Self-management in older people living with cancer and multimorbidity: A systematic review and synthesis of qualitative studies

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Abstract
Objective: Many older people with cancer live with multimorbidity. Little is understood about the cumulative impact of old age, cancer and multimorbidity on self-management. This qualitative systematic review and synthesis aimed to identify what influences self-management from the perspective of older adults living with cancer and multimorbidity.

Methods: Six databases were systematically searched for primary qualitative research reporting older adults’ experiences of living with cancer and multimorbidity (eg, Medline, Embase, and CINAHL). A thematic synthesis was guided by Shippee’s model of cumulative complexity. Text labelled as results in the included papers was treated as data.

Results: Twenty-eight studies were included. While the included studies varied in their focus, our analysis highlighted a number of important themes consistent across the studies. Health conditions with the greatest negative impact on independent living assumed the greatest importance, sometimes meaning their cancer was a low priority. Self-management practices seen as likely to interfere with quality of life were deprioritized unless viewed as necessary to maintain independence. When burden outweighed capacity, people were reluctant to ask for help from others in their social network. The contribution of formal healthcare services to supporting self-management was relatively peripheral.

Conclusions: Old age and multimorbidity together may complicate self-management after cancer, threatening health and well-being, creating burden and diminishing capacity. Older adults prioritized self-management practices they considered most likely to enable them to continue to live independently.

The protocol was registered with Prospero (CRD42018107272).
1 | INTRODUCTION

Cancer incidence is strongly correlated with age, with nearly 50% of individuals diagnosed with cancer aged over 70 years. At any age, cancer can have a substantial impact on an individual’s independence, as treatment side-effects can reduce the ability to maintain normal daily activities. Almost a quarter of those living with and beyond cancer (LWBC) report poor health or disability after primary cancer treatment. Individuals can experience side-effects such as pain, breathlessness, and fatigue, as well as psychological problems including anxiety, depression and loss of confidence. However older adults are at increased risk of the side-effects of some cancer-related treatments and common features of ageing may be aggravated by cancer treatment. Older adults often lack the physiological reserves required to effectively recover from acute toxicities. In turn, this leads to ongoing problems related to quality of life (QoL) (a subjective concept, with a multidimensional perspective that encompasses physical, emotional, and social functioning). In addition, older adults are more likely to have poorer literacy and numeracy skills, with less access to transportation, social support, or financial resources compared to younger adults LWBC. Consequently, older adults may find it difficult to self-manage symptoms, complex therapeutic routines, self-monitoring, self-assessment and interactions with healthcare providers and organizations. Self-management refers to “the care taken by individuals towards their own health and wellbeing: it includes the actions people take for themselves...to care for their long term conditions.”

While cancer is a substantial health challenge, in older age it is often diagnosed in the context of other health needs that can complicate diagnosis, treatment, and management. Over 75% of people with cancer report at least one other condition, and multimorbidity (defined here as the co-existence of two or more conditions) increases with age. Older adults LWBC are more likely to have pre-existing conditions and to experience poorer physical functioning than younger people with cancer and frequently report long-term support needs for management of complex health conditions after cancer treatment. The number of people living with multimorbidity is rising with an ageing population. Further conditions are also likely to develop after- and perhaps as a consequence of cancer and its treatment. These include diabetes, cardiovascular disease, neuropathy, or renal impairment. Leach et al reported that older adults have an average of five long-term conditions, two of which develop after a cancer diagnosis. The onset of these conditions may be a consequence of ageing, behavioural/genetic risk factors, or due to late/long-term effects of cancer treatments. Additional conditions may negatively impact cancer recovery, longevity, and reduce QoL.

