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Cultural factors affecting the self-care of cancer survivors: An integrative review

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ABSTRACT

Purpose: For cancer survivors, self-care is an important factor that can improve health and quality of life. Cultures known to inform human behavior can influence self-care, such as prioritizing various self-care practices or utilizing other resources. The impact of culture on cancer survivors' self-care has not been adequately investigated to date. The purpose of this integrative review is to summarize and synthesize the past empirical literature examining cultural factors affecting cancer survivors' self-care.

Design: An integrative review was conducted.

Methods: This study was performed in accordance with Whittemore and Knafl's stages of an integrative review (problem identification, literature search, data evaluation, data analysis, and presentation of the results). A literature search was conducted using PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, Web of Science (WOS), and the International Bibliography of the Social Sciences (IBBS) computerized databases with the guidance of a medical librarian.

Results: The review incorporated 16 articles. Cultural values, cultural beliefs, fatalism, social norms, faith/religion, sexual roles, and customs were identified as cultural factors affecting the self-care of cancer survivors. These cultural factors were found to influence the behaviors of cancer survivors' health maintenance (healthy life and psychological well-being), self-care monitoring (physical symptoms and complication symptoms), and self-care management (coping with symptoms and response to symptoms).

Conclusion: The results of this study provide valuable insights into the cultural influence of cancer survivors on self-care behaviors, and healthcare providers can promote self-care behaviors if they understand cultural factors and develop nursing interventions that take cultural influences into account.

1. Introduction

The concept of "cancer survivor" began to be used in the 1960s, when the cancer survival rate gradually increased due to the development of cancer treatments. In recent years, as the number of cancer survivors has increased, the trend has been shifting to a primary care-based chronic disease management approach (McCorkle et al., 2011). Even after cancer treatment is finished, cancer survivors need regular hospital visits for at least 5 years after cancer diagnosis to check for cancer recurrence, metastasis, or secondary cancer, and some cancer patients require long-term rehabilitation.

Continuous health management, including lifestyle changes such as smoking and alcohol consumption cessation, exercise, and diet, are required to prevent cancer recurrence (Foster and Fenlon, 2011). Against this background, several cancer-related experts have conducted studies on self-care as a key element of health care for cancer survivors (Howell et al., 2020; Cuthbert et al., 2019; Howell, 2018). Proper self-management has been shown to reduce disease-related symptoms, improve quality of life, and improve overall well-being (Yun et al., 2016; Riegel et al., 2017).

It has been reported that when the degree of self-care performance increases, the patient's activity ability improves (Jeon and Park, 2018), whereas when the degree of self-care performance decreases, complications occur (Yun et al., 2016). For cancer survivors, self-care is an

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important factor that can improve health (Jeon and Park, 2018), and self-care is being studied in various cultures around the world. However, we do know that cultures known to inform human behavior can influence self-care, such as prioritizing various self-care practices or utilizing other resources (Kagawa-Singer et al., 2014).

Culture can influence both self-care behaviors and factors that influence self-care, such as confidence, habits, motivation, support from others, and the patient-caregiver relationship (Riegel et al., 2012; Osokpo et al., 2021). Culture can be said to be "a way of life in society as a whole" that encompasses ideas, clothing, language, religion, rituals, norms such as laws and morals, and values (Jary and Jary, 1991). Intercultural differences exist in values, expectations, nuances of meaning, attitudes, language, environment, and perceptions of individuals (Arnault, 2018). In addition, culture affects how diseases are defined, such as attribution of causes of diseases, treatment processes, and curability. Culture can affect how a person monitors, interprets, labels, and explains symptoms (Arnault, 2018; Airhihenbuwa et al., 2014).

Humans are regarded as biological beings inseparable from culture. Cancer survival is the process by which humans construct and live as culturally variable processes (Bell and Ristovski-Slijepcevic, 2013). While culture affects the ability to manage complex problems of chronic diseases such as cancer and adopt strategies for maintaining health (Airhihenbuwa et al., 2014), studies involving self-care for cancer survivors so far have rarely considered the role of culture influencing individuals' self-care due to their complexity. Identifying the effects of cancer survivors' cultural factors on self-care can provide information on interventions or policy developments to improve individual health promotion behavior and potentially help resolve differences in cancer survivors' self-care outcomes (Grady and Gough, 2014; Fisher et al., 2007). For chronically ill patients, self-care is all individual activities related to health promotion, disease management, and medical utilization to maintain health (Riegel et al., 2012). As such, given the impact that culture can have on an individual's self-care, it is important to understand how culture influences the adoption of self-care behaviors and shapes thinking regarding decisions around m A comprehensive understanding is required.

Since most of the preceding studies on the cultural impact of cancer survivors on self-care describe the cultural diversity of self-care, they provide a narrow understanding of how culture affects self-care, health promotion behavior, and its role in disease management (Kagawa--Singer et al., 2014). In addition, most studies have focused on the influences of culture on self-management or the role of culture in ethical mini-center health care (Chadder et al., 2018; Ashing-Giwa et al., 2004). Previous studies have not provided a comprehensive understanding of the influence of culture on self-care for cancer survivors.

Therefore, the purpose of this integrated review was to summarize and synthesize the past empirical literature examining cultural factors affecting cancer survivors' self-care. Specific aims were: (a) to describe the effect of cultural factors on cancer survivor's self-care; (b) to explore how each of the self-care theory's three concepts for cancer survivors—self-care maintenance, self-care monitoring, and self-care management—have been studied in the research literature; and (c) to identify important research findings and implications for intervention research. A comprehensive understanding of the impact of culture on self-management can facilitate the design and coordination of interventions to meet the needs of cancer survivors.

2. Methods

2.1. Design

An integrative review approach was selected to summarize and synthesize empirical literature examining cultural factors affecting cancer survivors' self-care. An integrative review is a specific review method that summarizes past empirical or theoretical literature to provide a more comprehensive understanding of a particular phenomenon or healthcare problem (Whittemore and Knafl, 2005). Given that the published literature involving the cultural effect on cancer survivor's self-care is varied in design and methods, an integrative review approach was identified as the most useful.

2.2. Theoretical framework

Riegel et al. (2012) define self-care as a process of maintaining health through health promoting practices and managing illness in the middle-range theory. The key concepts of the middle-range theory are self-care maintenance, self-care monitoring, and self-care management.

