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Self-care needs in an aged population living with a chronic condition or multimorbidity: a systematic review

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Abstract

Background: A increase in average life expectancy leads us to an older population with multimorbidity. Understanding their self-care needs is essential for a response that promotes self-care with better health outcomes.

Methods: A systematic review was performed to identify the self-care needs of an aged population living in their own residency with a chronic condition or multiple chronic conditions, in high income countries. Any approach designed and implemented to assess self-care needs was considered, with no restrictions applied to study designs. Two electronic databases were searched, MEDLINE (PubMed) and Web of Science, between the 1st of January 2017, and the 28th of April 2023, and structured according to the guidelines of the Joanna Briggs Institute (JBI). A narrative synthesis approach was adopted to extract, synthesize, and analyse the data.

Results: In the included studies (n=14), which identified self-care needs in older people with multimorbidity, they considered three dimensions: Self-maintenance; Self-monitoring and Self-management. The methods and tools that researchers used most frequently to identify and analyse self-care needs were questionnaires and interviews. All the participants with self-care needs had two or more chronic pathologies (diabetes, cardiovascular disease, arthritis, kidney disease, among others), although some didn't mention them specifically.

Conclusions: Self-care for older people with multimorbidity who are not institutionalized is fundamental, with an integrated approach to their health process, with healthcare aimed at their individual needs.

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Keywords: Self-care; chronic condition; multimorbidity; aged; needs assessment; people-centred care; older adults.

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Background

Advances in living conditions and health care have contributed to an increase in average life expectancy but have also brought new challenges for health systems. While socio-economic improvements and advances in healthcare have potentially reduced the incidence of certain diseases and increased longevity, they have also created a context in which multimorbidity has become more frequent, especially in older populations [1], [2], [3]. Multimorbidity, commonly defined in medical literature as the presence of two or more chronic diseases in the same person (Abebe et al.), is a relevant public health problem that needs to be considered (Vogeli et al.) [4], [5]. Data collected between 1992-2017 from a meta-analysis show that the overall prevalence of multimorbidity in the community was 33.1 % [6]. According to WHO data, the pace of population ageing will accelerate and, between 2015 and 2050, the percentage of the world's population aged over 60 will almost double, from 12% to 22%, and the number of people aged 80 and over will triple between 2020 and 2050, reaching 426 million [7]. The prevalence of multimorbidity increases with age, peaking between the ages of 80 and 90 [7]. However, chronological age in relation to ageing does not have a standard value. For the WHO, the elderly are considered to be those aged 60 or over in developing countries, while in developed countries, this stage of life officially begins at the age of 65 [8]. People with two or more morbidities have a risk of death 1.73 times higher than people without multimorbidity [9]. A small percentage of the population lives

with a chronic illness, with the largest percentage suffering from four or more chronic illnesses [7], [10]. WHO defines chronic diseases as diseases of long duration and generally slow progression. In Europe, the most prevalent chronic diseases are heart disease, cancer, respiratory disease, diabetes and mental health problems [8]. Given their vulnerability, the elderly are exposed to multiple negative consequences, including a high mortality rate, greater use of healthcare and increased healthcare costs, influencing general functioning and quality of life [9], [11], [12], [13], [14]. Therefore, and considering the reduction in decision-making capacity due to the vulnerability of the elderly, a clear orientation towards self-care is essential [15]. Self-care represents the set of actions that a person takes towards their health and well-being [16]. Focusing their study on people with chronic illnesses, Riegel and colleagues defined self-care as activities carried out with the aim of improving and restoring health and well-being, as well as treating or preventing illness [17]. The concept of self-care as a universal human need received a fundamental contribution from Orem in his Self-Care Nursing Model [18], which is based on the Self-Care Deficit Nursing Theory [19]. This theory argues that nurses are responsible for recognising and addressing patients' self-care deficits and promoting their ability to act to improve their return to independence and health [18], [20]. Person-centred care facilitates trust and is associated with better health outcomes [21]. Support for disease self-management is a crucial strategy for reducing the overall burden of chronic diseases and has had positive effects on the health outcomes of these people [22], [23], [24]. The global burden of chronic diseases results, in part, from individuals' inability to take care of themselves [25], [26], [27]. There are many benefits of self-care interventions [28], [29], which resulted in the publication of the WHO Guidelines on Self-Care Interventions in 2019 [30] and 2021 [31]. Self-care is the ability of individuals, families, and communities to promote and maintain health, prevent illness and cope with disability, with or without the support of a healthcare

provider [32], [33], [34]. Webber *et al.* developed the framework "The Seven Pillars of Self-Care" (7PSC), which emphasises the importance of (i) health knowledge and literacy, (ii) mental well-being, self-awareness, and capacity for action, (iii) physical activity, (iv) healthy eating, (v) risk prevention and reduction, (vi) good hygiene and (vii) rational use of products and services [35]. The literature shows several positive aspects that result from improved self-care [36], [37], [38], [39], [40], [41], [42]. Empowering older people to meet their self-care requirements allows for greater patient autonomy, reduced dependency on health services and improved long-term outcomes [43], [44], [45], [46], [47]. Self-care, in fact, has been recognized as an integral pillar for achieving health for all, and an important step in evaluating the effectiveness of these interventions is to measure an individual's ability to manage their own health and well-being [48], [49]. There are already several instruments that make it possible to measure an individual's capacity and ability to look after themselves in specific health conditions or in distinct population groups, such as the elderly [50], [51], [17].

Despite the growing interest in self-care and self-management among people living with chronic conditions, current evidence remains fragmented. Several reviews have addressed self-care behaviours, self-management interventions, or measurement instruments in specific chronic diseases or broader adult populations. However, there is still limited evidence synthesizing the specific self-care needs of older adults living at home with multimorbidity, particularly focusing on how these needs are identified and assessed in empirical studies. Existing studies often focus on single diseases, institutionalized populations, or specific interventions rather than the broader spectrum of self-care needs in older adults living independently. Therefore, there is a need to synthesize the available evidence regarding the types of self-care needs experienced by community-dwelling older adults with chronic conditions or multimorbidity and the methods used

to assess them, to support the development of person-centred care strategies and more targeted interventions.

Ensuring a healthy life and promoting well-being at all ages is one of the WHO's sustainable development goals for 2030 [52], [53]. This review seeks to identify the self-care needs of an elderly population living in their own home with a chronic illness or multiple chronic illnesses.

