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RESEARCH ARTICLE

The importance of social vulnerability and exclusion in cancer prognosis and survival: a scoping review

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Abstract

Background Cancer prognosis and survival are determined not only by biological and clinical factors, but also by patients' social environments. Social vulnerability, including socioeconomic deprivation, limited education, weak social networks, and social exclusion, can critically influence diagnosis, treatment adherence, and outcomes. This scoping review aims to synthesize the current evidence on the impact of social vulnerability and exclusion on cancer outcomes, comprising prognosis, survival, quality of life, and related psychosocial factors.

Methods Following the Preferred Reporting Items for Systematic reviews and Meta-Analysis Extension for Scoping Reviews (PRISMA-ScR) guidelines, a comprehensive search was conducted in PubMed, Scopus, and Web of Science for studies published between 2014 and 2025. Eligible studies included those evaluating associations between social determinants and oncological outcomes among adult cancer patients.

Results A total of 32 studies were included, encompassing 92,291 patients. The majority were observational, including cross-sectional ($n=16$), prospective cohort studies ($n=13$) and retrospective studies ($n=3$). The most frequent analyzed variables included marital and socioeconomic status, education and social support. Patients with stable social networks and higher socioeconomic levels showed better treatment adherence, psychological well-being, and survival; while social isolation, low income, and residence in deprived areas were associated with later diagnosis and worse prognosis. Several studies used validated indices to assess social vulnerability, such as the Social Vulnerability Index (SVI) and the Social Vulnerability Screening Index (SVSI).

Conclusions Social vulnerability and exclusion are important, yet often under-recognized or undervalued determinants of cancer outcomes. The integration of social assessment into the care of cancer patients would facilitate the implementation of individualized interventions tailored to each patient's social context and needs. Such an approach could enhance equity in access to care, improve treatment adherence, and enable the early identification and mitigation of factors associated with social exclusion or vulnerability, ultimately contributing to improved survival outcomes.

Keywords Social vulnerability · Social exclusion · Cancer prognosis · Survival · Social determinants of health

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Introduction

According to the World Health Organization, cancer remains one of the leading causes of mortality worldwide and represents a complex challenge not only from a medical standpoint but also from a social perspective [1].

Despite advances in early diagnosis and oncological treatments in many developed countries, the evolution and survival of cancer patients continue to be influenced by a wide range of factors beyond the purely biological domain. Within this context, social factors have emerged as critical yet often underexplored determinants [2]. However, the literature addressing this issue is scattered and heterogeneous.

The social dimension refers to external factors that influence an individual's well-being, such as socioeconomic conditions, social networks, family relationships and household environment. The assessment of these indicators can help determine whether someone is socially vulnerable, at risk of social exclusion or already experiencing social exclusion. Social exclusion is the state or situation that prevents an individual, group or community from participating in the social, economic and political life of society. In contrast, social vulnerability refers to the condition in which individuals or groups are more likely to suffer from social exclusion. For example, inaccessibility to adequate housing without architectural barriers may promote social vulnerability, since some of the physical obstacles prevent the performance of daily living activities, whether basic (e.g., eating, bathing) or instrumental (e.g., dressing, walking independently) [3]. Similarly, the breadth and quality of a person's social network, such as maintaining relationships beyond the nuclear family, or cohabiting, can be a crucial marker for identifying social exclusion, as these connections often represent the only link between an individual and society [4].

The study of Moragas-Fernández et al. [5] highlighted that social indicators such as social support, household composition, lack of social networks, isolation, and socioeconomic status can significantly affect patients not only at the time of diagnosis but also in their prognosis, quality of life, and ultimately their survival. Moreover, patients with weak social networks, limited resources, or reduced emotional support frequently experience higher stress levels, poorer treatment adherence and, in some cases, worse clinical outcomes and reduced survival [6].

Nowadays, tumor stage (local, locally advanced, or metastatic), along with other clinical and molecular factors, mainly determines the curative or palliative intent of oncological treatments, directly influencing patient prognosis and survival [7]. This study aims to demonstrate that patients' exogenous factors, specifically those related to the social dimension, play an essential role not only at the time of oncological diagnosis but also in treatment adherence, prognosis and survival. The ultimate goal is to provide a structured and critical overview of how social conditions can act as invisible yet decisive risk factors in oncology, while underscoring the necessity of integrating social assessment into comprehensive cancer care pathways.

Review question: are patients' social factors important to analyze at the time of diagnosis for their oncological prognosis, survival, and other cancer-related outcomes such as treatment, quality of life, and psychosocial well-being?

Methods

The current review was based on the Preferred Reporting Items for Systematic reviews and Meta-Analysis Extension for Scoping Reviews (PRISMA-ScR) [8].

Search strategy

The search strategy followed the Population, Concept and Context (PCC) strategy, across three electronic databases: PubMed, Web of Science and Scopus.

A scoping search was conducted between 2014 and 2025, using keywords referring to social factors and oncological patients. Polyglot software from Systematic Review Accelerator© [9] was used to translate the search strategy across databases. Monthly alerts were established to identify newly published studies until an end date of December 12, 2025. The complete search strategy is shown in Appendix 1.

Eligibility criteria

Table 1 shows eligibility criteria based on PCC strategy, and Table 2 shows additional eligibility criteria based on publication characteristics.

Study selection

After removing duplicates, two reviewers independently screened all identified studies according to the predefined inclusion and exclusion criteria. Articles were first evaluated by title and abstract, followed by a full-text review. Any discrepancies were resolved through consensus. The screening process was conducted using Rayyan©, an online review management tool [10].

Data extraction

Data were systematically extracted into a Microsoft Excel spreadsheet. The extracted variables included:

Table 1 Eligibility criteria based on PCC strategy

PCC Element	Inclusion	Exclusion
Population	Human oncological patients older than 18 years old	Non-oncological patients. Patients younger than 18 years old
Concept	Evaluation of social factors in oncological patients	Studies that do not evaluate social factors in oncological patients
Context	Oncology care or cancer trajectory in any healthcare or community setting	Studies unrelated to oncology or cancer care

Table 2 Additional eligibility criteria based on publication characteristics

Other eligibility criteria	Inclusion	Exclusion
Date	Studies published between 2014 and 2025	Studies published before 2014
Language	Studies written in English	Studies not written in English
Publication type	Cohort, cross-sectional or case–control studies and clinical trials	Clinical practice guidelines, abstracts, letters, editorials, case series, systematic or narrative reviews, meta-analyses

1. Study and patient characteristics: first author, year of publication, country of study, sample size, study objectives, study design, patient's age, cancer type and stage.
2. Social risk assessment tools: employed scales, as well as relevant social indicators.