Self-care maintenance is defined as those behaviors used by patients with a chronic illness to maintain physical and emotional stability. In individuals who are well, self-care focuses on self-improvement, but in the face of a chronic illness, many self-care maintenance behaviors often mirror the recommendations of providers. These behaviors could be related to lifestyle (e.g., smoking cessation, preparing healthy food, coping with stress) or the medical regimen (e.g., taking medication as prescribed). These activities may be imposed by others (e.g., health care professionals or family members) and then agreed on by the patient or solely chosen by the patient to meet his or her own goals (Riegel et al., 2012).

Self-care monitoring refers to the process of observing oneself for changes in signs and symptoms. For example, many people monitor their weight regularly to follow gains and losses. Many visit the dentist to monitor their success in avoiding cavities. In self-care of chronic illness, monitoring that is systematic and routine produces the best outcomes.

Self-care management is defined as the response to signs and symptoms when they occur (Riegel et al., 2012, 2019). This includes implementing treatment recommendations independently or in consultation with healthcare providers when symptoms develop (Riegel et al., 2012). This theoretical framework guided the research direction, information gathering and analysis of the studies.

2.3. Review procedure

This study performed in a five-stage integrated review of the empirical literature using the methodological strategy proposed by Whittemore and Knafl (2005): problem identification, literature search, data evaluation, data analysis, and presentation. Integrative reviews include diverse data sources (qualitative, quantitative, experimental, and mixed method studies) which enhance a holistic understanding of the topic of interest (Whittemore and Knafl, 2005).

1) Problem identification

The first step is clear identification of the problem that the review is addressing and the review purpose. The question of this study is: "What cultural factors affect self-care for cancer survivors?" In the preceding literature, cancer survivors can be classified as "co-survivor," "survivor," "surviving cancer," "acute survivorship," "extended survivorship," and "permanent survivorship." Self-care to prevent recurrence of disease includes symptom control, management of concomitant diseases during cancer treatment, food intake modification, medication adherence, and appropriate exercise. To fully comprehend the influence of culture on self-care, critical elements from the above relate to culture elements.

2) Literature Search

A literature search was conducted under the guidance of a medical librarian to reduce the potential of bias and error in all processes of the study. It was done using PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, Web of Science (WOS), and International Bibliography of the Social Sciences (IBSS) computerized databases with the guidance of the medical librarian.

The key search terms included combinations of concepts related to cancer survivor, and self-care, culture. The following key words and MeSH terms were used using a variety of combinations: "co-survivor," "survivor," "surviving cancer," "acute survivorship," "extended survivorship," "permanent survivorship," "self-care," "self-care management," "self-care monitoring," "self-care maintenance," "culture," "customs," "norms," "social organization," "transcultural nursing," "transcultural," "cross-cultural," "enculturation" and "acculturation." The year of publication of the articles to be searched was not limited.

2.3.1. Inclusion and exclusion criteria

The inclusion criteria for this review were that the resource (1) articles written and published in English, (2) published articles, (3) articles analyzing cultural factors influencing the self-care (related to self-care elements) experiences of cancer survivors. Exclusion criteria were standalone abstracts and conference proceedings where full text could not be confirmed. The searched literature was selected according to selection and exclusion criteria, a PRISMA flow diagram was drawn up, and EndNote, a bibliographic program, was used.

3) Data Evaluation

To fully search the influence of culture on self-care, critical elements extracted from the included articles were organized in a data matrix with key concepts, synonyms, search terms, inclusion/exclusion criteria, population, problem of interest, interventions/prognostic factors, context or outcomes, and literature/study types. Two of the authors independently completed data matrices. A quality appraisal of included articles used criteria developed by Falk et al. (2013). As a result of the data matrix evaluation, the authors came to an agreement on which items matched.

4) Data Analysis

In order to extract and synthesize structured data from the selected theses, the researcher, research design, disease, research purpose, measurement tool used, country, number of subjects, age of subjects, major results (findings related to culture and self-care), etc. were chronologically described using an Excel file (Whittemore and Knafl, 2005). Memos were used to derive topics and subtopics for the coded data between authors, and through regular e-mail correspondence and frequent research meetings, comparison and contrast of the theses' core results, topic, and sub-topic synthesis were repeated to reach an agreement. Then, using the mid-range theory of self-care for chronic diseases (Riegel et al., 2012), data related to culture and self-care were organized by pattern and topic (Table 1). The quality of each included article was appraised using criteria developed by Falk et al. (2013).

5) Presentation

After the authors reached an agreement on the pattern, the topic and subtopics were derived. The appropriateness of the relationship between the subject and the sub-topic and the inclusiveness of the sub-topic of the subject were confirmed. Through this, it was possible to confirm the influence of culture on the self-maintenance, self-monitoring, and self-management of cancer survivors.

3. Results

Through an initial literature search, 411 papers were identified (104 from PubMed, 102 from CINAHL, 81 from Embase, 3 from Web of Science (WOS), and 121 from IBSS). After removal of duplications (n = 9), the titles of 402 articles were screened for relevance, and 198 articles were removed because they did not meet the inclusion criteria.

All abstracts of the 204 studies were assessed by first author for eligibility. Articles that did not meet the inclusion criteria were removed (n = 83). The full text of the remaining 121 articles were evaluated and 89 articles did not address culture and 18 articles did not address self-care. A total of 16 were included in the final review (Fig. 1).

1) Characteristics of Study

Of the 16 papers included in this review, seven were quantitative studies, one was a mixed method study, and the remaining eight were qualitative studies. The studies were published between 2004 and 2021 as shown in Table 1. The location of most studies was in North America (USA 10, Canada 1). In addition, one study was conducted in China, one study was conducted in Brazil, one study was conducted in Korea, one study was conducted in Hong-Kong, and one study was conducted in Sweden.

The study subjects were breast cancer survivors (n = 8), urological cancer survivors (n = 2), gastrointestinal cancer survivors (n = 1), colon/rectal cancer survivors (n = 2), and various other cancer survivors (n = 2). The age of participants in all included studies was between 31 and 92 years of age, and four studies did not report participant age.

