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Title

The relationship between intersectionality and cancer inequalities: a scoping review protocol

Authors

Mar Estupiñán Fdez. de Mesa¹, Dr Afrodita Marcu¹, Prof. Emma Ream¹, Dr Katriina L Whitaker¹

¹School of Health Sciences, University of Surrey, Research Park, Guildford, Surrey, UK, GU2 7YH

Corresponding author: m.estupinan@surrey.ac.uk

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Abstract**Introduction**

Persistent inequalities in cancer care and cancer outcomes exist within and between countries. However, the evidence pertaining to the root causes driving cancer inequalities is mixed. This may be explained by the inadequate attention paid to cancer patients' experiences of living at the intersection of multiple social categories (e.g., social class, ethnicity). This is supported by the intersectionality framework. This framework offers an alternative lens through which to analyse and understand how these interlocking systems of oppression uniquely shape the experiences of cancer patients and drive inequalities. In this protocol, we outline a scoping review that will systematically map what is known about the relationship between intersectionality and inequalities in cancer patients' care experience and cancer outcomes; and to determine how the intersectionality framework has been applied in studies across the cancer care pathway and across countries.

Methods and analysis

This study will be guided by Arksey and O'Malley's, and Levac's frameworks for scoping reviews. We will identify and map the evidence on cancer inequalities and intersectionality from 1989 to present date. Electronic databases (EMBASE, PsychINFO, CINAHL, Medline, Web of Science, ProQuest) and a systematic search strategy using a combination of key words and Boolean operators AND/OR will be used to identify relevant studies. Screening of eligible papers and data extraction will be conducted by two independent reviewers, and disagreements resolved by discussion with the research team. We will use an iterative process to data charting using a piloted form. Findings will be collated into a narrative report.

Ethics and dissemination

Ethical approval is not required since data used is from publicly available secondary sources. Findings will be disseminated through peer-reviewed journals, conferences, and stakeholder meetings. Further, findings will inform the next phases of a multistage research project aimed at understanding inequalities among breast cancer patients.

Strengths and limitations

First scoping review to identify the relationship between intersectionality and cancer inequalities and to map out how the intersectionality framework has been applied in cancer research across countries.

Findings from this review will serve to provide recommendations to improve intersectional methodological analyses in cancer research.

A quality assessment of papers included in this review will not be performed as this is not applicable to scoping reviews. However, conflict of interest and fundings will be summarised as a mechanism to assess for potential bias.

Only studies published in English will be eligible for inclusion.

Study rationale

Cancer is a growing global issue and a health priority that imposes an unequal burden on historically marginalised populations¹. The unprecedented COVID-19 pandemic has exposed entrenched inequalities among these populations, including in cancer care and cancer outcomes²⁻⁴. The pandemic severely disrupted cancer care services (e.g., screening programmes, treatments) affecting populations worldwide⁴⁻⁶. In the same period, the reduced access to health care resulted in excess of 'non-COVID' deaths, including excess deaths from cancer^{7 8}. The ongoing pandemic continues to impact cancer services and people living with cancer^{9 10}. In response, international organisations and governments are reinforcing their strategies to recover cancer services and to reduce inequalities^{8 11 12}. Likewise, researchers have been called to concentrate their efforts on finding implementable solutions that address the root causes of inequalities in cancer, particularly those affecting historically marginalised populations^{11 13}.

Cancer inequalities

A global public health priority, cancer remains the leading cause of death worldwide¹. Despite progress in cancer survival and quality of life due to screening, early diagnosis, and enhanced

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3 access to treatment¹⁴, persistent inequalities in cancer outcomes exist within and between
4 countries^{15 16}. These inequalities have been documented in countries with both universal and
5 private healthcare systems^{15 17-19}. This suggests inequalities are not necessarily alleviated by
6 the provision of free treatment at the point of access, rather, socioeconomic, and contextual
7 factors play a key role in driving these inequalities.
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12 Inequalities in cancer outcomes extend across the cancer pathway from prevention to
13 survivorship¹², and are largely driven by the social determinants of health (SDH)¹⁵. These are
14 the factors where people are born, grow, live, and age, and the broader socioeconomic and
15 political factors that shape the conditions of daily lives and impact opportunities for health²⁰. It
16 is widely recognised that the SDH lead to avoidable, unfair, and systematic cancer inequalities
17 and therefore there is a social responsibility and moral duty to act on them^{15 21}. Addressing
18 these inequalities requires action at all levels of society and beyond the health sector, e.g.
19 tackling the root causes of unequal distribution of power and unequal access to resources
20 between communities¹⁵.
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27 Socioeconomic inequalities in cancer outcomes are complex. They operate at the intersection
28 of multiple pathways reflecting the exposure to a range of risk factors from social factors (e.g.,
29 class, resources or support), living conditions (e.g., overcrowding), behavioural factors (e.g.,
30 smoking), different access to and through health services, and macro factors such as
31 structural racism, social geography, or poverty¹⁵. Socioeconomic inequalities in cancer affect
32 everyone, however their impact is greatest on the most disadvantaged populations. Lack of
33 knowledge to recognise symptoms among people from lower socioeconomic position leads to
34 delayed healthcare seeking^{19 22 23}. Unemployment influences behaviours towards cancer care
35 (e.g., people may not find time to take up cancer screening; or patients might prioritise work
36 over treatment if absenteeism implies loss of income)²⁴. Mistrust of healthcare professionals
37 by people from minority ethnic populations and sexual minorities groups²⁵⁻²⁷, and perceptions
38 and experiences of discrimination and racism^{28 29} impacts uptake of health services.
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47 However, this evidence is mixed. This might be explained by the inadequate attention paid to
48 cancer patients' experiences of living at the intersection of systems of oppression and
49 discrimination. This is supported by the intersectionality theory. This theory reframes health
50 inequalities in terms of power relations to unpick how some groups are privileged over
51 others³⁰. Intersectionality offers new lens from which to understand and examine how the
52 interconnectedness of multiple socially-constructed identities (e.g., gender, ethnicity social
53 class racism) shape and influence cancer outcomes and cancer patients' experiences^{31 32}.
54 Intersectionality posits that these identities, social categories, and processes exist together,
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3 are additive and mutually reinforcing, and lead to complex experiences of social and health
4 inequality^{30 33}.

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7 Research into socioeconomic inequalities in cancer outcomes, however, has largely focused
8 on the analysis of one dimension of oppression (e.g., social class or ethnicity). This approach
9 has been criticised for failing to capture the complexity of multiple social locations and systems
10 of social power influencing the true lived experiences of inequality among cancer patients,
11 particularly those from historically marginalised groups³⁴. To this end, concerns have been
12 raised that traditional research approaches lead to repeatedly measuring and documenting
13 inequalities in a way that does not yield the evidence required to identify factors amenable to
14 change³¹. In a similar vein, the SDH framework for the study of health inequalities has been
15 criticised for conceptualising determinants of health as single categories or markers for
16 difference which arguably leads to analyses that are less policy relevant³⁵.