Little is understood about how ageing and multimorbidity interact and influence outcomes in the context of self-management in cancer specifically. Clinical trials in oncology have often excluded older people or people living with frailty or multimorbidity. Thus, clinicians have little evidence to help treat this age group with a scarcity of evidence-based treatment guidelines and challenges in extrapolating study findings. This hinders our ability to understand the long-term impact of cancer and its treatment, particularly in the case of those who are living with multiple other conditions. These individuals may find it difficult to self-manage the disabling effects of symptoms, complex therapeutic routines, self-monitoring, self-assessment and interactions with healthcare providers and organizations. A review by Kenzik identified patterns of health care use in older adults after cancer. These included long-term hospitalizations, long-term care facility placement after cancer treatment, or home health care needs after cancer. However, the authors did not find any studies that addressed the potential impact of cancer on long-term care needs of the older adults. Kenzik identified a focus on the ageing population as a high-priority gap in the evidence. When older people have needs that arise from other conditions, these must be co-managed alongside their cancer, potentially leading to increased work and burden for the patient and their families. For example, the risk of polypharmacy (ie, taking multiple medications) is higher for people living with and beyond cancer because this group are often prescribed a considerable number of medications, for both cancer management and for supportive care. This increases the risk of drug interactions, morbidity and adverse events, especially for older adults who may already taking a number of medications for other conditions.

In order to understand the complex experience of older adults, we drew on Shippee’s cumulative complexity model (CCM). This model sets out a mechanism by which complicating factors at individual patient level interact to affect self-management, utilization of healthcare services and health outcomes (see Figure 1 below). An imbalance between the workload of demands and capacity to address these is likely to result in poor outcomes. As burdens accumulate and increase in complexity, patients may be less able to cope with demands placed on them. Self-management requires patients to balance the workload of everyday life with the workload of managing their own health, mobilize and coordinate resources, and manage any limitations to their own capacity to do this work. Treatment and illness burdens compound the picture, with negative outcomes leading to further imbalance, resulting in complexity accumulating over time.

This synthesis analyses findings from multiple qualitative studies to inform understanding of how older adults manage complexity associated with multiple health conditions in the context of ageing and LWBC. The review question was: “What do older adults living with and beyond cancer and multimorbidity report as influencing self-management?” In line with the CCM, we focus here on patient capacity...
and burden of treatment. These constructs informed the search strategy and defined dimensions of interest for analysis.

2 | METHODS

Systematic review procedures were used for study selection and data extraction, together with a comparative thematic approach to analysis and synthesis. Our focus on identifying studies that yielded qualitative data reflected a primary aim to review perspectives and experiences of living with old age, cancer and multimorbidity. In contrast to systematic reviews, qualitative syntheses of this kind aim to give deeper conceptual insight through the synthesis of a group of related studies, using induction and interpretation to mirror the qualitative methods of the individual studies included.

This review was written using guidelines from the Enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) tool.

3 | SEARCH STRATEGY

A dearth of MeSH terms for multimorbidity necessitated an iterative approach to developing a search strategy. We drew on methods outlined by Gallacher et al. for conducting a qualitative systematic review of a novel construct. We initially carried out a series of scoping searches to identify key articles that fitted our proposed inclusion criteria. This process included citation tracking (forward searching of studies that have cited the paper), reference tracking (backwards search of studies referenced in articles) and “berry picking” of “clusters” of similar papers often found together. We also used the “related articles” function in databases. We drew on strategies used in existing similar reviews to develop as comprehensive a search as possible. A Research Engagement Librarian (VF) was involved in the development of search strategy.

A systematic search of the literature was carried out between June and July 2018 (See Appendix A in Data S1). The following databases were used: Medline via Ovid, Embase via OVID, CINAHL via EBSCO, PsycINFO, via EBSCO, Web of Science and SCOPUS. The search was updated in May 2020 in advance of publication.

4 | DATA COLLECTION AND ANALYSIS

Abstract and title screening of all papers was undertaken independently by TC and AC based on pre-specified inclusion criteria (Table 1). Differences in judgement were resolved by JB. Full-text articles were obtained and assessed by TC and AC.

A data extraction sheet informed by the CCM was designed a priori. Extraction of data was carried out independently by AC and TC, with a 5%-10% cross-check to ensure consistency. The results/findings sections of each paper were extracted, to reflect participant views (not author’s interpretations), and treated as formal data. We extracted data related to those participants who were identified as being aged 65 or older (or were considered “older adults” by the authors of the included study as per our inclusion criteria in Table 1).
and who were identified as having another condition alongside their cancer diagnosis. When papers focused on the experience of living with specific comorbidities or multimorbidity, data were extracted related to those participants identified as having had cancer as one of their conditions. Papers that included data from family or other unpaid caregivers were also extracted for analysis if they referred to the lived experiences of older adults with multimorbidity. Results relating to health care professionals’ (HCPs) views or experiences were not included.

