think, here we go again."

Fear of deterioration and future unpredictability	Uncertainty about prognosis	Participants expressed difficulty understanding what the future would look like and whether their condition would remain stable, improve, or deteriorate.	“No one can tell me exactly what will happen. I live with that question every day.”
Fear of deterioration and future unpredictability	Awareness of mortality	Some participants spoke directly about fear of death, while others referred indirectly to limited time, unfinished responsibilities, or worry about family members after their death.	“You start thinking about how much time you have and what will happen to your family when you are gone.”
Emotional adaptation and search for control	Acceptance of limitations	Some participants described gradual acceptance of their condition and learned to adjust expectations rather than constantly comparing themselves with their previous level of functioning.	“I had to stop fighting the fact that my life changed. I still have a life, but I have to live it differently.”
Emotional adaptation and search for control	Reliance on family and social support	Emotional support from spouses, children, friends, and healthcare providers helped participants manage fear and maintain hope.	“When my daughter checks on me, I feel less alone. It reminds me that I am not facing this by myself.”
Emotional adaptation and search for control	Spiritual and existential coping	Several participants used prayer, gratitude, reflection, or spiritual beliefs to manage uncertainty and preserve meaning.	“I pray, and it helps me accept what I cannot control.”
Emotional adaptation and search for control	Prioritizing meaningful activities	Participants attempted to preserve quality of life by focusing on manageable activities, family time, hobbies, and moments of normality.	“I cannot do everything, but I try to do the things that still make me feel like myself.”

Table 4 illustrates that psychological uncertainty was a major component of quality of life among patients with heart failure. Participants described heart failure as an unpredictable condition that could remain stable for a period and then suddenly worsen. This unpredictability created a continuous emotional burden, even when physical symptoms were not severe. Fear of hospitalization was especially prominent among participants who had experienced previous admissions, because hospitalization symbolized loss of control, physical decline, and possible disease progression. Uncertainty about prognosis also affected participants’ ability to plan for the future. Some participants avoided long-term planning because they did not know whether their health would allow them to travel, work, attend family events, or remain independent. Awareness of mortality appeared in different forms, ranging from direct fear of death to concerns about unfinished responsibilities and the emotional impact of illness on family members. At the same time, participants were not passive in the face of uncertainty. Many developed emotional and practical strategies to preserve control, including acceptance of limitations, reliance on family support, spiritual coping, and prioritizing meaningful activities. These adaptive strategies did not remove uncertainty, but they helped participants maintain dignity, hope, and a sense of continuity in daily life.

Table 5

Integrated Interpretation of Quality of Life Experiences Among Patients With Heart Failure

Dimension of quality of life	Main source of disruption	Patient response	Consequence for daily life
Physical quality of life	Breathlessness, fatigue, edema, dizziness, reduced exercise tolerance	Resting, avoiding exertion, planning activities, monitoring symptoms	Reduced independence, slower routines, avoidance of physically demanding activities
Emotional quality of life	Fear of deterioration, uncertainty, anxiety, frustration, awareness of mortality	Seeking reassurance, spiritual coping, acceptance, emotional suppression, family support	Persistent worry, cautious living, difficulty planning for the future
Social quality of life	Reduced mobility, fatigue, dietary restrictions, embarrassment, dependence on others	Declining invitations, limiting travel, relying on caregivers, selective participation	Social withdrawal, role changes, fear of being a burden
Treatment-related quality of life	Medication burden, dietary rules, fluid restriction, clinic visits, monitoring tasks	Organizing medication routines, following restrictions, contacting providers, tracking weight	Life organized around illness management and clinical instructions
Identity and autonomy	Loss of previous abilities, occupational changes, dependence on family, inability to perform former roles	Reframing expectations, focusing on meaningful activities, adapting household routines	Altered self-image, reduced spontaneity, gradual reconstruction of normal life

Table 5 provides an integrated interpretation of how different dimensions of quality of life were disrupted and reorganized by heart failure. The findings show that patients’ quality of life was not affected by a single factor but by the interaction of physical symptoms, emotional uncertainty, treatment burden, social restriction, and changes in identity.

Physical quality of life was reduced by breathlessness, fatigue, swelling, and limited exercise tolerance, which forced participants to rest more often and plan activities carefully. Emotional quality of life was affected by fear of sudden deterioration and uncertainty about the future. Social quality of life declined when participants avoided gatherings, travel, or family activities because of fatigue, dietary restrictions, or fear of becoming unwell in public. Treatment-related quality of life was also important, as participants described how medications, salt restriction, fluid control, clinic appointments, and weight monitoring organized much of their daily routine. Finally, the illness influenced identity and autonomy, particularly among participants who could no longer work, perform household responsibilities, or maintain previous family roles. The integrated pattern suggests that quality of life in heart failure should be understood as a dynamic and multidimensional experience in which patients continuously attempt to balance safety, independence, emotional stability, and meaningful participation in daily life.

