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Review Article

How Do Patients Use Self-Care to Manage Nonspecific Symptoms Prior to a Cancer Diagnosis? A Rapid Review to Inform Future Interventions to Reduce Delays in Presentation to Primary Care

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Background. A timely diagnosis of cancer is important for patient outcomes. The delay in the patient interval (time from symptom interpretation to seeking help) is often the longest throughout the cancer patient pathway. Factors extending this interval include vague symptom profiles increasing the difficulty of symptom appraisal and individual demographics influencing help-seeking behaviours. An underexplored and potential source of delay in cancer diagnosis is associated with managing symptoms using self-care activities prior to presentation to healthcare. *Methods*. This study aimed to characterise the use of self-care activities in the context of managing nonspecific symptoms, prior to cancer diagnosis and their effect on the length of the patient interval. Eligible publications were identified using a rapid systematic review, and their qualitative self-care data were extracted and analysed using thematic synthesis. *Results*. Forty-five qualitative research papers between 2009 and 2024 were included in the final review. Self-care was used as part of an iterative process, often resulting in delayed presentation to healthcare, if methods were effective in managing nonspecific symptoms. Across the literature, varying types of self-care activities were reported across all cancers with nonspecific symptoms, including the use of over-the-counter or alternative medications, lifestyle changes, and watchful waiting. The individual's decision to self-care was either prompted externally by a healthcare professional (HCP) (e.g., community pharmacists) or prompted by the individual depending on the availability of home remedies and medication. Patients used self-care when there was a low perceived need to seek healthcare, to determine whether healthcare was required, or to avoid the use of healthcare. However, across the literature, there is limited evidence to understand the variation by cancer type, symptoms, and individual characteristics. *Conclusions*. The findings of this rapid review demonstrate that self-care activities could hinder prompt help-seeking and delay cancer diagnosis among people who are experiencing nonspecific cancer symptoms. However, more evidence is needed to understand which individual factors facilitate the adoption of self-care behaviours over prompt help-seeking for nonspecific cancer symptoms.

1. Introduction

Early presentation to healthcare with potential cancer symptoms is integral for prompt investigation and earlier cancer diagnosis. In England, most symptomatic early-stage cancers are diagnosed through the two-week-wait (TWW) referral pathway, which aims to investigate potentially alarming symptoms within two weeks after presentation to primary care [1]. A significant number of patients are otherwise diagnosed through emergency presentations or through routine referrals and investigations. These routes are often associated with later-stage diagnosis and poorer patient outcomes [2].

There are biological, psycho-social, and system-level barriers that may hinder earlier cancer diagnosis [3–6].

Evidence shows that the lower predictive value of nonspecific symptoms contributes significantly to delayed diagnosis. Nonspecific symptoms are defined as potentially nonserious or self-limiting symptoms that are seemingly related to common illnesses and may otherwise resolve with a course of treatment administered by a HCP or through self-care methods. Current NICE guidelines include weight loss, itching, fever, fatigue, appetite loss, and early satiety as common nonspecific symptoms [7, 8]. Each cancer is likely to have a more extensive list of symptoms associated with it, including those reported by cancer patients. These are reported across most cancer types and are particularly common among rare cancers or those with unmet need (e.g., ovarian, oral, oesophageal, and pancreatic cancers). There is growing evidence that patients with these cancer types, who are likely to be experiencing these symptoms, may have extended patient and primary care intervals. Not only are their symptoms likely to be intermittent, they are also more likely to present to healthcare multiple times, receive a trial of treatment, have existing illnesses, and not want to "bother" the doctors [9–11]. While there are safety nets for patients once they do present to healthcare with potential nonspecific cancer symptoms, there is little evidence for how we can reduce delays in the patient interval.

A wide range of studies have investigated the symptom appraisal process, barriers, and facilitators of help-seeking informed by the model of pathway to treatment (MPT) [12]. This model stipulates that the appraisal process starts with the emergence of new symptoms, and these are assessed before help-seeking is initiated. While symptom awareness and recognition are found to be integral to the assessment of new symptoms, an important part of this process is also noted as self-management. Despite it being recognised as a potential response to new symptoms (e.g., through self-medication, monitoring symptoms, or change in lifestyle), its active role in this process as a behavioural response to symptoms is underexplored and has not been contextualised. For instance, the terminology used to describe these behaviours varies significantly (e.g., self-management, self-care, symptom management, and coping mechanisms), which limits both research and the synthesis of evidence.

Furthermore, qualitative research often includes quotes, statements, and interpretations from patients managing their symptoms with over-the-counter (OTC) medication, home remedies, dietary changes, or other behavioural methods before appraising their symptoms as something that can be serious and initiating help-seeking. However, we have yet to understand what facilitates (when, where, and why) the adoption of the aforementioned activities. It is important to understand whether these are influenced by differences in patient characteristics and whether modification of these activities could reduce time to presentation.

In line with the Aarhus statement for improving transparency and methodological approaches to improve prediagnostic patient pathways to cancer diagnosis [13], this rapid review aims to conceptualise the behavioural mechanisms within the symptom appraisal process under the umbrella term: self-care behaviours and activities. In the last decade, the World Health Organisation (WHO) acknowledged the management of symptoms and disease as part of a concept called "self-care." Self-care is defined as the individual's ability to promote and maintain current health and prevent disease. It also includes the ability to cope with an illness (with or without support from a HCP) and determine when support from a HCP is required. It is proposed that individuals gain skills, knowledge, and experience across their lifespan, which enables them to use different self-care activities (e.g., use of home remedies over appropriate use of healthcare) based on their context (e.g., living with chronic illnesses), environment (e.g., access to healthcare), and the adoption of health-related behaviours (e.g., cancer screening) to maintain their current health status or respond to new symptoms [14].