Methods

Study Design

The systematic review was guided by the question “Which self-care needs are identified in an aged population living in their own residency with a chronic condition or multiple chronic conditions?” was performed to identify the self-care needs of an aged population living in their own residency with a chronic condition or multiple chronic conditions, in high income countries. This review was conducted in accordance with the Joanna Briggs Institute (JBI) methodological framework for mixed-methods systematic reviews, which allows the integration of evidence from quantitative, qualitative, and mixed-methods studies [54], [55], [56]. A protocol is published in the International Prospective Register of Systematic Reviews (registration CRD42023429034). Considering the protocol that was registered, the review underwent slight changes, namely the inclusion of one additional database in the search, and the latest version of the PRISMA statement checklist, trailed our methodology [57]. The research question and the protocol design were reviewed by four authors (IB, JM, SM, VN).

Search Strategy

Three electronic databases were searched, MEDLINE (PubMed), Web of Science and CINAHL, using a search query that mixed controlled vocabulary terms (MeSH), with relevance to our topic, with a wide variety of keywords and terms, that, from our experience, are found in the literature and often used interchangeably (see Additional file 1). Minor modifications were applied to fulfil specific requirements between the two databases. The search strategy was tested and refined by four authors (IB, JM, SM, VN). The review comprised a six-year period, between the 1st of January 2017, and the 28th of April 2023, and an update on a 1st of February.

Data Selection

The files with the complete list of records identified were uploaded and managed for study selection and screening process in the Rayyan software. The inclusion eligibility criteria were grounded in the PICOS framework and aged population (65 or over years old) living with a chronic condition, in their own residency, and nondependent in performing their daily care activities (see Table 1) [58]. As inclusion criteria, the type of study was also considered (those employing quantitative, qualitative, and mixed methods designs). Exclusion was determined by the following criteria: (a) not written in English; (b) not reporting studies from high-income economies; (c) without full text; and (d) reporting systematic reviews, conferences abstracts, editorials, opinion pieces, dissertations, and research protocols. Income groups were defined according to the World Bank country classification by income level (2024–2025), which categorizes economies into four groups (low, lower-middle, upper-middle, and high income) based on Gross National Income per capita [59], [60].

Quality Assessment

The evaluation of the methodological quality of included studies was performed by four researchers (IB, JM, SM, VN), in accordance with the Joanna Briggs Institute (JBI) guidelines and following a individual approach [54], [55]. The JBI guidelines propose a set of critical appraisal tools covering different study designs [54], [55]. The checklist score was as follows: "Yes" with 1 point, "No" and "Unclear" with 0 points. Each tool criteria were classified according to the researcher decision, as a "yes" if the criterion is met, as a "no" if the criterion is unmet, as "unclear", or "not applicable". A second and a third reviewer were consulted if decisions could not be made with assurance, and inconsistencies were resolved by consensus. The sum of the points was classified from 70% of the items present, considering the recommendations. Thus, a score between 70-79% of the checklist criteria was classified as medium quality, between 80-90% was assigned high quality, and a score greater than 90% of the criteria was classified as excellent quality.

Data Extraction

Data extraction was performed by four researchers (IB, JM, SM, VN), responsible for extracting and checking data. When relevant information required for data extraction was missing or unclear, attempts were made to contact the corresponding authors of the primary studies by email to request additional data or clarification. When authors did not respond or the requested information was not available, studies for which the missing information prevented appropriate data extraction or interpretation were excluded from the review. A data extraction form developed by the authors was used to systematically collect information from the included studies. The form was explicitly designed in alignment with the review question and objectives, ensuring that all relevant variables

related to the identification and assessment of self-care needs were captured. The data extraction form was structured using a standardized format supported by an Excel spreadsheet. The form included the following variables: country, type of study, study design, primary and secondary objectives, setting, chronic conditions, targeted population, self-care concept, type of self-care needs measured, methods and tools to measure self-care.

Data Synthesis

Given the heterogeneity of the included studies in terms of study design, population characteristics, and methods used to assess self-care needs, a narrative synthesis approach was adopted to integrate the findings. This approach enabled the systematic organization and interpretation of both quantitative and qualitative evidence. Extracted data from the included studies were compared and grouped according to similarities in reported self-care needs, methodological approaches used to assess these needs, and characteristics of the target populations. The synthesis focused on identifying recurring patterns and key themes related to self-care needs among community-dwelling older adults with chronic conditions or multimorbidity.

To facilitate the interpretation of the findings, the identified self-care needs were categorized according to the Middle-Range Theory of Self-Care of Chronic Illness: self-care maintenance, self-care monitoring, and self-care management. This theoretical framework supported the structured organization of the results and allowed the integration of evidence from different study designs while maintaining conceptual consistency across the synthesis.

Table 1. Search strategy based on PICOS framework.

A complete dual review approach was performed, for both the title/abstract screening stage and the full-text screening stage. The PRISMA flow chart captures the entire selection process (see) [57], [61]. At the title and screening stage, two researchers, independently, reviewed the title and abstract (IB, JM), results were compared, and inconsistencies were resolved by a third researcher. At the full-text screening stage, four researchers reviewed (IB, JM, SM, VN), dually and independently, the studies retrieved. Results were compared and inconsistencies resolved by consensus between the four researchers.