### TABLE 1 Criteria for eligibility for the review

| Criteria                                                                 | Rationale                                                                                      |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Articles published in English.                                           | Due to time and funding constraints                                                            |
| Qualitative empirical studies                                            | Qualitative data from mixed methods studies included if the qualitative component is relevant. |
| Published from the year 2000 onwards                                      | Those published earlier are unlikely to reflect current practice.                              |
| Papers that reported on the experience of older adults with multimorbidity and any cancer type | Focus on self-management after the completion of treatment for cancer. In papers that did not distinguish between those coming to end of treatment and those post-treatment, only included papers that indicated that at least some of the participants have completed primary treatment of cancer and are currently self-managing their illness in the community. Did not include studies that focused solely on treatment-decision making, palliative care, or ongoing receipt of in-hospital cancer treatment. |
| Articles included the perspectives of older adult patients (aged ≥ 65 y) and informal caregivers of patients aged ≥ 65 y | If sample included individuals both under and over 65: included those papers where it was possible to extract data on experiences of those over 65 Papers that referred to “older” adults or similar without providing an age range were considered for inclusion An informal caregiver was defined as “anyone who cares, unpaid, for a friend or family member who cannot cope without their support.” Data only extracted for analysis if it related directly to the lived experiences of older adults with multimorbidity. |
| Coexistence of multiple chronic diseases and medical conditions in the same individual (two or more conditions) | Definition of chronic disease: “health problems that require ongoing management over a period of years or decades” These constructs are outlined in the cumulative complexity model. The model emphasizes a patient-level mechanism whereby complicating factors that impact the balance between patient workload of demands and patient capacity to address demands. These factors contribute to treatment and illness burdens which may lead to negative outcomes and lead to complexity accumulating over time). |
| Articles focusing on areas denoted in the dimensions of interest based on Cumulative complexity Model | Patient workload: All tasks and responsibilities that people engage in on a day-to-day basis. Includes everyday life demands plus the responsibilities of patient-hood, including job/family, self-care, clinical appointments, and other priorities. Patient capacity: Abilities, resources, or willingness to cope with demands. Incorporates affective, cognitive, informational, material, physical and relational resources that can be mobilized by individuals, for example: physical and mental functioning, socioeconomic resources, social support, literacy, attitudes/beliefs and self-efficacy. Workload and capacity balance: Balance between the patient’s workload of demands and patient capacity. Focus on the imbalance between the two—workload that exceeds capacity. Outcomes of imbalance: for example, poor access, non-adherence, low QoL or other problems; experience of care as burdensome, fragmented, or low quality; poor engagement and health outcomes etc. |

#### 4.1 Quality assessment/Appraisal

Included articles were assessed using the Critical Appraisal Skills Programme (CASP) tool to consider the quality parameters of qualitative work. We did not exclude articles on the grounds of quality alone but relative quality of included studies was considered during analysis. Quality assessment was undertaken by TC and AC during the data extraction process. Differences of opinion were discussed and reviewed by JB. See Appendix B in Data S1 for more information.
4.2 | Data analysis and synthesis

Data were first analyzed using systematic reading, familiarization and open coding, undertaken independently and then in collaborative data analysis workshops with TC, AC and JB. Directed content analysis was used to map codes to the main constructs of the CCM, namely the dimensions of interest denoted in Table 1. (Patient workload, Patient capacity, Workload and capacity balance, and outcomes of...
imbalance). Themes were developed with reference to the CCM but we remained open to other interpretations and lines of enquiry, constantly testing the extent to which the CCM helped to interpret, characterise and explain the data. The unit of analysis was the theme rather than the prevalence or frequency of statements. Themes were discussed and iterated in workshops until consensus was reached. We used Microsoft Excel to manage records and data throughout the review.

5 | RESULTS

Thirty papers reporting 28 individual studies were included in the final analysis (see Table S1 for detail on included studies and Table S2 for Participant characteristics). Figure 2 depicts the PRISMA flow diagram of studies identified and excluded at each stage of the review.