Thus, this review aimed to understand the use of self-care activities in the context of managing nonspecific cancer symptoms prior to seeking healthcare. We aimed to explore the patient accounts for the self-care methods reported in the qualitative literature for cancers that often present with nonspecific symptoms and how these methods may have delayed or prompted help-seeking.

2. Methodology

A rapid systematic approach identified studies for inclusion adapted from that described by Kerrison and colleagues [15]. The Cochrane Rapid Review Method Recommendations were also used throughout to ensure that the standard of review was sufficient [16]. The project was registered with PROSPERO (ref: CRD42022346548).

2.1. Search Strategy. PICO (patient/population, intervention, comparison, and outcome) was used to define the research question and focus the search strategy (see Table 1).

The search string components were derived from those identified by PICO as cancer, self-care behaviours, activities, and delayed diagnosis. As publications often did not stipulate whether symptoms experienced were nonspecific in the title or abstract, terms for nonspecific symptoms were not included to ensure that publications were not prematurely excluded prior to full paper review. Terms for qualitative research were added to refine the number of results for screening—only qualitative data would be extracted to understand how and why individuals use self-care activities. The decision to exclude quantitative studies was made after the initial searches were used to build the search strategy with guidance from a librarian. A very small number of quantitative or mixed-methods research papers that specifically investigated self-care were identified, all of which had heterogenous methodologies. It was agreed among authors that including quantitative data could reduce clarity around the concept of self-care as part of symptom appraisal and potentially enable bias. An update of the search string was carried out on 19th January, 2024, inclusive of all papers published from 1st January, 2022, to 19th January, 2024. The results are included in Figure 1.

Keywords in each component of the search string were combined with the Boolean operator "OR," and each component was combined using "AND." Truncation (*) and

Table 1: PICO method used to develop the research question [17].

P	Patient/population	Individuals with nonspecific cancer symptoms
I	Intervention	Use of self-care behaviours and activities
C	Comparison	Not applicable
O	Outcome	Delayed diagnosis

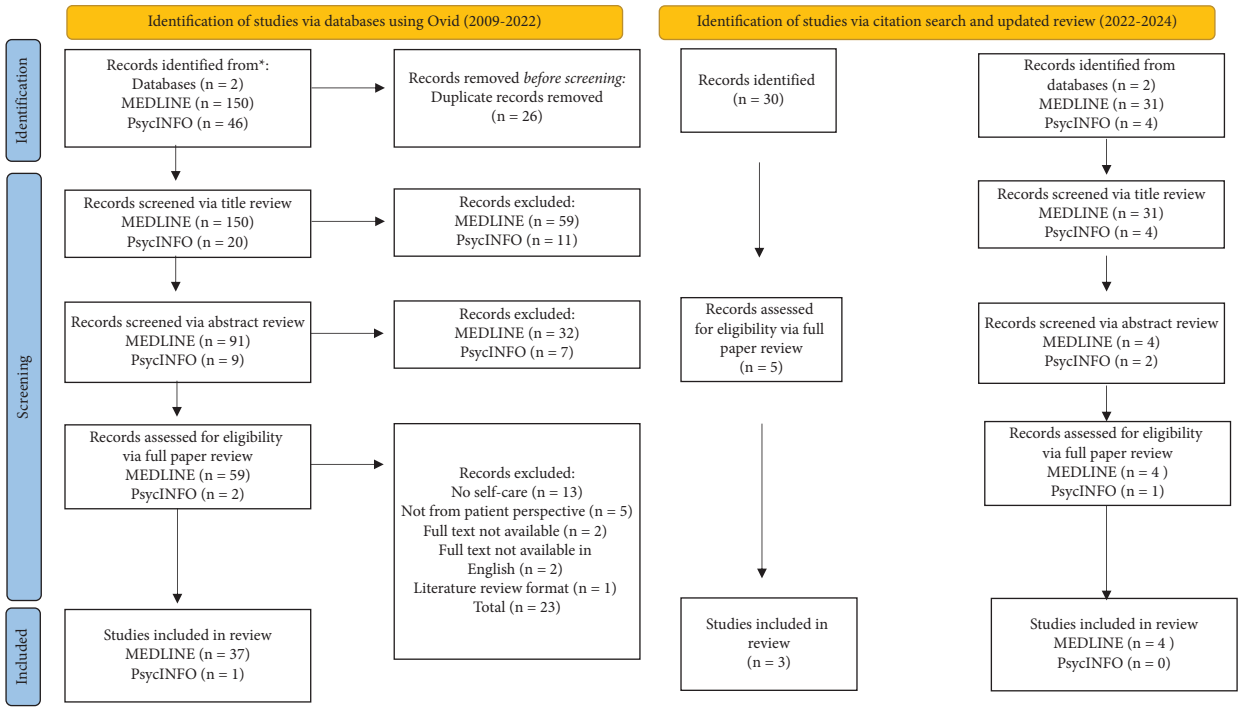

Figure 1: Flowchart for the study screening and selection process adapted from [18].

wildcard symbols (?) were used to account for alternative spelling or phrasing of key words. An initial search was performed, and papers reviewed for key words were consistently used to describe components; these were then added to the search string, and the search was repeated until no new consistent words or concepts were found. The search was carried out in MEDLINE and PsycINFO through Ovid, with any duplicate results removed prior to screening. Key words were adjusted slightly for each database, according to subject headings available in Ovid. See Supplementary Materials (Tables 1 and 2) for the complete search string.

2.2. Study Eligibility. Publications were considered eligible for inclusion if they (1) included self-care activities, (2) were published in English in a peer-reviewed journal, (3) were published between 2009 and 2022 (based on the first categorisation of the patient interval in cancer diagnosis in 2009 [63]), and (4) used a qualitative research design or included qualitative data. They were excluded if they (1) did not include views from the patient perspective or (2) were focused on the use of self-care activities postdiagnosis.