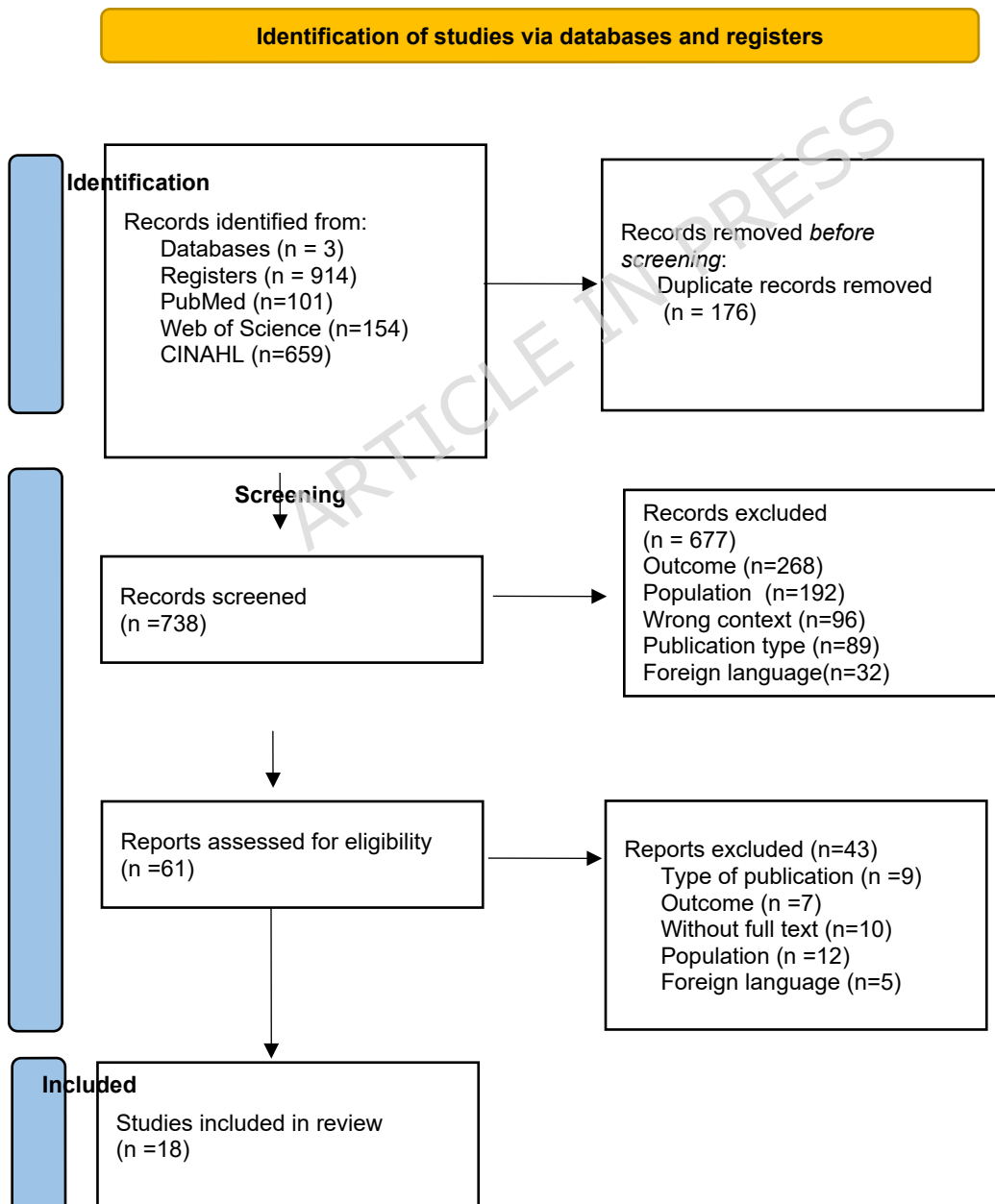


Figure 1. PRISMA flow diagram.

To synthesize data collected from different studies was applied a narrative synthesis strategy. The concept of self-care was defined in accordance to the Middle-Range Theory of Self-Care of Chronic Illness, as a process of maintaining health through health promoting practices and managing illness, meaning the all manners adopted by persons living with a chronic illness to care for themselves [62], [63]. Self-care needs were categorized following the three concepts under the theory, that fulfil the performance of sufficient self-care: (a) self-care maintenance, as adherence to self-care behaviours such as regular exercise and taking medication as prescribed; (b) self-care monitoring, such as regular measurement of changes, routine testing; and (c) self-care management, such as changing the diet or medication dose based on detection and interpretation of symptoms [62].

Results

Data Extraction and Study Selection

The search of the electronic databases identified 255 articles. After screening and removing duplicate studies (the duplicates were removed by Rayyan software when the initial screening was started), 209 studies were identified. 107 articles were removed after blind analysis by two reviewers of the title and abstract, 1 of which was by tiebreaker by a third reviewer. Of the remaining 102 articles, those that did not have full-text ($n=3$), protocols or literature reviews ($n=20$), the target population under 65 years of age ($n=14$) or with institutionalised elderly ($n=1$), were carried out in low-income countries ($n=2$) were excluded. Most of the studies that were

excluded (n=46) did not report self-care needs as a primary or secondary outcome, however, and despite the reference to self-care needs in some studies, these were not presented in the results. In the end, there were 14 studies with a quantitative, qualitative, and mixed design that reported on the self-care needs of non-institutionalised older people with multimorbidity. The search results and the screening process of this systematic review are presented in detail in .

Studies Characteristics

The studies were conducted in different countries, from high-income economies, namely The Netherlands (n=2), England (n=3), USA (n=6), Denmark (n=1), France (n=1) and Puerto Rico (n=1). Most of the studies with a qualitative design (n=8) aimed to identify and assess the self-care needs of people aged over 65, and to explore the strategies used by the elderly throughout their treatment process.

All the participants with self-care needs had two or more chronic pathologies (diabetes, cardiovascular disease, arthritis, kidney disease, among others), although some didn't mention them specifically (n=5). These included diabetes, cardiovascular disease, arthritis, and kidney disease, among others. The summary and analysis of each of the included studies is shown in Table 2.

Table 2. Overall description of the studies included (n=14).

This categorization made it possible to identify and structure the needs of non-institutionalized older adults with multimorbidity, directing the intervention of health professionals towards more individualized care. The methods used by the different studies to analyse the different self-care

needs were also identified. The most used methods were questionnaires (n=7) and interviews (n=3). This summary of the dimensions and tools used when assessing self-care needs, is shown in Table3

Table 3. Dimensions and tools used when assessing self-care needs.

Discussion

The results of the analysis of the systematic review studies revealed three dimensions of analysis: (a) first dimension: self-maintenance; (b) second dimension: self-monitoring, and (c) third dimension: self-management.

First Dimension: Self-Maintenance

In the development of self-maintenance, needs for self-maintenance include family support, social support, communication from the attending physician, home visits, and spiritual needs. Addressing these needs involves engaging the older people in self-empowerment, understanding their needs, and the support they must address the health-disease process. This was evident in Feder et al.'s study, which evaluated patients' perceptions of Health Priorities Identification (PHPI) through interviews [64]. The participants reported feeling proactive, found it easy to identify priorities, and emphasized the importance of family support, social support, and healthcare professionals valuing their health perception as determining factors for self-assessment. The need for social support was also evident in other studies' results [65], [66], [67], [68], [81]. Perceiving and reporting their needs improved communication with the family, while difficulties persisted when the family was distant. Another highlighted aspect was the ease of access and communication with the attending

physician, with regular consultations being essential for a therapeutic relationship to develop. However, some studies, such as Joensson et al., mentioned that older adults may not disclose their feelings to the family doctor due to various reasons, including not recognizing the importance of the information, considering it too intimate, or devaluing the information [69].

Identified needs included home visits by doctors and nurses to assess health outcomes and discuss goals. Regular and frequent phone calls were also deemed important for disease management. The need for these contacts became more apparent after hospitalizations or sudden health changes, warranting increased frequency [70]. The active involvement of the older people in shared decision-making with the doctor is crucial for person-centred care [71], [72]. Simultaneously, studies indicate that older adults with multimorbidity have spiritual needs that need to be understood to improve their quality of life and enable involvement in chronic disease management [67].