Figure 1

Conceptual Representation of Quality of Life Among Patients With Heart Failure Based on Symptom Monitoring, Functional Limitation, and Psychological Uncertainty

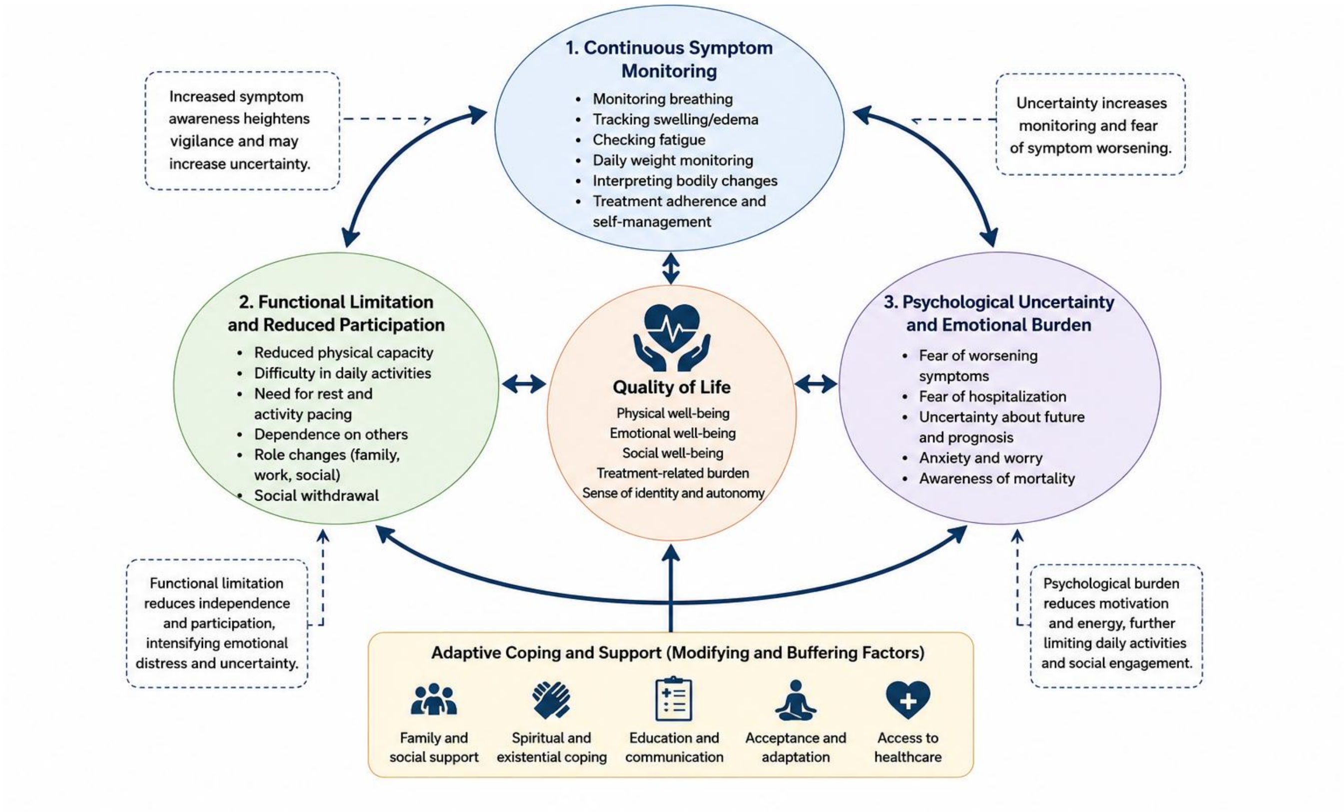

Figure 1 represents the conceptual relationship among the three main themes identified in the study. Symptom monitoring, functional limitation, and psychological uncertainty were not separate experiences; rather, they formed a circular and reinforcing process. Continuous symptom monitoring increased patients' awareness of bodily vulnerability and often intensified psychological uncertainty. Functional limitation reduced independence and social participation, which increased emotional distress and reinforced concerns about disease progression. Psychological uncertainty, in turn, made patients more vigilant about symptoms and more cautious in physical and social activities. Within this process, adaptive strategies such as family support, acceptance, spiritual coping, communication with healthcare providers, and prioritization of meaningful activities helped some participants preserve quality of life. However, these strategies did not completely eliminate the burden of heart failure. Instead, they enabled patients to negotiate a new form of daily life in which self-management, caution, and adaptation became central to maintaining dignity, stability, and personal meaning.