2.3. Screening of Search Results. The results of the search were exported into an Excel document, and their titles were screened and assigned a value of 1 (to include) or 0 (to exclude). The abstracts of eligible publications were then screened in the same manner, with those deemed eligible undergoing full paper review. The title review was carried out by one researcher (GW), and the abstract and full paper review was carried out by two researchers (GW and YH). The interrater reliability rate was calculated for the abstract and full paper review, and any discrepancies were resolved through discussion.

2.4. Quality Assessment. Publications were reviewed based on quality, according to the critical appraisal skills program's (CASP) qualitative quality assessment checklist [64]. The criteria assess the appropriateness of the research aim, qualitative methodology, research design, data collection method, researcher and participant relationship, data analysis method, and the reported findings. Each of the ten criteria was evaluated as low, medium, or high, and the quality for each criterion was assigned a score (low = 0, medium = 0.5, and high = 1), with a total score of over eight being considered high enough quality for inclusion.

2.5. Data Extraction. Study design data were extracted from eligible papers into a custom Excel table. Data on self-care activities were extracted from the result section of the eligible papers into a separate Excel table and imported into NVivo

for coding. All symptom data from eligible papers were extracted if patients reported symptoms that were perceived to be linked to cancer and self-care activities reported before seeing a HCP. The self-care data extracted into Excel were sorted into the following categories: cancer type, self-care method used, language used to describe self-care, how self-care is contextualised (e.g., as a theme, subtheme, or quote within a theme), the facilitator of self-care (e.g., chemist), when self-care is used, the verbatim quotes or author findings supporting these behaviours, and the reported nonspecific symptoms.

2.6. Data Analysis. The MS Excel summary sheet of self-care activities was reviewed to determine if further analysis was required. Data were sorted according to cancer type to assess any similarities or differences between how participants were managing symptoms (e.g., OTC medication, alternative medicine, traditional therapies or healers, lifestyle changes, and watchful waiting) and whether this was influenced by the type of cancer they were diagnosed with. All symptoms reported in the papers were reported in Table 2 (inclusive of potential alarm symptoms). The number of references reporting the behaviour was recorded to enable an assessment of how important the finding may be if it was reported across multiple papers. The data were then coded line-by-line in NVivo for a more in-depth analysis and to allow for emerging themes to be discovered. A thematic synthesis was carried out, adapted from that described by Thomas and Harden [65], across all self-care data, irrespective of cancer type, to reduce bias according to different numbers of studies for each cancer type and hence the amount of data available. Descriptive themes were assigned to the data using a deductive approach of assigning, comparing, re-examining, and grouping codes. Where data did not fit into a theme, a new code was formed. This process was repeated until thematic saturation was reached. There were no additional themes identified as a result of the updated review, and the update further supported the results of this review.

2.7. Rigour. Two reviewers were used to review the paper's eligibility based on the inclusion criteria and the interrater reliability calculated according to the Kappa statistic [66]. In other stages of review, where only one reviewer was used, examples were discussed beforehand to reduce bias. The primary reviewer (GW) had limited knowledge of the literature regarding delay in individuals' help-seeking, which is helpful in reducing bias in the coding and interpretation stages. Quality assessment measures also ensured that only papers with findings considered to be valuable and of good quality methodology were included.

3. Results

3.1. Study Selection. Following a title and abstract review of 170 search results, 59 papers from MEDLINE and 2 papers from PsycINFO were selected for full paper review. After a full paper review according to the eligibility criteria, 37 papers from MEDLINE, 1 paper from PsycINFO, and 3 papers from citation searches of eligible papers were selected for inclusion, and the updated review on 19th January, 2024, resulted in an additional 4 papers being included (see Figure 1). Common reasons for exclusion included self-care activities not being reported, data not being from a patient perspective, and the full text not being available, either at all or in English. In total, 45 papers were included in this review.

3.2. Study Characteristics. 1543 participants were included across the 45 selected studies. Most studies were conducted in the UK ($n = 18$, 40%). In terms of study design, most used an interview format ($n = 39$, 87%) and synthesised data using thematic analysis ($n = 22$, 49%) or framework analysis ($n = 8$, 18%). While many studies did not use a framework to guide analysis ($n = 19$, 42%), the majority of those that did used either the MPT ($n = 12$, 27%) or the Model of Total Patient Delay ($n = 7$, 19%). There was a wide range of cancer types across the studies, with the most common being breast cancer ($n = 15$, 33%), colorectal cancer (CRC) ($n = 9$, 20%), or lung cancer ($n = 7$, 15%). The manner of recording self-care varied greatly, with up to 11 different terms to describe self-care being used across studies. Self-care activities were sometimes reported as a theme ($n = 13$, 29%) or subtheme ($n = 11$, 24%) but mostly as a quote within a subtheme or theme ($n = 21$, 47%). The reported patient delay was variable in how it was recorded across studies and hence could not be analysed. A summary of the study features and a detailed overview can be found in the supplementary materials (Supplementary Tables 3 and 4).

3.3. Quality of Selected Studies. All studies had a quality score of over eight, with the majority ($n = 31$, 69%) scoring ten (moderate to high quality). Any deduction in score was due to a lack of suitable reporting. All studies were of suitable quality for inclusion, and each of their findings was considered reliable and generalisable due to rigorous methodology.

3.4. Thematic Synthesis Results. The thematic synthesis of the qualitative resulted in two primary themes, namely [1] *the iterative process of self-care* and [2] *the factors that influence self-care activities* (see Figure 2). The subthemes for the latter consisted of reasons for using self-care and types of self-care activities.