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19 In response, scholars and healthcare stakeholders are advocating for a shift in research. This
20 would imply challenging dominant approaches and shifting from solely describing inequalities
21 towards using multidimensional intersectional analyses that help to identify the processes and
22 root causes of cancer inequalities^{12 31 34 36 37}. Moving away from solely documenting inequalities
23 will arguably minimise existing notions of the intractability of injustice and inequity³¹. To this end,
24 researchers are recommended to go beyond demographic intersectional positions to focusing
25 on modifiable social processes (e.g., racism, classism, heterosexism, ableism), and on
26 identifying implementable solutions that will contribute towards advancing the social and
27 health equity agendas³⁷.

28 29 30 31 32 33 34 35 36 37 38 39 **Applications of the intersectionality framework in research and policy**

40 41 42 **Research**

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44 The intersectionality framework provides a critical unifying interpretive and analytical lens from
45 which reframing how social and health inequalities are conceptualised, examined, analysed,
46 and addressed³⁴. The framework affords opportunities to improve population health research
47 by providing more precise identification of both the heterogeneity of effects and causal
48 processes producing health inequalities, and to test and generate new theories³¹. It also helps
49 to examine more effectively interlocking systems of oppression and privilege, to enhance the
50 analysis of existing maps of social inequalities within populations, and to better investigate
51 intersectional research questions^{31 34 38}.

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58 Intersectionality has been largely applied to the study of identity and marginalisation in social
59 sciences^{39 40}; however, it is a theoretical perspective that is now being adopted by scholars
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3 from different disciplines (e.g. in the field of HIV⁴¹, mental health⁴², or health and wellbeing⁴³
4 44). The wider application of intersectionality has raised concerns among intersectional
5 scholars who fear that researchers might be distancing from the tenets of intersectionality and,
6 with this, the risk of detaching from the original foundations in Black feminist theory and its
7 original aim of addressing issues of social power and advancing social justice^{37 45}. Further
8 concerns have been raised pertaining to intersectionality becoming a theoretical buzzword
9 that does not add value to research^{37 46}. These concerns are particularly relevant to the
10 application of intersectionality in quantitative research^{37 45}. By exploring and documenting how
11 researchers are engaging and using the intersectionality framework to investigate inequalities
12 in cancer, we would address these concerns and inform the global debate.

21 **Policy**

22 Policies and services that focus on adapting healthcare services to suit the needs of the
23 majority (e.g., white ethnic groups, heterosexuals, or able-bodied individuals) create structural
24 barriers and shape opportunity of cancer risk and care^{24 47}. This situation presents challenges
25 to individuals belonging to minority groups and those living at the intersection of multiple social
26 locations. For instance, women from ethnic minorities groups might delay seeking care due to
27 mistrust of services largely led by white male healthcare professionals; or a black transgender
28 wheelchair user might fear being stigmatised by fellow patients and healthcare staff. This
29 situation is compounded by inadequate recording of routine data and lack of in-depth
30 intersectional analysis⁴⁸. If this were to be addressed, highly insightful evidence could be
31 generated that could bring about a step-change in our understanding of cancer risk and cancer
32 care among historically marginalised groups.

33 To this end, emerging evidence suggests that applying intersectionality-based policy analysis
34 frameworks can help to advance research, policy development and action in a variety of
35 health-related areas and on inequalities^{36 46}. This perspective would afford an opportunity for
36 policymakers to embrace social responsibility, to shift towards a critical praxis, and to act as
37 transformative actors that affect transformative change³⁶. Examples of this approach have
38 been documented by Hankivsky et al.³⁶ including in maternity healthcare, substance misuse,
39 HIV testing and prevention, and palliative care.

40 Additionally, the intersectionality framework has been identified as being of primary
41 importance to inform the identification of strategies for intervening on the processes that
42 generate health and social inequalities between intersectional social groups⁴⁹. It has been
43 acknowledged, however, that not all countries are embracing the intersectionality framework
44 at the same pace, and challenges exist to realise its full potential (e.g., lack of robust datasets
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3 for research purposes, complex analytical methods required for analysis, or key prerequisite
4 of openness to social justice, and willingness to move away from prioritizing a priory singular
5 axes of inequality)^{36 46}. Therefore, exploring and documenting how the intersectionality
6 framework has been applied to inform equity-orientated cancer policy and practice will be
7 valuable to gauge the appetite for its adoption in cancer-related research.
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12 We will conduct a scoping review to map out the application of the intersectionality lens in
13 research on inequalities in the cancer care pathway. This scoping review is different, and
14 builds on, a recent review of intersectionality in cancer inequalities¹² by expanding upon
15 specific analytical methods and outcomes used across countries. Kelly-Brown et al.
16 established an important foundation with their review by mapping and summarising the
17 evidence in the United States (US)¹². However, the increasing interest on understanding how
18 the intersectionality framework is being applied ^{37 45 50} makes it relevant to expand this scoping
19 review beyond the US.
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26 By including the evidence from other countries, we will cover a gap in the literature and will
27 help to create a more comprehensive picture of how interlocking systems of oppression and
28 discrimination influence cancer inequalities, and how these are experienced by cancer
29 patients. Population health research is being increasingly critiqued for lacking underpinning
30 theoretical frameworks and theory, and for excluding the context of people's lives through
31 identifying single sets of health determinants for entire populations^{31 51 52}. This review will look
32 in-depth at the critical social theories, statistical analyses, and intersectional methodologies
33 applied to the study of cancer inequalities across countries. This will help to identify how well
34 researchers are attending to the core tenets of intersectionality, to identify gaps in the
35 literature, and to provide recommendations to improve intersectional methodology in the
36 cancer arena.
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44 **Study aims**

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46 The aims of this scoping review are two-fold: (i) to examine and map the breadth and nature
47 of research pertaining to the relationship between intersectionality and inequalities in cancer
48 care and outcomes, and cancer patients' experiences across the care pathway and to identify
49 gaps in the current evidence; (ii) to identify and document how the intersectionality framework
50 is being applied and interpreted across countries for the analysis of inequalities in cancer.
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55 **Study definitions**

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57 Social category (or categorization) is a socially constructed term that refers to a group of
58 individuals that share common characteristics, such as ethnicity, class⁵³. Marginalisation
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3 refers to both a process and experience by which some groups (dominant) are privileged
4 within society over other groups as a result of an unequal distribution of power and power
5 relations⁵⁴.
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9 Social inequality across the cancer care pathway “refers to systematic differences between
10 social groups that affect people’s risk of developing cancer, the likelihood that they receive
11 effective and timely (or any) treatment for the cancer, whether they survive, and whether they
12 have access to palliative care”^{15 p.15}. The cancer care pathway framework is considered to
13 provide “an opportunity to appraise progress in tackling the root causes of cancer inequalities
14 by measuring socioeconomic inequalities, and as part of cancer control policies”^{15 p.13}. This
15 review will be conducted in the context of the cancer care pathway defined as multiple stages,
16 including primary prevention (pre-diagnosis and detection), diagnosis, treatment, post-
17 treatment survivorship, and end of life.
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23 24 **Methods and analysis**