Results

The literature search yielded 1152 studies from all electronic databases revised. After removing duplicates and screening 932 articles based on title and abstract, 38 papers underwent full-text review for eligibility. Finally, 32 articles met the inclusion criteria based on the PCC framework. Figure 1 shows the PRISMA flow diagram with the entire process of study selection.

General characteristics of the studies

Studies selected included a total of 92,291 patients (median: 287, range: 36–44,187). Most were observational, including cross-sectional ($n = 16$), prospective ($n = 13$) and retrospective studies ($n = 3$). While most of the studies analyzed patients with different tumor types and locations ($n = 15$), several focused on a specific location, with the most common being breast cancer ($n = 5$) and colorectal cancer ($n = 4$). Other cancer locations studied were gastrointestinal ($n = 2$), head and neck ($n = 2$), gynecological ($n = 2$), pancreatic ($n = 1$) and lung ($n = 1$). A detailed summary of the main study characteristics is shown in Table 3. To provide socioeconomic context, annual Gross Domestic Product (GDP) per capita for each study's country and year of publication was also included.

A wide range of validated scales was used to assess the different social dimensions. Social support was the most frequently examined domain, reported in the majority of studies ($n = 25$; 78%). The most commonly used instruments to assess social support were the Multidimensional Scale of Perceived Social Support (MSPSS), employed in five studies, and the Duke–UNC Functional Social Support Questionnaire (Duke-UNC-11), used in four studies. Mental health was assessed in nearly 60% of the included studies ($n = 19$), with the Hospital Anxiety and Depression Scale (HADS) being the most frequently applied instrument, reported in four studies. Quality of life was evaluated in 50% of the studies (n = 16). The EORTC QLQ-C30 was the most commonly used instrument, as it was applied in half of the studies assessing this domain. In contrast, socioeconomic status and social vulnerability constituted the least explored social domains, examined in only 28% of the studies ($n = 9$). Moreover, substantial methodological heterogeneity was observed when assessing these social dimensions, as each study employed a different instrument, with no scale being used in more than one article.

Beyond social domains assessed through validated instruments, studies also reported several individual social indicators with marital status ($n = 22$), educational level ($n = 19$), and employment status ($n = 14$) being the most common. These variables were primarily collected as descriptive sociodemographic descriptors rather than conceptualized as multidimensional social constructs, and were therefore analyzed separately from the main social domains.

In addition, some studies reported clinical and functional measures such as the Barthel Index, to assess basic activities of daily living in general patient populations (not specific to oncology patients) and the Charlson Comorbidity Index (CCI) to assess comorbidities, as well as demographic and

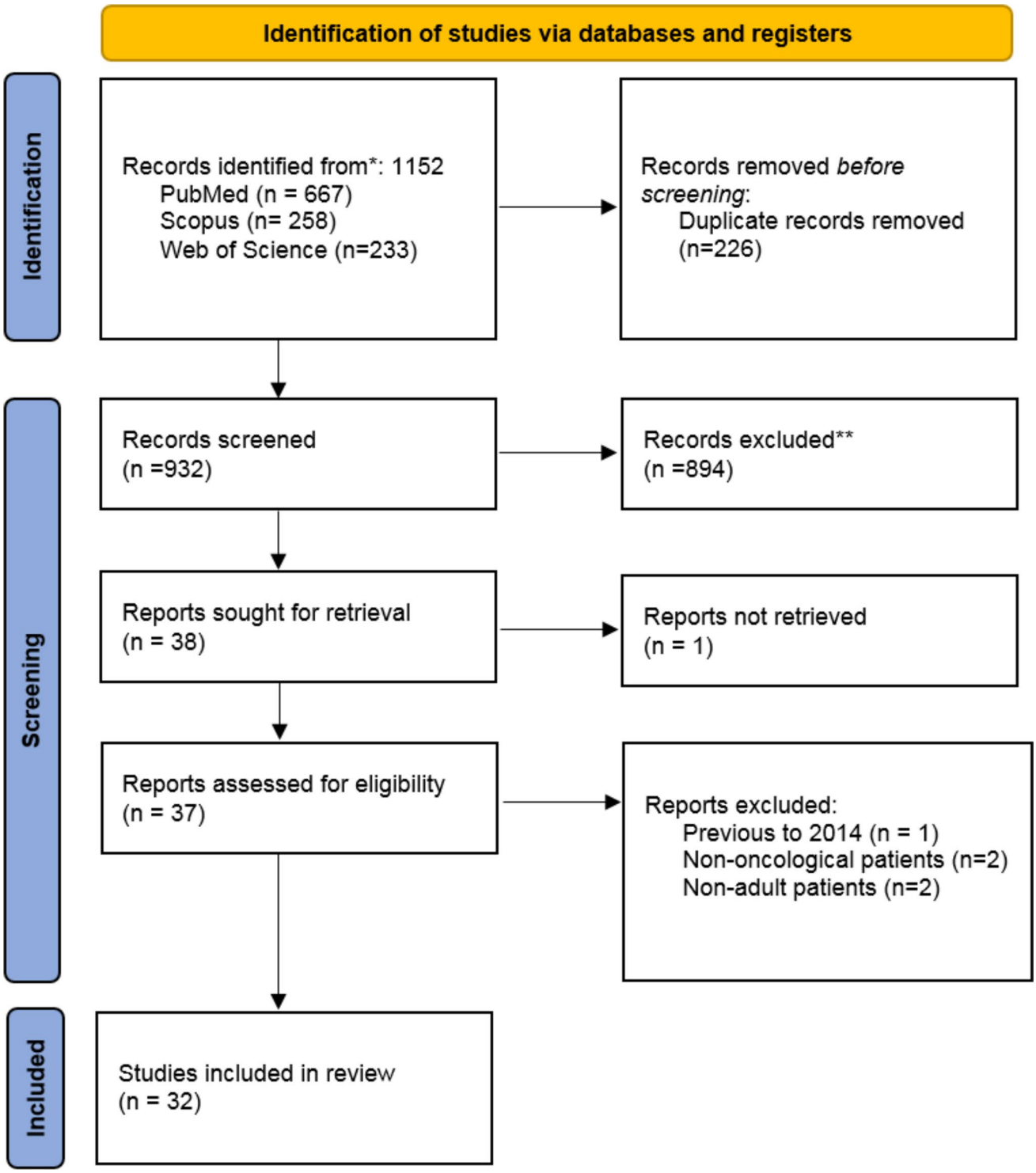


Fig. 1 Flow diagram of PRISMA. **Records excluded manually

clinical indicators such as age, gender, tumor staging, histology or oncological treatment.