Overall, the findings revealed that quality of life among patients with heart failure was shaped by the ongoing interaction between bodily symptoms, functional limitations, and psychological uncertainty. Participants experienced heart failure as a condition that required constant self-observation and adjustment. Their daily lives were marked by careful monitoring of breathing, swelling, fatigue, body weight, diet, and medication use. These self-management practices were essential for preventing deterioration, yet they also increased the burden of living with illness. Functional limitation affected participants' independence, social participation, family roles, and sense of identity. Psychological uncertainty further deepened the impact of the disease by making the future feel unpredictable and by increasing fear of hospitalization, decline, and death. Despite these challenges, participants also described efforts to adapt by accepting limitations, relying on family and healthcare support, using spiritual or reflective coping, and focusing on activities that preserved meaning. The findings therefore suggest that quality of life in heart failure is not merely the absence of symptoms but the patient's ability to maintain control, dignity, connection, and hope while living with a chronic and unpredictable condition.

4. Discussion

The present qualitative study explored quality of life among patients with heart failure in Canada, with specific attention to symptom monitoring, functional limitation, and psychological uncertainty. The findings showed that quality of life was not experienced by participants as a single clinical outcome, but as a multidimensional and continuously negotiated condition shaped by physical symptoms, self-management demands, emotional burden, social restriction, and altered identity. Three main themes were identified: living under continuous symptom monitoring, restriction of daily function and social participation, and psychological uncertainty and emotional burden. Together, these themes indicate that patients with heart failure live in a state of constant adjustment, in which ordinary activities such as walking, sleeping, eating, weighing oneself, taking medication, and interacting with family members become closely connected to disease management. This finding is consistent with contemporary perspectives that place quality of life at the center of heart failure care and emphasize that the burden of heart failure cannot be understood only through mortality, hospitalization, or cardiac function indicators (Volterrani et al., 2025). It also aligns with comprehensive reviews describing heart failure as a complex chronic condition involving pathophysiological, pharmacological, behavioral, and lifestyle-related dimensions that collectively shape patients' everyday functioning (Elendu et al., 2024).

The first major finding of the study was that participants experienced symptom monitoring as a continuous and emotionally charged responsibility. Patients monitored breathing, swelling, fatigue, body weight, dizziness, and medication effects, and they frequently described uncertainty about whether physical sensations represented normal variation or clinical deterioration. This finding supports previous evidence that heart failure symptoms are often clustered, fluctuating, and difficult for patients to interpret in isolation (Li et al., 2025). Participants' accounts of breathlessness were especially important, as shortness of breath was often viewed as a warning sign that required immediate attention and behavioral adjustment. This is strongly aligned with qualitative evidence showing that breathlessness among individuals with heart failure affects daily activity, emotional security, and self-management decisions (Seckin et al., 2024). The present findings also support studies showing that symptoms in chronic heart failure influence quality of life through psychosomatic mechanisms, where physical symptoms and psychological responses reinforce one another (Wang et al., 2023). In this sense, symptom monitoring was not merely a clinical recommendation; it became a form of bodily vigilance that shaped how participants moved, rested, planned, and evaluated their own safety.

The emotional burden associated with symptom monitoring can also be understood in relation to self-care and self-efficacy. Participants who felt more confident in interpreting symptoms and managing medications described greater perceived control, while those who felt uncertain reported more anxiety and hesitation in deciding when to seek help. This finding is consistent with evidence that self-efficacy is positively associated with quality of life among patients with cardiovascular diseases (Lu et al., 2026). It also supports the rationale for self-management interventions in heart failure, which aim to improve patients' ability to recognize symptoms, adhere to treatment, and prevent avoidable readmissions (Nelogal et al., 2025). The finding that some participants struggled with decisions about when to contact healthcare providers is consistent with tele-empowerment approaches designed to improve self-care behaviors, reduce uncertainty, and decrease readmission risk among heart failure patients (Khanipour-Kencha et al., 2023). The present study adds to this literature by showing that the challenge is not only whether patients know self-care instructions, but how they emotionally experience the responsibility of applying those instructions in ambiguous everyday situations.

The second major finding was that functional limitation substantially reduced quality of life by restricting mobility, independence, household activities, occupational roles, and social participation. Participants described difficulty walking, climbing stairs, bathing, cooking, cleaning, shopping, and attending social gatherings. These limitations were not described only as physical inconvenience; they were experienced as losses of autonomy, spontaneity, dignity, and identity. This finding aligns with predictive research showing that quality of life in heart failure is shaped by physical functioning, symptoms, and psychosocial factors rather than by clinical status alone (Park et al., 2022). It also corresponds with broader cardiovascular literature showing that improvements in symptoms and physical capacity are meaningful because they influence patients' perceived ability to resume daily life and social participation (Marinescu et al., 2025; Timmers et al., 2021). In the present study, functional limitation often resulted in activity pacing, avoidance of exertion, and dependence on family members. These patterns suggest that quality of life in heart failure is closely tied to the patient's ability to preserve a sense of agency while adapting to reduced physical capacity.