25 26 **Protocol design**

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28 The study design will be conducted based on Arksey and O’Malley’s⁵⁵ and Levac’s⁵⁶
29 recommendations for scoping reviews which are based on a six-stage methodological
30 framework: (i) identifying the research question; (ii) searching for relevant studies; (iii)
31 selecting studies; (iv) charting the data; (v) collating, summarizing, and reporting the results;
32 (vi) consulting with stakeholders to inform or validate study findings. This framework is
33 preferred because it provides clarity and transparency, and allows an iterative process with
34 the aim of strengthening the results^{57 (11.2.5)}. For transparency, the Preferred Reporting Items
35 for Systematic Reviews and Meta-Analysis (PRISMA)⁵⁸ will be used to report the search
36 results (Supplemental Table 1)
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42 43 **Stage 1: Identifying the research question**

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45 The ‘Population,’ ‘Concept’, and ‘Context’ (PCC) framework⁵⁹ have been used to formulate
46 the review questions as shown in Table 1.
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49 The research questions are:

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51 1. What is known from the existing literature about the relationship between
52 intersectionality and cancer inequalities across the care pathway?
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54 2. In what countries has the intersectionality framework been applied to examine
55 inequalities in cancer outcomes?
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57 3. What intersectional methods and statistical analysis have been used to examine and
58 understand inequalities in cancer outcomes?
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Table 1. Population, concept, and context framework to guide the research question	
Population	Cancer patients Individuals where cancer control measures are relevant (e.g., screening, vaccination)
Concept	Inequalities Intersectionality
Context	Cancer care pathway (pre-diagnosis, diagnosis, treatment, post-treatment survivorship, and end of life)

Stage 2: Identifying relevant studies

This stage will encompass a three-step iterative process: reviewing the literature, refining the search strategy, and including further sources of evidence identified in papers' reference lists⁵⁷. Title and abstract review will precede the full-text review of the selected studies. The search strategy and inclusion and exclusion criteria have been developed and agreed by the research team.

The identification of relevant studies will involve a structured search in the following electronic databases: EMBASE, PsychINFO, CINAHL, Medline, and Web of Science. ProQuest will be used to retrieve grey literature (i.e., thesis). The search strategy will be based on a systematic combination of keywords and Boolean operators AND/OR. An expert librarian has been consulted to help refine the search strategy. The search will be limited to articles published in the English language between 1989 (when the term was academically coined by Kimberlé Crenshaw⁶⁰) to present date to capture the growth, breadth, and use of intersectionality. A pilot sample search is shown Supplemental Table 2. Quality assessment of reviewed papers is beyond the remit of scoping reviews. However, to assess for potential bias, reported conflict of interest and funding will be summarised¹².

Stage 3: Study selection

EndNote reference software will be used to store and manage papers. An Excel Form will be developed and piloted for the screening and extraction of data. Papers will be first screened by two reviewers and subsequently the research team will meet to discuss and resolve discrepancies. Only when 75% or more agreement has been achieved, will the team proceed to full screening⁵⁷. Application of inclusion and exclusion criteria will ensure the relevance of studies included in this review.

Inclusion criteria

Studies will be included if they meet the following criteria:

- Refer to: intersectionality, power, marginalisation, discrimination, oppression and/or disadvantage in the text (e.g., title, abstract, keywords, introduction, methods, results)
- Examine and discuss cancer inequalities among individuals living at the intersection of two or more social categories
- List and/or describe intersecting dimensions used in analysis
- Empirical research (i.e., reviews, reports, commentaries, etc., will be excluded)
- Grey literature, defined as academic literature that it is not controlled by commercial publishers (i.e., thesis)
- Published in the English language between 1989 and to present date

Exclusion criteria

Studies will be excluded if they meet the following criteria:

- Studies that examine and assess cancer inequalities from unitary category lens
- Studies focused on cancer control relative to lifestyle behaviours (e.g., smoking)
- Studies not focused on cancer
- Published in languages other than English due to limited resources for translation
- Published before 1989

Stage 4: Charting the data

Key information will be extracted and summarised in a charting table developed and piloted by the research team. The team will follow an iterative process whereby the data charting will be reviewed, refined, and continually updated. Relevant variables will be captured, including author(s), year of publication, aim of study, study setting, study population, cancer type, phase of cancer care, study design, theoretical framework, dimensions of interest, data analysis, outcomes/findings, and conflict(s) of interest and funding.

Stage 5: Synthesising and reporting results

According to recommendations for scoping reviews⁶¹, the aim of the review is to map out and aggregate the evidence available as opposite to critically analysing the quality of individual studies. As such, data extracted will be summarised in a narrative report which will encompass the following themes: phases of the care pathway (including main outcomes and study findings); and study characteristics and methodologies (including region of study, theoretical engagement, study designs, qualitative and quantitative statistical analysis, number of social positions observed).

Stage 6: Consultation and patient and public involvement

This scoping review is part of a multistage research project that has engagement and involvement of stakeholders and communities at its core. For the scoping review phase, stakeholders will help to interpret findings and make recommendations. NHS healthcare professionals, representatives from cancer charities, and patients' representatives will be invited to provide their insights via email or virtual meetings.

Discussion

Cancer is a global health priority that imposes an unequal burden on historically marginalised populations⁶². This burden has been exacerbated by the COVID-19 pandemic²⁻⁴. Increasing pressure from social justice movements (e.g., Black Live Matters) which advocate for action to address the disproportionate and deep-rooted inequalities experienced by some groups in the population, including in cancer care and cancer outcomes, has generated a great deal of interest to better understand and address the structural processes through which inequalities emerge. This situation has led international organisations and governments to review and reinforce their cancer strategies posing central attention on reducing inequalities, particularly among historically marginalised populations^{8 11 12}. Similarly, scholars have been called to shift their research focus from solely describing inequalities towards analysing processes that are amenable to change and identifying implementable solutions that helps advance social and equity agendas^{10 11}.

The intersectionality framework is being considered a tool that could open new avenues to understand the complex and interlocking processes of oppression and discrimination influencing cancer inequalities. Emerging evidence is starting to illustrate the potential of the intersectionality framework in identifying and explaining the root causes of inequalities^{44 63}. However, as this framework is being rapidly embraced by scholars across disciplines, concerns about the risk of detaching from the core tenets of intersectionality (i.e., addressing issues of social power and advancing social justice) have been raised^{37 45}. This situation has drawn scholars' attention to the application of the intersectionality framework outside of social sciences, particularly in quantitative research. For instance, Bauer et al.⁴⁵ and Guan et al.³⁷ have reviewed the application of intersectionality in quantitative health research in an endeavour to document what methodologies have been used and to assess the level of engagement with the framework. Key findings included the necessity for researchers to clearly justify the mathematical rationale guiding their study designs and interpretation of findings, and the need to familiarise with the core tenets of intersectionality.

