

REVIEW

Barriers and facilitators for people with severe mental illness accessing cancer screening: A systematic review

Emma Tuschick¹  | Jill Barker¹  | Emma L. Giles¹ | Susan Jones¹ | Julie Hogg² | Kehinde K. Kanmodi¹  | Jula Sill¹ | Kate Sykes³

¹School of Health and Life Sciences, Teesside University, Middlesbrough, UK

²Library Services, Teesside University, Middlesbrough, UK

³Northumbria University, Newcastle Upon Tyne, UK

Correspondence

Jill Barker, School of Health and Life Sciences, Teesside University, Middlesbrough, UK.
Email: Jill.Barker@tees.ac.uk

Funding information

National Institute for Health and Care Research

Abstract

Objective: Evidence suggests that people with severe mental illness (PwSMI) are 2.1 times more likely to die from cancer before the age of 75, compared to people without Severe mental illness (SMI). Yet, cancer screening uptake is low among PwSMI. This mixed-methods systematic review aimed to identify the barriers and facilitators for PwSMI deciding to access and attend primary cancer screening of the cervix, breast and colon.

Methods: Six electronic databases and two grey literature sources were searched, with 1017 records screened against inclusion criteria. Included papers were appraised and data synthesised using the constructs of Normalisation Process Theory.

Results: Twenty papers met the inclusion criteria. Factors that impact upon uptake of PwSMI accessing cancer screening were found to include age, gender, race, and income. Common barriers to attending screening included poor communication from healthcare staff, stigmatising attitudes, and accessibility problems such as no access to transportation. While, facilitators included social support from friends, family, and healthcare providers.

Conclusions: Due to ease and privacy, colorectal screening was found to have fewer barriers when compared to cervical and breast screening. The review identified multiple barriers that can be addressed and targeted to support decision-making for cancer screening among PwSMI. The protocol was registered with PROSPERO (CRD42022331781).

KEYWORDS

bipolar disorder, cancer and oncology, early detection of cancer, Psychotic disorders, schizophrenia, systematic review

1 | BACKGROUND

People with severe mental illness (PwSMI) have a life expectancy of between 15 and 20 years lower than the general population.^{1,2} Severe mental illness (SMI) has been defined as “people with

psychological problems that are often so debilitating that their ability to engage in functional and occupational activities is severely impaired” (p.1), in which schizophrenia and bipolar disorder are included.³ The ‘Core20PLUS5’ agenda⁴ highlights five priority areas that need to be improved to reduce health inequalities. This agenda shows that two

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2024 The Authors. Psycho-Oncology published by John Wiley & Sons Ltd.

of the five areas to focus on include the health of PwSMI, and the early diagnosis of cancer, which includes screening.⁴

People with severe mental illness in England are 2.1 times more likely to die from cancer below the age of 75, compared to people without SMI,⁵ with cancer being the leading cause of premature mortality.⁵ This has been attributed to multiple factors including delayed cancer diagnosis, treatment choices and lack of adherence to treatment plans, and reduced uptake of cancer screening services.^{6,7} Cancer screening is one way to improve the early diagnosis of cancers, by testing people who are asymptomatic.^{8,9}

Established cancer screening programmes are in place in the United Kingdom (UK) to screen people for cancer of the cervix, breast, and colon, with further programmes being explored to establish screening to detect cancer early in other sites such as lung, prostate and ovaries.^{9,10} Many other countries also offer or are considering implementing these programmes (such as the United States of America [USA], Canada, and Japan). Worldwide, uptake rates of cancer screening show that PwSMI are 25% less likely to receive cancer screening when compared to the general population.¹¹

This may be because PwSMI may need additional support in deciding to attend and then access cancer screening services.¹² The reasons behind low screening uptake are important to understand given general mortality rates in PwSMI are continuing to rise worldwide and in England by 5%–10% every 2 years.¹³ The National Health Service Long Term Plan and the 'Levelling Up' White paper both aim to increase healthy life expectancy by up to five years by 2035 for PwSMI,^{14–16} by promoting wellbeing, intervening earlier, and improving medical pathways.¹⁶ More widely, several countries have developed a National Cancer Control Plan which aims to provide a strategic plan to reduce mortality rates and considers the whole continuum of care including early detection of cancer.¹⁷

Previous research has indicated barriers to attending cancer screening including that PwSMI may not receive an invitation to screening if they are in hospital or not registered with a General Practice (GP).¹² Increased anxiety, stigma among staff delivering screening, and the screening process being complicated, may make it difficult for PwSMI to understand the process.¹² To date, no review assessing the quality of findings across the literature has been conducted. As such, a clear picture of the barriers to screening are not available, therefore, the aim of this mixed methods systematic review was to identify and synthesise the barriers and facilitators that can impact PwSMI deciding to attend, and then access cervical, breast and/or colorectal cancer screening.