The extent to which the included studies addressed cancer-related outcomes varied considerably. Approximately 65% of the studies ($n = 21$) focused on symptoms and diagnostic aspects in oncological patients, whereas 34% ($n = 11$) examined prognosis and survival outcomes.

Table 4 provides an overview of the social domains assessed, the validated instruments used, the

Table 3 Characteristics of included studies and patients

First author, year of publication	Country	GDP per capita (current US$)	Number of patients	Patients' age	Tumour location	Type of study
Almuhtaseb et al. 2021 [13]	Italy	35,773	36	41-73	Breast cancer	Qualitative, exploratory study
Banovčinová et al. 2016 [4]	Slovakia	16,603	211	54.3±12.33	Multiple cancer types	Qualitative/conference-based cross-sectional study.
Bonacchi et al. 2019 [28]	Italy	33,736	835	18-90	Multiple cancer types	Quantitative, descriptive-correlational study.
Bou-Samra et al. 2022 [11]	USA	77,191	568	61±10.7	Gastrointestinal cancer	Retrospective cohort
Bruno et al. 2024 [6]	Italy	39,580	206	49.3±10.8	Gynaecological cancer	Quantitative, cross-sectional analysis.
Choi et al. 2024 [29]	USA	85,373	4,393	30.3±8.6	Multiple cancer types	Quantitative, observational cohort analysis
Ding et al. 2024 [23]	China	13,136	300	18-60	Lung cancer	Cross-sectional mediation analysis.
Eggins et al. 2022 [20]	Australia	65,526	2,635	<40-≥70	Breast cancer	Quantitative, observational (cross-sectional).
Gomes et al. 2022 [15]	Portugal	24,515	125	36±12.8	Gynaecological cancer	Quantitative, cross-sectional, mediation model.
Gonzalez-Saenz De Tejada et al. 2016 [30]	Spain	26,523	972	67.5±10.4	Colorectal cancer	Prospective cohort study.
Gonzalez-Saez de Tejada et al. 2017 [31]	Spain	28,170	947	67.46±10.38	Colorectal cancer	Prospective longitudinal study.
Hamdan-Mansour et al. 2015 [32]	Jordan	4,073	92	50.8±15	Multiple cancer types	Cross-sectional descriptive-correlational study.
Jung et al. 2021 [33]	South Korea	35,142	766	55.7	Multiple cancer types	Quantitative, observational (cross-sectional) study.
Khalil et al. 2025 [21]	USA	89,520	15,118	78 (72-84)	Gastrointestinal cancer	Population-based cohort study.
Lai et al. 2017 [14]	Italy	32,406	45	55±9.2	Multiple cancer types	Quantitative, cross-sectional.
Li et al. 2024 [17]	USA	85,373	304	33.5±4.7	Multiple cancer types	Longitudinal observational study
Manjer et al. 2015 [34]	Sweden	51,545	1,452	72.7±5.5	Breast cancer	Observational cohort study.
Martín-Abreu et al. 2022 [18]	Spain	29,674	180	76±4.5	Multiple cancer types	Observational study
Masoud 2024 [24]	USA	85,373	872	65 (53-73)	Colorectal cancer	Observational cohort study.
McDermott et al. 2021 [22]	USA	70,646	13,117	66-≥85	Head and neck cancer	Population-based retrospective cohort study.
Møller et al. 2022 [19]	Denmark	67,790	44,187	70 (63-77)	Multiple cancer types	Cross-sectional study
Møller et al. 2023 [26]	Denmark	68,827	1,603	67.5 (51-78)	Multiple cancer types	Observational population-based study.
Nephew et al. 2024 [35]	USA	85,373	139	64±8.2	Multiple cancer types	A prospective study
Patel-Kerai et al. 2017 [36]	UK	40,851	173	58 (32-81)	Breast cancer	Quantitative cross-sectional study.
Rashid et al. 2023 [37]	USA	82,769	24,078	69 (64-74)	Pancreatic cancer	Prospective longitudinal study.
Rini et al. 2016 [38]	USA	58,064	255	54 (19-79)	Multiple cancer types	Quantitative longitudinal path analysis.
Sarma et al. 2018 [12]	USA	63,064	896	69	Colorectal cancer	Prospective cohort study.
Sauer et al. 2019 [39]	Germany	46,794	1,087	58.8±12.2	Multiple cancer types	Prospective longitudinal multicenter study.
Sawaf et al. 2023 [40]	USA	82,769	160	61±11.2	Head and neck cancer	Observational prospective study.
Shao et al. 2024 [2]	China	13,136	187	<40-≥60	Multiple cancer types	Quantitative, observational (cross-sectional)

Table 3 (continued)

First author, year of publication	Country	GDP per capita (current US$)	Number of patients	Patients' age	Tumour location	Type of study
Tabrizi et al. 2016 [16]	Iran	5,242	81	47.9±11.4	Breast cancer	Randomized controlled trial.
Tang et al. 2016 [41]	Taiwan	23,083	325	≤45->60	Multiple advanced cancers	Longitudinal observational study.

GDP Gross Domestic Product per capita obtained from the World Bank, *IMF* International Monetary Fund

sociodemographic and clinical indicators, and the cancer-related outcome reported in each study.

Table 5 categorizes the indicators identified across the included studies into three distinct levels of analysis: individual, social, and area-based. This classification facilitates an assessment of whether social determinants are addressed at the person-specific, community/group, or administrative/systemic level. Results show that most indicators are evaluated at an individual level.

Half of the studies included in this review explored the relationship between social factors and patients' symptoms. Most of them focused on the influence of social support and mental-health-related domains on psychological symptoms. A detailed overview is presented in Table 6.

Relationship between social factors and oncological events

Two studies identified a clear association between poor or socially isolated social circles and a later cancer diagnosis. However, these studies identified a direct association between stronger social integration and lower mortality [11, 12].

Almuhtaseb et al. highlighted that social support, especially from immediate family members, provides emotional benefits during the oncological process [13]. The findings of Banovcinová et al. support this conclusion and underline the value of support from family or cohabiting members during oncological illness [4]. Additionally, Lai et al. revealed that the quality of the social relationships may be more predictive of adverse outcomes than lifestyle factors [14].

Other studies emphasized the impact of emotional well-being on the experience of illness, suggesting that maintaining a positive attitude and strong social relationships improves coping and overall well-being. Emotional support from family, especially from a partner, was reported as a significant protective factor in the cancer care process, although formal support from the health system was often perceived as limited [15, 16]. Social isolation, lack of a support network, or negative attitudes toward social interaction were found to be associated with a poorer quality of life, increased depressive symptoms, reduced willingness to seek help, and more negative perceptions of the illness [17].