Data were collected mainly through one-on-one interviews or focus group interviews in qualitative studies. Other quantitative studies collected data using self-reported surveys or standardized tools. In the mixed method study, data were collected through one-on-one interviews for primary data collection. Most studies have pointed to factors that may moderate the influence of culture on self-care, such as gender, education, marital status, and socioeconomic status. All studies included cultural or cultural influence factors such as race and ethnicity, spiritual and social beliefs, social roles, and traditional beliefs. However, not all studies provided a specific definition of culture. However, for humans, culture is a description of how individuals interpret the world, trigger the decisions they make, and influence their behavior in the context of a disease state. In some studies, the meaning of ethnicity was conceptualized as the effect of an individual's social position in the process of examining the effect on self-care after cancer recovery as a minority (Table 1).

2) Cultural influences on self-care decisions

When cancer survivors' individual self-care decisions are made, it has been shown that the culture experienced by the individual during his or her life and the cultural experience of the community to which he or she belongs (Cheng et al., 2016; Oliveira and Zago, 2018; Anbari et al., 2021; Hamilton et al., 2011; Nynikka et al., 2014; Chung et al., 2009) are influential. Social expectation roles and cultural health beliefs became major influencing factors in the decision-making process for health behavior (Cheng et al., 2016; Lindquist et al., 2015). This shows that self-care is affected by cultural beliefs, regardless of socioeconomic status and age. In addition, they pursued health care that was sustained by their religious beliefs, fatalism and ethnic identity, helped to implement actual health behaviors, and improved the quality of life of individuals (Miller et al., 2015; Suh et al., 2013; Nynikka et al., 2014; Chung et al., 2009). In one study, the decision to self-care in a confined area of a small town and the process of returning to work had a significant impact on the cancer survivors' previous experiences in that area, regardless of their socioeconomic status or age (Anbari et al., 2021). Self-care that is 'culturally customized' or 'culturally reflected' allows self-care (monitoring, management) appropriate to family, general expectations, and individual characteristics to be performed (Badger et al., 2020; Suh et al., 2013; Penedo et al., 2018).

In addition, the influence of family culture, including emotional support, has been mentioned very commonly and, furthermore, considered to be manifested in personal beliefs, and cultural beliefs (Cheng et al., 2016; Anbari et al., 2021; Greenlee et al., 2015; Miller et al., 2015; Speed-Andrews et al., 2013 Hamilton et al., 2011; Suh et al., 2013; Kelley, 2004; Ashing-Giwa et al., 2004; Penedo et al., 2018) (Table 2).

Table 1
Characteristics of the included studies.

No	Author/Year	Study Purpose	Disease	Country	Conceptualization of Culture	Conceptualization of Self-care	Design/ Sampling/ Measures	Effect/ Outcomes/ Results	*Quality score
1	Cheng et al. (2016)	To reveal Chinese breast cancer survivors' views and experiences of self-management in extended survivorship	Breast Cancer	China	Beliefs, responsibilities, such as gender, family, and social roles; cultural health beliefs	Life-style adjustments (balanced diet, avoiding stimulating food, medication adherence), managing emotions (control of stress), managing symptoms (avoiding overexertion, taking frequent breaks, engaging in light activities)	**Design:** Mixed-method study. **Sampling:** 19 breast cancer survivors N = 19; 19 women, age = 54(41–65) **Measures:** One-time interviews and analysis	Health beliefs and cultural diversity are vital in the decision-making process about healthy behaviors	**6**
2	Oliveira and Zago (2018)	To describe the experiences of healthy behavior at urological cancer survivors	Urological Cancer	Brazil	Place of birth, beliefs, religion values	Monitoring symptoms, physiological stability (control of stress and anxiety, happiness) lifestyle modification	**Design:** Qualitative exploratory study **Sampling technique:** Convenient Sampling. **Participants:** Individual Interviews: N = 14; Mean age: were 64 ± 9 years; 14 men **Measures:** One-time interviews conducted with individual patients	Social contexts and cultural beliefs play important role in adherence to healthy behaviors (monitoring symptoms, physical stability, lifestyle modification)	**6**
3	Anbari et al. (2021)	Describes how breast cancer-related lymphedema (BCRL) influences the work experiences and quality of life (QoL) of survivors living in rural and small towns in Missouri.	Breast Cancer	United States	Rural/small town areas, beliefs, rural characteristics	Physical exercise, physiological stability, symptoms early detection, self-reliance	**Designed:** Multiple-case study methodology **Population:** White, N = 13, 52–78 (median 65) **Sampling technique:** purposive homogenous sampling **Measures:** One-time interviews conducted with individual participants	Rural town resources and cultures serve as unique contextual factors to survivors' return-to-work journey with symptom monitoring.	**6**
4	Badger et al. (2020)	To test two 2-month psychosocial interventions (Telephone Interpersonal Counseling [TIPC] and Supportive Health Education [SHE]) to improve quality of life (QOL) outcomes for Latinas with breast cancer	Breast Cancer	United States	Culturally adapted interventions, culturally tailored: familism, respect, personalism, sympathy, trust	Welling being, Symptom monitoring (complications), stress management	**Design:** RCT with longitudinal assessment. **Sampling technique:** Purposive sampling **Population:** N = 230 Latina survivor/rural and urban **Measures:** Psychological distress, distress symptom	Rural vs. urban may influence intervention accessibility and outcomes	**6**
5	Greenlee et al. (2015)	To examine the effect of a culturally based approach to dietary change	Breast Cancer	United States	Culturally based dietary intervention	Life-style adjustments (balanced diet)	**Design:** Randomized to Intervention and Control groups design.	Good effect community-based education culturally appropriate	**6**

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Table 1 (*continued*)