The finding that reduced participation affected family, occupational, and social roles is also consistent with research on caregiver burden and relational quality of life in heart failure. Participants frequently expressed gratitude for help from spouses, children, or relatives, but they also reported guilt and sadness about becoming dependent. This reflects evidence that heart failure affects not only patients but also family caregivers, whose quality of life may be influenced by caregiving responsibilities, emotional concern, and changes in household roles (Kim et al., 2022). The relational burden identified in this study also connects with palliative care literature emphasizing that advanced heart failure creates needs related to symptom relief, family communication, emotional support, and care planning (Rivera et al., 2023; Wamukobole et al., 2023). Position statements on palliative and hospice care for heart failure similarly argue that supportive care should be integrated into heart failure management because patient well-being depends on more than disease-directed treatment (Lee et al., 2025). Although not all participants in the present study were at the end stage of illness, their narratives show that palliative principles such as dignity, communication, family support, and relief of distress are relevant throughout the heart failure trajectory.

The third major finding was that psychological uncertainty was a defining feature of patients' quality of life. Participants described fear of sudden deterioration, fear of hospitalization, uncertainty about prognosis, awareness of mortality, and difficulty planning for the future. This finding is consistent with previous heart failure research showing that uncertainty can mediate the relationship between physical symptoms and self-care, particularly among older men with heart failure (Yu & Lee, 2024). It is also aligned with evidence from dialysis patients showing that uncertainty in illness and fatigue are associated with poorer health-related quality of life (Cho et al., 2022). The present study extends these findings by illustrating how uncertainty is experienced qualitatively as a persistent background condition that shapes daily decisions, emotional stability, and future orientation. Even during clinically stable periods, participants reported feeling that deterioration could occur unexpectedly. This form of uncertainty can intensify symptom vigilance and reduce willingness to engage in physical or social activities, thereby reinforcing functional restriction.

The psychological uncertainty observed in this study also resonates with evidence from heart transplant recipients, where uncertainty in illness mediates the association between social support and quality of life, and psychological resilience moderates this process (Gao et al., 2025). In the present findings, participants who had stronger family support, spiritual coping, or acceptance strategies appeared better able to tolerate uncertainty, even though uncertainty did not disappear. This supports broader cardiovascular literature emphasizing the importance of psychosocial risk factors in heart disease and the need to move beyond recognition toward active psychological support (Kupper et al., 2023). Studies of cardiac anxiety after acute coronary syndrome further demonstrate that psychological distress can persist after cardiac events and may require structured interventions such as cognitive behavioral therapy (Johnsson et al., 2025). Similar symptom-related anxiety has been documented in patients with ventricular arrhythmias, atrial fibrillation, and pulmonary arterial hypertension, indicating that fear and uncertainty are common across cardiovascular conditions in which bodily sensations may signal serious risk (Fuge et al., 2026; Sandhu et al., 2021; Skúladóttir, 2024). Therefore, the psychological uncertainty reported by participants should be considered a core component of heart failure-related quality of life rather than a secondary emotional reaction.

Another important finding was that participants attempted to preserve quality of life through adaptive coping strategies, including acceptance, family support, spiritual coping, communication with healthcare providers, and prioritizing meaningful activities. These strategies helped participants reconstruct a sense of normality within the limits imposed by heart failure. The finding is consistent with research suggesting that resilience and social support can protect quality of life in serious cardiovascular illness (Gao et al., 2025). It also aligns with broader chronic disease literature emphasizing that digital health, personalized medicine, and patient-centered care may support quality of life when they respond to the lived realities of chronic illness management (Cilli et al., 2022). However, participants' coping strategies were not always sufficient to eliminate distress. Some patients continued to feel constrained by treatment routines, uncertain prognosis, and fear of dependency. This indicates that interventions should not only teach patients how to monitor symptoms but also support the emotional and existential challenges that accompany long-term self-management.

