Exploring Cancer Outcomes of People With and Without Pre-existing Anxiety and/or Depression Following Symptomatic Presentation to Healthcare: A Scoping Review

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Abstract

Objective: The objective of this scoping review is to collate the literature on cancer outcomes and highlight where any disparities occur for people with anxiety and/or depression, enabling exploration of the reasons behind those factors.

Introduction: Around 375,000 people in the UK are diagnosed with cancer annually. Individuals with mental health disorders have a 30% higher case fatality rate from cancer compared to individuals without. Each year, 5-7% of urgent suspected-cancer hospital appointments are missed, with anxiety and depression possible causes, and survival is worse following emergency diagnoses.

Inclusion criteria: Studies that report differences/disparities in cancer diagnostic processes/outcomes between people with/without pre-existing anxiety and/or depression will be included.

Methods: The databases MEDLINE, PsycINFO, EMBASE and CINAHL will be searched for articles between 2015 and 2024. Additional articles will be sourced using forward and backward citations. Two researchers will screen the articles for eligibility against the inclusion criteria. Qualifying articles will be quality appraised. The search results will be presented using the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR). The final articles will be presented in a narrative synthesis supplemented with thematic analysis if appropriate.

Introduction

There are around 1,000 new cancer cases in the UK every single day (1). The NHS Long Term Plan, published in January 2019, sets out ambitions and commitments to improving cancer outcomes for the next 10 years. The plan states that currently, only 50% of cancer patients are diagnosed at an early stage (stage one or two), where survival outcomes are better. One of the aims of the plan is that by 2028, 75% of people with cancer will be diagnosed at an early stage (2). This demonstrates the importance of early cancer diagnosis as a fundamental contributor to patient survival.

Existing mental health conditions may influence cancer outcomes. According to Kisely, individuals with a mental health disorder are said to have a 30% higher case fatality rate than the general population, even though their chance of developing cancer is no greater (3) The SPOCC study (NIHR reference NIHR207010) found that pre-existing anxiety and/or depression was associated with increased odds of an emergency diagnosis (odds ratio 1.118, 95% confidence interval 1.083 to 1.154, $p < 0.0001$) and of dying within 30 days of a cancer diagnosis (1.135, 1.088 to 1.184, $p < 0.0001$), and a decreased chance of being diagnosed through the two-week-wait pathway (0.951, 0.927 to 0.976, $p < 0.0001$) (manuscript in preparation).

1 in 6 people report experiencing a common mental health problem (such as anxiety and depression) in any given week in England (4). More specifically, every week, 8 in 100 people are diagnosed with mixed anxiety and depression, 6 in 100 people with generalised anxiety disorder, and 3 in 100 people with depression (4).

Each year, 5-7% of urgent suspected-cancer hospital appointments are missed (5), with anxiety and depression possible causes. Non-attendance at urgent suspected cancer investigations can lead to a delay in diagnosis, resulting in a worse prognosis – increasing the risk of cancer being diagnosed through the emergency route. Survival for emergency presentations is significantly lower than for any other route.

Anxiety and/or depression may impact a person's interactions with healthcare in a number of ways. For example, while anxiety may evoke excessive worrying about health and increase a person's engagement with healthcare, it may also lead to avoidant behaviour, risking delayed presentation or non-attendance at clinical appointments (4,6). In contrast, depression is characterised by low mood, low self-worth, and losing interest and enjoyment in things that were enjoyed in the past (4) and may be a barrier to attending appointments. For example, in a paper written by Clifton, a participant with depression mentioned that low mood meant they did not want to leave their house, leading to missing appointments regularly. In a more extreme case, a participant stated, "it just seems like nothing is really worth it anyway... it doesn't matter if you were to have cancer because it would do everyone a favour" (7).

A scoping review was chosen to identify and collate the existing literature on cancer outcomes in people with anxiety and/or depression. A preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews, Prospero and Epistemonikos was conducted and no current or underway systematic reviews or scoping reviews on the topic were identified. This review will explore the literature on the cancer outcomes of people with anxiety and/or depression, highlight where any disparities occur, enabling investigation of the reasons behind those factors. This will inform intervention development to specifically target an underserved population with unmet needs.

Review question

What are the cancer outcomes in people with pre-existing anxiety and/or depression? A secondary aim is to explore the extent of evidence on possible reasons underlying differences in cancer outcomes between people with and without anxiety and/or depression.

Keywords

anxiety; cancer outcomes; depression; disparities

Eligibility criteria

Participants
Studies that include adult participants aged over 18 who had pre-existing anxiety or depression prior to their cancer diagnosis. We will exclude individuals diagnosed via a cancer screening route, because we are interested in diagnosis after symptomatic presentation to primary or secondary care. Additionally, we will exclude individuals with severe mental illness (SMI), as this category does not include patients solely with anxiety and/or depression.