Martín-Abreu et al. associated anxiety and depression with loss of dignity, suggesting that solid and frequent social support contributes to preserving patients' mental health and dignity, ultimately improving their overall cancer experience [18].

Regarding social inequalities, low income, lack of health insurance, and low educational attainment were linked to poorer screening perceptions, more unmet needs, advanced-stage diagnosis, poorer quality of life, greater psychological distress, less effective adaptation to treatment and reduced survival. Marital status and educational level were the most frequently analyzed variables.

Møller et al. developed a register-based instrument to assess social vulnerability and its association with cancer care. Their findings indicated that patients with higher levels of social vulnerability experienced greater psychological distress throughout the course of their disease. The study highlighted that social vulnerability, as measured through administrative data on factors such as education, income, and living situation, can significantly influence patients' experiences, coping mechanisms, and engagement with healthcare services. These results underscore the importance of systematically identifying socially vulnerable patients in order to tailor interventions, provide targeted support, and potentially improve both patient well-being and cancer-related outcomes [19].

Geographical and ethnic disparities were also identified, with patients from more vulnerable areas and within specific racial minorities, such as non-Hispanic Black populations, having worse oncological outcomes, later diagnoses, reduced access to treatment and lower survival. Two studies also highlighted the influence of neighborhood socioeconomic context, with more disadvantaged areas showing poorer oncological prognosis [20, 21].

Finally, three studies [11, 18, 22] found that lack of social support and low socioeconomic status were associated with a significant reduction in life expectancy following diagnosis. Conversely, patients with stable and/or frequent social ties, steady cohabitation, or robust family and community support demonstrated better psychological adaptation, greater involvement in medical decision-making, and more favorable clinical outcomes.

Table 4 Social scales and indicators used in the studies

Social factors						Other social and medical indicators	Oncological outcomes
First author, year of publication	Social Support	Socioeconomic status	Mental health	Quality of life	Others		
Almuhtaseb et al. 2021 [13]	Qualitative interviews	Qualitative interviews	Qualitative interviews		Qualitative interviews		Prognosis
Banovčinová et al. 2016 [4]	MSPSS			EORTC QLQ-C30		Education level, employment status, marital status and time since diagnosis	Symptoms
Bonacchi et al. 2019 [28]		NEQ	SOC-3 PDI			Age, sex, marital status, education, tumour location and treatment	Diagnosis
Bou-Samra et al. 2022 [11]	ISEL		CES-D	FACT-F	PSQI IPAQ	Race/ethnicity, education, occupation, economics, health insurance	Survival
Bruno et al. 2024 [6]	MSPSS		DASS-21, WLEIS			Education, employment, marital status, cancer diagnosis, stage, treatment and time since diagnosis	Diagnosis
Choi et al. 2024 [29]	SVI MHSVI		PCS MCS	EORTC QLQ-C30		Sex, ethnicity, age at diagnosis, cancer type, education, income, insurance, lifestyle, treatment and quality of life	Symptoms
Ding et al. 2024 [23]	SPSS SCSQ		K10			Gender, age, education, occupation, residence, marital status, caregiver, income, insurance, smoking, awareness, hospitalization and illness duration	Symptoms

Table 4 (continued)

Social factors						Other social and medical indicators	Oncological outcomes
First author, year of publication	Social Support	Socioeconomic status	Mental health	Quality of life	Others		
Eggins et al. 2022 [20]	SCNS-SF34	IRSD	BSI-18	FACT-B	ARIA+	Age, marital status, health insurance status, educational level, employment status, income bracket, place of residence, socio-economic level at area level, stage at diagnosis, treatment status, smoking and comorbidities	Symptoms
Gomes et al. 2022 [15]	MSPSS		IES ERQ			Age, education and partner/children	Symptoms
Gonzalez-Saenz De Tejada et al. 2016 [30]	Duke–UNC FSSQ		HADS	EORTC QLQ-C30,	Barthel Index	Age, gender, marital status, employment, tumour location and disease stage	Symptoms
Gonzalez-Saez de Tejada et al. 2017 [31]	Duke–UNC FSSQ		HADS	EORTC QLQ-C30,	Barthel Index	Gender, age, marital status and profession	Symptoms
Hamdan-Mansour et al. 2015 [32]	PSS		MSP (BDI-II)	SWLS		Gender, age, income, education, residence, marital status, religion and cancer type	Symptoms
Jung et al. 2021 [33]			BDI	McGill QoL Questionnaire		Gender, age, income, education, residence, marital status, religion, cancer type dimensions and physical activity	Symptoms
Khalil et al. 2025 [21]	SVI	HOLC redlining grades		CDC		Comorbidity index, cancer location and stage	Diagnosis
Lai et al. 2017 [14]				EORTC QLQ-C30	VAS	Age, sex, educational level, type of cancer and alexithymia	Symptoms

Table 4 (continued)

Social factors						Other social and medical indicators	Oncological outcomes
First author, year of publication	Social Support	Socioeconomic status	Mental health	Quality of life	Others		
Li et al. 2024 [17]	PROMIS Social		PROMIS Emotional			Age at enrolment/diagnosis, sex, years since diagnosis, ethnicity, marital status and tumour characteristics	Symptoms
Manjer et al. 2015 [34]		SEI				Age, education, marital status, children, cohabitation, occupation, mammography, screening and family cancer history	Diagnosis
Martín-Abreu et al. 2022 [18]	Duke–UNC-11		BSI-18 PPDS	EORTC QLQ-C30	Elixhauser, ECOG	Age, gender, education level, tumour location, histology, stage, estimated survival and treatment	Symptoms Prognosis
Masoud 2024 [24]	SVI					Distance to surgeon, year of diagnosis, time of first treatment, health insurance, smoking within last year, functional status, cancer location, pathologic stage, treatment and physical status	Prognosis
McDermott et al. 2021 [22]					CCI	Sex, age, marital status, registry region, patient urban, index location and stage and geographic region	Survival
Møller et al. 2022 [19]	rSVI						Prognosis Survival
Møller et al. 2023 [26]	SVSI					Cancer location	Prognosis Survival
Nephew et al. 2024 [35]	PROMIS Social	SDI			BHLS, MOS Adherence CSD	Gender, race, age at diagnosis, score at diagnosis and number of tumours	Survival

Table 4 (continued)