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3 Despite making inroads into some areas of health inequalities, intersectionality remains largely
4 uninvestigated in the cancer arena. Further, to date there has been little exploration of how
5 intersectionality is travelling within cancer inequalities work beyond the US³⁷. Therefore, our
6 scoping review will contribute to filling this gap in the literature by examining and mapping the
7 breadth and nature of the evidence pertaining to the relationship between intersectionality,
8 including the methodologies, and inequalities among cancer patients across the care pathway
9 and across countries.
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15 Findings from the scoping review will serve to contribute to the international debate relative to
16 quantitative intersectional analyses, to formulate recommendations to improve methodologies,
17 and to identify future research opportunities. Further, findings will serve to identify the potential
18 the intersectionality framework affords to inform policy and practice, and to formulate
19 recommendations for policymakers and providers interested in planning, improving, and
20 developing evidence-based, culturally sensitive, and tailored policies cancer services.
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26 **Ethics and dissemination**

27 Ethical approval is not required since data is from publicly available secondary sources.
28 Findings from this scoping review will be disseminated through stakeholders' meetings and
29 academic channels, including but not limited to peer-reviewed journals and conferences.
30 Furthermore, findings from this scoping review will guide the next phase of a multistage
31 research project aimed at examining and understanding inequalities among breast cancer
32 patients living at the intersection of systems of oppression and discrimination.
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38 **Authors' contributions**

39 MEFM conceived the idea and was responsible for designing the scoping review protocol,
40 including developing the research questions and study methods, and drafting and editing the
41 protocol. KW, AM, and ER aided in developing the research questions and study methods,
42 and contributed meaningfully to the drafting and editing, and approved the final manuscript.
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52 **Competing interest statement**

53 None declared.
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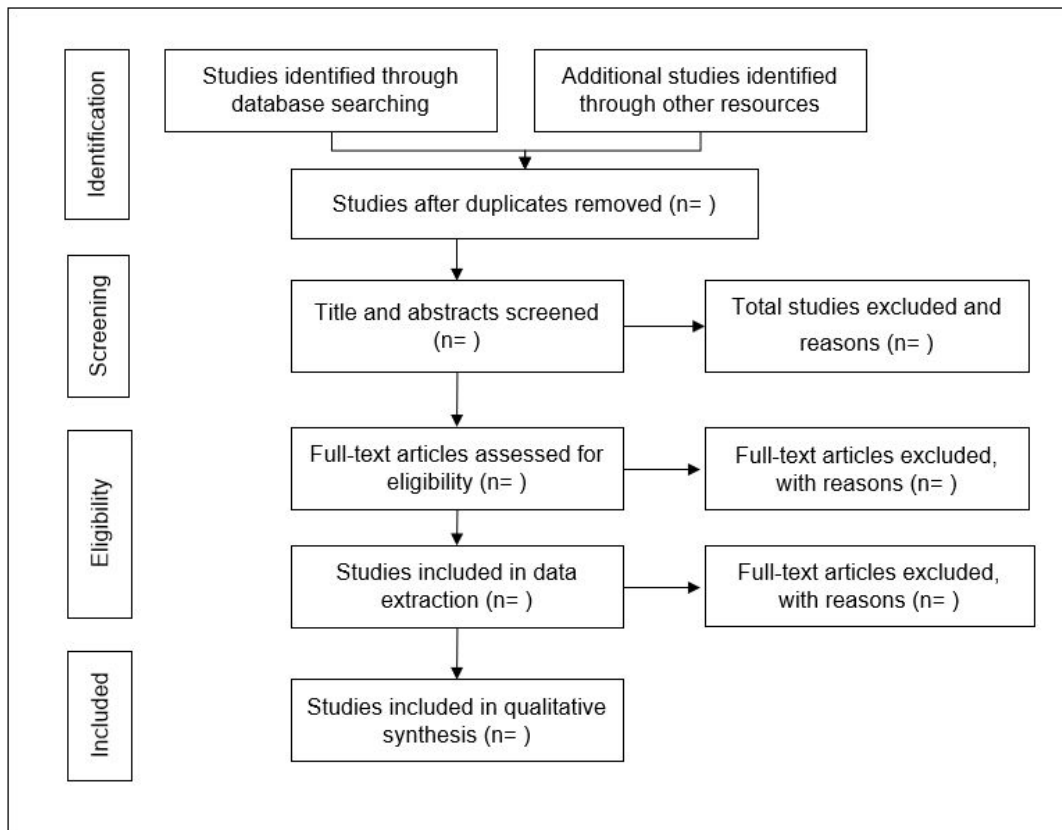
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Supplemental Table 1. PRISMA flowchart



view only

Supplemental Table 2. Example of Search strategy

Search ID#	Key Term	Medline search string
S1	Cancer	[TI:AB] (cancer* OR carcinoma* OR neoplas* OR tumor* OR tumour* OR malignan* OR hodgkin* OR nonhodgkin* OR adenocarcinoma* OR leukemia* OR metasta* OR lymphoma* OR sarcoma* OR melanoma* OR myeloma* OR oncolog*)
S2	Intersectionality	[TX] Intersect* OR Power OR Marginali* OR Oppress* OR Discrim*
S3	Inequalities	[TI:AB] (disparit* OR inequit* OR inequalit* OR disadvantag*)
S4		#1 AND #2 AND #3

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The relationship between intersectionality and cancer inequalities: a scoping review protocol

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The relationship between intersectionality and cancer inequalities: a scoping review protocol

Authors

Mar Estupiñán Fdez. de Mesa¹, Dr Afrodita Marcu¹, Prof. Emma Ream¹, Prof. Katriina L Whitaker¹

¹School of Health Sciences, University of Surrey, Research Park, Guildford, Surrey, UK, GU2 7YH

Corresponding author: m.estupinan@surrey.ac.uk

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Abstract**Introduction**

Persistent inequalities in cancer care and cancer outcomes exist within and between countries. However, the evidence pertaining to the root causes driving cancer inequalities is mixed. This may be explained by the inadequate attention paid to cancer patients' experiences of living at the intersection of multiple social categories (e.g., social class, ethnicity). This is supported by the intersectionality framework. This framework offers an alternative lens through which to analyse and understand how these interlocking systems of oppression uniquely shape the experiences of cancer patients and drive inequalities. In this protocol, we outline a scoping review that will systematically map what is known about the relationship between intersectionality and inequalities in cancer patients' care experience and cancer outcomes; and to determine how the intersectionality framework has been applied in studies across the cancer care pathway and across countries.