2 | METHODS

The protocol for this systematic review was registered with PROSPERO (CRD42022331781), with one amendment being made since its registration (the update added additional research team members and the percentage increase of full papers that were double sifted). The systematic review formed part of a larger mixed methods study.¹⁸ The review is reported in line with Preferred Reporting Items for Systematic Reviews and Meta-Analyses reporting

guidelines. Throughout the sections below the authors have highlighted which members of the team were involved in each activity. This is represented by the person's initials (e.g., ET).

2.1 | Search strategy

Searches for all databases were conducted in line with the Population, Issue, and Context (PICo) framework¹⁹ for conducting literature searches for the purpose of mixed method synthesis. To identify relevant papers, the elements of the PICo framework were used to inform the keywords. Keywords included: Schizophrenia, Bipolar, Psychosis and SMI ('Population'); inequalities, barriers, facilitators, accessibility, knowledge and motivation ('Issue'); and breast, cervical, colorectal cancer screening ('Context'). Six electronic databases were searched: MEDLINE, CINAHL, Embase, SCOPUS, PsycINFO and ProQuest Nursing. MEDNAR and Google Scholar was searched for grey literature, with the first 100 listed records being retained from each.²⁰

An academic librarian (JH) confirmed the appropriateness of the search strings prior to running the searches in the six electronic databases. Three experts by experience with SMI also checked and confirmed the appropriateness of the key words. An example search strategy can be seen in supplementary file 1. The original search was conducted in June 2022, and updated in June 2023. To ensure all relevant papers were captured in the search, gold standard papers (articles that are highly relevant to the topic and match the research question) were searched for and found in the retrieved articles to help assess the sensitivity and specificity of the search.²¹

2.2 | Eligibility criteria

Papers were included if they were published in English language, reported primary research, from any country, with outcomes on barriers, facilitators, experiences, attitudes, and knowledge towards cervical, breast, and/or colorectal cancer screening. These three screening programmes were chosen because all are widely used throughout the UK, Europe, and America. Collating outcomes from around the globe, can mean any good practice can be applied to the UK. Papers that reported other cancer screening programmes would be considered for inclusion if the data on cervical, breast and/or colorectal cancer screening could be extracted. The papers needed to involve PwSMI or family carers/paid care workers/healthcare professionals of PwSMI. Predetermined definitions were used to differentiate between each population (Table 1). Papers were included where other mental illnesses (such as depression and anxiety) were presented, if the data on SMI could be clearly extracted. There was no restriction on year of publication.

2.3 | Study selection and data management

All results from the database searches were imported into Endnote version 20, for storage, duplicate removal, and sifting. One reviewer

TABLE 1 Definitions of populations.

People with severe mental illness	Carers	Health professionals
Severe mental illness includes a diagnosis of schizophrenia, bipolar disorder, or other psychotic disorders. It can also include an individual having a disorder that causes a disability (working group for improving the physical health of people with SMI, 2016).	A carer is anyone, including children and adults who looks after a family member, partner or friend who needs help because of their illness, frailty, disability, a mental health problem or an addiction and cannot cope without their support. The care they give is unpaid (NHS commissioning, 2014)	Someone who works in the medical profession, for example, a doctor or nurse (Cambridge Dictionary, 2022)

(ET) sifted all titles and abstracts against the inclusion criteria. The results were split between two further reviewers who independently double sifted 20% each (JB, KKK), and one reviewer sifted 20% (JB) for the updated sift. Any discrepancies were discussed between reviewers, and if an agreement could not be reached a third reviewer would make a final decision (KS). The third reviewer was not needed to intervene in any decision. There was a 91.66% agreement rate between reviewers (almost perfect inter-rater reliability when converted into Kappa statistic) and 97.87% for the updated sift. Papers deemed eligible in the first sift were retrieved so the full paper could be assessed. One reviewer (ET) screened all full papers, with 100% being double sifted between four other reviewers (JB, KKK, RM, KS), and 20% with one reviewer for the updated sift (EG). Two papers that were deemed eligible in the first sift^{22,23} could not be retrieved following multiple attempts, including contacting the authors. There was an 84.16% agreement rate between reviewers (a substantial agreement) and a 100% agreement rate for the updated full paper sifts. Two decisions were assessed by a third reviewer (KS) in the first sift who made the final decision on whether they were included in the review. The reference lists from all included papers were searched by two reviewers in the first (ET, KS) and second sift (ET, JS). This resulted in three additional papers being added. There was an 80.77% agreement rate between the reviewers (a substantial agreement).