The findings also have implications for understanding heart failure within diverse clinical and life-course contexts. Cardiovascular quality of life is shaped by comorbidities, age, gender, reproductive status, cancer treatment history, pulmonary vascular disease, and other chronic conditions. Research on older adults with cardiovascular multimorbidity highlights the need for pragmatic approaches that reflect real-world complexity rather than narrowly selected patient populations (Bonanad et al., 2026). Studies on pulmonary hypertension and special clinical conditions similarly show that cardiovascular symptoms often occur within complicated medical contexts requiring individualized management (Preston et al., 2024). Cardio-oncology surveillance pathways demonstrate the importance of monitoring cardiac events among patients treated for breast cancer, further emphasizing that symptom surveillance and quality of life must be integrated into long-term care models (Cronin et al., 2024). Studies of postpartum women with heart disease also show that quality of life and mental health are shaped by communication, treatment, and life-stage responsibilities (Liu et al., 2024; liu et al., 2023). These studies support the present finding that quality of life among heart failure patients cannot be separated from social roles, care responsibilities, and uncertainty about future functioning.

The present study further supports the value of qualitative inquiry for capturing dimensions of illness that may be missed by standardized tools. Patient-reported experiences in other chronic and rare conditions show that symptoms influence identity, relationships, daily routines, and emotional well-being in complex ways (Williams-Hall et al., 2022). Pediatric heart disease palliative care literature similarly emphasizes that quality of life must be understood through communication, family context, and life-span needs (Blume et al., 2023). Psychological and rehabilitation perspectives on cardiac disorders also recognize that cardiac illness affects adjustment, participation, and functioning beyond clinical treatment outcomes (Ehly & Estrada-Hernández, 2023). Even evidence from non-cardiac or broader health-disruption contexts, such as the effect of the COVID-19 pandemic on athletes, demonstrates that limitations in physical activity, routine, and future certainty can significantly affect quality of life (Rzymski et al., 2022). The present study contributes to this body of knowledge by providing a qualitative account of how heart failure patients interpret symptoms, negotiate functional decline, and live with uncertainty in everyday life.

5. Conclusion

Overall, the findings indicate that quality of life in heart failure is best understood as an interactive process involving symptom vigilance, functional adaptation, and psychological meaning-making. Patients are required to monitor their bodies, adjust activities, manage treatment demands, depend on others when necessary, and cope with the unpredictable course of disease. This interpretation is consistent with the view that heart failure care should prioritize patient-centered outcomes, psychosocial support, self-care empowerment, and communication about uncertainty alongside biomedical management (Nelogal et al., 2025; Volterrani et al., 2025). The study shows that improving quality of life among heart failure patients requires attention to both clinical stability and the lived experience of illness. In particular, healthcare providers should recognize that symptom monitoring may produce anxiety, functional limitation may alter identity, and uncertainty may reduce patients' confidence in planning and participation. Therefore, quality of life interventions should combine education, emotional support, family involvement, accessible communication, and individualized care planning.

6. Limitations & Suggestions

This study had several limitations. First, the sample consisted of 26 patients recruited from outpatient cardiology and heart failure clinics in Canada, and although purposive sampling was used to increase variation in age, sex, duration of diagnosis, and functional status, the findings may not represent the experiences of all patients with heart failure in different healthcare systems, cultural contexts, rural communities, or acute inpatient settings. Second, the study relied on self-reported experiences, which may have been influenced by memory, current emotional state, symptom severity at the time of interview, or willingness to discuss sensitive issues such as fear of death, dependence, and family burden. Third, although qualitative data saturation was achieved, the study did not compare experiences across specific heart failure classifications, such as preserved versus reduced ejection fraction, or across different levels of disease severity. Finally, interviews were conducted at one point in time; therefore, the study could not capture how patients' experiences of symptom monitoring, functional limitation, and uncertainty may change across disease progression, hospitalization, recovery, or transition to palliative care.

Future research should examine the quality of life experiences of patients with heart failure using longitudinal qualitative designs that follow participants over time and capture changes in symptom interpretation, functional ability, emotional adaptation, and care needs across different stages of the disease. Studies should also compare patients with different clinical profiles, including heart failure with preserved ejection fraction, reduced ejection fraction, advanced heart failure, multiple comorbidities, and recurrent hospitalization. Future investigations may benefit from including family caregivers to better understand the relational and household-level effects of heart failure on quality of life. Mixed-methods studies are also recommended to integrate qualitative experiences with standardized quality of life measures, symptom burden scales, self-care assessments, and clinical indicators. In addition, culturally diverse samples and studies in rural or underserved areas are needed to explore how access to care, health literacy, cultural beliefs, financial burden, and social support influence patients' ability to monitor symptoms and manage uncertainty.