Methods and analysis

This study will be guided by Arksey and O'Malley's, and Levac's frameworks for scoping reviews. We will identify and map the evidence on cancer inequalities and intersectionality from 1989 to present date. Electronic databases (EMBASE, PsychINFO, CINAHL, Medline, Web of Science, ProQuest) and a systematic search strategy using a combination of key words and Boolean operators AND/OR will be used to identify relevant studies. Screening of eligible papers and data extraction will be conducted by two independent reviewers, and disagreements resolved by discussion with the research team. We will use an iterative process to data charting using a piloted form. Findings will be collated into a narrative report.

33 **Ethics and dissemination**

34 Ethical approval is not required since data used is from publicly available secondary sources.
35 Findings will be disseminated through peer-reviewed journals, conferences, and stakeholder
36 meetings. Further, findings will inform the next phases of a multistage research project aimed
37 at understanding inequalities among breast cancer patients.

38 **Strengths and limitations**

- 39 • First scoping review to identify the relationship between intersectionality and cancer
40 inequalities and to map out how the intersectionality framework has been applied in cancer
41 research across countries.
- 42 • Scoping review design guided by a structured framework and systematic reporting system
43 which will provide rigour and transparency.
- 44 • A quality assessment of papers included in this review will not be performed as this is not
45 applicable to scoping reviews.
- 46 • Only studies published in English will be eligible for inclusion.

47 **Study rationale**

48 Cancer is a growing global issue and a health priority that imposes an unequal burden on
49 historically marginalised populations^[1]. The unprecedented COVID-19 pandemic has exposed
50 entrenched inequalities among these populations, including in cancer care and cancer
51 outcomes^[2-4]. The pandemic severely disrupted cancer care services (e.g., screening
52 programmes, treatments) affecting populations worldwide^[4-6]. In the same period, the reduced
53 access to health care resulted in excess of 'non-COVID' deaths, including excess deaths from
54 cancer^[7 8]. The ongoing pandemic continues to impact cancer services and people living with
55 cancer^[9 10]. In response, international organisations and governments are reinforcing their
56 strategies to recover cancer services and to reduce inequalities^[8 11 12]. Likewise, researchers
57 have been called to concentrate their efforts on finding implementable solutions that address
58 the root causes of inequalities in cancer, particularly those affecting historically marginalised
59 populations^[11 13].

60 **Cancer inequalities**

61 A global public health priority, cancer remains the leading cause of death worldwide^[1]. Despite
62 progress in cancer survival and quality of life due to screening, early diagnosis, and enhanced
63 access to treatment^[14], persistent inequalities in cancer outcomes exist within and between
64 countries^[15 16]. These inequalities have been documented in countries with both universal and
65 private healthcare systems^[15 17-19]. This suggests inequalities are not necessarily alleviated by

66 the provision of free treatment at the point of access, rather, socioeconomic, and contextual
67 factors play a key role in driving these inequalities.

68 Inequalities in cancer outcomes extend across the cancer pathway from prevention to
69 survivorship^[12], and are largely driven by the social determinants of health (SDH)^[15]. These
70 are the factors where people are born, grow, live, and age, and the broader socioeconomic
71 and political factors that shape the conditions of daily lives and impact opportunities for
72 health^[20]. It is widely recognised that the SDH lead to avoidable, unfair, and systematic cancer
73 inequalities and therefore there is a social responsibility and moral duty to act on them^[15 21].
74 Addressing these inequalities requires action at all levels of society and beyond the health
75 sector, e.g. tackling the root causes of unequal distribution of power and unequal access to
76 resources between communities^[15].

77 Socioeconomic inequalities in cancer outcomes are complex. They operate at the intersection
78 of multiple pathways reflecting the exposure to a range of risk factors from social factors (e.g.,
79 class, resources or support), living conditions (e.g., overcrowding), behavioural factors (e.g.,
80 smoking), different access to and through health services, and macro factors such as
81 structural racism, social geography, or poverty^[15]. Socioeconomic inequalities in cancer affect
82 everyone, however their impact is greatest on the most disadvantaged populations. Lack of
83 knowledge to recognise symptoms among people from lower socioeconomic position leads to
84 delayed healthcare seeking^[19 22 23]. Unemployment influences behaviours towards cancer care
85 (e.g., people may not find time to take up cancer screening; or patients might prioritise work
86 over treatment if absenteeism implies loss of income)^[24]. Mistrust of healthcare professionals
87 by people from minority ethnic populations and sexual minorities groups^[25-27], and perceptions
88 and experiences of discrimination and racism^[28 29] impacts uptake of health services.

89 However, this evidence is mixed. This might be explained by the inadequate attention paid to
90 cancer patients' experiences of living at the intersection of systems of oppression and
91 discrimination. This is supported by the intersectionality theory. Rooted in the Black Feminism
92 movement^[30-32], which challenged the inequalities experienced by Black women,
93 intersectionality provides a theoretical framework to reframe the critical analysis of health
94 inequalities in terms of power relations. Further, intersectionality allows researchers to unpack
95 how some groups are privileged over others^[33]. Intersectionality posits that socially-
96 constructed identities (e.g., gender, ethnicity), social categories (social class), and social
97 processes (racism) exist together, are additive and mutually reinforcing, and lead to complex
98 experiences of social and health inequality^[33 34]. In the cancer field, intersectionality offers
99 new critical lens from which to understand and examine how the interconnectedness of these
100 multiple identities and social processes shape and influence cancer outcomes and cancer

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3 101 patients' experiences^[35 36]. Different concepts have been used to refer to intersectionality (e.g.,
4 102 theory, perspective, paradigm). Following Bowleg's views^[37], in this scoping review we will use
5 103 'intersectionality framework' *"to denote intersectionality as more of an analytical framework or*
6 104 *paradigm than a traditional testable theory"*.

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10 105 Research into socioeconomic inequalities in cancer outcomes has largely focused on the
11 106 analysis of one dimension of oppression (e.g., social class or ethnicity). This approach has
12 107 been criticised for failing to capture the complexity of multiple social locations and systems of
13 108 social power influencing the true lived experiences of inequality among cancer patients,
14 109 particularly those from historically marginalised groups^[37]. To this end, concerns have been
15 110 raised that traditional research approaches lead to repeatedly measuring and documenting
16 111 inequalities in a way that does not yield the evidence required to identify factors amenable to
17 112 change^[35]. In a similar vein, the SDH framework for the study of health inequalities has been
18 113 criticised for conceptualising determinants of health as single categories or markers for
19 114 difference which arguably leads to analyses that are less policy relevant^[38].