3.5. The Process of Self-Care. All papers identified an iterative process of using self-care prior to seeking help. Individuals adopted different self-care activities to manage nonspecific symptoms and assessed the effectiveness of their methods in managing them. Participants sought medical help at the point that their method was not effective, that is, the symptoms worsened or were persistent:

> "*I think it [constipation] was getting on for about 10 days. I was getting quite worried because I'd tried all over-the-counter* medication *from the chemist, but nothing seemed to help at all, that's why I went to the GP.*" [24].

Table 2: All reported symptoms and self-care activities reported according to cancer type.

Cancer type	All symptoms reported	Self-care activities reported	References
Colorectal	COBH, abdominal pain, rectal pain/burning sensation, tiredness, weight loss, rectal bleeding, bloating, loss of appetite, nausea, flatulence, general feeling of being unwell, numbness, breathlessness, persistent cough, swollen ankles, and fever	OTC medication: Diarrhoea tablets, cough medicine, lozenges, haemorrhoid treatment, indigestion remedies, painkillers, supplements, and sitz bath Alternative medicine: Herbal medications and traditional healers Watch and wait: Monitoring symptoms Lifestyle changes: Quitting smoking, changing diet, increasing water intake, and resting or sleeping more	[19–26]
Lung	Cough, breathlessness, tiredness or lack of energy, hoarseness of voice, coughing up blood, loss of appetite, weight loss, pain, dizziness, changes in colour and consistency of phlegm, sore throat, and general feeling of being unwell	OTC medication: Cough medicine, lozenges, haemorrhoid treatments, indigestion remedies, and painkillers Watch and wait: Monitoring symptoms Lifestyle changes: Quitting smoking, changing diet, increasing water intake, and resting or sleeping more	[19, 25–30]
Head and neck	Hoarseness of voice, cough, sore throat, runny nose, weight loss, tiredness, pain, numbness, difficulty moving jaw, mouth sore, headache, ringing sound in ear, nosebleeds, double vision, fainting/feeling dizzy, and enlarged lymph nodes	OTC medication: Painkillers Alternative medicine: Herbal medications Watch and wait: Monitoring symptoms Lifestyle changes: Quitting smoking, and changing diet	[28, 31, 32]
Oral	Mouth sore, toothache, loose tooth, tiredness, fever, burning sensation, and gum problems	OTC medication: Ulcer cream, painkillers, mouthwash, and *Q* tip Alternative medicine: Prick with a needle, self-extraction of tooth, eating sweets, rubbing salt, herbal tea, and traditional healers Watch and wait: Monitoring symptoms	[33–35]
Gynaecological	Abdominal pain, bloating, urinary urges or incontinence, pain/bleeding during/after sex, pain, heavier or longer periods, difficulty eating, flatulence, changes in odour, discharge, and tiredness	OTC medication: Antinausea medication Watch and wait: Monitoring symptoms Lifestyle changes: Changing diet	[28, 36–41]
Oesophageal	Dysphagia, heartburn/indigestion/reflux, weight loss, vomiting, and phlegm	OTC medication: Indigestion remedies	[42]
Gastro-oesophageal	Pain, dysphagia, tiredness, weight loss, loss of appetite, and general feeling of being unwell	OTC medication: Cough medicine, lozenges, haemorrhoid treatments, indigestion remedies, and painkillers Watch and wait: Monitoring symptoms Lifestyle changes: Changing diet, increasing water intake, and resting or sleeping more	[19]
Gastric	COBH, bloating, abdominal pain, nausea/vomiting, weight loss, tiredness, loss of appetite, jaundice, and heartburn/indigestion/reflux breathlessness	OTC medication: Indigestion remedies Watch and wait: Monitoring symptoms	[28, 42]
Brain	Dysarthria, alteration in perception, hallucination, sensation of fear, seizure, facial palsy, headache, slurred speech, loss of coordination, confused behaviour, apathy, anhedonia/being emotional, loss of appetite, gradual change in personality, memory loss, tiredness, and blurred vision	OTC medication: Painkillers and migraine tablets Watch and wait: Monitoring symptoms Lifestyle changes: Resting more	[28, 43]
Haematological	Groin pain, breathlessness, under-performance, pain, altered sensations, stiffness and nonspecific pain, sleepiness, rash/itching, night sweats, tiredness, swelling, joint pain, stomach pain, headaches, reduced exercise tolerance, loss of mobility, losing weight, loss of appetite, nausea, change in colour of skin, ulcer, height loss, impaired posture, indigestion, night urination, frothy urine, and apathy	OTC medication: Painkillers, indigestion remedies, antiinflammatories, antihistamines, and gargles Watch and wait: Monitoring symptoms and using distraction techniques Lifestyle changes: Altering daily tasks, using of mobility aids, changing diet, and resting or sleeping more	[28, 44, 45]

Table 2: Continued.

Cancer type	All symptoms reported	Self-care activities reported	References
Prostate	Difficulty passing urine, joint/back pain, and erectile problems	OTC medication: Painkillers Alternative medicine: Herbal medications and traditional healers	[46, 47]
Pancreatic	Tiredness, feeling "different," intermittent discomfort/pain, loss of appetite, acid reflux/indigestion like symptoms, stomach-ache, weight loss, COBH, change in colour of urine, abdominal pain, and breathlessness	OTC medication: Indigestion remedies Watch and wait: Monitoring symptoms Lifestyle changes: Changing diet	[48, 49]
Breast	Lump, flu-like symptoms, sudden pain, and changes to the nipples and skin	Alternative medicine: Herbal medications and traditional healers Watch and wait: monitoring symptoms	[37, 50–62]

