



# Self-management in Older Adults with Multiple Chronic Conditions (MCCs): A Qualitative Content Analysis

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## Abstract

**Background:** The growing population of older adults and the prevalence of multiple chronic conditions (MCCs) among them present significant challenges in care and treatment. Self-management is an effective approach to managing the consequences of MCCs.

**Objectives:** This study aimed to explore the factors related to self-management among older adults with MCCs.

**Methods:** This qualitative study employed a content analysis approach from June to April 2023 in hospitals and universities in Tehran. The sample consisted of 26 participants, including older adults with MCCs, family caregivers, and specialists. Data were collected through semi-structured interviews. Purposeful sampling was used, and continued until data saturation was achieved. The rigor of the study was evaluated using the Lincoln and Guba criteria, and analysis was conducted simultaneously with data collection using the Elo and Kyngäs methods.

**Results:** The final analysis identified several factors affecting self-management. A total of 697 semantic units and 336 codes were categorized into 13 subcategories and 4 main categories. These categories included: Individual factors (biological factors, cognitive factors, coexisting diseases, mental health, economic status, health-oriented behaviors), interpersonal factors (interaction with the medical care team, family relationships), factors related to the health system (facilities of medical centers, staff empowerment, health policymaking), and extra-organizational factors (cultural factors, social factors).

**Conclusions:** The findings of this study highlight the factors related to self-management in older adults with MCCs, which can be utilized in the design of self-management programs.

**Keywords:** Chronic Conditions, Older Adult, Qualitative Research, Self-management

## 1. Background

Demographic projections indicate a significant shift towards an older global population. By 2050, it is estimated that over 21% of the world's population will be over 60 years old (1). In Iran, the population growth rate for individuals over 60 years old is projected to exceed 26% from 2011 to 2050 (2). Studies suggest that a staggering 55 - 98% of older adults are affected by multiple chronic conditions (MCCs), with an even higher prevalence (80.2%) among older adults in Iran (3).

Individuals with MCCs have two or more chronic diseases simultaneously, lasting for a year or more. This condition limits their ability to perform daily tasks and necessitates ongoing medical care. Although MCCs cannot be cured, they can be managed and improved through multidisciplinary approaches (4). Notably, 25% of deaths attributed to chronic diseases occur in individuals over 65 years of age, accounting for 79.2% of deaths in Iran (5). However, older people with MCCs often do not actively participate in maintaining their health (6).

Self-management is defined as the ability of individuals to manage symptoms, treatment, and the physical and psychological consequences of a disease, and to adjust their lifestyle to adapt to chronic conditions (5). Enhancing the self-management abilities of older adults with MCCs can improve their quality of life (7). Given the high prevalence of MCCs and the unique challenges they pose for self-management in older adults, it is necessary to separately analyze the factors related to self-management in this population (8).

## 2. Objectives

This study employed a qualitative approach to examine the factors influencing self-management in Iranian older adults with MCCs.

## 3. Methods

### 3.1. Study Design

This qualitative study was part of an exploratory mixed-method research design and was conducted using a conventional content analysis approach, following the Elo and Kyngäs method (9). Participants were purposefully selected from among older adults with MCCs, their caregivers, and healthcare professionals.

### 3.2. Study Setting and Sampling

Older adults included in the study had a history of MCCs confirmed by a physician for at least the past six months, lived in Tehran City either alone or with family, and had no cognitive impairments (as indicated by a score of seven or higher on Hodgkinson's brief cognitive test) (10). Family caregivers who participated in the study were family members responsible for the care of older adults with MCCs. Healthcare professionals (including physicians, nurses, clinical psychologists, physiotherapists, social workers, pharmacists, and gerontology specialists) were included based on their experience working with older adults with MCCs and their informed consent to participate in the study.