20 115 In response, scholars and healthcare stakeholders are advocating for a shift in research. This
21 116 would imply challenging dominant approaches and shifting from solely describing inequalities
22 117 towards using multidimensional intersectional analyses that help to identify the processes and
23 118 root causes of cancer inequalities^[12 35 37 39 40]. Moving away from solely documenting
24 119 inequalities will arguably minimise existing notions of the intractability of injustice and
25 120 inequity^[35]. To this end, researchers are recommended to go beyond demographic
26 121 intersectional positions to focusing on modifiable social processes (e.g., racism, classism,
27 122 heterosexism, ableism), and on identifying implementable solutions that will contribute
28 123 towards advancing the social and health equity agendas^[40].

124 **Applications of the intersectionality framework in research and policy**

125 **Research**

126 The intersectionality framework provides a critical unifying interpretive and analytical lens from
127 which reframing how social and health inequalities are conceptualised, examined, analysed,
128 and addressed^[37]. The framework affords opportunities to improve population health research
129 by providing more precise identification of both the heterogeneity of effects and causal
130 processes producing health inequalities, and to test and generate new theories^[35]. It also
131 helps to examine more effectively interlocking systems of oppression and privilege, to enhance
132 the analysis of existing maps of social inequalities within populations, and to better investigate
133 intersectional research questions^[35 37 41].

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3 134 Intersectionality has been largely applied to the study of identity and marginalisation in social
4 135 sciences^[42 43]; however, it is a theoretical framework that is now being adopted by scholars
5 136 from different disciplines (e.g. in the field of HIV^[44], mental health^[45], or health and wellbeing^{[46}
6 137 ^{47]}). The wider application of intersectionality has raised concerns among intersectional
7 138 scholars who fear that researchers might be distancing from the tenets of intersectionality and,
8 139 with this, the risk of detaching from the original foundations in Black Feminist theory and its
9 140 original aim of addressing issues of social power and advancing social justice^[40 48]. Further
10 141 concerns have been raised pertaining to intersectionality becoming a theoretical buzzword
11 142 that does not add value to research^[40 49]. These concerns are particularly relevant to the
12 143 application of intersectionality in quantitative research^[40 48]. By exploring and documenting how
13 144 researchers are engaging and using the intersectionality framework to investigate inequalities
14 145 in cancer, we would address these concerns and inform the global debate.

146 **Policy**

147 Policies and services that focus on adapting healthcare services to suit the needs of the
148 majority (e.g., white ethnic groups, heterosexuals, or able-bodied individuals) create structural
149 barriers and shape opportunity of cancer risk and care^[24 50]. This situation presents challenges
150 to individuals belonging to minority groups and those living at the intersection of multiple social
151 locations. For instance, women from ethnic minorities groups might delay seeking care due to
152 mistrust of services largely led by white male healthcare professionals; or a black transgender
153 wheelchair user might fear being stigmatised by fellow patients and healthcare staff. This
154 situation is compounded by inadequate recording of routine data and lack of in-depth
155 intersectional analysis^[51]. If this were to be addressed, highly insightful evidence could be
156 generated that could bring about a step-change in our understanding of cancer risk and cancer
157 care among historically marginalised groups.

158 To this end, emerging evidence suggests that applying intersectionality-based policy analysis
159 frameworks can help to advance research, policy development and action in a variety of
160 health-related areas and on inequalities^[39 49]. This perspective would afford an opportunity for
161 policymakers to embrace social responsibility, to shift towards a critical praxis, and to act as
162 transformative actors that affect transformative change^[39]. Examples of this approach have
163 been documented by Hankivsky et al.^[39] including in maternity healthcare, substance misuse,
164 HIV testing and prevention, and palliative care.

165 Additionally, the intersectionality framework has been identified as being of primary
166 importance to inform the identification of strategies for intervening on the processes that
167 generate health and social inequalities between intersectional social groups^[52]. It has been

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3 168 acknowledged, however, that not all countries are embracing the intersectionality framework
4 169 at the same pace, and challenges exist to realise its full potential (e.g., lack of robust datasets
5 170 for research purposes, complex analytical methods required for analysis, or key prerequisite
6 171 of openness to social justice, and willingness to move away from prioritizing a priory singular
7 172 axes of inequality)^[39 49]. Therefore, exploring and documenting how the intersectionality
8 173 framework has been applied to inform equity-orientated cancer policy and practice will be
9 174 valuable to gauge the appetite for its adoption in cancer-related research.

15 175 We will conduct a scoping review to map out the application of the intersectionality lens in
16 176 research on inequalities in the cancer care pathway. This scoping review is different, and
17 177 builds on, a recent review of intersectionality in cancer inequalities^[12] by expanding upon
18 178 specific analytical methods used across countries, and by identifying global systems of
19 179 injustice affecting cancer patients. Kelly-Brown et al. established an important foundation with
20 180 their review by mapping and summarising the evidence in the United States (US)^[12]. However,
21 181 the increasing interest on understanding how the intersectionality framework is being applied
22 182 to the study of health inequalities^[40 48 53] justifies the need for a scoping review that includes
23 183 evidence beyond the US.

30 184 By including the evidence from other countries, we will cover a gap in the literature and will
31 185 help to create a global picture of how interlocking systems of oppression and discrimination
32 186 influence cancer inequalities. Particularly, our review will contribute to improving our
33 187 understanding of the effect of the 'global determinants of health'^[54] (e.g. racism) on inequalities
34 188 in cancer, as well as the place-specific socioeconomic factors, and how these are experienced
35 189 by cancer patients. Population health research is being increasingly critiqued for lacking
36 190 underpinning theoretical frameworks and theory, and for excluding the context of people's
37 191 lives through identifying single sets of health determinants for entire populations^[35 55 56]. This
38 192 review will look in-depth at the critical social theories, statistical analyses, and intersectional
39 193 methodologies applied to the study of cancer inequalities across countries. This will help to
40 194 identify how well researchers are attending to and interpreting the intersectionality framework
41 195 worldwide, to produce a global heat map of cancer research and intersectionality, to identify
42 196 gaps in the literature, and to provide recommendations to researchers, policymakers, cancer
43 197 commissioners and provider.

198 **Study aims**

55 199 The aims of this scoping review are two-fold: (i) to examine and map the breadth and nature
56 200 of research pertaining to the relationship between intersectionality and inequalities in cancer
57 201 care and outcomes, and cancer patients' experiences across the care pathway and to identify
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202 gaps in the current evidence; (ii) to identify and document how the intersectionality framework
203 is being applied and interpreted across countries for the analysis of inequalities in cancer.

204 **Study definitions**

205 Social category (or categorization) is a socially constructed term that refers to a group of
206 individuals that share common characteristics, such as ethnicity, class^[57]. Marginalisation
207 refers to both a process and experience by which some groups (dominant) are privileged
208 within society over other groups as a result of an unequal distribution of power and power
209 relations^[58].