Second Dimension: Self-Monitoring

In the development of self-monitoring, needs include teaching and training in skills such as using equipment for monitoring signs and symptoms, recognizing warning signs, and monitoring changes in functionality. In a study, Spoorenberg et al. instructed a group of 136 elderly individuals to identify and monitor the prevalence and severity of their health problems, revealing changes in mental functions, physical health, mobility, personal care, nutrition, and support [73]. Mobility issues were more prevalent in women than in men, possibly related to musculoskeletal changes due to osteoporosis [64], [73]. Changes on functionality were identified in several fields: mental function; physical health; mobility; Self Care; nutrition and sports. The major prevalence and severity were identified on the field of mental health and mobility. Research indicates major prevalence of changes on functionality around women's than man [64], [73], [74]. One of the

identified reasons might be related with changes on the musculoskeletal provoked by osteoporosis [64]. Cultural settings might influence the rise of gender difference, women's might have more facilities on the communication and describe their difficulties. The women is also the one who perform domestic tasks evaluating better capacity on functionality [73], [74]. In Spoorenberg et al. study, the participants were divided in two groups, according to the severity of symptoms, the fragile group with minor complexity levels of care present major score levels of severity comparing to the ones who showed to have complexity needs of care, in spite of the last ones present in general an unfavourable clinical condition [73].

This fact might be analysed because older people from the last group are more used to the consequences of ageing being more capable to apply strategies and give response to the situation, while the other older population are not adapted to accept the consequences of ageing yet. Those suffering new problems might have difficult to deal with it, while the others suffering from permanent and more complex problems are more used to adapt in a long term [64], [73].

Third Dimension: Self-Management

The older people population need information, education, and training, as in case of diabetes, particularly on the evaluation and monitorization of signs and symptoms, using the equipment for the capillary blood glucose testing, as the management and use of insulin. Several studies emphasize the importance of family members presence on the process of educate, support, training and evaluate the results [67], [74], [75]. As with renal chronic disease, where the patients need information and support for the awareness of their disease situation and participation on exercise programmes, food programmes and hydration (selection of food, ways of cook and fluid intake), education and skills training to monitor the symptoms [66]. The importance of information and

support on training management increase taking in account the level of multimorbidity in which the old people presents several situations of disease, as heart failure, renal failure, diabetes, hypertension, among others [66], [80]. Other studies also indicate the importance and need of information and training within the context of old people participation on the management of chronic disease in these levels mentioned [75], [76].

On the management of medication, were found lack of information about the medicine storage, preparation and uses. As clarification regarding prescription, discussion and side effects on medication and also consequences of not taking the medication [65]. During the use of polimедication is important to inform and help their memory to prevent wrong behaviours that can result in forgetfulness related to medicine intake, switching medicines, medication errors on doses and time, so there is the need of training about use of medicine in a correct way [65]. Older people population present information needs and training to use informatic equipment's, as tablets or phones, that allow to access and use applications to monitor and register digital symptoms, as the follow-up and feedback through professionals in telehealth [69], [72], [74], [77].

To ensure that patients and their families achieve their self-care, self-monitoring, and self-management goals, it is essential for nurses to implement strategies that empower them for self-care. Empowerment of self-care emerges as a foundational pillar in various studies, being a fundamental process to promote the autonomy of patients with chronic diseases at home [65], [67], [69], [70]. This empowerment generally depends on the acquisition of knowledge, skills, and mastery of technology and support equipment. The developed skills aim to empower the user to promote their physical, mental, and emotional well-being. The sudden onset of a chronic illness for the user and their family can lead to stress and distress in all members, requiring adaptation strategies, as mentioned by Bowling et al. [76]. These changes can be related to health status

(symptoms, treatment advice), personal factors (acceptance of the disease, self-regulation, and empowerment), and environmental factors (support and relationships, policies, access to appropriate food in the market). Additionally, Sporenberg et al. [73] identified needs in the physical dimension, mobility problems, and personal care, in which intervention is necessary to improve the self-care of these users, especially for the most vulnerable [64].

The Empowerment for self-care, studies have shown that it has sub-dimensions, such as: a. Capacity for Interaction and Communication: These capacities/needs are present in users during the management of chronic disease. Thus, users identify the need for improvement to be able to communicate and interact better, thereby managing their chronic illness. If communication and interaction between users and healthcare professionals are effective, they serve as a channel to clarify the progression of chronic illness and for users to clarify doubts. This feedback mechanism is crucial for users to address unmet needs and alert to the type of assistance required, ensuring that they can manage the illness independently.

The empowerment for self-care has a capacity for interaction and communication, these capacities/needs are present in users during the management of chronic disease. Thus, users identify the need for improvement to be able to communicate and interact better, thereby managing their chronic illness. If communication and interaction between users and healthcare professionals are effective, they serve as a channel to clarify the progression of chronic illness and also for users to clarify doubts [65], [70]. This feedback mechanism is crucial for users to unmet needs and alert to the type of assistance required, ensuring that they can manage the illness independently. Also, empathy capacity should be reflected in the actions of healthcare professionals – empathy and understanding. It is crucial for users to feel that professionals listen to their concerns and those of their families. It is important for them to show genuine interest in the situation and can actively

listen to all experiences and difficulties. On the other hand, it is essential for them to use negotiation to gain user and family engagement and adherence to care, as clarified by Traore et al. [75]. Effective communication and user engagement in healthcare can enhance their ability to make decisions regarding their illness. Additionally, Feder et al. found that active participation is crucial [64]. Users reported that this process brought improvements in their communication with doctors and family about their healthcare goals and preferences, making them feel more empowered to ask questions about the consequences and impact on their quality of life. Health literacy is fundamental tool for healthcare professionals should develop an intervention that provides clear and accessible information about chronic disease, its progression, treatment, and management strategies, to increase user literacy about their chronic illness. It is essential for users to understand the stage of their disease and treatment options. Afterward, users should be able to identify treatment priorities for their disease, as mentioned by Feder et al. [64]. Users must be capable of discerning what is essential from what is secondary. Education for user empowerment is critical to bridge knowledge gaps [69]. The empowerment family in the context of chronic illness, it is essential for professionals to empower the family by providing them with tools, such as knowledge and resources, to act in the health condition of a family member with a chronic illness. This integration of the family into chronic disease management is crucial and can involve strategies such as health literacy education, encouraging communication among all members (healthcare team, user, and family), active family participation in the process, emotional support, training moments, and the encouragement of integration into community groups sharing similar issues. These aspects are mentioned throughout various studies [67], [69], [70], [76]. The financial aspect is also influential but less emphasized in studies; however, it can significantly impact family well-being. Therefore, it is imperative to teach the family to prepare a long-term plan for dealing