Social factors						Other social and medical indicators	Oncological outcomes
First author, year of publication	Social Support	Socioeconomic status	Mental health	Quality of life	Others		
Patel-Kerai et al. 2017 [36]			HADS	FACT-G	MHLC/GHLC BIBCQ	Age, residence, employment, marital status, education, religion, time since diagnosis and treatment modalities	Symptoms
Rashid et al. 2023 [37]	Duke–UNC FSSQ			EORTC QLQ-C30,		Age, sex, ethnicity, rural or urban environment, region, type of hospital, admission criteria, surgery and adjuvant or neoadjuvant treatment	Symptoms
Rini et al. 2016 [38]	NOS		ENRICHD	HRQoL	Barthel Index	Age, sex, ethnicity, marital/partner status, education level, employment status, type of transplant (autologous or allogeneic), diagnosis and comorbidities	Survival
Sarma et al. 2018 [12]	SNI				ICD-9	Age at diagnosis, race, smoking, alcohol intake, physical activity, aspirine use, stage of disease , tumour location and all-cause mortality	Survival
Sauer et al. 2019 [39]	ISSS-8		PHQ-9	HRQoL		Sex, marital status, education, staging, treatment and time of diagnosis	Symptoms
Sawaf et al. 2023 [40]	MOS-SSS		ADI		CCI	Race/ethnicity, insurance status, employment, education, tumour location and tumour stage	Survival

Table 4 (continued)

Social factors						Other social and medical indicators	Oncological outcomes
First author, year of publication	Social Support	Socioeconomic status	Mental health	Quality of life	Others		
Shao et al. 2024 [2]	MSPSS				DS, MDASI MCMQ	Age, sex, employment status, educational level, marital status, place of residence, average monthly income, type and duration of cancer, type of treatment and number of treatment sessions	Symptoms
Tabrizi et al. 2016 [16]	UCLA Loneliness			EORTC QLQ-C	GHQ-28, SHS	Age, marital status, current employment, financial situation, comorbidities and time since diagnosis	Survival
Tang et al. 2016 [41]			HADS SDS			Sex, age, marital status, religion, distress caused by emotional symptoms, cancer site, staging, chronic disease and social support	Symptoms

ADI Area Deprivation Index, *ARIA* + Accessibility/Remoteness Index of Australia Plus, *Barthel Index* Barthel Index of Activities of Daily Living, *BIBCQ* Body Image after Breast Cancer Questionnaire, *BHLS* Brief Health Literacy Screen, *BSI-18* Brief Symptom Inventory–18, *CDC* Centers for Disease Control and Prevention indices, *CES-D* Center for Epidemiologic Studies Depression Scale, *CSD* Cumulative Social Disadvantage Index, *CCI* Charlson Comorbidity Index, *DASS-21* Depression, Anxiety, and Stress Scale–21, *DS* Demoralization Scale, *Duke–UNC FSSQ* Duke–UNC Functional Social Support Questionnaire, *Duke–UNC-11* Duke–UNC Functional Social Support Questionnaire (11 items), *ECOG* Eastern Cooperative Oncology Group Performance Status, *EORTC QLQ-C30* European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (Core 30), *Elixhauser* Elixhauser Comorbidity Index, *ENRICHD* ENRICHD Social Support Instrument, *ERQ* Wong–Law Emotional Regulation Questionnaire, *FACT-B* Functional Assessment of Cancer Therapy–Breast, *FACT-F* Functional Assessment of Cancer Therapy – Fatigue, *FACT-G* Functional Assessment of Cancer Therapy—General, *GHLC/MHLC* Multidimensional Health Locus of Control/God Locus of Health Control, *HADS* Hospital Anxiety and Depression Scale, *HOLC redlining grades* Historical redlining grades by HOLC, *ICD-9* International Classification of Diseases, 9th revision, *IES* Impact of Event Scale, *ISSS-8* Illness-Specific Social Support Scale–8, *IPAQ* International Physical Activity Questionnaire, *K10* Kessler Psychological Distress Scale (10 items), *McGill QoL Questionnaire* McGill Quality of Life Questionnaire, *MCMQ* Medical Coping Modes Questionnaire, *MCS* Mental Component Score, *MDASI* M.D. Anderson Symptom Inventory, *MHSVI* Modified Health Social Vulnerability Index, *MOS Adherence* Medical Outcomes Study – Adherence, *MOS-SSS* Medical Outcomes Study—Social Support Survey, *MSP* Multidimensional Social Support Profile, *MSPSS* Multidimensional Scale of Perceived Social Support, *NEQ* Needs Evaluation Questionnaire, *PDI* Psychological Distress Inventory, *PHQ-9* Patient Health Questionnaire–9, *PPDS* Palliative Patient's Dignity Scale, *PROMIS Social Isolation/Support/Emotional* patient-reported outcomes measurement information system (various short forms: Social Isolation, emotional/informational/instrumental support), *PSS* Perceived Stress Scale, *Qualitative interviews* Qualitative interviews, *rSVI* Registry-based Social Vulnerability Index, *SCSQ* Simplified Coping Style Questionnaire, *SDI* Social Deprivation Index, *SEI* Social Environment Index, *SHS* State Hope Scale, *SNI* Social Network Index (Cohen's), *SOC-3* Sense of Coherence Scale (3 items), *SPSS* Social Perceived Support Scale, *SDS* Zung Self-Rating Depression Scale, *SVI* CDC Social Vulnerability Index, *SVSI* Social Vulnerability Screening Index, *SWLS* Satisfaction With Life Scale, *UCLA Loneliness Scale* University of California Los Angeles Loneliness Scale**,** *VAS* Visual Analogue Scale, *WLEIS* Wong–Law Emotional Intelligence Scale