The included studies varied widely in their focus. Only six of the included studies sought to explicitly explore the experiences of older adults LWBC with multimorbidity or complex health needs.\textsuperscript{29-31} Fifteen studies focused on the experiences of older adults LWBC\textsuperscript{32-47} and ten of these studies focused exclusively on women with breast cancer.\textsuperscript{26,32-39,46} Another four studies sought to describe the experiences of people with cancer, without focusing explicitly on age or multimorbidity.\textsuperscript{48-51} Four papers focused on multimorbidity,\textsuperscript{52-55} without a specific focus on cancer. Three of these studies focused exclusively on older adults.\textsuperscript{52,54,55}

Most studies employed qualitative in-depth, semi-structured interviews. While the majority did not report the relationship between researcher and participants (a criterion for quality using the CASP tool), studies largely met the quality criteria outlined in the CASP tool\textsuperscript{25} (See Appendix B in Data S1).

The findings below illustrate how old age and multimorbidity can accumulate to complicate self-management and threaten health and well-being, adding burden and diminishing capacity. Five themes are presented and Appendix C in Data S1 provides a summary table of which studies contributed to which theme. Quotes are presented with as much detail about the participant as possible, based on the information provided in the original text from which it was taken. While space to present illustrative quotes is limited in this paper, many more supporting quotes can be accessed in Appendix D in Data S1.

5.1 | Burden and capacity for health-related work

Existing health-related work complicated engagement with self-management after cancer. Numerous practical tasks required coordination, including taking medications, making lifestyle changes and symptom monitoring. Physical restrictions and mobility problems could interfere with symptom management and complicate participants’ access to care. A lack of social support or financial resources further diminished personal capacity to self-manage. Findings reflected a picture of increasing burden against diminishing capacity, and an accumulation of complex work.

For some, previous experience of health-related work enhanced capacity to self-manage. Rather than accumulating complexity, some had developed coping strategies and an ability to navigate the healthcare system prior to their cancer diagnosis. They considered multiple conditions a normal part of life that required frequent attention, similar to a job. For these individuals, cancer was embedded into a pre-existing routine of healthcare-related work and established skills, and they were able to successfully self-manage their conditions.

Individuals deployed a variety of self-directed coping strategies to manage increasing complexity, striving for control of their health care decisions and management. Many described omitting health-related tasks from their daily routine if they were considered less pertinent or perceived as causing a workload-capacity imbalance. Such decisions were motivated by a strong desire to maintain autonomy and continue to live independently, as well as self-efficacy and personal beliefs about ageing and health. The next section details how these factors influence strategies deployed.

I was always very physical…I used to be a great walker…Because of the pain, I was walking less…I gradually had to decrease the things that I did on foot…Now I’m packing around 20 or 30 pounds more than I should…And I know my osteoarthritis would be better if I didn’t have that weight. I think I eat fairly carefully but obviously I don’t get enough exercise…to burn it off…And I can’t exercise a lot because of my arthritis so…it’s a vicious circle. (Participant quote: a woman in their 70’s who had arthritis, back problems, cancer, cataracts, heart disease and urinary incontinence\textsuperscript{52}).

Older adults frequently spoke about actively choosing to disengage with healthcare practices that interfered with their QoL. They rejected healthcare plans perceived to be too challenging, unacceptable, or too difficult to integrate into an already busy and complex routine. Individuals expressed concerns about polypharmacy and compounding side-effects. In addition to threats to independent living, negative past experiences of treatment or scepticism about the efficacy of medications in the context of existing conditions and ageing were problematic. The relationship between cancer and health-related behaviours was perceived as distal and some expressed a belief that the link was not supported by scientific evidence. Others believed that self-management strategies for certain combinations of conditions were contradictory (eg, medications that led to weight gain but obesity led to worsened symptoms). Some individuals decided to adhere to the recommendations for the condition they prioritized, and rejected the seemingly conflicting self-management recommendation.

5.2 | Desire to maintain autonomy

Individuals prioritized functional ability and autonomy. Conditions perceived as having the most impact on daily living assumed the greatest importance for older adults. Symptoms or health-related
work that impacted on QoL were a source of frustration. Participants frequently voiced upset at needing to limit participation in valued activities.