2.4 | Data extraction

To data extract, a Microsoft Excel spreadsheet was developed. The spreadsheet captured: the authors, year of publication, country of study, aim of the research, study design, methods, setting/location of research, sample size, participant demographics, data about sense-making, enrolment, enactment and appraisal, and any non-normalisation process theory data that related to the review topic. One reviewer (ET) undertook the data extraction, and for quality assurance purposes, another two independent reviewers (CI, KS) checked 20% of the papers against the extracted data, to ensure data were not missing and there were no errors.

2.5 | Assessment of quality

All papers that met the inclusion criteria were quality assessed independently by three reviewers (ET, CI, JS), using the Mixed Methods Appraisal Tool (MMAT) version 2018.²⁴ The MMAT

includes a total of 25 criteria and two screening questions. Mixed Methods Appraisal Tool can appraise five different categories of study designs: (a) qualitative, (b) randomized controlled, (c) non-randomized, (d) quantitative descriptive and (e) mixed methods.²⁴ The MMAT was chosen as it has been used in previously published mixed method systematic reviews that focused on barriers and facilitators within cancer contexts.²⁴ No studies were excluded based on the quality score. Risk of bias was not assessed in this review, as it was not the aim of the review to assess the effectiveness of an intervention or compare interventions to see which were the most effective.²⁵ Responses were compared and any discrepancies between the reviewers were resolved through discussion. There was a 96.5% agreement rate between the reviewers (a substantial agreement) and 81.81% (moderate agreement) on the updated sift.

2.6 | Analysis

To analyse the extracted data, Framework Synthesis²⁶ was utilised and the data were entered into NVivo 10 for coding. The coding was in line with the four constructs of Normalisation Process Theory (NPT) (coherence, cognitive participation, collective action and reflexive monitoring).²⁷ NPT is a comprehensive and well-established analytical framework for understanding and explaining the dynamics of implementing and embedding complex interventions/practices across healthcare contexts.^{28,29} NPT was developed for use when implementing an intervention or reviewing an existing process or practice at an organisational level.^{30,31} NPT supports the integration of qualitative and quantitative data, making it suitable for mixed research designs.³² By using NPT, we can systematically examine the processes and mechanisms that influence the success or failure of normalising practices within cancer screening to understand barriers and facilitators for PwSMI that are relevant to its implementation.^{32,33} For this review, reflexive monitoring was not included, due to there being insufficient data to justify keeping reflexive monitoring as a standalone concept, therefore, this data was integrated into the other three concepts. This is consistent with previous research where the four NPT concepts have been used selectively.^{34,30,31} Each paper's data were mapped to the three constructs and themes were developed by clustering data together from across the papers. ET completed initial drafts of the analysis, which was discussed, adapted and confirmed with the wider review team (KS, JB, ELG, JS & SJ).

3 | RESULTS

3.1 | Search results

The searches yielded 1017 records. After de-duplication and title and abstract sifting, 114 full papers were assessed. In total, 20 papers met the inclusion criteria and were included in the review^{35–54} (Figure 1).

3.2 | Study characteristics

The characteristics from the 20 included papers are presented in Table 2. Most papers ($n = 11$) focused on multiple cancer screening programmes (i.e., cervical and breast) within the same study,^{35–38,44–48,51,53} four on breast cancer screening,^{42,43,49,54} three on cervical

cancer screening,^{39,41,50} and two on colorectal cancer screening.^{40,52} In total, 3,594,891 PwSMI were included as participants across the studies. However, the diagnoses of 2,585,638 people were unclear, with papers stating they had either Bipolar or Schizophrenia. Most papers ($n = 11$) reported on research from the USA,^{36–38,40,42,44,46,48,50,51,54} followed by Canada ($n = 5$),^{39,41,43,49,53} Japan ($n = 2$),^{47,52} and the UK ($n = 2$).^{35,45} All papers were awarded a score of five or above for the quality assessment. The results of the quality assessment can be seen in supplementary file 2.