### 3.3. Data Collection

The study was conducted from June to April 2023 in clinics, hospitals, and universities in Tehran. After obtaining ethical approval, the researcher explained the research objectives to the participants. Data were collected through semi-structured individual

interviews, with a total of 29 interviews conducted and recorded in a private setting by the first author.

Interviews with older adults with MCCs began with broad, general questions, such as "What diseases are you currently managing?", "What challenges have these diseases presented to you?", "How do you navigate your health with multiple conditions?", "How do you handle the issues and complications that come with these diseases?", and "What factors contribute to managing these conditions?".

Caregivers were also asked open-ended questions, including "What health conditions does your older adult loved one have?", "What difficulties have these conditions brought about?", "How do they maintain their health while dealing with these conditions?", and "What factors, such as individual, interpersonal, health system, and external support, aid in managing these challenges?".

Healthcare professionals were asked questions such as "in your experience caring for older adults with MCCs, what challenges have these conditions presented for them?" and "What factors, such as individual, interpersonal, health system-related, and extra-organizational factors, help in addressing these challenges?".

The duration of each interview was adjusted according to the participants' preferences and tolerance levels, averaging approximately 46 minutes. Interviews continued until data saturation was reached.

### 3.4. Data Analysis

To analyze the data, the method outlined by Kyngäs et al. was used, which consists of three stages: (1) preparation, (2) organization, and (3) reporting (9).

In the preparation stage, the researcher gained a general understanding of the data by repeatedly reading the text and immersing themselves in it. The units of analysis were selected, and decisions were made regarding whether to use explicit or latent content analysis for data interpretation.

In the organization stage, open coding was performed, followed by the creation of subcategories. These subcategories were then grouped into more abstract categories, leading to the formulation of a general description that incorporated both subcategories and categories.

In the reporting phase, the analysis process was documented, along with the connections between concepts and categories.

This study adhered to Guba and Lincoln's criteria for trustworthiness in qualitative research, which include

credibility, dependability, confirmability, and transferability (11). To enhance credibility, the researcher aimed to establish a strong rapport with participants and ensured a deep engagement with the data through long-term involvement. Peer debriefing was conducted, where the interviews and extracted codes were presented to several colleagues to confirm the researcher's interpretations. The study's findings were discussed with colleagues throughout the analysis process.

The researchers involved in this study have 10 - 30 years of experience in both theoretical and clinical training related to chronic diseases and in working with older adult patients with MCCs. Triangulation was employed to increase the credibility of the qualitative aspect of the study. This involved multiple researchers participating in data collection, analysis, and interpretation. Triangulation of data sources was also implemented by including participants with varying levels of experience (older adults, caregivers, and experts) in data collection.

The researcher provided a detailed description of the research setting, participants, sampling method, and data collection timeframe. The methods were reviewed by experts, and feedback was provided by supervisors. To validate the researcher's efforts, it was crucial to accurately document and report the research steps and decisions made during the process, ensuring that others could replicate the study if necessary.

## 4. Results

The majority of the older adult participants were female (57.1%), with a mean age of  $73.71 \pm 6.26$  years. The number of caregivers of both genders was equal, with a mean age of  $41.40 \pm 6.73$  years. Most of the experts were male (69.6%), with a mean age of  $44.00 \pm 4.18$  years (Table 1). From the 29 interviews, 697 semantic units were extracted, irrespective of any overlap. After combining similar codes, 336 codes remained (Table 2).

### 4.1. Individual Factors

#### 4.1.1. Biological Factors

Biological factors play a key role in self-management. A 41-year-old male nurse (P10) stated, "I observed that older adult women tend to receive better care due to their regular visits. I realized that older adult men, upon being diagnosed with a serious illness such as heart disease, are more proactive in planning and following up on their care." Age and physical activity level also affect self-management. An 81-year-old woman

mentioned, "I feel younger than ten years ago, but I forget my appointments. I get tired." The impact of fatigue on self-management was further emphasized by a gerontology specialist (P4), who said, "in old age, muscle fatigue affects various aspects of self-care and independence."