Decreased ability to remain functionally independent challenged participants’ self-identity as autonomous individuals. They described coming to terms with a change in their social-role and disappointment at no longer being able to support or care for others. A number described facing illness with stoicism; the acceptance of functional limitations was viewed as a way of maintaining control and not letting problems take over their lives. Some contended that nothing could be done to change the inevitability of chronic conditions in old age.

It’s just like having a job really...you have to learn to live with. It’s the way I look at it. There’s so many people. I’m not the only one with it...I feel like it’s just a normal thing that in life you deal with what you’ve got and make the best of it and don’t go crying around about it. Just deal with it and go on with it. (Participant quote: participant in their 70’s, arthritis, high blood pressure, and a history of cancer).

Illness was largely expected and accepted as part of ageing. However, “feeling old” was linked to physical impairment rather than chronological age. Some participants described how functional limitations decreased QoL and contributed to a growing perception of themselves of being “old.” For others, the belief that age is not “chronological” encouraged them to work to maintain characteristics associated with youth and independence. Within the context of deteriorating health or reduced capacity accompanying old age, there was an acceptance of death by many individuals, with some suggesting that a life further disrupted by illness and functional disability, was not worth living.

“I want to be self-sufficient. I don’t want to be sick. Until I’m overwhelmed, I want to be able to deal with it [my illness] on my terms.” (Participant quote)

5.3 Reaction to cancer (and its consequences) complicated by pre-existing conditions and ageing

Prior to their cancer diagnosis, many had already come to terms with living with complex health needs. Previous experiences influenced how individuals thought about cancer, with some considering it “just another thing to add to the list.” Cancer was rarely cited as having an impact compared to more invasive, disabling or challenging health conditions (such as osteoarthritis) that severely interrupted daily activities and functional abilities. After treatment had ended, cancer was viewed as relatively unproblematic and not a major contributing factor to functional limitations. Many described cancer as treatable and something that had happened it the past; it was not considered a chronic disease. The importance of cancer receded following treatment, in the context of more pressing health and social problems.

“I rather wish I could say I’ve survived diabetes. I think that’s more important” (Participant quote: male colorectal cancer, 7 years post-diagnosis).

However, when the effects of cancer persisted beyond the end of treatment and impacted on daily life, cancer was prioritized over other co-existing chronic conditions. In some cases, unexpected but long-lasting side-effects of treatment caused on-going problems with simple daily activities, and also interfered with self-management of their co-existing conditions (eg, mobility problems). Further, complex multimorbidity and old age was seen by some to negatively affect QoL during and beyond cancer treatment and occasionally worsened adverse effects from cancer treatments.

Some expressed a belief that there was something different about cancer, describing it as more disruptive than their pre-existing conditions. These older adults grew up at a time when cancer was less treatable, and thus for many, a diagnosis was viewed as a “death sentence.” Cancer was often discussed in the context of a profound awareness of mortality. For those who felt they had lived sufficiently long lives, cancer was feared less. A few individuals expressed a sense of optimism and positivity, noting that surviving cancer had bolstered their sense of resilience. However, for most, the experience of cancer had heightened fears about functional vulnerability, and in turn, the risk of becoming dependent or a burden on others. The role of age was particularly evident in discussions about perceived ability to withstand potential future treatment for cancer.

Some individuals described how uncertainty about cause of symptoms exacerbated fears of recurrence. Given the complexity associated with having multiple conditions, it was difficult for people to ascertain the precise source of symptoms. It was often unclear if symptoms were due to cancer, their co-existing chronic condition(s), their age, or the interaction of multiple factors. In some cases, the attribution of cause to pre-existing conditions/ageing had a positive effect, leading to reduced distress and increased acceptance of reduced capacity.

5.4 Resistance to asking for help from social networks

It was difficult for older adults to balance their personal need for support with striving for control and maintaining autonomy. Individuals raised concerns about reaching out for help from neighbours and extended family members. When help was received, people were grateful for the emotional and practical support of others. However, there was reluctance to burden others with requests for help in attending appointments or with household chores. Some highlighted the difficulty in talking about their health with other people, fearing that although their complex health was central to their lives, it may not be of interest to others.