with chronic illness and making decisions for the future. Empowering the family in the context of chronic illness improves the user's quality of life and prepares the family for future challenges. This process should be tailored to the needs of the family and the user, considering the disease's characteristics and individual circumstances. The training technology and use of artificial intelligence as an investment in this capability is increasingly important in the management of chronic disease. If users are proficient in technology and equipment, it is safer to monitor and surveil their chronic disease remotely. Currently, medical equipment is very intuitive and user-friendly. However, it is essential for professionals to provide training to users and their families to ensure safer chronic disease surveillance. Training can be done through virtual simulations, in-person courses, and interactive platforms. Technology mastery also allows for the implementation of telemedicine, enabling users to communicate with healthcare professionals through video calls or text messages. These tools are essential for all users but have a more significant impact on those who have difficulty traveling. Additionally, artificial intelligence algorithms help identify warning signs. Traore et al. highlighted the importance of user and family empowerment regarding equipment and digital platforms [75]. Patton et al. pointed out the user's inability to self-monitor as a barrier to self-care [65]. The assessment and feedback tools: regular assessments of the situation are essential to ensure the monitoring of chronic disease progression and user and family self-care capabilities or limitations. These tools are essential for improving the quality and safety of chronic disease management at home, as emphasized in Traore et al.'s study [75].

On the other hand, there are factors that influence the self-care process, these factors can be facilitators or barriers to self-care [63], [64], [67], [68], [69].

A motivation to participate is fundamental to improving the quality of life and staying healthy. Users motivated for self-care understand that proper monitoring and surveillance contribute to

limiting complications, giving them the power to be more independent and have a better quality of life. It can also lead to healthier aging. Setting and achieving goals can lead to more motivation to maintain healthy habits [65]. Motivation also contributes to a more motivated family and the well-being of all members. The importance of motivation and family well-being is highlighted in David *et al.* and Patton *et al.* studies [65], [67].

The family involvement in care is crucial because the family helps monitor chronic disease, as mentioned by David *et al.* in diabetic patients [67]. In Feder *et al.*'s study, users placed importance on developing communication skills to convey their disease's stage and progression to their family, thus integrating their family into their care [64]. Healthcare Professional Competence having access to healthcare professionals who possess knowledge about chronic disease is essential. These professionals should have a range of skills that enable them to empower and support users. Healthcare professionals play a crucial role in promoting users' self-care, leading to more active citizens in their own health and well-being. Competencies that contribute as facilitators include the ability to listen and advise, empathy, negotiation skills, behaviour change expertise, the ability to assess users, and provide feedback. These competencies are highlighted in David *et al.* study when referring to interventions designed to foster general patient activation and self-efficacy in engaging in health behaviours and disease management may also improve engagement in the process [66], [78].

The sudden symptoms and Functional changes in functionality can be frightening for individuals with chronic diseases. This aspect can feel like a confrontation with limitations and consequences of the disease, which can manifest as motor, cognitive, sensory, or other changes. These changes can be a barrier until the user adapts or can become problematic if the user never accepts these impairments or alterations [66], [67], [75]. As shown in Jacobs *et al.* study, feelings of anger and

depression can arise [77]. Sporenberg et al. also found issues experienced by users regarding acceptance and adaptation [73]. The lack of knowledge users with chronic diseases may not have sufficient knowledge about their condition, including signs, symptoms, treatment, and self-care measures, as observed in Jacobs et al. study [77]. This can occur due to inadequate access to information that meets their needs. A lack of knowledge can lead to incorrect decisions.

The financial resources as barriers to self-care [65], [76], [77]. Sometimes, chronic illnesses bring additional expenses for users and their families, and there may not always be sufficient financial resources to cover these costs. These costs can be related to regular medical appointments, medications, therapies, medical equipment, and more. This can lead to deficits in self-care and disease management.

Identifying these barriers is essential for healthcare professionals to develop strategies to address the needs of users with chronic illnesses and their families. Strategies may involve providing education and training, improving access to healthcare, and identifying social support within the community. Care should be personalized and delivered in proximity to the user and their family, tailored to individual needs. Additionally, the support of family, friends, and support groups can play a crucial role in addressing these various barriers.

Limitations of the Study

Regarding the limitations of this study, we acknowledge our decision to use only two databases. In the future, we will consider including more databases to increase the breadth of the research. The period from 2017 to 2023 was chosen to ensure that only recent and up-to-date studies were included, reflecting the latest advancements in the research field. However,

we recognize that this temporal restriction may have excluded important studies from before this period. Also, to consider is that only texts in English were used, which may limit the scope of the findings. Another aspect may be related to the selection of articles from high-income countries due to the social, economic, and health conditions of this population. Nevertheless, articles from various countries worldwide were included, which helps increase the transferability of the conclusions.

Conclusions

This systematic review adds value to the existing literature by providing a comprehensive synthesis of the self-care needs of community-dwelling older adults living with chronic conditions or multimorbidity, an area where evidence remains fragmented. In addition, it identifies the methods and tools used to assess these needs, offering insights that may support the development of more targeted, person-centred interventions and healthcare strategies.

The studies' findings have underscored the complex needs of patients with multimorbidity living at home, particularly in terms of health literacy and strategies for managing their health behaviors.

Key themes that emerged from the research include the critical role of social and family support, as well as the importance of disease knowledge for effective self-care. In response to these expressed needs, healthcare professionals have implemented strategies to empower patients for self-care, including improving communication and interaction with family and professionals, empowering families, and providing training in technology and artificial intelligence.

The findings of the studies also revealed influencing factors in the self-care process, with facilitators including patient motivation to participate, interest in involving the family in care, and

the skills of healthcare professionals in the specific chronic illness domain. Barriers to the self-care process included sudden changes in functionality, lack of knowledge about chronic illness, and limited financial resources.

It would be important to conduct further studies to delve deeper into the needs of adult patients and their families facing chronic illness. Increasing knowledge about chronic diseases is crucial for more tailored interventions to meet patient needs and reduce health complications.

Supplementary Information

Additional file 1. Search strategy detailing.

Declarations

Ethics approval and consent to participate. Not applicable.

Consent for publication. Not applicable.

Availability of data and materials. Data supporting the analysis and discussion is provided within the manuscript and supplementary information files. Any other information or data is available upon request.

Competing interests. All authors declare no conflicts of interest.

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Author Contributions. IB, VN, SM and JM conceptualized the study, developed the research protocol, identified articles for full-text review, extracted data from studies that met the inclusion criteria, synthesized, and analysed the data. MP, RP, IB, VN, SM and JM wrote the manuscript. MM, VN, SM, JM, RP, MP, CF, LP, AE, MG, HO, CM and IB, contributed comments to finalize the manuscript and approved the final submitted version.

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Table 1. Search strategy based on PICOS framework.