210 Social inequality across the cancer care pathway “refers to systematic differences between
211 social groups that affect people’s risk of developing cancer, the likelihood that they receive
212 effective and timely (or any) treatment for the cancer, whether they survive, and whether they
213 have access to palliative care”^[15 p.15]. The cancer care pathway framework is considered to
214 provide “an opportunity to appraise progress in tackling the root causes of cancer inequalities
215 by measuring socioeconomic inequalities, and as part of cancer control policies”^[15 p.13]. This
216 review will be conducted in the context of the cancer care pathway defined as multiple stages,
217 including primary prevention (pre-diagnosis and detection), diagnosis, treatment, post-
218 treatment survivorship, and end of life.

219 **Methods and analysis**

220 **Protocol design**

221 The study design will be conducted based on Arksey and O’Malley’s^[59] and Levac’s^[60]
222 recommendations for scoping reviews which are based on a six-stage methodological
223 framework: (i) identifying the research question; (ii) searching for relevant studies; (iii)
224 selecting studies; (iv) charting the data; (v) collating, summarizing, and reporting the results;
225 (vi) consulting with stakeholders to inform or validate study findings. This framework is
226 preferred because it provides clarity and transparency, and allows an iterative process with
227 the aim of strengthening the results^[61 (11.2.5)]. For transparency, the Preferred Reporting Items
228 for Systematic Reviews and Meta-Analysis (PRISMA)^[62] will be used to report the search
229 results (Supplemental Table 1)

230 **Stage 1: Identifying the research question**

231 The ‘Population,’ ‘Concept,’ and ‘Context’ (PCC) framework^[63] have been used to formulate
232 the review questions as shown in Table 1.

233 The research questions are:

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3 234 1. What is known from the existing literature about the relationship between
4 235 intersectionality and cancer inequalities across the care pathway?
5
6 236 2. In what countries has the intersectionality framework been applied to examine
7 237 inequalities in cancer outcomes?
8
9 238 3. What intersectional methods and statistical analysis have been used to examine and
10 239 understand inequalities in cancer outcomes?
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14 **Table 1.** Population, concept, and context framework to guide the research question

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	Population	Cancer patients Individuals where cancer control measures are relevant (e.g., screening, vaccination)
	Concept	Inequalities Intersectionality
	Context	Cancer care pathway (pre-diagnosis, diagnosis, treatment, post- treatment survivorship, and end of life)

240 241 **Stage 2: Identifying relevant studies**

242 This stage will encompass a three-step iterative process: reviewing the literature, refining the
243 search strategy, and including further sources of evidence identified in papers' reference lists
244 [61]. Title and abstract review will precede the full-text review of the selected studies. The
245 search strategy and inclusion and exclusion criteria have been developed and agreed by the
246 research team. This study will be conducted between July 2022 and January 2023.

247 The identification of relevant studies will involve a structured search in the following electronic
248 databases: EMBASE, PsychINFO, CINAHL, Medline, and Web of Science. ProQuest will be
249 used to retrieve grey literature (i.e., thesis). The search strategy will be based on a systematic
250 combination of keywords and Boolean operators AND/OR. An expert librarian has been
251 consulted to help refine the search strategy. The search will be limited to articles published in
252 the English language between 1989 (when the term was academically coined by Kimberlé
253 Crenshaw [32]) to present date to capture the growth, breadth, and use of intersectionality. A
254 pilot sample search is shown Supplemental Table 2. Quality assessment of reviewed papers
255 is beyond the remit of scoping reviews. However, to assess for potential bias, reported conflict
256 of interest and funding will be summarised^[12].

257 **Stage 3: Study selection**

258 EndNote reference software will be used to store and manage papers. An Excel Form will be
259 developed and piloted for the screening and extraction of data. Papers will be first screened
260 by two reviewers and subsequently the research team will meet to discuss and resolve
261 discrepancies. Only when 75% or more agreement has been achieved, will the team proceed
262 to full screening^[61]. Application of inclusion and exclusion criteria will ensure the relevance of
263 studies included in this review.

264 **Inclusion criteria**

265 Studies will be included if they meet the following criteria:

- 266 • Refer to: intersectionality, power, marginalisation, discrimination, oppression and/or
267 disadvantage in the text (e.g., title, abstract, keywords, introduction, methods, results)
- 268 • Examine and discuss cancer inequalities among individuals living at the intersection of
269 two or more social categories
- 270 • List and/or describe intersecting dimensions used in analysis
- 271 • Empirical research (i.e., reviews, reports, commentaries, etc., will be excluded)
- 272 • Grey literature, defined as academic literature that it is not controlled by commercial
273 publishers (i.e., thesis)
- 274 • Published in the English language between 1989 and to present date

275 **Exclusion criteria**

276 Studies will be excluded if they meet the following criteria:

- 277 • Studies that examine and assess cancer inequalities from unitary category lens
- 278 • Studies focused on cancer control relative to lifestyle behaviours (e.g., smoking)
- 279 • Studies not focused on cancer
- 280 • Published in languages other than English due to limited resources for translation
- 281 • Published before 1989

282 **Stage 4: Charting the data**

283 Key information will be extracted and summarised in a charting table developed and piloted
284 by the research team. The team will follow an iterative process whereby the data charting will
285 be reviewed, refined, and continually updated. Relevant variables will be captured, including
286 author(s), year of publication, aim of study, study setting, study population, cancer type, phase
287 of cancer care, study design, theoretical framework, dimensions of interest, data analysis,
288 outcomes/findings, and conflict(s) of interest and funding.

289 **Stage 5: Synthesising and reporting results**

290 According to recommendations for scoping reviews^[64], the aim of the review is to map out and
291 aggregate the evidence available as opposite to critically analysing the quality of individual
292 studies. As such, data extracted will be summarised in a narrative report which will encompass
293 the following themes: phases of the care pathway (including main outcomes and study
294 findings); and study characteristics and methodologies (including region of study, theoretical
295 engagement, study designs, qualitative and quantitative statistical analysis, number of social
296 positions observed).

297 **Stage 6: Consultation and patient and public involvement**

298 This scoping review is part of a multistage research project that has engagement and
299 involvement of stakeholders and communities at its core. For the scoping review phase,
300 stakeholders will help to interpret findings and make recommendations. NHS healthcare
301 professionals, representatives from cancer charities, and patients' representatives will be
302 invited to provide their insights via email or virtual meetings.

303 **Discussion**

304 Cancer is a global health priority that imposes an unequal burden on historically marginalised
305 populations^[65]. This burden has been exacerbated by the COVID-19 pandemic^[2-4]. Increasing
306 pressure from social justice movements (e.g., Black Live Matters) which advocate for action
307 to address the disproportionate and deep-rooted inequalities experienced by some groups in
308 the population, including in cancer care and cancer outcomes, has generated a great deal of
309 interest to better understand and address the structural processes through which inequalities
310 emerge. This situation has led international organisations and governments to review and
311 reinforce their cancer strategies posing central attention on reducing inequalities, particularly
312 among historically marginalised populations^[8 11 12]. Similarly, scholars have been called to shift
313 their research focus from solely describing inequalities towards analysing processes that are
314 amenable to change and identifying implementable solutions that helps advance social and
315 equity agendas^[10 11].