“One feels sorry for oneself, in the sense that one loses one’s independence and you become dependent on
others. My daughter has to drive me. I have to phone her and she has to adjust her schedule if she can. If she can't, I have to adjust my schedule...I do feel unduly restricted....I can't go where I want to go, when I want to go – even the short distances....I'd say that's one of my biggest frustrations” (Participant quote5).

There was a sense that being older contributed to social isolation, not simply due to cancer or illness. Many lacked a supportive network outside of their families that could potentially offer support. Participants described losses they were experiencing in their supportive networks, as many of their friends and close family were also falling ill and dying. Nonetheless, some noted that they had developed a new social network as a result of their illness that helped to buffer against loneliness and isolation. Others expressed a desire to engage with more support within the community but were unaware of how to access this.

5.5 Missed potential for HCPs to reduce burden and enhance capacity

Many expressed a desire for appropriate and well-timed information from an approachable and trusted healthcare provider, and an opportunity to ask questions and raise concerns. It was evident they wanted to be treated holistically as individuals and not to be seen uniformly as older adults. Participants valued being able to discuss their conditions with someone who had time to listen, communicated clearly, and understood the perspective of an older adult with multiple conditions. Individuals felt HCPs could potentially reduce their health-related workloads and have a key role in helping them manage their health. However, while many participants expressed a general satisfaction with care, some indicated that encounters with HCPs were often missed opportunities to reduce burden or enhance capacity.

Fragmentation of healthcare services complicated access for participants, who expressed a desire for more coordinated care. A lack of relational continuity with HCPs was problematic and particularly challenging for patients with cognitive impairment. Patients perceived high pressure on HCPs and did not always want to burden them further. Individuals felt responsible for identifying what support or information they needed. Short appointments required older adults to prioritize concerns. Even if a symptom was impacting on QoL participants described a process of weighing up whether it was sufficiently troublesome to mention to their healthcare provider.

“Well, you know how doctors are—they're so busy nowadays. They just don't have time to really take time to talk to you. I know he tries, but he really doesn't have the time” (Participant quote5).

Many older adults perceived their concerns were dismissed or minimized by healthcare professionals (HCPs). Occasionally, some felt HCPs made assumptions based on pre-existing conditions, rather than the concerns presented by the individual. Others voiced frustration at what they saw as HCPs’ age-based perceptions or stereotypes of older adults. Being cognizant of societal views of older adults added to patient workload, as they felt obliged to act in a manner that would avoid perpetuation of stereotypes relating to older people.

He said to me, “Don't worry about that. A lot of people your age, something happens like this, and they continue with a cane forever. Just accept it. You know, you're not as young as you used to be.” I could kick him right in the pants because that's one of his things: “You know, you're not as young as you used to be.” And I told him once, “You know, if I believed that, I'd have been dead 10 years ago” (Participant quote: participant in their 80’s).

6 DISCUSSION

Challenges encountered because of old age and multimorbidity may accumulate to complicate self-management, threatening health and well-being, increasing burden and diminishing capacity. To manage, older adults prioritized self-management practices that aligned with their own beliefs and that they saw as most likely to result in continued independent living. Conditions with the greatest impact on independent living assumed the greatest importance, and so, for many, previous experiences of cancer assumed a low priority. Self-management practices seen as likely to interfere with QoL were deprioritized unless viewed as necessary to maintain independence. When burden outweighed capacity, people were reluctant to ask for help from their social network. The contribution of formal healthcare services to supporting self-management was viewed as relatively peripheral.