Review question	Which self-care needs are identified in an aged population living in their own residency with a chronic condition or multiple chronic conditions?
Population	Aged population (65 years or older) living with a chronic condition or multimorbidity, and non-institutionalized.
Intervention	Empirical studies that report results from a self-care needs assessment strategy.
Comparator	Not applicable.
Outcomes	Three main outcomes: (1) self-care needs classified as self-care maintenance, self-care monitoring, and self-care management; (2) methods and tools used to assess those specific needs; and (3) interventions designed and/or applied to address those specific needs.
Study design	No restrictions were applied to study designs. Studies published from January 1 st , 2017, to April 1 st , 2023, using quantitative, qualitative, or mixed methods.

Table 2. Overall description of the studies included (n=14).

Authors / Year	Country	Study Design	Target Population(s)	Objective(s): Primary and secondary	Chronic condition(s)	Main results	JBIC Critical Appraisal (Total)
Patton et al, 2018 [65]	England (northwest)	Qualitative approach - seven focus groups	Age >65 years; receiving ≥4 regular medications (prescribed) resident in the community and not cognitively impaired. 50 participants (60% female).	Primary: (i) Identify determinants (barriers, facilitators) of adherence to multiple medications from older people's perspectives; (ii) identify key domains to target for behavior change; (iii) map key domains to intervention components that could be delivered in an intervention by community pharmacists. Secondary: Improve treatment outcomes in older patients by targeting HCPs' clinical behaviors by general practitioners (GPs) and community pharmacists and patients' medication adherence behaviors.	- Not specific condition was defined	- A wide range of determinants were identified as barriers (e.g. forgetfulness, prioritization of medications) and facilitators (e.g. social support, personalized routines) of adherence to multiple medications. Eight domains were identified as key targets for behavior change (e.g. "Social influences," "Memory, attention and decision processes," "Motivation and goals") and mapped to 11 intervention components (BCTs) to include in an intervention [e.g. "Social support or encouragement (general)," "Self-monitoring of the behavior", "Goal-setting (behavior)"].	8/10 (85%)
David et al., 2018 [66]	USA	Cross-sectional study in the PREPARE randomized trial.	Age >60 years, 414 participants, 43% were non-white, 9% were women, and 20% had limited health literacy.	Primary: To examine whether a validated measure of patient activation was associated with engagement in ACP among older adults with serious and chronic illness.	- 2 or more chronic conditions	- In adjusted models, higher PAM levels and greater social support were associated with higher ACP behavior change process scores. PAM levels independently accounted for 4.8% of the variance of the overall process scores ($p < 0.001$) and 3.6% of the overall action scores. Only social support contributed more to ACP than PAM levels, accounting for 11.9% and 5.6% of the variance, respectively. Besides social support, PAM explained a greater portion of the variance in ACP scores than literacy or comorbidity. Interventions designed to foster general patient activation and self-efficacy to engage in health behaviors and disease management may also improve engagement in the ACP process.	6/8 (85%)
Bowling et al., 2017 [76]	USA	Exploratory qualitative study (grounded theory). Six focus groups	Veterans ≥70 years old with moderate-to-severe CKD. 30 participants, with a mean age of 75.1 (70.1–90.7) years, 60% were black, and 96.7% were	Primary: identify and describe the relationship among factors that facilitate or impede CKD self-management for older veterans with moderate-to-severe CKD. Secondary: obtain patients' perspectives on CKD self-management	- Moderate-to-severe CKD, hypertension, arthritis, diabetes, and gout.	- Among older veterans with moderate-to-severe CKD, multimorbidity presents a major challenge for CKD self-management. The central organizing concept that emerged from these data were managing complexity. Barriers were related to the interaction between Health Condition Factors, contextual Environmental Factors, and contextual Personal Factors. Older adults with CKD must negotiate the complexity that arises when they are asked to adhere to discordant treatment recommendations. They experience this in the context of differing personal abilities to cope with complexity and within a health care environment that is not organized to address multiple chronic conditions. An integrated treatment approach that	7/10 (76%)

			men.			supports self-management across commonly occurring conditions may be necessary to meet the needs of these patients.	
Panagioti et al., 2018 [74]	England (northwest)	Randomized controlled trial (cluster).	A final intervention group of 504 participants of which 207 consented to the intervention, with the remaining 802 as controls.	Primary: assess the cost-effectiveness of health coaching for patients with multimorbidity compared to usual care. Secondary: evaluated the role of health coaching in the care of multimorbidity.	- 2 or more long-term conditions (self-reported from a list of 15)	Reasonable levels of intervention uptake amongst older patients with multimorbidity who were not actively seeking help with self-management. Assistance with diet and exercise were the most common interventions within health coaching, although support for low mood and social prescribing were also present for a significant minority. In an intention-to-treat analysis, those selected for health coaching did not improve significantly on any outcome (patient activation, quality of life, depression, or self-care) compared to usual care. Patients selected for health coaching demonstrated lower levels of emergency care use, but an increase in the use of planned services and higher overall costs, as well as a quality-adjusted life year gain.	10/13 (76%)
David et al., 2019 [67]	USA	Cross-sectional study Multiple regression analyses.	Older adults (n=60; ≥65 years).	Primary: To investigate the relationship between family support, diabetes self-care, and health outcomes in older, community-dwelling adults	- Diagnosis of type as a primary or secondary diagnosis	- The spouses and children are the support for diabetes - results revealed that the most frequent self-care management behaviors were assistance with diet and social support. Assistance with medications and physician visits were also reported. Twelve participants reported that they received no support from their family member - that adhering to a general healthy diet was performed most frequently - The characteristics of the family affect diabetes outcomes in older adults - the results provide support for the practice recommendation of integrating the family in diabetes management of older adults to facilitate diabetes self-care behaviors and glucose control.	7/8 (92%)
Jacobs et al., 2017 [77]	USA	In-depth, qualitative interviews.	n=15 - Ages of participants ranged from 62 to 88 years (mean = 77.1 years) n=10 - Ages of participants ranged from 57 to 77 years (mean = 66.7 years)	Primary: to understand the knowledge, strengths, and areas of need regarding self-management of chronic illness.	- Diabetes, hypertension, cardiovascular disease, hyperlipidemia, asthma, arthritis, anxiety, and chronic migraines.	- Emerged themes included: 1) social support, 2) coping strategies, 3) spirituality, 4) chronic disease health literacy, 5) anger, and 6) depression. While participants had a general overall knowledge of chronic illness, they had deficits in knowledge regarding their own illnesses and medications. - Part of disease management is adapting to circumstances beyond one's control - An association has been shown to exist between resilience and quality of life and health promotional behavior - The themes: 1) disease knowledge acquisition and health literacy; 2) role of spirituality; 3) social and family support; and 4) coping strategies.	8/10 (85%)
	Denmark	Qualitative study.	Older adults (n=14, >65)	Primary: Explore the disclosure practices of the knowledge from older	- Arthritis, diabetes, hypertension, depression,	- Three types of knowledge domains of older adults with multimorbidity in the General Practitioner consultation: (1)	