Table 5 Indicators and scales, depending on the level

Domain/concept	Example measures/scales	Level
Admission criteria	Hospital protocols/ Admission records	Structural/ System-level
Age	Sociodemographic data	Individual
Age at diagnosis	Clinical registry	Individual
Alcohol intake	Lifestyle questionnaires/ CDC	Individual
Average monthly income	SEI	Individual
Cancer diagnosis	ICD-9, EORT QLQ-C30, FACT-G	Individual
Cancer location	Clinical registry, EORT QLQ-C	Individual
Cancer site	Pathologic stage	Individual
Cancer stage	Pathologic stage/ Clinical registry	Individual
Cancer type	Histology	Individual
Caregiver	MSPSS, Duke-UNC FSSQ, PROMIS Social	Individual
Chronic disease	ICD-9, CCI	Individual
Cohabitation	Sociodemographic data/ MSPSS	Individual
Comorbidity index	CCI	Individual
Distance to surgeon	ARIA + , GIS mapping	Area-level/ Structural
Educational level	SEI	Individual
Employment status	SEI, Sociodemographic data	Individual
Ethnicity	Sociodemographic data	Individual
Family cancer history	Clinical history/Anamnesis	Individual
Functional status	Barthel Index, ECOG, EORT QLQ-C30	Individual
Gender	Sociodemographic data	Individual
Geographic region	Registry region/ ARIA +	Area-level
Health insurance status	Insurance status/ Admission records	Structural/ System-level
Histology	ICD-9/ Pathology reports	Individual
Hospitalization	Admission records	Structural/ System-level
Insurance	Administrative registry	Structural/ System-level
Lifestyle	IPAQ, CDC	Individual
Marital status	Sociodemographic data	Individual
Partner/children	MSPSS, DUKE-UNC FSSQ	Individual
Pathologic stage	TNM Classification, Clinical registry	Individual
Physical activity	IPAQ	Individual
Physical status	ECOG, Barthel Index, EORT QLQ-C30	Individual
Place of residence	ARIA + , IRSD, ADI	Area-level
Registry region	Population-based registry data	Area-level
Religion	Sociodemographic data	Individual
Rural or urban environment	ARIA + , IRSD	Area-level
Screening	Public health records/ CDC	Structural/ System-level
Sex	Sociodemographic data	Individual
Smoking	Lifestyle questionnaires/ CDC	Individual
Social exclusion	SVI, SDI, IRSD, HOLC redlining grades	Mixed (individual + structural + area)
Social support	PSQI, DUKE-UNC FSSQ, MOS-SSS, ENRICHD	Individual
Social vulnerability	SVI, MHSVI, rSVI, SVSI	Mixed (individual + area)
Stage of disease	Pathologic stage/ Clinical registry	Individual
Time of diagnosis	Clinical registry	Structural/ System-level
Time of first treatment	Hospital registry	Structural/ System-level
Treatment	Clinical registry/ MOS Adherence	Structural/ System-level
Tumor location	Clinical registry	Individual
Year of diagnosis	Clinical registry	Structural/ System-level

ADI Area Deprivation Index, *ARIA* + Accessibility/Remoteness Index of Australia Plus, *Barthel Index* Barthel Index of Activities of Daily Living, *CCI* Charlson Comorbidity Index, *CDC* Centers for Disease Control and Prevention indices, *Duke–UNC FSSQ* Duke–UNC Functional

Table 5 (continued)

Social Support Questionnaire, *ECOG* Eastern Cooperative Oncology Group Performance Status, *ENRICHD* ENRICHD Social Support Instrument, *EORTC QLQ-C30* European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (Core 30), *FACT-G* Functional Assessment of Cancer Therapy – General, *HOLC redlining grades* Historical redlining grades by HOLC, *ICD-9* International Classification of Diseases, 9th revision, *IPAQ* International Physical Activity Questionnaire, *IRSD* Index of Relative Socio-economic Disadvantage, *MHSVI* Modified Health Social Vulnerability Index, *MOS* Adherence Medical Outcomes Study – Adherence, *MOS-SSS* Medical Outcomes Study – Social Support Survey, *MSPSS* Multidimensional Scale of Perceived Social Support, *PROMIS Social* Patient-Reported Outcomes Measurement Information System (Social Isolation/Support), *rSVI* Registry-based Social Vulnerability Index, *SDI* Social Deprivation Index, *SEI* Social Environment Index, *SVI* CDC Social Vulnerability Index, *SVSI* Social Vulnerability Screening Index, *TNM* TNM Classification of Malignant Tumors

Table 6 Summary of studies assessing cancer-related symptoms in relation to social domains

First author, year of publication	Social domain assessed	Specific Symptoms/ Dimensions	Assessment Instruments
Choi et al. 2024 [29]	Social support and socioeconomic status	Physical and mental health components, general oncology symptoms	SVI, MHSVI, EORTC QLQ-C30
Ding et al. 2024 [23]	Social support	Psychological distress and coping styles	SPSS, SCSQ, K10
Eggins et al. 2022 [20]	Social support and socioeconomic status	Psychological distress and breast cancer-specific symptoms	SCNS-SF34, IRSD, BSI-18, FACT-B
Gomes et al. 2022 [15]	Social support and mental health	Post-traumatic stress and emotional regulation	MSPSS, IES, ERQ
Gonzalez-Saenz De Tejada et al. 2016 [30]	Social support and mental health	Anxiety, depression, and general physical symptoms	Duke–UNC FSSQ, HADS, EORTC QLQ-C30
Gonzalez-Saez de Tejada et al. 2017 [31]	Social support and mental health	Anxiety, depression, and general physical symptoms	Duke–UNC FSSQ, HADS, EORTC QLQ-C30
Hamdan-Mansour et al. 2015 [32]	Social support and mental health	Depression and perceived stress	PSS, MSP, BDI-II
Jung et al. 2021 [33]	Mental health	Depression and quality of life dimensions	BDI, McGill QoL
Lai et al. 2017 [14]	Quality of life	General physical symptoms and pain intensity	EORTC QLQ-C30, VAS
Li et al. 2024 [17]	Social support and mental health	Social isolation and emotional distress	PROMIS Social, PROMIS Emotional
Martín-Abreu et al. 2022 [18]	Social support and mental health	Psychological distress, dignity, and physical symptoms	Duke–UNC-11, BSI-18, PPDS, EORTC QLQ-C30
Patel-Kerai et al. 2017 [36]	Mental health	Anxiety, depression, and general cancer symptoms	HADS, FACT-G
Rashid et al. 2023 [37]	Social Support	General oncology physical and functional symptoms	Duke–UNC FSSQ, EORTC QLQ-C30
Sauer et al. 2019 [39]	Social Support & Mental Health	Depression and health-related quality of life	ISSS-8, PHQ-9
Shao et al. 2024 [2]	Social Support	Demoralization and multiple concurrent symptoms	MSPSS, DS, MDASI
Tang et al. 2016 [41]	Mental Health	Anxiety and depression	HADS, SDS