Previous research has also demonstrated that people with multiple conditions often prioritize a “main” long-term condition.5 Our work builds on these findings by specifically focusing on the experience of cancer and concurrent ageing alongside multiple conditions. The older adults in the included studies often did not prioritize cancer and did not perceive the condition as having an impact compared to health conditions that interrupted daily life. Interestingly, we noted that some respondents expressed skepticism about the relationship between cancer and health-related behaviours and in turn, the efficacy of recommended self-management strategies. In particular, the relatively invisible impact of self-management strategies recommended after cancer was contrasted with the immediate and evident impact of self-management of co-existing conditions such as diabetes or arthritis. Such views may conflict with policy and practice agendas that describe cancer as a “long term condition.” Many perceived cancer as something that had happened it the past that did not have an ongoing impact. Cancer appeared to only be prioritized when it resulted in highly visible long-lasting side-effects. However, it was often difficult for older adults living with multimorbidity after cancer to ascertain the precise source of symptoms experienced. Previous research has indicated that some individuals prioritize conditions
based on the immediate impact of the condition on functional health, whereas others focus on the significance of or the future risk associated with the condition. In our study, cancer was regularly viewed as a potential future risk, even if it was not an interruption in everyday life. Even among those who viewed cancer as something that had been treated and was in the past, conversations about recurrence still prevailed. People frequently described cancer in relation to mortality, in a way that they did not when they described other long-term conditions. Cancer was conceptualized as a possibly acute or intermittent (albeit high-risk) condition, rather than an ongoing long-term condition.

Complex symptomology made it difficult for individuals to establish the source of, and make sense of, their symptoms. In particular, our focus older adults living with cancer and multimorbidity has demonstrated how the particular context of ageing can influence attitudes, beliefs, social support and coping strategies employed. The importance of lay beliefs about symptoms is useful to consider in the context of existing literature on those LWBC and co-existing multiple conditions. Such individuals are significantly more likely to report poor health outcomes than with no history of cancer or a chronic condition. Those with multiple conditions report significantly worse QoL than those with only one condition, which in turn is significantly worse than the healthy population. Therefore, cancer does seem to add a degree of complexity, even if this complexity is not always recognized or articulated by the older person.

Our findings illustrate the key role of psychological factors in people’s experiences of illness and in influencing how they approach self-management. Shippee et al present patients’ attitudes and beliefs as a component of capacity that help the individual to resist overburden. However, we also identified the psychological “work” that individuals undertake to help them to understand, make sense of, and prioritize their conditions in order to enable more effective self-management. Individuals’ beliefs and previous experiences appeared to influence how they thought about their various conditions. Psychological factors shaped individuals’ readiness to perform patient-related work, and drive patient’s overall response to self-management and cumulative complexity. Beliefs about (and attitudes towards) complexity appeared to be key drivers of health behaviours, influencing support and subsequent outcomes. This subjective response often appeared to play a more significant role than the influence of objective patient workload and capacity. In some cases, the beliefs people had about illness prior to a diagnosis of cancer may lead to feelings of acceptance and resilience that reduce the perceived burden of illness and treatment. This finding is in keeping with previous literature relating to social cognitive approaches to behaviour (eg, the work of Bandura). For example, the common-sense model of self-regulation proposes that individuals form lay representations of illnesses that guide coping procedures to manage illness. The model proposes that behavioural coping with an illness can be conceptualized as a function of an individual’s beliefs about their condition, and their beliefs about engaging in the coping behaviour. This might include beliefs about whether the coping strategy will result in desired outcomes (attitudes), beliefs about their personal capacity to perform the behaviour (self-efficacy), and beliefs in ability to cope with challenges in managing the illness (coping self-efficacy). Drawing on these theories may help us to better conceptualize the role of psychological responses within Shippee’s model of cumulative complexity.

Our focus on cancer alongside MM has illustrated the reciprocal interplay between different conditions. A condition such as cancer may be considered as acute or intermittent due to fluctuating workload and capacity across the treatment trajectory, highlighting a temporal element that is not depicted in the current CCM. At different times, different conditions demand work and impair capacity in different ways. A new diagnosis may disrupt an individual’s workload-capacity temporarily, but overtime they may be able to readjust. Further, by exploring a particularly complex group, we have highlighted that in the absence of disruptive symptoms, cancer may assume less importance for the individual. Prioritization of conditions appears to be largely driven by the workload-capacity imbalance. However, cancer or other co-existing conditions (eg, asthma or high blood pressure) may lead to little ongoing “work” or disruption for the individual, but may have serious consequences if not attended to. Thus, our findings present a challenge for healthcare professionals to promote active engagement with self-management regimens for asymptomatic conditions that might be perceived as less important compared to those that cause daily difficulties.