Concept
Studies that include information on cancer outcomes, such as stage at diagnosis, survival/mortality and route to diagnosis in people with anxiety and/or depression. As above, those diagnosed via the screening route will be excluded to enable synthesis of evidence on the symptomatic population.

Context
Studies based in countries with a gatekeeper access to secondary care, for example the UK and Scandinavian countries.

Types of Sources
This scoping review will consider primary research, from both published and unpublished literature. Reference lists of relevant systematic reviews will be screened, and appropriate references included. It will include quantitative studies and consider qualitative studies to give an insight into possible reasons for poor cancer outcomes.

Methods

The proposed scoping review will be conducted according to the JBI methodology for scoping reviews (8).

Search strategy
The search strategy will aim to locate both published and any relevant grey literature. An initial search of Google Scholar and MEDLINE was conducted to identify relevant articles related to cancer outcomes in people with anxiety and/or depression. Key words were taken from these identified articles to develop a full search strategy for Ovid (see Appendix 1). The databases MEDLINE via Ovid, PsycINFO, EMBASE via Ovid and CINAHL via EBSCOhost, ProQuest Dissertations and Theses will be searched for articles between 2015 and 2024 because the NICE NG12 cancer referral guidelines were updated in 2015. The database choices include grey literature; PsycINFO and EMBASE include conference abstracts; and PQDT is a database of PhD theses. Validated search filters will be applied if relevant e.g. UK. Additional articles will be sourced and screened using forward and backward citation chasing using Scopus. Websites of Mind and Cancer Research UK will be searched for additional articles. The search strategy will be adapted for each database. Keywords and relevant controlled vocabulary in each database will be searched. Included articles will be limited to English language only.

Study/Source of Evidence selection

Following the search, all identified citations will be collated and uploaded into EndNote 21 and duplicates will be removed. Pilot screening of 100 articles will be undertaken to clarify the inclusion/exclusion criteria. Two researchers will screen the articles using Rayyan for eligibility against the inclusion criteria both at title and abstract and at full text. A third researcher will resolve conflicts over any disagreements. We will consider quality appraising qualifying articles using relevant tools from the JBI checklist.

Data Extraction

- *Patient information (age, sex, ethnicity, deprivation)*
- *Cancer site*
- *Diagnosis anxiety/depression*
- *Study period*
- *Study location*
- *Study design and analysis*
- *Research question*
- *Cancer outcomes (stage, survival, mortality, route to diagnosis)*
- *Information underpinning disparities e.g. quotes, emerging themes, reasons why anxiety and depression affect the diagnostic process*
- *Excel spreadsheet*

Data Analysis and Presentation

The search results will be presented using the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR). The final articles will be analysed using thematic analysis.

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Conflicts of interest

The authors have no conflicts of interest to declare.

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Appendices

Appendix I: Search strategy

Ovid MEDLINE (R) ALL

Number	MeSH subject heading or free text search terms	Hits
1.	Anxiety/	111,182
2.	Anxiety Disorders/	43,239
3.	Depression/	155,797
4.	*Mental Disorders/	143,718
5.	anxiet*.ti,ab.	274,361
6.	anxious*.ti,ab.	21,699
7.	depress*.ti,ab.	578,882
8.	exp Neoplasms/	3,940,710
9.	cancer*.ti,ab.	2,304,302
10.	neoplasm*.ti,ab.	161,959
11.	tumor*.ti,ab.	1,795,391
12.	tumour*.ti,ab.	310,955
13.	malignan*.ti,ab.	705,400
14.	carcinoma*.ti,ab.	781,975
15.	Healthcare Disparities/	22,766
16.	health inequities/	594
17.	exp Socioeconomic Factors/	519,509
18.	disparit*.ti,ab.	103,058
19.	inequit*.ti,ab.	22,073
20.	inequal*.ti,ab.	46,557
21.	equit*.ti,ab.	48,127
22.	equal*.ti,ab.	422,136
23.	discrimin*.ti,ab.	340,499
24.	1 or 2 or 3 or 4 or 5 or 6 or 7	884,812
25.	8 or 9 or 10 or 11 or 12 or 13 or 14	5,182,923
26.	15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23	1,404,464
27.	24 and 25 and 26	3,458
28.	limit 27 to yr="2015 -Current"	1,519

Appendix II: Data extraction instrument

The JBI template source of evidence details, characteristics and results extraction instrument was used, which is Appendix 11.1 of the JBI Manual for Evidence Synthesis, which can be found here: https://jbi-global-wiki.refined.site/space/MANUAL/4687579/Appendix+11.1+JBI+template+source+of+evidence+details%2C+characteristics+and+results+extraction+instrument