No	Author/Year	Study Purpose	Disease	Country	Conceptualization of Culture	Conceptualization of Self-care	Design/ Sampling/ Measures	Effect/ Outcomes/ Results	*Quality score
		on increasing fruit/vegetable (F/V) intake and decreasing fat intake among Hispanic breast cancer survivors.					**Sampling technique:** Purposive sampling **Population:** Intervention (n = 34), 55.1 ± 9.1/Control (n = 36), 58.0 ± 10.1 **Measures:** Daily intake (fruit, fat, vegetable), BMI, weight		
6	Miller et al. (2015).	To explore the relationships between systemic and individual-level contextual factors and health-related quality of life (HRQOL) in a cohort of African American and Latina breast cancer survivors (BCS)	Breast Cancer	United States	Cultural beliefs, ethnic identity, spirituality (faith)	Self-care management for multiple chronic conditions, activation (care seeking, adhering to screening/follow-up care recommendations), balancing work and treatment demands, symptom and stress management	**Design:** Cross-sectional design **Sampling technique:** Purposive sampling. **Population**: African American (n = 88) and Latina (=232) **Measures:** HRQOL, stress, ethnicity, health behavior	Socio-cultural factors significantly influence HRQOL, other systemic/ institutional factors, lifestyle, and healthy behaviors and psychological status acceptance of their conditions, and shaped their perception of illness, and the adoption of lifestyle changes.	**6**
7	Nynikka et al. (2014)	To examine racial and ethnic disparities in patient-provider communication (PPC), care quality, and patient activation among long-term cancer survivors.	Breast, Prostate, Colon/rectal, Ovarian, Endometrial Cancer	United States	Race and ethnicity used as a proxy for culture, customs	Self-care monitoring and management (response of symptoms)	**Design:** Cross-sectional survey, **Sampling technique:** A purposive, nonrandom sampling. **Population:** African Americans (n = 294, age = 68.8), Hispanics (n = 161, age = 70.3), Asian (n = 272, age = 67.6) **Measures:** Patient-provider communication (PPC), quality of care, self-efficacy	Asian survivors report poorer follow-up care communication and care quality (self-monitoring and response).	**5**
8	Speed-Andrews et al. (2013)	To examine the strength of associations between the most common PA beliefs of CRC survivors and motivational constructs from the Theory of Planned Behavior (TPB) as well as PA behavior	Colon/rectal Cancer	Canada	Cultural Belief, faith about health	Physical activity (PA) behavior	**Design: C**ross-sectional design **Sampling technique:** random sampling **Population:** Colorectal cancer survivors (n = 600, age = 67.3, 31–92) **Measures:** Physical activity (PA) belief, planed behaviors, PA behavior	All Physical activity beliefs were significantly correlated with all planed behaviors and physical activity.	**6**
9	Hamilton et al. (2011)	To explore cultural factors and physical, psychological,	Breast, Lung, Prostate, Colon, Head, Neck Cancer	United States	Religious beliefs, experience of race-related, social norms	Health related coping styles	**Design: C**ross-sectional design **Sampling technique:**	Faith, religious, cultural, and lay beliefs influenced	**6**

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Table 1 (*continued*)

No	Author/Year	Study Purpose	Disease	Country	Conceptualization of Culture	Conceptualization of Self-care	Design/ Sampling/ Measures	Effect/ Outcomes/ Results	*Quality score
		and relationship well-being on African American cancer survivors.					Purposive sampling. **Population:** African American (N = 449); Age: 63.8 (±8.1), M; 187, F:262, **Measures:** Religious Involvement Scale, Brief Index of Race-Related Stress (IRRS), Ways of Helping Questionnaire (WHQ): coping styles	health behavior definition, symptom interpretation, and behaviors in response to symptoms.	
10	Lindquist et al. (2015)	To describe experiences about management of self-care in female cancer survivors with lymphedema.	Breast Cancer	Sweden	Familiar with women's social activities, Sexual roles	Physical activity, manageability, social self-care, manual self-treatment	**Design:** Qualitative descriptive **Sampling technique:** Purposive sampling **Population:** Swedish female cancer survivors with lymphedema (N = 8). Age range: 45–71 years; **Measures**: One-session interview was conducted	1) Self-care can learn by social activities involves relation to others, self-helping group, and motivational factors. 2)Participants reported experience of loss in social activity, partly due to the side effect of treatment of cancer.	**6**
11	Chung et al. (2009)	To assess the utility and relevance of the Taking CHARGE program in a selected minority group, namely, African American breast cancer survivors.	Breast Cancer	United States	Cultural variations - values, beliefs, attitudes and customs, spirituality, faith, religion.	Self-Care as self-regulation, self-maintenance	**Design:** Qualitative descriptive design **Sampling technique:** Convenience sampling **Population:** Mean 56(Age range: 41–72 years) (African American women, N = 13) **Measures:** 2 focus group interviews.	Findings indicated that the program's content was relevant to participants' experiences, African American women identified need for cultural enhancements in spirituality, self-preservation, and positive valuations of body image. influences the self-care behaviors they perform	**6**
12	Suh et al. (2013)	To evaluate the effects of a culturally responsive health promotion program for elderly Korean (CHP–K) survivors of gastrointestinal (GI) cancers	Gastrointestinal (GI) Cancers	South Korea	Country of birth and Ethnicity presented, cultural beliefs and needs.	Self-Care used – self management, health promotion behaviors	**Design:** Single-blind, prospective, randomized controlled trial design **Sampling techniques:** Purposive sampling **Population:** experimental group: n = 32, 70.59(±3.740), control group: n = 31, 71.52 (±3.577)	Culturally tailored program (cultural belief and age-appropriate exercise and individualized person-to-person care for symptom management) improved various physical and psychological outcomes in	**5**

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Table 1 (*continued*)

No	Author/Year	Study Purpose	Disease	Country	Conceptualization of Culture	Conceptualization of Self-care	Design/ Sampling/ Measures	Effect/ Outcomes/ Results	*Quality score
							Measures: Physical activity, body weight, BMI, the Patient Generated Subjective Global Assessment scale, the M.D. Anderson Symptom Inventory, and self-efficacy and self-esteem scales.	these participants.	
13	Penedo et al. (2018)	To determine whether participation in the culturally adapted CBSM (C-CBSM) leads to significantly greater reductions in symptom burden relative to participation in the non-culturally adapted CBSM among Hispanics treated for localized PC with elevated symptom burden.	Prostate Cancer	United States	Cultural patterns and belief systems, meanings, values, and social context	Self-Care conceptualized as self-management, behavioral stress management	**Design:** Randomized controlled trial (RCT) with repeated measures design **Sampling technique:** No sampling technique reported. Convenience sampling suggested as a limitation **Population:** (N = 260), (Hispanic/Latin) Americans **Measures:** Disease-specific symptom, burden, health-related quality of life	Program reflected of Hispanic culture and sociocultural processes (e.g., allocentrism, familism, fatalism, simpatia) was improved on health among Hispanics. The cultural adaptation in this study went beyond linguistic translation to Spanish and incorporated intervention content compatible with our Hispanic cultural and sociocultural patterns, belief systems, meanings, values, and social context into the program.	**6**
14	Kelley (2004)	To provide a culturally specific intervention program for African-American women to alter selected behavioral risk factors, psychosocial responses, and breast self-care variables	Breast Cancer	United States	Ethnicity used as proxy to culture and serves as antecedents to cultural practices, understandings, beliefs	Self-care: Breast self-exams, healthy eating, exercise, and psychological wellbeing	**Design:** Qualitative descriptive approach **Sampling technique:** Purposive Sampling **Population:** African-American women (n = 60 intervention group; n = 60 attention control group) **Measures:** Behavioral risk factors (high fat intake, inadequate amount of physical activity, inadequate fiber intake), psychosocial	Culturally Appropriate Breast Educational Intervention Program (CABHEIP) improved Breast Self-Examination [BSE], healthy eating, and exercise in African-American women	**6**