### 7 | CONCLUSIONS

Challenges resulting from old age and multimorbidity may accumulate to complicate self-management for older cancer survivors, increasing burden and diminishing capacity. In these circumstances, older adults prioritize self-management practices that align with their own beliefs and that they see as most likely to result in continued independent living. Health and well-being are threatened by interactions with health services that do not enable individual concerns and preferences to be expressed and addressed.

#### 7.1 | Study limitations

As previously noted by Cavers et al, identifying qualitative data on this precise topic was challenging as age and multimorbidity were often “hidden” in articles with a different prevailing focus. However, our stringent inclusion criteria developed apriori enabled us to select appropriate studies for inclusion. Further, while the included studies varied widely in their focus, our systematic analysis of this set of rich, qualitative studies has served to identify important themes that transcend individual study differences. The dataset was largely focused on the experiences of individuals with particular characteristics (ie, breast cancer, Caucasian, and female), and more research is needed to better understand the experiences of specific subgroups (specifically socio-economically disadvantaged groups, those with low health literacy, and ethnic minorities), and crucially to those who may have more severe symptoms as a consequence of their cancer or another.
condition. The type of cancer that an older person is diagnosed with is likely to affect its impact on other health conditions. Those with breast and prostate cancer report lower comorbidity burden than those with other cancers that may lead to more disabling side effects, including leukaemia, colorectal, oral, and bladder cancer. Recruitment of more heterogeneous samples in future studies of this nature is recommended, including a wider range of cancer types and treatment stages.

Synthesizing qualitative research can add to the findings of individual studies, however we are reliant on the content presented with study reports as opposed to the raw data from the individual studies. Some have argued that original qualitative studies are interpretive and are drawn from data that are not intended to be generalisable nor without bias. Conversely, some have suggested that qualitative synthesis should seek to achieve transparency rather than reproducibility. To enhance transparency, we have provided detailed descriptions of the inclusion criteria, search strategies and details of included studies. Further, we have provided quotations from the raw data so readers can make their own judgements about the relevance and utility of the data (Appendix C in Data S1).

7.2 Clinical implications

Our findings reinforce the view that post-treatment cancer care is often disjointed, with older patients facing challenges in liaising with healthcare professionals. Over-stretched healthcare services often struggle to manage care for complex patients and there is frequently a gap in healthcare provider expertise, patient-centred care and inter-professional collaboration. Patients are at risk of problems associated with polypharmacy, such as poor medication adherence and adverse drug-related effects. These individuals are often very conscious of clinicians’ workload, with some reporting concerns about taking up too much time. Short clinic appointments required older adults to prioritize issues and individuals did not always feel comfortable raising concerns about seemingly vague or unexplained symptoms. This is in keeping with existing literature indicating that older people may be more likely to defer to authority and may not feel that they are able to gain information they need or ask questions. Persistent symptoms associated with cancer may not be shared with health professionals. Further, the extent of the work (in particular added workload) that individuals do to manage their health after cancer might also remain unnoticed by health professionals, but perhaps also by the patients themselves. Without adequate support from (and access to) health care professionals, lay understandings may predominate, leading to misattribution of symptoms and missed opportunities to promote wellness. Our findings highlight a need to develop more collaborative approaches to supporting individuals that address older patients’ priorities and needs after cancer. Truly person-centred approaches challenge practitioners to develop skills to communicate effectively, coordinate care, and be able to balance competing priorities in order to manage complicated consultations in a limited timeframe. There is a need to move beyond a focus on a single chronic diseases and instead, move towards a more comprehensive approach that focuses on the cumulative impact of a number of conditions on daily activities and quality of life.

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CONFLICT OF INTEREST

All authors declare that they have no conflict of interest. AR is a National Institute for Health Research (NIHR) Senior Investigator. The views expressed in this article are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care.

AUTHOR CONTRIBUTIONS

All authors made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data. J.B. led and supervised the study. A.C., T.C. and J.B. led the analysis and interpretation of data. A.R., C.F., L.C., N.F. and T.W. contributed research and clinical expertise. V.F. contributed expertise relating to the design and conduct of the literature search. T.C. and J.B. drafted the manuscript.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**SUPPORTING INFORMATION**

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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