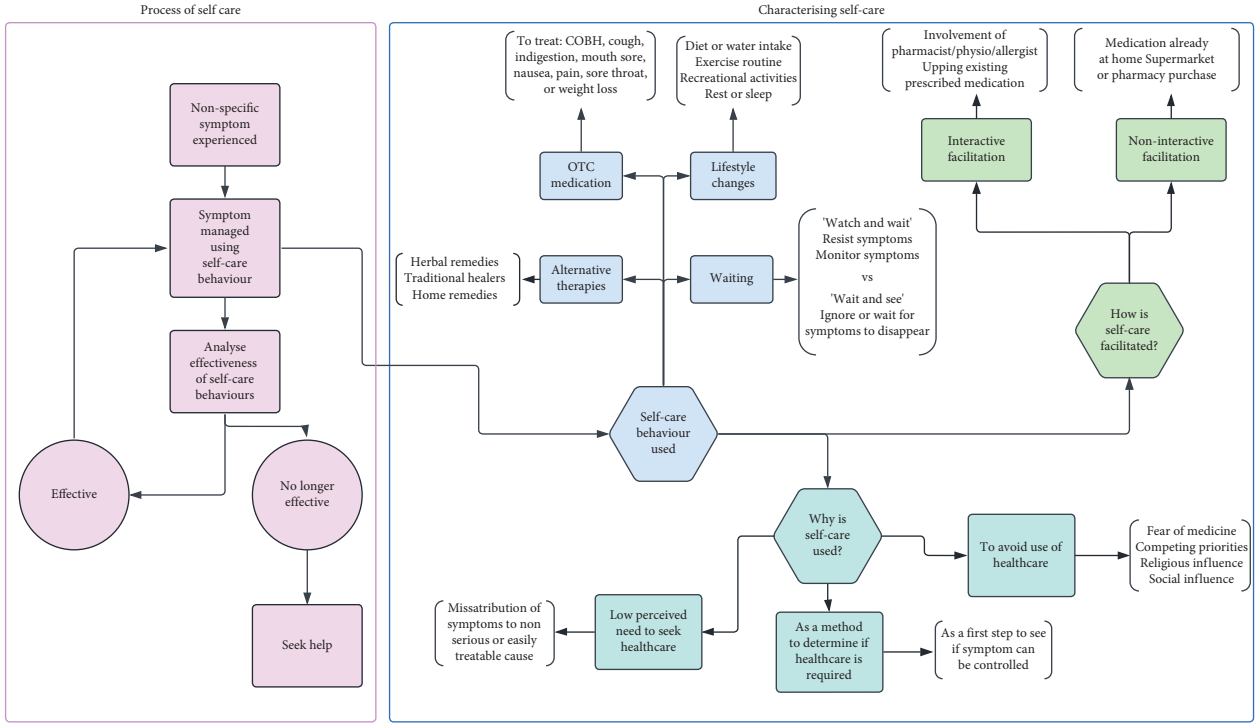

Figure 2: A model of self-care activities and the factors influencing their use prior to help-seeking. The iterative process of self-care is highlighted in the purple section, while the factors that influence the type of activities are highlighted in the blue section.

In four studies, this process was repeated, and the outcome of self-care activity use was reappraised. For example, although the use of self-care may have initially been successful, the "*changes in or persistence of symptom(s)*" [26] meant that participants reappraised their strategy and sought help. No differentiation can be made from the papers included in this review for the cancer types or symptoms that followed a particular pattern in this process.

In contrast, if participants felt that their use of self-care activities was effective in managing their symptoms, that is, symptoms dissipating or having a lower physical burden, then their use continued: *"he said about going to the GP, a couple of times actually. And I'm like, "Oh no, I can't be bothered. It's only something small. It goes with paracetamol."* [43]

3.6. Different Types of Self-Care Activities. Self-care activities used to manage nonspecific cancer symptoms of each cancer type were categorised into four unique categories as demonstrated in Table 3; these were identified as (1) OTC medication use, (2) alternative/complimentary medicine use, (3) change of lifestyle, or (4) watchful waiting.

While some symptoms were similar across cancer types (e.g., cough, tiredness, and weight loss), others were unique (e.g., loss of coordination for brain cancer or night sweats for haematological cancer). Some self-care activities were associated with a specific symptom, e.g., the purchase of OTC laxatives and change of bowel habit (COBH), while many symptoms were reported stand alone with limited information about how self-care activities directly related to the symptoms.

The use of OTC medication was reported for all cancer types, excluding head and neck cancer, with the most common reported in studies being the use of OTC indigestion tablets ($n = 4$) and OTC painkillers ($n = 4$). Changes in lifestyle were most common among cancers with lower gastro-intestinal symptoms ($n = 9$), and the most common reported method was a change in diet or water intake ($n = 9$). In contrast, alternative or traditional medicine use was common among cancers with rare and vague presentation ($n = 7$), such as head and neck cancer, as well as for cancers with potential alarm symptom presentation ($n = 16$), such as breast cancer.

> *"Over the last month, I've had a feeling of being full, and I used alternative medicine treatments to clean out my body."* [40]

Two different approaches to watchful waiting were identified as part of self-care activities and were observed across a range of studies of differing cancer types and locations ($n = 12$). These were either passive waiting, which is categorised as "wait and see," or active waiting, which is categorised as "watch and wait." Those in the "wait and see" approach tended to wait for symptoms to disappear or ignore symptoms. This approach was perceived as passive as symptoms were not acknowledged and no action was taken:

> *"Some participants took no medicines or action to manage their symptoms. They thought their symptoms would go away or tried to forget about them and continued on with their daily routine."* [19]

Table 3: The number of studies in which themes and subcategories were identified.