#### 4.1.2. Cognitive Factors

Cognitive ability and problem-solving skills are crucial factors in self-management. A 72-year-old woman (P24) expressed, "as I age and deal with the pressures of my illness, my intelligence is not what it used to be." A female gerontology expert (P3) noted, "with more life experience and problem-solving skills, older adults have developed various strategies to deal with challenges." Personal knowledge and health literacy are also closely related to self-management. A 65-year-old woman (P22) stated, "health service training has helped me control my blood pressure, headaches, and the effects of drugs." A physician specializing in geriatrics (P7) mentioned, "education is essential for older adults to acquire the necessary knowledge."

#### 4.1.3. Coexisting Diseases

Participants' experiences were related to complex treatment patterns, disease severity, treatment complications, and self-management. A 45-year-old caregiver (P16) mentioned, "my father has been dealing with problems for 15 years. These problems are not fully treated, leading to confusion and irregular care." The factors affecting self-management include drug interactions, hearing and vision impairments, unclear side effects, disease recurrence, gradual side effects, risk of falls, mobility issues, low blood pressure, shortness of breath, and heart palpitations. A pharmacist (P6) explained, "polypharmacy and drug interactions can cause hearing and vision problems, impacting daily life." Pain, fatigue, and polypharmacy also significantly influence self-management. A geriatric physician (P2) mentioned, "many older adults experience chronic pain, which can affect vision and balance." A female geriatric specialist (P3) highlighted, "frailty worsens in older adults with chronic diseases."

#### 4.1.4. Mental Health

The primary subcategories of mental health identified were anxiety, depression, and loneliness. A psychologist (P1) emphasized the importance of combating loneliness in older adults by fostering hope and encouraging future planning: "Avoiding loneliness is essential for an older adult to effectively plan for their

**Table 1.** Participants' Characteristics

No.	Age	Gender	Type of Disease/Specialty/Occupation	Education	Duration of Disease	Interview Times	Length of Interview (Minutes)
1	40	Male	Clinical psychology	Ph.D.	-	2	35 + 45
2	45	Male	Gerontology specialist, physician	Medicine	-	1	40
3	39	Female	Gerontology specialist/faculty	Ph.D.	-	1	60
4	47	Male	Gerontology specialist/faculty	Ph.D.	-	1	70
5	43	Female	Gerontology specialist/faculty	Ph.D.	-	1	60
6	50	Male	Pharmacist		-	1	50
7	48	Male	Gerontology specialist, physician	Medicine doctor	-	1	60
8	48	Male	Nurse	MSC	-	1	45
9	43	Male	Social worker	MSC	-	1	45
10	41	Male	Nurse	BSC	-	1	54
11	44	Female	Physiotherapist	MSC	-	1	35
12	48	Female	Nurse	MSC	-	1	55
13	36	Male	Nurse	BSC	-	1	70
14	37	Female	Employee, caregiver	Bachelor's	-	1	45
15	36	Female	Faculty, caregiver	Ph.D.	-	1	60
16	45	Male	Employee, caregiver	Associate degree	-	1	35
17	51	Male	Freelance job, caregiver	Diploma	-	2	50 + 40
18	37	Female	Teacher, caregiver	MSC	-	1	60
19	28	Male	Student, caregiver	MSC student	-	1	60
20	73	Male	Blood pressure, diabetes, cataracts, knee joint replacement - high cholesterol	Diploma	11	1	45
21	81	Female	Heart failure, blood pressure, intestinal disease, knee joint replacement surgery, uterine evacuation, hearing loss, cataract	Elementary school	17	1	45
22	65	Female	Kidney disease, migraine headache, cataract, respiratory, blood pressure	Bachelor's degree	7	1	50
23	67	Female	Blood pressure, rheumatism, diabetes	Elementary school	9	1	45
24	72	Female	Diabetes, heart failure, blood pressure, back pain, high cholesterol, hearing loss	Elementary school	17	2	35 + 45
25	78	Male	Renal failure, hypertension, COPD, hearing loss	Associate degree	15	1	55
26	80	Male	Heart failure, asthma, diabetes, musculoskeletal	Elementary school	25	1	50