Joensson <i>et al.</i> , 2020 [69]		Interviews (snowball sampling).	years).	adults with multimorbidity, during the medical consultation. Secondary: Investigate how the participants categorized aspects of everyday life and patient knowledge.	COPD, ischemic heart disease, anxiety.	knowledge that had no direct biomedical relevance from participants' perspective; (2) knowledge considered too private; (3) knowledge assumed to position one a inferior.	9/10 (92%)
Traore <i>et al.</i> , 2019 [75]	France	Qualitative study. Delphi panel.	Elderly patients (n=26). Age > 65 years and 22 medical doctors.	Primary: Investigate which methods are the most important among the User-Centered Development (UCD) evaluation methods frequently used in health informatics. Secondary: Evaluate the results of user-centred functionality testing.	- Diabetes, heart failure, renal failure, and depression.	- Topics in the MDTs: Care Plan [Yes-94%, No-4%, NA-2%]; Decision Support Module [Yes-72%, No-0% NA-28%]; Patient Data [Yes-75%, No-6%, NA-19%]; Communication [Yes-79%, No-3%, NA-18%]; Notifications [Yes-89%, No-5%, NA-6%]. Topics in the elderly: Care Plan [Yes-87%, No-4%, NA-10%]; Patient Empowerment [Yes-68%, No-8%, NA-24%]; Patient Data [Yes-48%, No-4%, NA-48%]; Notifications and Communication [Yes-32%, No-5%, NA- 63%].	8/10 (85%)
Overbee k <i>et al.</i> , 2018 [71]	The Netherlands	A cross-sectional study of participant baseline responses to questionnaires	Older adults (n=201). Age ≥75 years.	Primary: Determine the degree of patient activation in frail and very old adults. Secondary: To assess which personal characteristics and other characteristics (multimorbidity, type of residence, level of frailty, mental competence, physical health, mental health, and health satisfaction) that are associated with patient activation.	- 2 or more (do not specify).	- The median Patient Activation Measure (PAM) score was 51. Most adults reported activation level 1 (39%), followed by activation level 2 (31%), activation level 3 (26%) and activation level 4 (5%). Care home residents more often reported lower activation levels (levels 1 and 2; 81%) than community-dwelling adults. Being community dwelling (compared to care home residents; p=0.04), the degree of mental capacity, physical health, mental health and satisfaction with healthcare were positively associated with PAM scores. Education level and frailty were negatively associated with PAM scores.	7/8 (92%)
Brown <i>et al.</i> , 2022 [70]	England	Qualitative. Focus group.	Four focus groups with four participants per group, two groups with GPs (n=8) and two with patients (n=8, aged ≥65 years).	Primary: To explore factors influencing Shared Decision Making (SDM) from the perspectives of older patients with multimorbidity and GPs, to inform improvements in personalized care. Secondary: Explore the perceptions and experiences of older patients with multimorbidity and GPs when seeking to achieve the component of personalized care.	- Angina or long-term heart problem; arthritis or long-term joint problem; asthma or long-term chest problem; blindness or severe visual impairment; cancer in the last 5 years; deafness or severe hearing impairment; diabetes; epilepsy; high blood pressure; kidney or liver disease; long-term back, mental, and neurological health problem.	Patient acknowledgement of clinician medicolegal vulnerability in the context of multimorbidity, and their recognition of This is a barrier to SDM. Expectations for GPs to follow clinical guidelines, challenges encountered in applying guidelines and in communicating clinical uncertainty, and limited clinician self-efficacy for SDM. Increasing consultation duration and improving continuity were viewed as facilitators.	8/10 (85%)
	USA					Patients reported that the PHPI process gave them the opportunity to discuss and “sit down and really think” about their health and health priorities in an expanded, proactive way.	

Feder et al., 2019 [64]		Qualitative study using thematic analysis. In-depth semi structured telephone and in-person interviews	Older adults who participated in the PHPI process (n=22). The mean age was 80 years, 64% were female, and all patients identified themselves as white.	Primary: Evaluate patients' Perceptions of Health Priorities Identification (PHPI). Secondary: Describe patients' perceptions of the PHPI process; identify enabling factors and barriers to the process and elicit recommendations from patients on process enhancement.	- Three or more chronic conditions (do not specify).	Patients found that participation in the PHPI process led to changes in the ways they communicated with their family as well as other clinicians. Patients described being able to speak with family "more freely" after the facilitation and viewed the facilitation as a catalyst for talking to their family about their healthcare goals and preferences. Patients also reported feeling empowered to ask questions of clinicians as the result of the PHPI process, for example, in seeking clarification of the purpose and consequences of medical treatments or the likely impact of such treatments on quality of life. Patients viewed the PHPI process as feasible and effective in assisting them to identify their health priorities, engaging them in their care, and potentially aligning the healthcare they receive with the priorities they value most.	7/10 (76%)
Spoorenberg et al., 2019 [73]	The Netherlands	Single-group pre-post-test study.	People aged 75 years and older.	Primary: To assess the prevalence and severity of health-related problems and the change after receiving individual care and support from Embrace for the whole sample and for subgroups based on the risk profiles Frail and Complex care needs. Secondary: To assess the prevalence and severity of health-related problems and the change after receiving individual care and support from Embrace, for those who had a health-related problem at baseline because of aging.	Participants were classified into 3 risk profiles using their level of complexity of care needs.	The health-related problems reported by older adults were pragmatically and retrospectively grouped into 6 coherent clusters: Mental Functions, Physical Health, Mobility, Personal Care, Nutrition, and Support. The most prevalent and most severe problems at baseline were Mental Functions (b152 Emotional functions) and Mobility. The changes in prevalence after 12 months varied. The largest decreases were Mental Functions (b152 Emotional functions), Nutrition (d560 Drinking), and Support (e575 General social support services, systems, and policies), whereas the prevalence of the Mobility-related items increased (b730 Muscle power functions). Severity scores decreased or remained stable after 12 months. Participants in the Frail group who had a problem had higher baseline severity scores than participants with complex care needs experiencing a problem. However, both groups showed positively changing patterns after 12 months of person-centered and integrated care and support. Those with relatively new problems may have more difficulty with coping, whereas those with persistent problems may already have adapted to some extent to their situation.	10/13 (76%)
Orellano-Colon et al., 2021 [72]	Puerto Rico	A cross-sectional epidemiological research design, considering a complex sampling	(1) Spanish speaking Hispanic adults ≥ 65 years, (2) living independently at home in the CMP	Primary: Determine the prevalence of functional disabilities among Hispanics 65 years and older. Secondary: Compare the prevalence of functional disabilities in specific self-care activities, IADL and functional mobility between males and females when controlling for age, income, chronic conditions, marital status, and sampling design.	Arthritis, low back pain, osteoporosis, high blood pressure, obesity, heart disease, gastrointestinal disorder, respiratory disease, visual, hearing, depression, anxiety and other.	Different prevalence of chronic conditions between sexes. The prevalence 4 or more comorbidities was statistically different by sex ($p = 0.0003$); the estimated prevalence among females was 76.9%, and among males was 53.3%. Females showed higher prevalence, mainly in the following conditions: osteoporosis, gastrointestinal disorder, arthritis, and respiratory disease. In contrast, males showed higher prevalence, mainly in the following conditions: hearing conditions ($p = 0.04$), and anxiety ($p = 0.013$). Approximately 1560 subjects have some kind of physical function disability in the CMP. The estimated prevalence among females was 69.1% (95% CI: 60, 77%) and among males was 42.2% (95% CI: 32, 53%). Thus, the estimated	6/8 (85%)