316 The intersectionality framework is being considered a tool that could open new avenues to
317 understand the complex and interlocking processes of oppression and discrimination
318 influencing cancer inequalities^[37 66 67]. Emerging evidence is starting to illustrate the potential
319 of the intersectionality framework in identifying and explaining the root causes of inequalities^{[47}
320 ^{68]}. However, as this framework is being rapidly embraced by scholars across disciplines,
321 concerns about the risk of detaching from the core tenets of intersectionality (i.e., addressing
322 issues of social power and advancing social justice) have been raised^[40 48]. This situation has

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2
3 323 drawn scholars' attention to the application of the intersectionality framework outside of social
4 324 sciences, particularly in quantitative research. For instance, Bauer et al.^[48] and Guan et al.^[40]
5 325 have reviewed the application of intersectionality in quantitative health research in an
6 326 endeavour to document what methodologies have been used and to assess the level of
7 327 engagement with the framework. Key findings included the necessity for researchers to clearly
8 328 justify the mathematical rationale guiding their study designs and interpretation of findings,
9 329 and the need to familiarise with the core tenets of intersectionality.

14 330 Despite making inroads into some areas of health inequalities, intersectionality remains largely
15 331 uninvestigated in the cancer arena. Further, to date there has been little exploration of how
16 332 intersectionality is travelling within cancer inequalities work beyond the US^[40]. Therefore, our
17 333 scoping review will contribute to filling this gap in the literature by examining and mapping the
18 334 breadth and nature of the evidence pertaining to the relationship between intersectionality,
19 335 including the methodologies, and inequalities among cancer patients across the care pathway
20 336 and across countries.

26 337 Findings from the scoping review will serve to contribute to the international debate relative to
27 338 quantitative intersectional analyses, to formulate recommendations to improve methodologies,
28 339 and to identify future research opportunities. Further, findings will serve to identify the potential
29 340 the intersectionality framework affords to inform policy and practice, and to formulate
30 341 recommendations for policymakers and providers interested in planning, improving, and
31 342 developing evidence-based, culturally sensitive, and tailored policies cancer services.

37 343 **Ethics and dissemination**

38 344 Ethical approval is not required since data is from publicly available secondary sources.
39 345 Findings from this scoping review will be disseminated through stakeholders' meetings and
40 346 academic channels, including but not limited to peer-reviewed journals and conferences.
41 347 Furthermore, findings from this scoping review will guide the next phase of a multistage
42 348 research project aimed at examining and understanding inequalities among breast cancer
43 349 patients living at the intersection of systems of oppression and discrimination.

49 350 **Authors' contributions**

50 351 MEFM conceived the idea and was responsible for designing the scoping review protocol,
51 352 including developing the research questions and study methods, and drafting and editing the
52 353 protocol. KW, AM, and ER aided in developing the research questions and study methods,
53 354 and contributed meaningfully to the drafting and editing, and approved the final manuscript.

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9 358 **Competing interest statement**
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11 359 None declared.
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For peer review only

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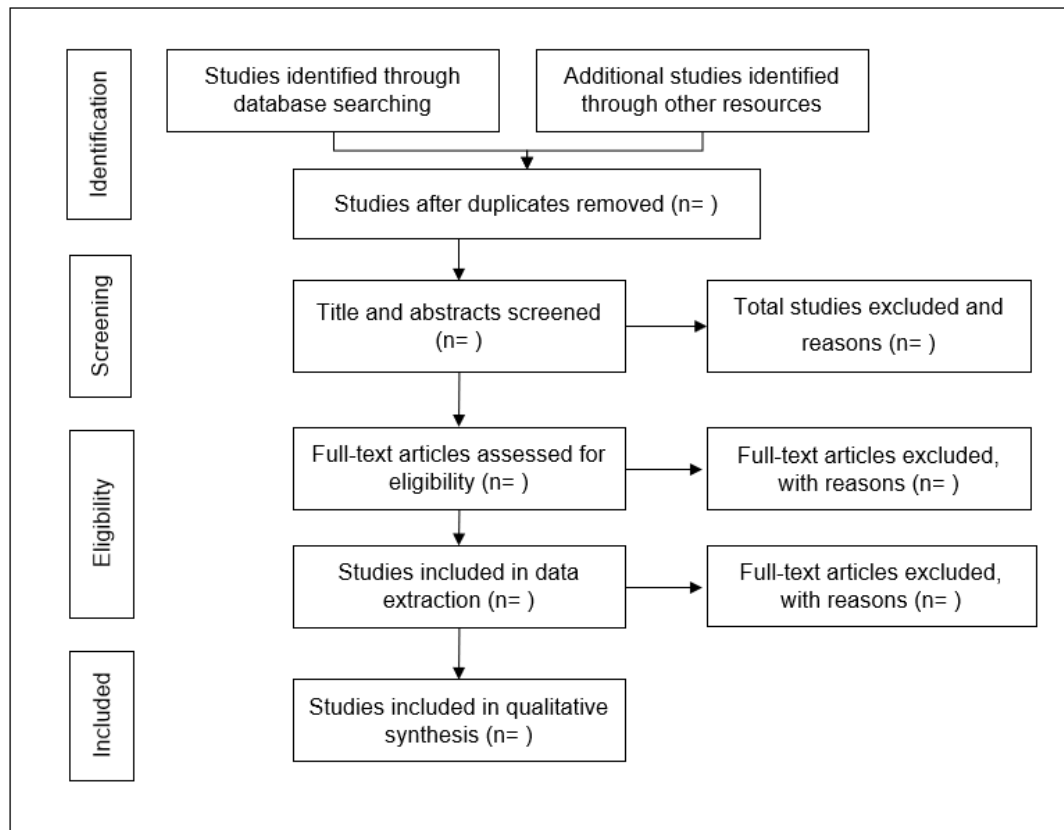
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Supplemental Table 1. PRISMA flowchart



view only

Supplemental Table 2. Example of Search strategy

Search ID#	Key Term	Medline search string
S1	Cancer	[TI:AB] (cancer* OR carcinoma* OR neoplas* OR tumor* OR tumour* OR malignan* OR hodgkin* OR nonhodgkin* OR adenocarcinoma* OR leukemia* OR metastas* OR lymphoma* OR sarcoma* OR melanoma* OR myeloma* OR oncolog*)
S2	Intersectionality	[TX] Intersect* OR Power OR Marginali* OR Oppress* OR Discrim*
S3	Inequalities	[TI:AB] (disparit* OR inequit* OR inequalit* OR disadvantag*)
S4		#1 AND #2 AND #3