lives." Sleep disorders and substance abuse also impact self-management. A 78-year-old man (P25) shared, "I used to believe that smoking hookah was good for relieving stomach pain, so I smoked it for ten years. Now I experience shortness of breath." A male pharmacist (P6) highlighted, "older adults who are emotionally vulnerable can become aggressive and stubbornly refuse treatment."

Life satisfaction was linked to improved self-management. An 81-year-old woman (P21) shared, "I refuse to let old age and illness confine me to my home. I cherish my life for my children's sake and work hard to maintain my health." A female geriatric specialist (P5) explained, "older adults tend to believe that not following medical recommendations will lead to negative consequences."

#### 4.1.5. Economic Factors

Based on the experiences of the participants, the cost of treatment, cost of care, and financial ability of older adults with MCCs are significant factors that affect self-management. A male social worker (P9) remarked, "Iranian older adults lack financial security, and poverty is a significant issue, affecting their access to medication, services, and quality care."

#### 4.1.6. Health-Oriented Behaviors

Health-oriented behaviors were discussed by participants in terms of adherence to treatment and the effectiveness of a healthy lifestyle in self-management. A 37-year-old female caregiver (P18) mentioned, "my father has been taking medication regularly since the

**Table 2.** Categories and Subcategories Obtained from the Interviews

Main Category	Subcategory	Primary Subcategory
Individual factors	Biological factors	Gender, age, physical performance level, fatigue
	Cognitive factors	Cognitive ability, problem-solving ability, individual knowledge, and health literacy
	Health-oriented behaviors	Healthy lifestyle adherence
	Mental health	Anxiety, depression, feeling lonely, sleep disorders, substance abuse, satisfaction with life, complications of diseases, happiness, personality traits
	Economic-factors	Cost of treatment and care, The financial ability of the patient
Factors related to healthcare service provider centers	Comorbidities	Complex treatment pattern, pain, frailty severity of diseases Polypharmacy, treatment side effects.
	Facilities of medical centers	The existence of sufficient healthcare resources, responsiveness of health services to the needs of elderly individuals, well-equipped medical centers
	Empowering employees	Manpower training, improving job satisfaction of employees
Interpersonal factors	Health policymaking	The approach of the health system to the participation of the elderly (patient-centered), treatment protocols, insurance coverage
	Interaction with the care and treatment team	Quality of communication with the physician and nurse, quality of communication with other health team members, trust in health care providers. Professional qualification of health team members
Extra organizational factors	Family relationship	Family caregiver knowledge, support from family members, caregiver burden
	Cultural factors	Altruism anti-elderly discriminatory attitudes, traditional religious beliefs about the elderly
	Social	Formal structures of social support, the social environment (friends, family, religion, media, and community).

beginning of his illness. However, his compliance with instructions is inconsistent and selective.” A 73-year-old man (P20) stated, “even after retiring, I maintain the same level of conscientiousness. I have never smoked and have always been sociable.”

#### 4.2. Interpersonal Factors

##### 4.2.1. Interaction with the Care - Treatment Team

The participants' experiences highlighted the importance of trust in care providers and the quality of communication with the healthcare team in promoting self-management. A 73-year-old woman (P24) expressed, “I prefer physicians who speak kindly and loudly.” A 48-year-old male nurse (P8) emphasized, “older adults often interact with the entire treatment team. Effective communication from everyone is essential for the efficiency of treatment.”