Healthcare providers should address quality of life in heart failure as a multidimensional clinical priority that includes symptom burden, emotional distress, functional ability, social participation, and uncertainty about the future. Patient education should move beyond general self-care instructions and include practical guidance on how to interpret symptoms, when to seek help, how to manage uncertainty, and how to communicate concerns before deterioration occurs. Nurses, physicians, psychologists, and allied health professionals should routinely ask patients about fear, activity avoidance, dependence on family, treatment burden, and perceived loss of identity. Care plans should be individualized and should include family involvement when appropriate, because many patients rely on relatives for monitoring, transportation, medication routines, and emotional support. Psychological support, spiritual care when desired, rehabilitation guidance, and palliative care principles should be integrated earlier in the disease trajectory to help patients maintain dignity, autonomy, and meaningful participation in daily life.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

References

Blume, E. D., Kirsch, R., Cousino, M. K., Walter, J. K., Steiner, J. M., Miller, T. A., Machado, D., Peyton, C., Bacha, E., & Morell, E. (2023). Palliative Care Across the Life Span for Children With Heart Disease: A Scientific Statement From the American Heart Association. *Circulation Cardiovascular Quality and Outcomes*, *16*(2). https://doi.org/10.1161/hcq.0000000000000114

Bonanad, C., Sánchez-Ospina, D., García-Blas, S., Salinas, G. L. A., Cepas-Guillén, P., Raposeiras-Roubín, S., Segura-Rodríguez, D., Cervera, J. P., Ortiz-Cortés, C., Corbí-Pascual, M., Noguerón-García, A., Varela, C. M. R., Thiscal-López, M., Vivas, D., Galant-Parrado, S., Jordá-Climent, S., & Izquierdo-Ortiz, M. J. (2026). Clinical Trials in Older Adults With Cardiovascular Multimorbidity: A Perspective on Pragmatic Trial Design. *Journal of clinical medicine*, *15*(12), 4471. https://doi.org/10.3390/jcm15124471

Cho, O. H., Hong, I.-S., & Kim, H. (2022). Effect of Uncertainty in Illness and Fatigue on Health-Related Quality of Life of Patients on Dialysis: A Cross-Sectional Correlation Study. *Healthcare*, *10*(10), 2043. https://doi.org/10.3390/healthcare10102043

Cilli, E., Ranieri, J., Guerra, F., Ferri, C., & Giacomo, D. D. (2022). Naturalizing Digital and Quality of Life in Chronic Diseases: Systematic Review to Research Perspective Into Technological Advancing and Personalized Medicine. *Digital Health*, *8*, 205520762211448. https://doi.org/10.1177/20552076221144857

Cronin, M. J., Lowery, A., McInerney, V., Wijns, W., Kerin, M. J., Keane, M., Blazkova, S., Neiuroukh, D., Martin, M. J., & Soliman, O. (2024). Understanding Cardiac Events in Breast Cancer (UCARE): Pilot Cardio-Oncology Assessment and Surveillance Pathway for Breast Cancer Patients. *Breast Cancer Research and Treatment*, *207*(2), 283-291. https://doi.org/10.1007/s10549-024-07322-w

Ehly, S., & Estrada-Hernández, N. (2023). Cardiac Disorders. 27-35. https://doi.org/10.1037/0000349-004

Elendu, C., Amaechi, D. C., Elendu, T. C., Fiemotonghan, B.-e., Okoye, O. K., Agu-ben, C. M., Onyekweli, S. O., Amapu, D. A., Ikpegbu, R. C., Asekhauno, M. O., Pius, E. I., Bayo-Shodipo, A. T., Okezie-Okoye, C. A., Bello, N. O., Oguine, C. A., Edochie, P., Dike, N. C., Amos, I., Asekhauno, J., . . . Adebayo, M. (2024). A Comprehensive Review of Heart Failure: Unraveling the Etiology, Decoding Pathophysiological Mechanisms, Navigating Diagnostic Modalities, Exploring Pharmacological Interventions, Advocating Lifestyle Modifications, and Charting the Horizon of Emerging Therapies in the Complex Landscape of Chronic Cardiac Dysfunction. *Medicine*, *103*(3), e36895. https://doi.org/10.1097/md.0000000000036895

Fuge, J., Olsson, K. M., Remmert, K., Stapel, B., Kamp, J. C., Park, D. H., Hoeper, M. M., Winter, L., & Kahl, K. G. (2026). Mental Disorders and Quality of Life in Patients With Pulmonary Arterial Hypertension Treated With Sotatercept. *Pulmonary Circulation*, *16*(2). https://doi.org/10.1002/pul2.70324

Gao, C., Gui, S., Zhu, L., Bian, X., Shen, H., & Jiao, C. (2025). Social Support and Quality of Life in Chinese Heart Transplant Recipients: Mediation Through Uncertainty in Illness and Moderation by Psychological Resilience. *Frontiers in Psychiatry*, *16*. https://doi.org/10.3389/fpsyt.2025.1637110