BDI-II Beck Depression Inventory-II, *BDI* Beck Depression Inventory, *BSI-18* Brief Symptom Inventory–18, *DS* Demoralization Scale, *Duke–UNC FSSQ* Duke–UNC Functional Social Support Questionnaire, *Duke–UNC-11* Duke–UNC Functional Social Support Questionnaire (11 items), *EORTC QLQ-C30* European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (Core 30), *ERQ* Wong–Law Emotional Regulation Questionnaire, *FACT-B* Functional Assessment of Cancer Therapy – Breast, *FACT-G* Functional Assessment of Cancer Therapy—Genera, *HADS* Hospital Anxiety and Depression Scale, *IES* Impact of Event Scale, *IRSD* Index of Relative Socio-economic Disadvantage, *ISSS-8* Illness-Specific Social Support Scale–8, *K10* Kessler Psychological Distress Scale, *McGill QoL* McGill Quality of Life Questionnaire, *MCS* Mental Component Score, *MDASI* M.D. Anderson Symptom Inventory, *MHSVI* Modified Health Social Vulnerability Index, *MSP* Multidimensional Social Support Profile, *MSPSS* Multidimensional Scale of Perceived Social Support, *PCS* Physical Component Score, *PHQ-9* Patient Health Questionnaire–9, *PPDS* Palliative Patient's Dignity Scale, *PROMIS* Patient-Reported Outcomes Measurement Information System, *PSS* Perceived Stress Scale, *SCSQ* Simplified Coping Style Questionnaire, *SDS* Zung Self-Rating Depression Scale, *SPSS* Social Perceived Support Scale, *SVI* CDC Social Vulnerability Index, *VAS* visual analogue scale

Discussion

This review provides an integrative synthesis of the current evidence on the impact of social vulnerability and exclusion on cancer diagnosis, prognosis, survival and other cancer-related outcomes such as treatment, quality of life, and psychosocial well-being. Analysis of the 32 studies revealed a consistent pattern: social factors—including educational level, marital status, employment status, and social support—have a significant impact not only on the stage at diagnosis, but also on treatment adherence, prognosis, psychological well-being, and, ultimately, survival.

Social support and social relationships as protective factors

The evidence reviewed highlights social support as one of the most relevant determinants of positive oncological outcomes. Patients integrated into cohesive networks tend to attend medical visits more regularly and communicate symptoms earlier, factors that can favor earlier diagnosis, maintain therapeutic adherence, and facilitate the early detection of recurrences and improved survival. In addition, emotional support and a sense of belonging emerge as mediators between the social environment and clinical outcomes. Patients with stronger social contacts demonstrate better psychological adaptation, lower levels of anxiety and depression, greater resilience, enhanced coping skills, and a more positive perception of their quality of life. In particular, Lai et al. (2017) and Banovčinová et al. (2016) highlight that emotional and instrumental support from family members, as well as from close friends, contributes to improve coping strategies and adherence to medical treatments, which may indirectly influence survival. This psychosocial pathway—connecting the social context with emotional well-being and medical outcomes—warrants further investigation through longitudinal studies and intervention trials [15, 17, 23].

Social inequality and structural determinants

The review also highlights the persistent influence of structural inequalities on cancer outcomes. People living in socioeconomically disadvantaged areas have worse outcomes, which may be due to difficulties accessing primary care centers or a lack of social resources to access and support them. This evidence confirms that geographic and economic inequalities remain key predictors of prognosis and should be considered essential elements of cancer assessment models [20, 21, 24, 25].

These patterns reflect structural inequalities within healthcare systems and highlight the need for specific interventions that address not only individual vulnerability, but also institutional and contextual barriers.

Social vulnerability as a measurable construct

One of the main contributions of this review is the identification of tools that allow the assessment and quantification of social vulnerability in the oncological field. Møller et al. (2022, 2023) developed and validated register-based indices (SVI and SVSI) that allow stratifying patients according to their social risk profile. These tools facilitate the integration of social assessment into routine oncological clinical practice, enabling the early identification of patients who may require psychosocial support or additional targeted interventions.

However, the great methodological heterogeneity of indicators used—from individual variables such as education or marital status to contextual measures such as territorial deprivation—makes comparison between the different patients studied difficult, and highlights the lack of a unified conceptual framework to assess the social vulnerability or exclusion of cancer patients [19, 26].

Limitations and purposes for future research

Although the reviewed studies consistently suggest a significant association between social determinants and cancer outcomes, several methodological limitations should be considered. While many studies employ standardized instruments to assess social vulnerability, heterogeneity in the methods used limits the comparability and generalizability of findings across studies. In addition, the most widely used and standard instruments for assessing social support in cancer patients (the MSPSS and the Duke-UNC FSSQ) were developed almost four decades ago, and their validity and interpretability may vary according to the sociocultural context and timing of assessment.

Accordingly, future research should prioritize the development and implementation of multidimensional instruments capable of capturing the complexity of social vulnerability while remaining adaptable to the specific characteristics of different communities and territorial contexts. Such an approach would allow for a more accurate analysis of the relationship between social vulnerability and survival.

In this context, a recently developed scale designed to assess social vulnerability in oncology patients may represent a promising advancement, as it incorporates domains particularly relevant to contemporary social contexts, including family environment, social support, housing adequacy, educational attainment, and both individual and household income [27].

In addition, future research should move beyond descriptive associations and increasingly focus on intervention-based studies aimed at determining whether reducing social vulnerability can improve survival and quality of life among cancer patients. Prospective cohort studies using standardized assessments of social determinants are essential to elucidate causal pathways and clarify the mechanisms linking social vulnerability to oncological outcomes. Moreover, the integration of qualitative methodologies exploring the lived experiences of patients exposed to social exclusion or vulnerability could provide a more comprehensive understanding of the interaction between structural and relational factors throughout the cancer trajectory. Ultimately, advancing towards a multidimensional conceptualization of cancer that integrates both physiological and social determinants will be essential for the development of truly patient-centered oncological care.

Implications for oncological clinical practice and health policies

Although further research is needed, this review suggests the need to systematically integrate social assessment into the cancer patient care process. Screening for social vulnerability—using tools such as the social vulnerability index or instruments adapted to the local context, such as the rating scale mentioned in the previous section—should be considered as essential as assessing comorbidities or functional status, at the time of diagnosis. Indeed, early identification of patients at high social risk would allow the deployment of personalized interventions, such as intensive psychosocial support, care navigation services or community support programs. From a health policy perspective, the incorporation of social determinants into cancer registries and care circuits would facilitate a more equitable allocation of resources and promote a more complete and fairer model of oncological care.

Conclusion

This review demonstrates that social vulnerability and social exclusion are often undervalued or poorly studied determinants that substantially affect psychological well-being, quality of life and, in some cases, survival among cancer patients.

Patients living in favorable social environments show a more optimal psychological state, better adherence to treatment, and improved clinical outcomes, whereas those experiencing social vulnerability or at risk of social exclusion accumulate disadvantages throughout the oncological care process, often resulting in poorer prognosis or additional challenges along the treatment pathway.