##### 4.2.2. Family Relations

Family caregivers' knowledge and capabilities play a significant role in the self-management of older adults with MCCs. A 67-year-old woman (P23) shared, “I have limited education. My health issues often leave me feeling uncertain about finding solutions.” Regarding caregiver burden, a 78-year-old man (P25) explained, “over the years, as I have faced illness and challenges, my

wife has taken on a considerable burden in caring for me.”

#### 4.3. Factors Related to the Health System

##### 4.3.1. Facilities of Medical Centers

The participants' experiences underscored the importance of adequate healthcare resources, responsive services tailored to the needs of older adults, and well-equipped medical centers in facilitating self-management among older adults. A 36-year-old female caregiver (P15) recounted, “when we visit health centers with my father, we often face long waiting times. This leads to stress for our family.” Another 37-year-old female caregiver (P14) stated, “health centers should prioritize quality facilities. When specialists are not readily available, it can leave my mother feeling fatigued.”

##### 4.3.2. Empowering Employees

Training in human resources and improving employees' job satisfaction are crucial for enhancing self-management among older adults. A 36-year-old male nurse (P13) stated, “educated and motivated staff should be employed in the field of geriatrics.” A male psychologist (P1) added, “with the support of managers, personnel can achieve their full potential, leading to maximum satisfaction and dedication.”

### 4.3.3. Health Policymaking

The health system's approach to older adults, including patient-centered care, treatment protocols, and insurance coverage, significantly affects self-management. A female gerontology expert (P3) stated, "to operationalize gerontology care and support the self-management of older adults, we need to enhance the infrastructure based on their needs." A 28-year-old caregiver (P19) mentioned, "if my grandmother feels secure with her insurance, she can take her situation more seriously."

## 4.4. Extra-Organizational Factors

### 4.4.1. Cultural Factors

Traditional religious beliefs toward older people, altruism in society, and discriminatory attitudes toward older adults were cultural factors that affected self-management, according to participants' experiences. A male nurse (P8) noted, "with the traditional approach and the high self-esteem of Iranian older people, they often carry themselves with authority. His religious wife takes good care of him." A 28-year-old caregiver (P19) added, "in Iran, the culture of older adults taking the lead in helping each other is highly valued."

### 4.4.2. Social Factors

Based on participants' experiences, social factors significantly affected self-management. A male social worker (P9) stated, "poverty is a significant issue, affecting their access to medication, services, and quality care." A 50-year-old caregiver (P17) mentioned, "older adults should not isolate themselves from society. Social connections make life less stressful for them." A male psychologist (P1) added, "to enhance their ability to manage their health conditions, older adults need to acquire skills."

## 5. Discussion

The analysis of the participants' experiences revealed that self-management is a multidimensional concept, with its various dimensions interacting with and influencing each other.

### 5.1. Individual Factors

Gender was identified as a significant factor in self-management, underscoring the importance of promoting self-management in both older adult women

and men. Smith et al. found that self-management effectiveness levels were similar between genders (12). Kessler et al. also observed similar patterns among older adults with dementia (13). McCabe et al. highlighted the importance of maintaining adequate independent daily activities in self-management, noting that fatigue syndrome, caused by increased dependency on daily tasks, can lead to a decrease in self-management (14, 15). Cognitive issues can pose significant challenges to the successful implementation of self-management programs (16). Hu et al. reported limitations in knowledge of diseases among older people, emphasizing the critical role of health education in enhancing self-management abilities (17). Health education and health literacy have been shown to change lifestyles and reduce rehospitalization rates (18). Refahi et al. demonstrated that promoting e-health literacy could offer better opportunities for active participation in self-care (19).

Tsamlag et al. illustrated the positive impact of self-care ability on the self-management of older adults with osteoarthritis, while Zhang et al. highlighted the relationship between self-care behavior and self-management in older adults with heart failure (20, 21). Jans et al. underscored the decline in self-management skills among older adults with MCCs (22). Cramm and Nieboer discovered that self-management abilities benefit cognitive performance in older people (16). Liu et al. demonstrated that older people with MCCs face challenges in their treatment, which negatively impacts self-management (23). Heid et al. identified insufficient responses to treatment and fluctuating health status as obstacles to self-management in older people (24).