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Table 1 (*continued*)

No	Author/Year	Study Purpose	Disease	Country	Conceptualization of Culture	Conceptualization of Self-care	Design/ Sampling/ Measures	Effect/ Outcomes/ Results	*Quality score
							responses (perceived stress, negative coping, low self-efficacy, perceived barriers to Breast Self Examination [BSE] and Clinical Breast Examination [CBE])		
15	Ashing-Giwa et al. (2004)	To determine culture and socio-ecological factors impact HRQOL and psychosocial experiences among women who have survived breast cancer	Breast Cancer	United States	Fatalism, ethnicity, spirituality	Healthy life maintenance, healthy behavior, monitoring of physical symptoms	**Design:** Qualitative descriptive design **Sampling technique:** Convenience sampling **Population:** Total 102, 24 African Americans, 34 Asians (Korean 11, Chinese 10, etc 13), 26 Latinas and 18 Caucasians **Measures:** 7 focus group interviews.	(1) African Amer-ican, Asian and Latina welcomed and actively participated in support groups that were culturally and linguistically appropriate for health maintenance (2) Spirituality is significant to the keep healthy behavior (3) Particularly African American and Latinas, acknowledged profound important of fateful belief at monitoring of symptoms.	**6**
16	Wong et al. (2021)	To understand the lived experience of dietary changes among Chinese CRC survivors after participating in a behavioral intervention program targeting diet and physical activity	Colorectal Cancer	Hong Kong	Cultural beliefs, experience of customs	Healthy life maintenance, healthy behavior (diet, activity)	**Design:** Qualitative descriptive design **Sampling technique:** Purposive Sampling **Population:** Total 55, 29 male, 26 female **Measures:** Individual interview, one time.	Identified themes of motives to changes of dietary practices including (1) individual commitment to dietary change; (2) adaptive strategies in interpersonal contexts and (3) working with healthcare professionals during the journey.	**5**

*Quality score of 5 or 6 indicates acceptable scientific rigor.

3) Culture and self-care maintenance

The studies analyzed investigated the influence of culture on certain self-care maintenances, such as healthy life (healthy diet, physical activity, medication adherence) and psychological well-being.

3.1. Healthy lifestyle

The act of cancer survivors maintaining self-care was driven by the belief that a healthy lifestyle could prevent cancer from recurring and improve their health (Anbari et al., 2021; Speed-Andrews et al., 2013; Greenlee et al., 2015). Adopting a healthy lifestyle influenced cultural beliefs, including diet, physical activity, and taking health/dietary supplements (Lindquist et al., 2015; Chung et al., 2009; Suh et al., 2013).

Cancer survivors in China are following the dietary principle of eating more fruits and vegetables and less meat to prevent cancer recurrence (Nynikka et al., 2014; Chung et al., 2009; Ashing-Giwa et al., 2004; Wong et al., 2021). They also eat roots for blood circulation (Ashing-Giwa et al., 2004; Wong et al., 2021). For Chinese cancer survivors, they were taking oriental medicine as a health supplement, believing that beef and geese were toxic, and believing that cold food was unhealthy according to the principles of traditional Chinese medicine (Chung et al., 2009; Wong et al., 2021). Some African Americans