Theme	Subcategories (number of studies)	References
The process of self-care		
Analysing the effectiveness of self-care	Analysing self-care is a nonlinear process ($n = 5$)	[21, 33, 35, 41, 44]
	Ineffective self-care prompts help-seeking ($n = 16$)	[21, 22, 26, 28, 31, 34, 35, 37, 40, 42, 43, 46, 48, 51, 53, 54]
	Effective self-care delays help-seeking ($n = 9$)	[20–22, 24, 31, 34, 36, 43, 46]
Self-care activity used		
Lifestyle changes	Change in diet or water intake ($n = 12$)	[19, 23–25, 32, 36, 41, 44, 47, 48, 52, 67]
	Change in exercise routine ($n = 2$)	[21, 44]
	Change in recreational activities ($n = 4$)	[23, 28, 32, 52]
	More rest or sleep ($n = 3$)	[19, 43, 44]
Waiting	"Watch and wait" ($n = 7$)	[20, 25, 28, 36, 44, 48, 51]
	"Wait and see" ($n = 11$)	[19–21, 23, 24, 28, 33, 36, 43, 44, 47]
Alternative therapies	Herbal remedies ($n = 6$)	[20, 31, 32, 35, 46, 53]
	Traditional healers ($n = 11$)	[20, 35, 37, 40, 46, 51–55, 62]
	Home remedies ($n = 4$)	[35, 41, 44, 54]
OTC medication	To treat COBH ($n = 3$)	[20–22]
	To treat cough ($n = 3$)	[19, 26, 28]
	To treat indigestion ($n = 4$)	[28, 44, 48, 49]
	To treat mouth sores ($n = 3$)	[33–35]
	To treat nausea ($n = 1$)	[36]
	To treat pain ($n = 6$)	[28, 35, 37, 41, 43, 46]
	To treat sore throat ($n = 3$)	[19, 27, 44]
	To treat weight loss ($n = 2$)	[20, 44]
How self-care is facilitated		
Noninteractive facilitation	Medication already at home ($n = 4$)	[19, 25, 38, 47]
	Supermarket or pharmacy purchase ($n = 2$)	[19, 34]
Interactive facilitation	Involvement of HCP ($n = 8$)	[19, 20, 28, 34, 40, 44, 46, 50]
	Upping prescribed medication ($n = 1$)	[27]
Why self-care is used		
Low perceived need to seek healthcare	Misattribution to nonserious or easily treatable cause ($n = 11$)	[20, 22, 25, 27, 31, 36, 41, 43, 44, 48, 54]
	Misattribution to existing comorbidity ($n = 5$)	[27, 37, 43, 48, 52]
As a method to determine if healthcare is required	Not wanting to waste GP time ($n = 3$)	[29, 33, 67]
	Wanting to see if symptoms can be managed prior to seeking help ($n = 4$)	[27, 33, 36, 47]
To avoid use of healthcare	Fear of medicine ($n = 2$)	[35, 46]
	Cheaper alternative ($n = 1$)	[32]
	Wanting to hide symptoms ($n = 3$)	[19, 22, 47]
	Competing priorities ($n = 2$)	[46, 62]
	Religious influences ($n = 16$)	[20, 32, 35, 38, 39, 46, 52–62]
	Social influences (societal norms) ($n = 5$)	[20, 46, 47, 50, 62]
	Social influences (influence of others) ($n = 5$)	[31, 32, 46, 57, 62]

"It's not frequent enough [36], it doesn't give me any trouble, so, as I say, I'm inclined just to ignore it." [34]

"Since there was no pain, I intentionally ignored it." [58].

In contrast, those adopting the "watch and wait" approach acknowledged the change in health or symptom and were more active in their method, either by monitoring symptoms or believing that if they actively tried to resist symptoms, they would go away:

"I was stubborn with my illness. I told myself, I will resist the illness with any means possible. . . Maybe that way it will change or even go away" [20]. *"It was only when I started feeling a bit of strangeness that I decided to try and keep a pattern of them."* [48]

3.7. Facilitation of Self-Care Activities. Whether self-care was prompted by an external facilitator or self-prompted was identified as an important part of the process in which the individuals evaluated their symptoms and what to do next. This was conceptualised as interactive or noninteractive facilitation of the self-care activities.

If it was interactive, we identified in eight papers that this usually involved a healthcare professional (HCP) [19, 22, 32, 33, 35, 43, 44, 61] or recommendations of others if they used traditional medicine first [37, 38, 50, 53, 55, 57]. In three papers [32, 35, 61], the continued use of self-care methods was not questioned by the facilitator, but one paper did report the facilitator's suggestion that the participant should contact their general practitioner (GP) [28].

Noninteractive processes included direct purchases from supermarkets or the use of available medication, for example, that which they "*had at home*" [32] or "*consumption of other people's prescription medication*" [29].

3.8. Why Self-Care Activities Are Used? The reason for using self-care fell into one of the following three categories: (1) low perceived need to seek healthcare, (2) as a method to determine if healthcare is required, or (3) to actively avoid the use of healthcare.

Those who did not believe they needed to seek healthcare were shown in many studies ($n = 10$) across a range of cancer types. Some participants misattributed their symptoms to either a nonserious or benign cause, for example, "*expected to get rid of their symptoms as they would a headache*" [32]. Others attributed their symptoms to an already existing condition, such as coughing being attributed to *"asthma, chronic obstructive pulmonary diseases (COPD), and emphysema"* or *"pain from arthritis"* [48]. Some participants used self-care methods as an initial step to determine whether the symptoms they were experiencing could be managed and, hence, ruled out as benign. If this did not work to manage their symptoms, they would then seek help, believing that this was a crucial first step so as not to "*waste your GP's time"* [43].