Johnsson, A., Ljótsson, B., Braunschweig, F., Mellbin, L., & Särnholm, J. (2025). Digital Cognitive Behavioural Therapy for Cardiac Anxiety Following Acute Coronary Syndrome: Protocol for a Randomised Controlled Trial Comparing CBT to a Digital Lifestyle Intervention. *BMJ open*, *15*(10), e106473. https://doi.org/10.1136/bmjopen-2025-106473

Khanipour-Kencha, A., Ghiyasvandian, S., Mohammadi, S., Khabazkhoob, M., Mirshahi, A., Wells, R., & Zakerimoghadam, M. (2023). Effectiveness of a Comprehensive Tele-Empowerment Programme on Self-Care Behaviours, Uncertainty and Readmission of Patients With Heart Failure: Protocol for a Randomised Controlled Trial. *BMJ open*, *13*(8), e074256. https://doi.org/10.1136/bmjopen-2023-074256

Kim, K.-A., Park, J. S., Seo, K. W., Choi, E. Y., & Ahn, J. A. (2022). Factors Affecting the Quality of Life of Family Caregivers of Patients With Heart Failure: A Cross-Sectional Study. *Medicine*, *101*(35), e30042. https://doi.org/10.1097/md.0000000000030042

Kupper, N., Houdt, S. v. d., Kuijpers, P., & Widdershoven, J. (2023). The Importance, Consequences and Treatment of Psychosocial Risk Factors in Heart Disease: Less Conversation, More Action! *Netherlands Heart Journal*, *32*(1), 6-13. https://doi.org/10.1007/s12471-023-01831-x

Lee, H. Y., Yoo, S. H., Cho, H. J., Youn, J. C., Park, S. M., Jeong, J. O., Kim, M. S., Shim, C. Y., Park, J. J., Kim, K. H., Kim, E. J., Yang, J. H., Cho, J. Y., Jo, S. H., Hwang, K. K., Lee, J. H., Kim, I. C., Kim, G. B., Choi, J. H., . . . Yoo, B. S. (2025). Palliative Care and Hospice for Heart Failure Patients: Position Statement From the Korean Society of Heart Failure. *International Journal of Heart Failure*, *7*(1), 32. https://doi.org/10.36628/ijhf.2024.0069

Li, Y., Wang, H., Chen, L., Wu, R., Liu, M. Z., Chen, H., Liu, S., Xiao, D., & Xiong, X. (2025). Exploring Symptom Clusters and Measurements in Patients With Heart Failure - A Scope Review. https://doi.org/10.21203/rs.3.rs-6684234/v1

Liu, J., Wang, Q., & Qu, D.-y. (2024). Postpartum Quality of Life and Mental Health in Women With Heart Disease: Integrated Clinical Communication and Treatment. *World journal of psychiatry*, *14*(1), 63-75. https://doi.org/10.5498/wjp.v14.i1.63

liu, j., Wang, Q., & Qu, D. (2023). Study on the Influencing Factors of Postpartum Quality of Life in Women With Heart Disease. https://doi.org/10.21203/rs.3.rs-3134776/v1

Lu, C., Xiao, Y., Su, Y., Li, X., Feng, Z., Hou, Z., Pan, C., & Yang, Q. (2026). The Correlation and Mediating Effects Between Self-Efficacy and Quality of Life in Patients With Cardiovascular Diseases: A Systematic Review and Meta-Analysis. https://doi.org/10.21203/rs.3.rs-8293510/v1

Marinescu, A., Oprea, S., & Costache, V. (2025). Does Minimally Invasive Valve Surgery Improve Quality of Life Compared to Sternotomy? A Systematic Review. *Journal of clinical medicine*, *14*(24), 8660. https://doi.org/10.3390/jcm14248660

Nelogal, S. S., Yedam, S. T., Koppula, S. R., Imtiaz, H., Shettywarangale, P., Shah, B., Avinash, V., Bhalla, A., Sahu, S., & Patel, T. (2025). Chronic Disease Self-Management in Heart Failure: A Narrative Review of Performance Gaps and Emerging Solutions. *Medicine*, *104*(52), e46819. https://doi.org/10.1097/md.0000000000046819

Park, J.-K., Ahn, J. A., Hayman, L. L., Park, J. S., & Kim, C. J. (2022). Predictive Model for Quality of Life in Patients With Heart Failure. *The Journal of Cardiovascular Nursing*, *38*(4), 330-338. https://doi.org/10.1097/jcn.0000000000000942

Preston, I. R., Howard, L., Langleben, D., Lichtblau, M., Pulido, T., Souza, R., & Olsson, K. M. (2024). Management of Pulmonary Hypertension in Special Conditions. *European Respiratory Journal*, *64*(4), 2401180. https://doi.org/10.1183/13993003.01180-2024