3.3 | Factors which impact upon uptake of cancer screening

Eight papers documented multiple demographic characteristics that impacted on cancer screening uptake.^{36,39–43,49,50} Of the eight, seven

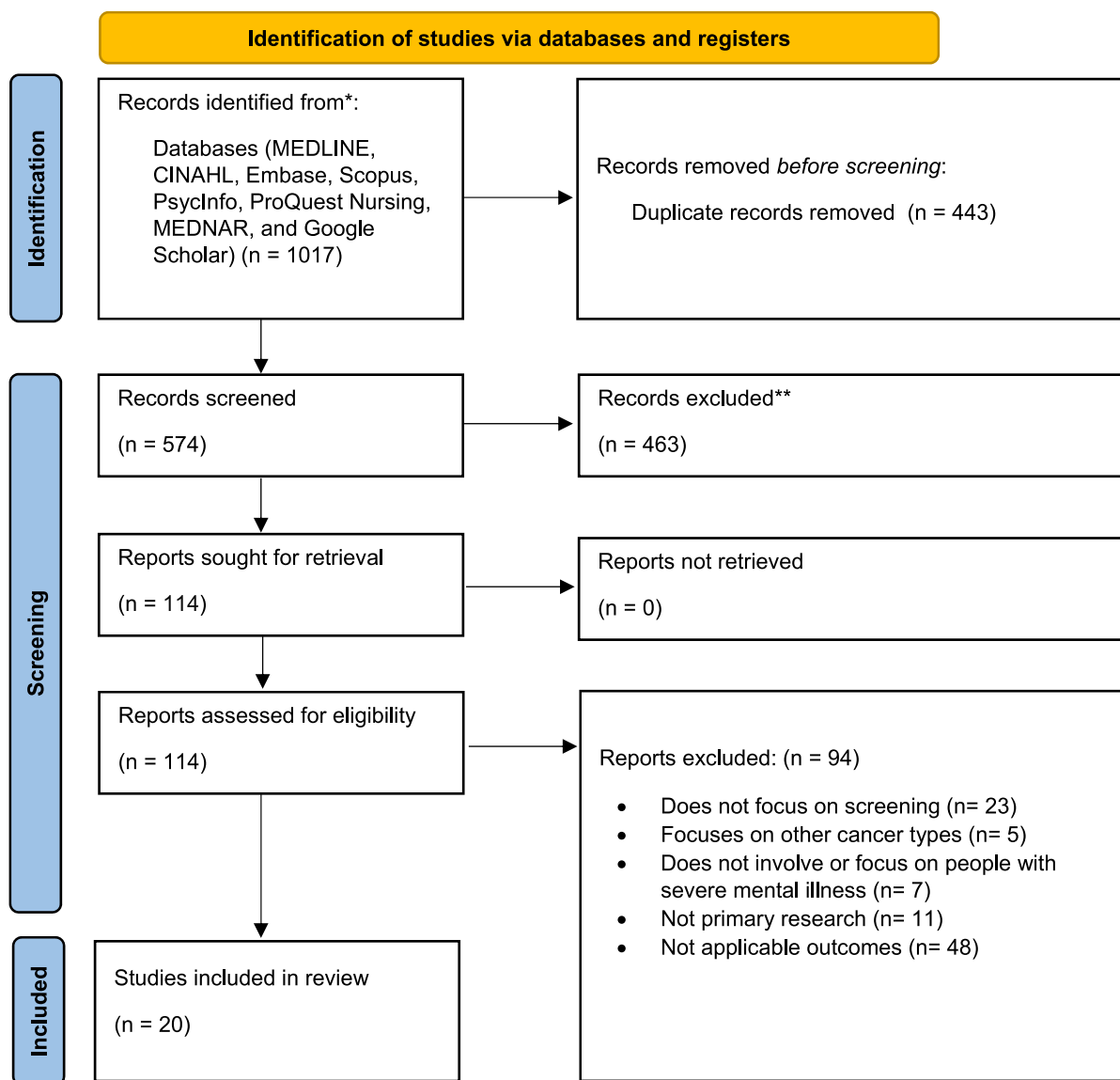


FIGURE 1 PRISMA Flow Diagram. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Flow Diagram. Source: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021; 372:n71. doi: 10.1136/bmj.n71. For more information, visit: <http://www.prisma-statement.org/>.

TABLE 2 Summary of included studies.