Therefore, integrating a systematic social assessment into oncological practice is not only a scientific and clinical necessity, but also an ethical obligation to guarantee equitable and comprehensive care for all patients, regardless of their social situation.

However, this scoping review highlights that high levels of social support are associated with better health-related quality of life, reduced anxiety and depression, and greater hope or life satisfaction. Furthermore, improved functional status is linked to positive perceptions of social support and better emotional and physical outcomes.

Appendix

Appendix 1: Search strategy

PubMed

((((((((((((((((((((((((oncological patient) OR ("Oncological patients")) OR ("Oncological patient")) OR ("Oncological disease")) OR (Oncological disease[Title/Abstract])) OR ("Tumoral patients")) OR (Tumoral patients[Title/Abstract])) OR ("tumoral disease")) OR ("tumoral disease"[Title/Abstract])) OR ("tumor patients")) OR ("tumor patients"[Title/Abstract])) OR (tumor patient[Title/Abstract])) OR ("tumor patient"[Title/Abstract])) OR ("Cancer patients"[Title/Abstract])) OR (Cancer patient[Title/Abstract])) OR ("oncology patients")) OR ("oncology patient")) OR ("oncology patients"[Title/Abstract])) OR ("oncology patient"[Title/Abstract])) OR ("Tumoral diseases")) OR ("Tumoral diseases"[Title/Abstract])) OR ("Tumoral disease"[Title/Abstract])) AND ((((((((((((((((((((((((social risk factor) OR ("social risk factor")) OR (social vulnerability)) OR (social risk determinants)) OR (social risk variable)) OR (social stressor[Title/Abstract])) OR (social assessment scale[Title/Abstract])) OR (social assessment tool[Title/Abstract])) OR (social rating tool[Title/Abstract])) OR (social measurement scale[Title/Abstract])) OR (social measurement tool[Title/Abstract])) OR ("social questionnaire")) OR (social life[Title/Abstract])) OR (social survey[Title/Abstract])) OR ("social deprivation")) OR ("socioeconomic disadvantage")) OR ("poverty")) OR ("material deprivation")) OR ("health literacy")) OR ("structural vulnerability")) OR ("neighborhood deprivation")) OR ("area deprivation")) OR ("access barriers")) OR ("housing insecurity"))) AND ((((life expectancy[MeSH Terms]) OR (survival[MeSH Terms])) OR (life expectancy)) OR (life expectancy[Title/Abstract])).

Scopus

((((((((((((((((((((((("oncological patient") OR ("Oncological patients")) OR ("Oncological patient")) OR ("Oncological disease")) OR ("Oncological disease")) OR ("Tumoral patients")) OR ("Tumoral patients")) OR ("tumoral disease")) OR ("tumoral disease")) OR ("tumor patients")) OR ("tumor patients")) OR ("tumor patient")) OR ("tumor patient")) OR ("Cancer patients")) OR ("Cancer patient")) OR ("oncology patients")) OR ("oncology patient")) OR ("oncology patients")) OR ("oncology patient")) OR ("Tumoral diseases")) OR ("Tumoral diseases")) OR ("Tumoral disease")) AND ((((((((((((((((((((("social risk factor") OR ("social risk factor")) OR ("social vulnerability")) OR ("social risk determinants")) OR ("social risk variable")) OR ("social stressor")) OR ("social assessment scale")) OR ("social assessment tool")) OR ("social rating tool")) OR ("social measurement scale")) OR ("social measurement tool")) OR ("social questionnaire")) OR ("social life")) OR ("social survey")) OR ("social deprivation")) OR ("socioeconomic disadvantage")) OR (poverty)) OR ("material deprivation")) OR ("health literacy")) OR ("structural vulnerability")) OR ("neighborhood deprivation")) OR ("area deprivation")) OR ("access barriers")) OR ("housing insecurity"))) AND ((((("life expectancy") OR (survival)) OR ("life expectancy")) OR ("life expectancy")).

Web of Science (WoS)

((((((((((((((((((((("oncological patient") OR ("Oncological patients")) OR ("Oncological patient")) OR ("Oncological disease")) OR ("Oncological disease")) OR ("Tumoral patients")) OR ("Tumoral patients")) OR ("tumoral disease")) OR ("tumoral disease")) OR ("tumor patients")) OR ("tumor patients")) OR ("tumor patient")) OR ("tumor patient")) OR ("Cancer patients")) OR ("Cancer patient")) OR ("oncology patients")) OR ("oncology patient")) OR ("oncology patients")) OR ("oncology patient")) OR ("Tumoral diseases")) OR ("Tumoral diseases")) OR ("Tumoral disease")) AND ((((((((((((((((((((("social risk factor") OR ("social risk factor")) OR ("social vulnerability")) OR ("social risk determinants")) OR ("social risk variable")) OR ("social stressor")) OR ("social assessment scale")) OR ("social assessment tool")) OR ("social rating tool")) OR ("social measurement scale")) OR ("social measurement tool")) OR ("social questionnaire")) OR ("social life")) OR ("social survey")) OR ("social deprivation")) OR ("socioeconomic disadvantage")) OR (poverty)) OR ("material deprivation")) OR ("health literacy")) OR ("structural vulnerability")) OR ("neighborhood deprivation")) OR ("area deprivation")) OR ("access barriers")) OR ("housing insecurity"))) AND ((((("life expectancy") OR (survival)) OR ("life expectancy")) OR ("life expectancy")).

Author contributions AM-F (Moragas-Fernandez A.) conceived the study, designed the methodology, conducted the literature search, extracted and analyzed data, and drafted the manuscript. RG-P (García-Pablo R.) assisted with the literature search and contributed to manuscript preparation. MC-C (Canela-Capdevila M.) contributed to manuscript preparation. RB-V (Benavides-Villareal R.), B-G (Benitez-Gabella G.), and CE-T (Escuin-Troncho C.) provided general advice and oversight. MA (Arenas M.) and JG (Gumà J.) supervised the project as thesis directors. All authors read and approved the final manuscript.

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Data availability The data supporting the findings of this scoping review are derived from publicly available published studies and are cited within the manuscript.

Declarations

Conflict of interest The authors declare that they have no conflicts of interest.

Ethical approval This study is a scoping review based exclusively on published literature. It did not involve human participants, animals, or the use of identifiable personal data. Therefore, ethical approval and informed consent were not required.

Informed consent As this study is a scoping review based exclusively on the analysis of previously published literature and does not involve the recruitment of participants or the collection of primary data, informed consent was not applicable.

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