Being *"afraid of hospitals*," *"medication,"* or *"needles"* [22, 35] was the reason that some participants chose to use self-care and avoid healthcare while others had more urgent priorities such as needing to "*support their families*" [35] that could not be affected by a potentially bleak diagnosis. Social and religious factors largely influenced the avoidance of healthcare in the majority of low- to middle-income countries, such as beliefs that the power of alternative medicine "*alone would cure their diseases*" [20, 53, 55]. Participants also perceived alternative medicines as being "*safer*" [46] and "*more affordable*" [36] than medical interventions. Others believed that their symptoms were the result of an "*evil eye*" [20], and therefore a traditional healer was required.

Participants also used self-care to avoid healthcare as they believed telling others of their symptoms would make them look "*weak in front of others*" [20, 47] and potentially affect their social standing, and that pains should be managed "*as a man*" [46, 47] by being resilient. Because of this view, participants often kept their symptoms hidden and were "*keen to manage their bodily changes themselves*" [46].

4. Discussion

4.1. Summary of Main Findings. This rapid review of the qualitative literature aimed to characterise self-care activities used in the context of managing nonspecific symptoms prior to cancer diagnosis and the potential impact on the patient interval. Our review shows that self-care activities adopted prior to cancer diagnosis are an important part of the patient interval; however, the depth of evidence that is captured in the literature ranges from an author acknowledgement to a full theme with participants' detailed accounts on self-care activities.

Our synthesis of the literature suggests that participants who experience nonspecific symptoms often follow an iterative process of self-care and evaluate its effectiveness as part of the symptom appraisal process. This is also linked to the decision to seek further medical assistance. However, it is not clear from the past qualitative literature if using self-care instead of prompt presentation to primary healthcare depends on the cancer type, the symptoms experienced, and the patient's sociodemographic characteristics. As such, from this thematic synthesis, we were unable to identify to what extent self-care activities would have delayed presentation or whether adoption of self-care behaviours was the correct response to experiencing new symptoms. This is further highlighted in the variable findings, suggesting that when, why, and how long individuals apply their self-care method, whether that be watchful waiting, a trial of medications (OTCs or alternatives), and/or changing lifestyle, before seeking help from HCPs could be informed by various individual and socio-cultural factors.

4.2. Comparison with the Existing Literature. To our knowledge, this is the first qualitative study to review the use of self-care in the context of managing nonspecific symptoms in the time before presentation to primary care. However, there is emerging interest to understand the role of individuals' self-care capabilities in cancer diagnosis [68], how this subsequently may also influence doctor-patient

communication, and the need for additional support to ensure that patients with limited capability can be supported with appropriate safety nets [69].

For example, our results demonstrated that patients use OTC medications for a range of cancer symptoms across almost all cancer types included in this review. The potential role of OTC medication use in delaying diagnosis has been investigated in a recent case-control study that used loyalty card data collected by two UK-based high street retailers and demonstrated that ovarian cancer patients are more likely to purchase OTC pain killers and indigestion medication at least eight months prior to their diagnosis [70]. Another study on self-reported OTC purchases among ovarian cancer patients suggested that patients may have multiple presentations, misdiagnoses, and a continuous self-care process resulting in delayed diagnosis [71]. If we can understand the underlying psychological mechanisms that lead to the use of OTC medication, it may be possible to identify how to break this cycle and facilitate help-seeking.

Furthermore, a recent systematic review investigating aging and delayed diagnosis included self-management as an important theme, in which they also identified watchful waiting as a potential self-care activity used during the symptom appraisal process [10]. However, this review also did not explore if the self-care activities vary depending on the cancer type or symptoms as well as patient characteristics. Similar to this review, our findings suggest that misattribution of symptoms is a common facilitator of self-care activities. Therefore, it is important to identify how best to disseminate information on how patients should monitor their symptoms and what to do when they do not resolve when they are initially being managed by self-care activities.

4.3. Implications for Future Research and Practical Applications. A key difference of this review, when compared to previous the literature investigating the patient interval in cancer diagnosis, is the conceptualisation of self-care activities as potentially modifiable. This allowed us to evaluate the evidence to identify potential facilitators or barriers of adopting self-care behaviours. While symptom attributes and awareness of cancer symptoms play an important role in decisions to seek help, our review demonstrates that during the iterative process of symptom appraisal and self-care, people can be nudged in the right direction to change their activities.

In our review, where self-care has been reported, we did not identify whether its adoption and its duration can be explained by the health care systems available across the 22 countries. However, access to healthcare is a common theme for the majority of the studies investigating barriers to help-seeking based on MTP [38, 41, 47]. A previous International Cancer Benchmarking study on the anticipated time to present with cancer symptoms in Australia, Canada, Denmark, Norway, Sweden, and the UK suggests that higher perceived barriers to attending primary care are associated with longer patient intervals [72]. Further research is needed to determine to what extent healthcare systems influence self-care behaviours and whether these could inform policy-level interventions to reduce delayed help-seeking.

Furthermore, the determinants of self-care activities identified in this study can be mapped to the COM-B (capability, opportunity, and motivation) model [73] to better understand potential interventions that can be developed and tested to reduce delays in cancer diagnosis (see Table 4). The use of COM-B to operationalise self-care activities as a modifiable behaviour could adequately inform policies to facilitate behaviour change. In line with previous research using COM-B to understand barriers to help-seeking [74], our synthesis demonstrated social networks (e.g., pharmacists, influence of others, religion, cultural, and traditional) as an important aspect for the adoption of self-care. While our results do not provide evidence to inform potential intervention methods, they do suggest that interventions could be delivered through these networks. For instance, there is growing evidence to support the success of community leaders in raising awareness about cancer symptoms when compared to mass media campaigns to influence those who need targeted approaches to reduce potential delays in presentation [75]. This also ties in with the policy change, allowing community pharmacists in the UK to have an enhanced role in referring patients to suspected cancer referral pathways [76]. However, the implementation and impact of this new policy are currently unknown, despite the willingness of community pharmacists to adopt this enhanced role in cancer care [77]. Thus, we believe that further exploration of the variation in self-care activities is needed to determine what needs to change and how individuals with low-risk cancer symptoms can be promptly investigated for their cancer risk.