Author, year, location	Methods (measures)	Cancer screening type	Sample size	Breakdown of sample size, including diagnosis	Age ranges	Gender	Quality score	Summary of findings
Abrams et al., 2012, USA	Quantitative analytical (age, race, location, and comorbidities)	Cervical cancer screening	105,681	Psychosis (n = 4747) Bipolar disorder (n = 3319) Depression (n = 5014) No diagnosis (n = 85,375)	19–64	Female (n = 105,681)	7	Demographics Ethnic minority participants are more likely to attend cancer screening than other races. Barriers Not reported Facilitators Being enrolled in Maryland Medicaid
Chochinov et al., 2009, Canada	Quantitative analytical (age, income, location, and comorbidities)	Breast cancer screening	110,240	Schizophrenia group (n = 1448) All other women group (n = 108,792)	50–69	Female (n = 110,240)	7	Demographics The higher the income, the more likely participants were to attend screening. Barriers Lack of continuity of care and income (decreased participation). Facilitators Not reported.
Clifton et al., 2016, UK	Qualitative interpretivist	Breast, cervical and bowel screening	85	Service users (n = 45) Professionals (n = 40)	26–73	Female (n = 39) Male (n = 6)	7	Barriers and facilitators Knowledge of screening programmes and processes (increased participation). Knowledge of, and attitudes towards mental illness (both). Health service delivery factors (both). Service users' beliefs and concerns (decreased participation). Practicalities for service users (both).
Domino et al., 2015, USA	Quantitative analytical	Breast, cervical and bowel cancer screening	65,634	Schizophrenia (n = 7228) Bipolar disorder (n = 7228) Major depression (n = 45,000)	18+	Male (n = 19,447) Female (n = 46,187)	7	Barriers Not reported Facilitators Being enrolled in Medicaid (increased participation)
Domino et al., 2017, USA	Quantitative analytical	Breast, cervical and bowel cancer screening	272,149	-	18+	Male (n = 96,613) Female (n = 175,536)	7	Barriers Not reported Facilitators Medical homes (increased participation) (Continues)

TABLE 2 (Continued)

Author, year, location	Methods (measures)	Cancer screening type	Sample size	Breakdown of sample size, including diagnosis	Age ranges	Gender	Quality score	Summary of findings
Fujiwara et al., 2021, Japan	Quantitative experimental	Colorectal, breast, and cervical cancer screening	170	-	39-80	Female (n = 170) Male (n = 170)	7	Barriers Not reported Facilitators Being in an educational intervention (increased participation)
Grove et al., 2021, USA	Quantitative analytical	Cervical and colorectal cancer screening	17,688	-	18+	Female (n = 17,646) Male (n = 42)	7	Barriers Not reported Facilitators Receiving enhanced primary care (increased participation)
Heyding et al., 2005, Canada	Quantitative experimental (age and income)	Breast cancer screening	247	-	50-70	Female (n = 247)	6	Demographics The higher the income, the more likely participants were to attend screening. Barriers Not reported Facilitators Trust in staff, having company, flexibility of the screening centre (increased participation).
Howard & Gamble, 2011, UK	Quantitative descriptive	Cervical and breast cancer screening	37	-	None noted	Not noted	5	Barriers No support for staff. Lack of confidence in staff (decreased participation) Facilitators Education for staff (increased participation)
Kilbourne et al., 2011, USA	Quantitative analytical	Breast and colorectal cancer screening	105,100	-	Mean: 56.4	Female (n = 18,783) Male (n = 86,317)	6	Barriers Not reported Facilitators Being in a mental health programme with colocated general medical clinics (increased participation)
Kodl et al., 2010, USA	Quantitative analytical (age, gender, race, and comorbidities)	Colorectal cancer screening	855	PTSD (n = 159) Depression (n = 373) Psychosis (n = 101) Anxiety (n = 285) Substance abuse (n = 366)	Mean: 60.8	Female (n = 286)	7	Barriers Not reported Facilitators Healthcare visits can increase adherence (increased participation)

TABLE 2 (Continued)