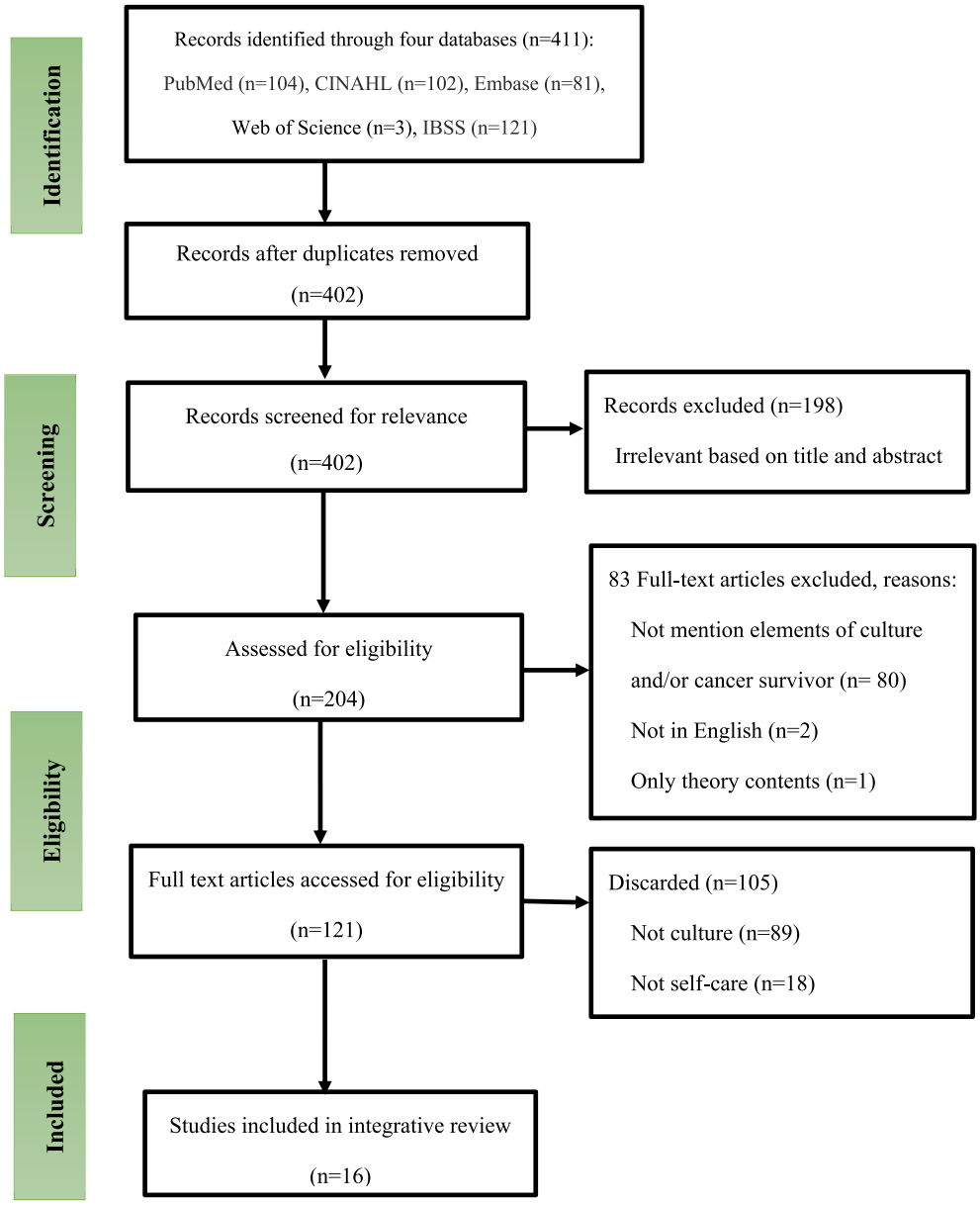

Fig. 1. Flow chart of identification, screening, eligibility, and inclusion of paper.

perceive herbal remedies to be beneficial to the body as an alternative medicine (Kelley, 2004; Ashing-Giwa et al., 2004). Among Asians, healthy behaviors (smoking cessation, abstinence from alcohol) are more prevalent because cultural norms classify these behaviors as 'unhealthy' or 'cancer-causing behaviors'(Suh et al., 2013; Wong et al., 2021). Many studies believed that physical activity was important for a healthy life, and many breast cancer survivors exercised to prevent lymphedema in the arms (Cheng et al., 2016; Anbari et al., 2021). However, there was a difference in the continuation of the movement according to the socio-cultural support for the movement guidelines and the role required for the movement (Chung et al., 2009).

Socially required roles and relationships include adjusting to life as a cancer survivor, maintaining marital relationships, and fulfilling family and social roles (return to work) (Lindquist et al., 2015; Penedo et al., 2018). Expectations of role and relationship return became a motivating factor for breast cancer survivors to continue exercising to prevent lymph node swelling (Anbari et al., 2021; Lindquist et al., 2015).

In addition, the experience of preventing complications through exercise by those who received treatment at a local self-help group first became a legacy of local belief and continued the exercise (Oliveira and Zago, 2018; Anbari et al., 2021).

Family and community cultural expectations and experiences influence self-care maintenance behavior. Therefore, when the intervention for self-care maintenance was 'cultured', it was effective (Penedo et al., 2018; Kelley, 2004; Ashing-Giwa et al., 2004; Wong et al., 2021).

3.2. *Psychological wellbeing*

Cancer survivors believed that maintaining psychological well-being could help them stay healthy and prevent cancer recurrence (Cheng et al., 2016; Chung et al., 2009). They believed that stress could contribute to cancer recurrence, and mainly adopted cognitive and self-management coping strategies in their daily life to cope with stress (Badger et al., 2020). In a specific way, they accepted the phenomenon as it is through changes in the natural environment or managed emotions through positive thinking (Lindquist et al., 2015; Chung et al., 2009). As a stress coping method for cancer survivors' self-care maintenance, they shared their feelings with family, friends, and members of

Table 2
Conceptualization of Culture and Self-care in the included studies.

Author (year)	Conceptualization of Culture							Conceptualization of Self-care						
								Self-care maintenance		Self-care monitoring		Self-care management		
	Cultural values	Cultural beliefs	Fatalism	Social norms	Faith/ religion	Social/ Sexual roles	Customs	Healthy life	Psycho-logical wellbeing	Physical symptoms	Compli-cation symptoms	Coping with symptoms	Response to symptoms
Cheng et al. (2016)		●				●		●	●			●	●
Oliveira and Zago (2018)				●	●		●	●	●	●			
Anbari et al. (2021)		●					●	●	●	●			
Badger et al. (2020)	●						●		●		●	●	
Greenlee et al. (2015)	●	●		●		●		●					
Miller et al. (2015).		●		●	●							●	●
Nynikka et al. (2014)	●		●			●	●	●		●			
Speed-Andrews et al., 2013		●		●	●			●					
Jill et al. 2011		●		●	●							●	
Lindquist et al. 2015				●	●	●		●	●				●
Chung et al. 2009	●		●		●		●	●	●				
Suh et al. 2013		●		●			●	●					●
Penedo et al. 2018	●	●		●				●					●
Kelley 2004		●			●	●		●	●				
Ashing-Giwa et al. 2004		●	●		●					●			
Wong et al. 2021		●					●	●					

a self-help group (Anbari et al., 2021; Kelley, 2004).

Also, seeking advice from cancer survivors and health care providers who received treatment first gave them inner peace (Chung et al., 2009). Religion strengthened the inner peace of cancer survivors, and fatalism based on religious belief provided a positive role in self-care maintenance and positive future motivation. In other words, religious belief is an important factor in strengthening psychological well-being (Oliveira and Zago, 2018; Chung et al., 2009).

In Asian culture, the belief that "you must maintain your health so as not to harm your family" makes one take responsibility for their own health, and this responsibility ultimately gives one confidence in maintaining your health. Confidence gives emotional stability and prevents anxiety, so self-care maintenance was performed by maintaining a positive attitude and utilizing supportive resources (Chung et al., 2009).

4) Culture and self-care monitoring

A study examining the effect of culture on self-care monitoring in cancer survivors corresponds to monitoring of comprehensive health-related symptoms (Oliveira and Zago, 2018; Anbari et al., 2021; Nynikka et al., 2014; Ashing-Giwa et al., 2004). Monitoring of symptoms related to cancer recurrence, monitoring of complications during cancer treatment (surgery, chemotherapy, radiation therapy), and monitoring of symptoms of concomitant chronic diseases are included. This covered monitoring through activities such as monitoring physical symptoms associated with previous cancer disease, routinely measuring hormone levels in the clinic or weighing daily (Nynikka et al., 2014). Cultural norms have influenced how Asian Americans interpret and cope with symptoms (Nynikka et al., 2014; Ashing-Giwa et al., 2004).