4.4. Strengths and Limitations. This review included 45 studies of high quality and was conducted in line with the Cochrane Rapid Review Method Recommendations. However, both this study and the characteristics of the selected sample do present some limitations. For instance, although the rapid search strategy did use an extensive list of search terms, the search is not as comprehensive as that associated with a systematic review (due to a limited number of databases and a lack of gray literature being used as sources). This decision was made in the interest of time and resource, as a study by Borah et al. highlighted that the average systematic review takes sixty-seven weeks with a team of approximately five researchers [78]. A recent study demonstrated that the conclusions made from a rapid review were not greatly different when compared to those made from a systematic approach [79]. While this is an accepted limitation of rapid reviews, they are increasingly being used to inform policy when insight is required in a short time period with limited resources [80]. However, we have further compared our search results with a recent systematic review that focused on the association between aging and patient interval in cancer diagnosis [10] and identified that our methodology might have missed five papers. These papers were further evaluated for full paper review, and those with relevant data were extracted [30, 45, 49] and analysed. No new themes were identified.

Table 4: Determinants of self-care activities within the symptom appraisal pathway mapped to the COM-B model.

COM-B constructs		Determinants of self-care activities/behaviours	Intervention functions	Policy categories
Capability	Psychological	Knowledge and awareness, self-efficacy, and confidence in maintenance of health	Education enablement	e.g., safety-netting policies to be in place for patients with long-term conditions presenting multiple times in healthcare over 12 months
	Physical	Long-term conditions and experience with self-limiting symptoms		
Opportunity	Social	Religion/culture and competing priorities	Enablement environmental restructuring	e.g., Sign-posts on OTC medication to be placed at community pharmacies, such as the Be clear on cancer flyers
	Physical	Accessibility of OTC medications, herbal and traditional medicine, and competing priorities		
Motivation	Automatic	Fear and beliefs about causes of illness	Education persuasion incentivisation	e.g., promote use of community-based centres for help-seeking and identify routes to help-seeking to promote symptom awareness
	Reflective	Previous experience with similar symptoms and wanting to avoid healthcare		

A further challenge for studying self-care was also the disparity in the vocabulary, with self-care being reported in 11 different ways across the 45 selected studies. This was also found in a study identifying over 136 definitions of self-care used across publications [81] and could be the reason for missing papers, despite an extensive search strategy. These features should be considered and used to inform the development of further recommendations for the reporting of self-care to improve consistency in future studies and truly understand the effect on patient delay.

Due to the nature of the research questions investigating reasons for potential patient delays in cancer diagnosis, the majority of the selected studies were of retrospective design, with participants often being interviewed following the diagnosis of cancer. These features may result in response and recall biases due to rationalisation of symptoms following diagnosis or regret for not seeking help sooner [82]. It should also be considered that, although self-care data were extracted for analysis, this was never the main focus of the selected studies, and, hence, the interview or survey questions prompting answers containing self-care activities may not provide the complete context of why or how they are used, preventing an in-depth analysis.

Our review identified the potential delays in diagnosis due to self-care activities as a potentially universal problem, with research included from 22 low-, middle-, and high-income countries across the world. A large sample size was used, but the majority of the studies were conducted in the UK, where the health service structure is dissimilar to other countries. Most of the sample was also made up of those with lung, breast, or CRC. However, lung, breast, and CRC are among the four most commonly diagnosed cancers worldwide, and cancer survival in the UK is comparatively low when compared to other high-income countries [83]. Hence, this sample may be more representative of the worldwide cancer population than originally thought.

5. Conclusion

Here, we presented outcomes of a rapid review using thematic synthesis that aimed to build a better understanding of how self-care is conceptualised. This review investigated the period before the investigations for suspected cancer took place, when cancer patients started to assess their symptoms. The overarching results demonstrated that self-care activities are indeed a part of the symptom appraisal process, with significant self-reported evidence for the use of OTC medication, traditional remedies, and a trial of behaviour change methods. This qualitative evidence also highlighted that self-care needs to be measured better in order to understand how it influences help-seeking in healthcare. Future studies are needed to understand the differences in social, psychological, and contextual characteristics of the individuals adopting different self-care activities and behaviours in relation to their impact on prompt help-seeking in healthcare. Further investigation would facilitate a better understanding of how, when, and where these behaviours can be modified for earlier cancer diagnosis.

Abbreviations

CASP: Critical appraisal skills program
CRC: Colorectal cancer
GP: General practitioner
HCP: Health care professional
MPT: Model of pathways to treatment
OTC: Over the counter
WHO: World Health Organisation.

Data Availability

The qualitative data supporting this rapid review are from previously reported studies and datasets, which have been cited. The processed data are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

Authors' Contributions

YH and CVW conceived the study. GW carried out the review, data extraction, coding, and data analysis. YH and CVW acted as second reviewers. GW, CVW, and YH reviewed the results. GW and YH wrote the first draft of the manuscript. CVW, HRB, and JF commented and reviewed the final draft of the manuscript. All authors agree on the final version of the manuscript.

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Supplementary Materials

Supplementary Table 1: search string for use in Ovid to search the MEDLINE database. Supplementary Table 2: search string for use in Ovid to search the PsychINFO database. Supplementary Table 3: summary of the selected study characteristics. Supplementary Table 4: detailed overview of features of selected studies. (*Supplementary Materials*)

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