		design of households to interview.	community.			number of persons with disability will be different by sex; approximately 1000 among females and 560 among males.	
Colorafi et al., 2021 [68]	USA	Qualitative descriptive study; observation and interview	Older adults (n=40) aged 65 and older, with at least two chronic cardiovascular diagnoses, who were readily able to converse with the researcher and who received care in an outpatient cardiac clinic.	Primary: Describe the ways in which older adults with multimorbidity's engage with their plan of care.	-Two or more chronic conditions (do not specify).	Participants were found to engage with the plan of care in ways that were seen to be congruent with process factors in the theoretical approach: They engaged in behaviors that supported their health ("Promote Health"), managed health-related information ("Organize Health Care" and "Seek Health Knowledge"), scheduled routine visits with the doctor ("Find Safe, Decent Care"), and participated in treatment planning ("Make Good Treatment Decisions" and "Participate in Treatment").	8/10 (85%)
Di Nitto et al., 2022 [78]	Italy	Qualitative descriptive study; semi-structured interviews.	Older adults ≥ 70 years with tumor treated with oral anticancer agents ≥ 3 months(n=22).	Primary: Explore and describe self-care behaviors in older adults treated with oral anticancer agents. Secondary: Organize behaviors within self-care maintenance, monitoring, and management (Middle-Range Theory of Self-Care of Chronic Illness)	-Cancer treated with oral anticancer agents; treatment side effects.	Nine categories of self-care behaviors were identified across the three dimensions: maintenance (medication adherence, dietary adaptations, physical activity), monitoring (general health status, cancer monitoring, symptom recognition, attending visits), and management (oral anticancer agent side-effect management and illness management). The authors emphasize that oncology nurses have a pivotal role in assessing and supporting these behaviors and that interventions are needed to improve self-care in this population.	8/10 (85%)
Wu et al., 2022 [79]	Singapore	Pilot study; 2-group pre-post repeated-measures.	Community-dwelling older adults with chronic diseases recruited from senior activity centers (CeHP n=8; control n=4 completed baseline).	Primary: Develop a Community-Based e-Health Program (CeHP) for older adults with chronic diseases. Secondary: Conduct a pilot evaluation (feasibility and pre-post changes in self-management/self-care measures and health outcomes).	-Chronic diseases (program content focused on hypertension, hyperlipidemia, and diabetes; lifestyle, medication adherence/brain health topics).	The 8-week CeHP (face-to-face + eHealth sessions using the Care4Senior app) was feasible and achieved high content validity. Participants in the CeHP group showed improvements in biomarkers (e.g., fasting glucose, HbA1c, cholesterol, BMI) and self-care-related measures after the program, although changes were not statistically significant; the control group showed decreases in some self-care/health literacy scores. Authors conclude CeHP can engage and empower older adults and supports scale-up testing.	10/13 (76%)

Foster et al., 2022 [80]	USA	Qualitative interview study	Older adult Veterans with heart failure, ≥ 65 years (n=9), recruited in the Veterans Health Administration.	Primary: Explore which features of a smartphone app were prioritized by older adult Veterans with HF for self-care support. Secondary: Capture preferences related to usability (e.g., simplicity, data sharing) and reactions to HF-related language.	-Heart failure	Most participants considered a smartphone app desirable for HF self-care. Preferred features included education on daily HF care, medication-adherence support, diet-restriction support, exercise goal setting, stress-reduction strategies, and prompts on when to contact a provider. Additional preferences included simplicity, ability to share data with caregivers, and positive framing of HF language.	9/10 (92%)
Iovino et al., 2023 [81]	Italy	Observational study; cross-sectional analysis	Older adults ≥ 65 years with multi morbidity (final n=541), recruited across seven regions	Primary: Test whether self-care self-efficacy and depression mediate the relationship between family support self-care (maintenance/monitoring/management). Secondary: Explore whether these relationships differ by gender.	Multimorbidity (≥ 1 index condition: diabetes mellitus, heart failure, or COPD + ≥ 1 additional chronic condition; excluding dementia/cancer).	Self-efficacy positively mediated the association between perceived family support and all self-care dimensions (maintenance, monitoring, management). Depression negatively mediated the relationship for self-care maintenance and self-care management (not monitoring). In gender-stratified analyses, depression was no longer a significant mediator in males; findings suggest interventions strengthening perceived family support may improve self-efficacy and reduce depressive symptoms (particularly in women).	6/8 (85%)

Abbreviations: ACP- Advanced Care Planning; CKD- Chronic Kidney Disease; CMP- ; PAM- Patient Activation Measure; PHPI- Perceptions of Health Priorities Identification; SDM- Shared Decision Making; UCD- User-Centred Development.

Table 3. Dimensions: Self-care needs

Dimensions	Self-care needs
Self-Maintenance [64], [65], [66], [68], [69], [70], [71], [72], [78], [79], [80], [81]	- Relationship with family - During home visits - Social support - Facilitated communication - Spiritual needs - Symptom control
Self-Monitoring [64], [73], [74], [78], [81]	- The health-related problems reported by older adults: Mental Functions, Physical Health, Mobility, Personal Care, Nutrition, and Support - Instruction for self-care - Training in Technology - Recognition of warning signs
Self-Management [65], [66], [67], [68], [69], [72], [74], [75], [76], [77], [78], [79], [80], [81]	- Family Relationship - Decision Support - Communication - Patient Empowerment