Qi, Z., Dai, Y., Hou, S., Zhu, B., & Wang, W. (2025). Latent Profile Analysis of Fear of Cancer Recurrence in Patients With

Prostate Cancer: Insights Into Risk Factors and Psychological Interventions. *Asia-Pacific Journal of Oncology Nursing*, *12*, 100651. https://doi.org/10.1016/j.apjon.2024.100651

Rivera, F. B., Choi, S., Carado, G. P., Adizas, A. V., Bantayan, N. R. B., Loyola, G. J. P., Whoy, S., Aparece, J. P., Rocha, A. J. B., Placino, S., Ansay, M. F. M., Mangubat, G. F., Mahilum, M. L. P., Al-Abcha, A., Suleman, N., Shah, N., Suboc, T., & Volgman, A. S. (2023). End-of-Life Care for Patients With End-Stage Heart Failure, Comparisons of International Guidelines. *American Journal of Hospice and Palliative Medicine®*, *41*(1), 87-98. https://doi.org/10.1177/10499091231154575

Rzymski, P., Rzymski, P., Burzyński, B., Jurys, T., Knapik, M., & Rzymska, I. (2022). The Effect of the COVID-19 Pandemic on Pro and Advanced Cycling Athletes: A Cross-Sectional Study in Poland. *Archives of Medical Science*. https://doi.org/10.5114/aoms/155211

Sandhu, U., Kovacs, A. H., & Nazer, B. (2021). Psychosocial Symptoms of Ventricular Arrhythmias: Integrating Patient-Reported Outcomes Into Clinical Care. *Heart Rhythm O2*, *2*(6), 832-839. https://doi.org/10.1016/j.hroo.2021.09.011

Seckin, M., Petrie, M. C., Stewart, S., & Johnston, B. (2024). Descriptive Qualitative Study of Breathlessness and Its Management of Turkish Individuals With Self-Reported Heart Failure. *BMJ open*, *14*(11), e088335. https://doi.org/10.1136/bmjopen-2024-088335

Skúladóttir, H. (2024). Physiological and Psychological Factors in Symptomatic Atrial Fibrillation. https://doi.org/10.69622/27195459

Timmers, L., Vervaet, P., Goethals, P., Pooter, J. D., Vanheuverswyn, F., Velde, E. V. d., Pauw, M. D., & Jordaens, L. (2021). Quality of Life and Symptoms in Patients Selected for Ablation of Ventricular Extrasystoles: A Prospective Study. *Journal of Interventional Cardiac Electrophysiology*, *65*(3), 601-607. https://doi.org/10.1007/s10840-021-01092-x

Volterrani, M., Hálasz, G., Adamopoulos, S., Agostoni, P., Butler, J., Coats, A. J., Cohen-Solal, A., Doehner, W., Jankowska, E. A., Lam, C. S., Lambrinou, E., Lund, L. H., Rosano, G., Metra, M., Paolillo, S., Filardi, P. P., Rakisheva, A., Savarese, G., Seferović, P., . . . Piepoli, M. (2025). Quality of Life in Heart Failure. The Heart of the Matter. A Scientific Statement of the Heart Failure Association and the European Association of Preventive Cardiology of the European Society of Cardiology. *European Journal of Heart Failure*, *27*(7), 1159-1173. https://doi.org/10.1002/ejhf.3440

Wamukobole, D. L., Hussein, H. E., & Shikanga, M. S. (2023). Palliative Care Needs of Patients With Advanced Heart Failure at a Cardiac Care Unit in Mtrh, Kenya: A Census Study. https://doi.org/10.21203/rs.3.rs-3153499/v1

Wang, Y., Yang, Q., Liu, Y., Zheng, G., Fan, F., Tian, H., & Zhang, X. (2023). Psychosomatic Mechanisms of Heart Failure Symptoms on Quality of Life in Patients With Chronic Heart Failure: A Multi-centre Cross-sectional Study. *Journal of clinical nursing*, *33*(5), 1839-1848. https://doi.org/10.1111/jocn.16955

Williams-Hall, R., Tinsley, K., Kruger, E., Johnson, C., Bowden, A., Cimms, T., & Gater, A. (2022). Qualitative Evaluation of the Symptoms and Quality of Life Impacts of Long-Chain Fatty Acid Oxidation Disorders. *Therapeutic Advances in Endocrinology and Metabolism*, *13*. https://doi.org/10.1177/20420188211065655

Yu, S., & Lee, H. (2024). Mediating Effects of Depressive Symptoms and Uncertainty on Physical Symptoms and Self-Care in Korean Older Men With Heart Failure. *Journal of Nursing Research*, *32*(6), e364. https://doi.org/10.1097/jnr.0000000000000644