Cultural backgrounds, where it is not easy to contact or communicate with health care providers, played a negative role in self-care monitoring of physical symptoms. In the case of African Americans and Hispanics, that is, Latino minorities, according to religious beliefs and ethnicity, fatalistic thinking influenced self-care monitoring behavior (Ashing-Giwa et al., 2004). In other words, they used to recognize the symptoms as fate. Also, religious beliefs often acted according to the advice of religious leaders rather than medical treatment for symptoms experienced after cancer treatment (Nynikka et al., 2014). This led to the belief that God would solve everything, which influenced self-care monitoring behavior. There were also differences in monitoring complications according to social norms. There were differences in the perceptions of lymphedema exacerbations among breast cancer survivors in rural and urban areas. This indicated that rural survivors were less aware of the importance of lymphedema than urban survivors (Anbari et al., 2021).

5) Culture and self-care management

Self-care Management includes response to changes in physical and emotional signs and symptoms, along with the implementation and evaluation of all therapies used (Riegel et al., 2012). The cultural beliefs of Asian Americans and African Americans first adopted traditional self-care management rather than medical contact in response to physical symptoms (Miller et al., 2015; Nynikka et al., 2014). Moreover, among African Americans, religious beliefs have been a major motif in self-care management practices (Hamilton et al., 2011). It was confirmed that this religious belief played a negative role in coping with physical symptoms, but had a positive role in emotional signs and symptoms. While maintaining peace of mind, this led to stress management (Miller et al., 2015; Hamilton et al., 2011). Self-care management was performed for emotional symptoms such as anxiety based on religious beliefs, which had a positive effect on individual quality of life (Badger et al., 2020). Ethnicity influenced self-care management (Nynikka et al., 2014). Among the Chinese, the belief that one's illness should not make it difficult for the family made them respond positively to changes in their physical and emotional symptoms. In order not to

harm the family, when physical symptoms appeared, medicines were taken or herbal medicines were taken (Cheng et al., 2016).

Also, there was a difference in how to cope with complications according to social norms (Suh et al., 2013; Penedo et al., 2018; Hamilton et al., 2011). When breast cancer survivors had high expectations of returning to their original roles, they actively participated in the treatment of lymphedema. They took time to receive exercise therapy or do self-management exercises at home (Hamilton et al., 2011).

4. Discussion

Understanding the cultural influences on cancer survivors' health behaviors is important for designing and nursing interventions to meet patient needs (Riegel et al., 2019). To our knowledge, this is the first integrated review summarizing and synthesizing relevant historical literature to identify cultural factors influencing self-care in cancer survivors. Through the diversity of designs and countries used in the research investigated in this study, it was possible to confirm the influence of culture on self-care in several paradigms.

Cultural values, cultural beliefs, fatalism, social norms, faith/religion, sexual roles and customs were identified as cultural factors affecting self-care of cancer survivors. These cultural factors were found to influence the behaviors of cancer survivors' health maintenance, self-care monitoring and self-care management. These results are consistent with the existing literature noting that culture influences self-care behaviors in individuals with chronic heart disease. (Osokpo and Riegel, 2020).

4.1. Culture and self-care maintenance

The authors found that cultural beliefs, fatalism, and social norms influence self-care maintenance, such as an individual's healthy life and psychological well-being. These results are consistent with other studies that have demonstrated that cultural beliefs influence an individual's health-promoting behavior, predict a subject's attitude toward the outcome, and influence self-efficacy (Riegel et al., 2019). As reported in previous studies (Cha et al., 2012), the authors found in this review that culture may have a somewhat negative effect on dietary control. In some cultures, it is hard-to-change eating habits in favor of consuming a lot of vegetables and fruits and drastically cutting back on meat. This may not be feasible in certain cultures, even if it is a diet based on medically positive analysis (Ononeze et al., 2008). For example, someone with Chinese cultural beliefs about high-nutrition and high-protein foods that improve basic stamina after cancer treatment is unlikely to accept such foods (Wong et al., 2021).

Similar to a previous study on chronic disease subjects, we found that cultural beliefs had a negative effect on prescribed dietary adjustments. In other words, while certain foods are regarded as cultural symbols for maintaining health, such as roots, they rarely eat meat such as beef (Osokpo and Riegel, 2020; Alassouda et al., 2020).

In addition, it was found that fatalism often perceives individual effort as unnecessary and negatively affects adherence to healthy behaviors (diet, physical activity) for maintaining a healthy life (Nynikka et al., 2014; Chung et al., 2009). This suggests that a previous study did not recognize the importance of maintaining healthy behaviors because individuals who are fatalistic do not believe that personal health, including worldly events, can be changed by human effort (Patel et al., 2015).

However, contrary to the results of this study, fatalism did not have a negative effect on all cultural groups in the study of differences in health behaviors according to race, and fatalistic beliefs about diseases in some cultures improved attitudes toward health behavior. This belief in God became a powerful motivator to engage in self-care maintenance behaviors (Heiniger et al., 2015).

Social norms and sexual role expectations were a great motivation for cancer survivors to return to life (Cheng et al., 2016; Lindquist et al., 2015). It was found that this had a positive effect on physical activity to overcome complications after cancer treatment according to expectations of previous roles (social, family, etc.). This is consistent with the findings of a previous study showing that specific cultural collectivism influences health behaviors and motivates them to engage in therapeutic activities (Pokhrel et al., 2018). Specifically, cultural collectivism, family practices, gender role expectations, and family units play an important role in related health self-care decisions and behaviors, whereas individual needs are viewed as secondary (Nguyen and Clark, 2014). These findings demonstrate the importance of assessing how the beliefs of specific sociocultural groups influence the motivation of self-care maintenance behaviors.

Cultural beliefs made it possible to maintain psychological well-being through coping with stress (Cheng et al., 2016; Oliveira and Zago, 2018; Anbari et al., 2021; Kelley, 2004). In addition, this study found that the cultural beliefs of the family and the community have an effect on self-care maintenance (Speed-Andrews et al., 2013 Greenlee et al., 2015), and it was found to be effective when the culture was reflected in the intervention for self-care maintenance (Suh et al., 2013; Penedo et al., 2018; Greenlee et al., 2015). This is consistent with the results of studies showing that emotional intervention reflecting cultural beliefs was effective in chronic disease research (Heo and Braun, 2014). This is because an individual's psychological state is affected by many factors, among them cultural beliefs and values (Hwang et al., 2008). Therefore, in order to effectively promote the self-care maintenance behavior of cancer survivors, a customized intervention approach that reflects the subject's cultural factors is required.