Zhu et al. identified early identification and management of pain as a therapeutic strategy to reduce the risk of unsuccessful aging (25). Dongbo et al. emphasized that chronic pain results in functional disability, often linked to psychological disorders such as depression, anxiety, cognitive deficits, and sleep disturbances (26). Gandolfi et al. reported that low quality of life, social isolation, and physical activity disorders diminish self-management. Frailty increases the risk of adverse outcomes such as falling, hospitalization, disability, mortality, and care costs (27). Hummler et al. showed that a significant proportion of older adults with MCCs lack the necessary knowledge to manage their medications independently, highlighting the importance of self-management for proper drug management (28). The prolonged involvement of older adults with MCCs is stressful (29). Butler et al. noted that feelings of despair, fear of death, sadness, depression, and frustration can lead to a limited functional state

(30). Sleep disorders reduce self-management, leading to the disruption of daily functioning (31). Substance abuse and drug addiction were identified as factors that reduced self-management, consistent with the findings of McCabe et al. (14).

Life satisfaction in older adults is crucial for effective self-management (29). Neuroticism has a negative relationship with self-management and self-care, while extraversion is positively linked to self-care behaviors (29). Banisi noted that happiness can enhance the personal and social skills of older adults (32). Ploeg et al. highlighted that older people face challenges such as retirement, which can lead to financial concerns regarding treatment payments (33). Interventions focusing on chronic self-management can improve medication adherence in older adults with multiple chronic conditions (33). Nonadherence may be involuntary in many cases due to limitations such as cognitive impairment or physical complications, which can affect adherence (34). Improving healthy lifestyle behaviors is linked to better self-management and improved health outcomes (35).

### 5.2. Interpersonal Factors

The sense of responsibility among physicians, nurses, and other members of the treatment team in clinical settings is a critical factor in strengthening therapeutic communication and ensuring effective follow-up on diseases (24). Qualified personnel who care for older adults contribute to improving their level of self-management by assisting them in planning, decision-making, and problem-solving (36). Dineen-Griffin et al. emphasized that the characteristics of caregivers significantly influence the promotion of self-management (37). Support from family members also plays a key role in fostering self-management behavior (38).

Jobst et al. highlighted the necessity of sufficient and specialized health resources for the successful and standardized implementation of self-management (39). In Iran, the main strategies to address these conditions have focused on providing specialized clinical care by skilled health professionals (38). The availability of resources, along with proper supervision, creates a suitable environment for the successful implementation of self-management programs (33). Jans et al. identified a lack of trained and specialized staff in the care of older adults as a barrier to effective self-management (22). The importance of insurance coverage in facilitating self-management has also been emphasized (40).

### 5.3. Extra-Organizational Factors

Respecting older adults can enhance their self-esteem, reduce social isolation, and improve access to care and support facilities (27). Conversely, discrimination diminishes the quality of care, fosters negative attitudes, and discourages older adults from participating in self-care, ultimately reducing their ability to manage their health effectively (23). Social support plays a crucial role in self-management, with men typically receiving more social support than women from their social networks (41).

### 5.4. Conclusions

This study identified a wide range of individual, interpersonal, health system-related, and extra-organizational factors affecting self-management among older adults with multiple chronic conditions (MCCs) in Iran. Removing barriers to self-management for this population is essential for creating a responsive and successful healthcare system.

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### Footnotes

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**Data Availability:** The dataset presented in the study is available on request from the corresponding author during submission or after its publication. The data are not publicly available due to privacy or ethics.

**Ethical Approval:** Permission to conduct the research was obtained from the ethics committee of Tehran University of Rehabilitation Sciences and Social Health with the code of ethics ([IR.USWR.REC.1399.256](#)).

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