4.2. Culture and self-care monitoring

Cultural beliefs have been found to influence how cancer survivors interpret and cope with their symptoms (Oliveira and Zago, 2018; Anbari et al., 2021; Nynikka et al., 2014; Ashing-Giwa et al., 2004). This is consistent with findings from a previous study that cultural beliefs influence self-care monitoring (Osokpo and Riegel, 2020). Cultural beliefs influence how individuals perceive, label, and interpret symptoms and complications associated with cancer recurrence, and their expected responses to symptoms (Arnault, 2018). The failure of regular monitoring of hormones and weight, which are important physical indicators for cancer survivors, according to individual religious beliefs (Nynikka et al., 2014) is similar to the interpretation of health abnormalities in some Asians' fatalistic beliefs. do (Heiniger et al., 2015). That is, it is consistent with other studies that culture accounts for an individual's disease-related symptoms, treatment processes, and treatment potential (Arnault, 2018; Airhihenbuwa et al., 2014). For cancer survivors, a change in body weight may be an important disease-related symptom, but the cultural beliefs of Saharan Africans equate higher weight with fame, beauty, and happiness, and thus may blindly affect body edema caused by circulatory disorders. In this case, it would be necessary to educate African cancer survivors in advance about disease-related symptoms to monitor. Cultural beliefs influence the presentation and interpretation of one's symptoms. Sometimes chronic disease symptoms are recognized as attacks or curses from evil spirits, so caution is needed in interpreting physical symptoms (Riegel et al., 2017). Therefore, to successfully facilitate self-care monitoring behaviors in cancer survivors, the impact of cultural beliefs on physical changes must be acknowledged and addressed in creative ways tailored to each individual patient.

4.3. Culture and self-care management

Although there are some studies examining the effect of culture on self-care management in cancer survivors, our findings show that cultural beliefs influence self-care management by influencing coping choices for physical and emotional symptoms (Cheng et al., 2016; Miller et al., 2015; Hamilton et al., 2011). Cancer survivors found peace in their hearts about emotional symptoms such as anxiety and stress

through religious beliefs (Suh et al., 2013; Penedo et al., 2018). In some cultures, a more traditional passive approach than medical contact may be adopted in response to physical symptoms, in part by the conviction of familiar cultural alternative therapies (Wegner and Rhoda, 2015).

Also, in cultures with high expectations for social roles, they actively participate in the treatment of lymphedema and took time to receive exercise therapy (Badger et al., 2020; Lindquist et al., 2015). This is the same as the results from a study in which social and family role expectations were identified as influencing factors in the analysis of factors affecting symptom management of chronic disease patients (Davy et al., 2015). These results demonstrate the importance of identifying how cultural beliefs and social norms influence health management adopted as a coping response to symptoms in cancer survivors.

As our study showed that self-care behaviors differed according to cultural differences among Asian-Americans, Hispanics and African-Americans even within the same country, the authors were able to confirm that the cultural spectrum was diverse (Nynikka et al., 2014; Ashing-Giwa et al., 2004). Even within the same family, cultural differences exist due to differences in personal and generational beliefs (Beaulieu, 2004). On the other hand, in different cultures, geographically, the same religious beliefs may have similar values, norms and ways of thinking (Abdulla, 2018). Therefore, the authors attempted to review the empirical or theoretical literature in order to provide a more comprehensive understanding, without limiting ourselves to regions or specific countries, to understand the existing studies and debates related to self-care behaviors and cultural factors in cancer survivors. The purpose of this study was to provide practical insight into the cultural factors that influence the behavior, adoption, etc. of self-management within groups at the global level. It is important for health care providers to understand the patient's cultural framework, as culture has a great influence on not only beliefs about health but also self-health behavior, which affects the continuity of treatment, management of complications and prognosis of disease (Seeleman et al., 2009; Horvat et al., 2014; Iwelunmor et al., 2014). These cultural frameworks are expressed within ethnicity, community systems and organizations (Iwelunmor et al., 2014). This study of the health care provider's perspective provides important insights into the need to be aware of the subject's cultural background in order to provide patient-centered care. It is possible to maximize the effect of treatment and health promotion by supporting the subject so that they can do so.

This review demonstrates useful implications for practice. In order to provide a comprehensive understanding of the effects of cancer survivors' cultural factors on individual self-care behaviors, this study reviewed the integrated literature and identified the influencing attributes.

Based on the findings of this study, it would be beneficial for nurses and other health care providers to be aware of cultural differences from country to country or from family to family and to a lesser extent from individual to individual. In order to provide patient-centered care, health care providers need to be aware of the subject's cultural background, understand the cultural context including the subject's diverse values and beliefs, and support the subject so that he or she can take corrective self-care. It is possible to maximize the enhancement effect. In addition, this study can play an important role in the development and implementation of interventions to promote the self-care behavior of cancer survivors who are affected by the culture of nurses.

4.4. Limitations and strengths

In this study, several key search terms were combined to provide an integrated review of cultural influences on the self-care practices of cancer survivors, but some parts may be missing. Also, because the authors used studies published in English, the authors may have missed useful findings in other languages. Qualitative studies could not be included when it was difficult to infer the effect. Also, it is unreasonable to generalize to all cancer survivors, as the literature on self-care analyzed in our study may not represent the characteristics of all cancer survivors. Despite these limitations, this review provides important knowledge about key factors influencing cancer survivors' self-care adoption.

5. Conclusion

Despite recognizing the importance of insight into cultural influencing factors that influence cancer survivors' self-care behavior, the clear nature of these factors has not been elucidated. Therefore, in order to provide a comprehensive understanding of cultural influencing factors on cancer survivors' self-care behavior, this study systematically reviewed them using an integrated review method. As a result, cultural influence factors affecting self-care behavior were identified, and these include cultural values, cultural beliefs, fatalism, social norms, faith/religion, sexual roles and customs. The results of this study provide valuable insights into the cultural influencers of cancer survivors on self-care behaviors, and healthcare providers can promote self-care behaviors if they understand cultural factors and develop nursing interventions that take cultural influencers into account.

Declaration of competing interest

All authors declare no conflict of interest.

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