Author, year, location	Methods (measures)	Cancer screening type	Sample size	Breakdown of sample size, including diagnosis	Age ranges	Gender	Quality score	Summary of findings
Lindamer et al., 2006, USA	Quantitative descriptive (age)	Breast cancer screening	46	Schizophrenia (n = 3220) All other women (n = 335,294)	44–72	Female (n = 46)	7	Barriers Doctor not recommending screening (decreased participation) Facilitators Not reported
Linz & D'Emilia 2022, USA	Qualitative interpretivist	Breast cancer screening	15	-	40–79	Female (n = 15)	7	Barriers "Trauma," fear, distrust in the health care system with subthemes of "stigma," "racism," "not how I was raised," and not my priority, with a sub theme of "other stressors." (decreased participation) Facilitators Support, good health care experiences, make it easy, integrated care, and self-care (increased participation)
Martens et al., 2009, Canada	Quantitative analytical (age, income, location, and comorbidities)	Cervical cancer screening	338,514	Schizophrenia: N = 3220 all other women: N = 335,294	18–69	Female (n = 338,514)	7	Demographics The higher the income, the more likely participants were to attend screening. Barriers Lack of income (decreased participation) Facilitators Continuity of care (increased participation)
Moravac, 2018, Canada	Qualitative interpretivist	Breast and cervical cancer screening	26	-	-	Female (n = 26)	7	Barriers Lack of trust in healthcare staff (decreased participation) Facilitators Having access to a family physician; being satisfied with one's family physician; having had previous Pap tests and/or mammograms that went reasonably well; being encouraged or influenced by mothers, friends, or others in one's social network; and valuing cancer checks as routine activities that help to maintain good health (increased participation). (Continues)

TABLE 2 (Continued)

Author, year, location	Methods (measures)	Cancer screening type	Sample size	Breakdown of sample size, including diagnosis	Age ranges	Gender	Quality score	Summary of findings
Murphy et al., 2020, USA	Quantitative analytical (gender)	Cervical, breast and colorectal cancer screening	12,176	-	21-64	Not noted	7	Demographics Females are more likely attend cancer screening. Barriers Lack of knowledge, wrong perception, stigma and socioeconomic status (decreased participation) Facilitators Enrolment in a behavioural health home programme (increased participation)
Murphy et al., 2021, USA	Qualitative interpretivist and quantitative analytical (age, gender, race, income, and comorbidities.)	Cervical, breast colorectal, and prostate cancer screening	32	-	21-64	Not noted	5	Demographics Ethnic minority participants are more likely to attend cancer screening than other races. The higher the income, the more likely participants were to attend screening. Barriers Access to care. Prioritization of other medical issues. Communication. Patient concern (decreased participation) Facilitators Access to care. Available support from family and community. Communication (increased participation)
Murphy et al., 2021, USA	Quantitative analytical	Cervical, breast, colorectal, and prostate cancer screening	74,633	-	21-64	Not noted	7	Barriers Lack of transportation and accessibility (decreased participation) Facilitators Primary care utilization and Medicaid enrolment (increased participation)
Ouk et al., 2020, Canada	Quantitative analytical (comorbidities)	Cervical cancer screening	1,245,457	With bipolar or schizophrenia (n = 119,948) Without: (n = 1,125,509)	19-70	Female (n = 1,245,457)	7	Barriers Not having a family physician (decreased participation) Facilitators Not reported

TABLE 2 (Continued)

Author, year, location	Methods (measures)	Cancer screening type	Sample size	Breakdown of sample size, including diagnosis	Age ranges	Gender	Quality score	Summary of findings
Yamada et al., 2022, Japan	Qualitative interpretivist	Colorectal cancer screening	153	-	39-80	Female (n = 72) Male (n = 81)	5	Barriers Feeling they do not need to go for cancer screening (decreased participation). Facilitators Wanting to prevent cancer/being scared of cancer (increased participation).

discussed age affecting uptake.^{37,40-43,49,50} However, the results were inconclusive about whether age positively or negatively increased the likelihood of uptake in PwSMI. A second characteristic that was discussed in two papers^{40,44} was gender, specifically relating to colorectal cancer screening. As above, results were inconclusive with one paper finding that gender did not influence uptake,⁴⁰ and the second paper finding females being more likely to attend colorectal cancer screening.⁴⁴ Three papers examined the effects of ethnicity on cancer screening attendance.^{36,40,50} Two papers found ethnic minority populations were more likely to attend the three screening programmes than white ethnic groups,^{36,50} while the third paper found no significant effects of ethnicity impacting on uptake of colorectal screening.⁴⁰ A further finding was that the higher the average household income, the greater the likelihood of attending cancer screening.^{36,41,43,49} Three papers^{41,48,50} indicated that cervical and breast cancer screening uptake levels were higher in urban locations, compared to other locations. Lastly, comorbidities were explored in three papers^{40,49,50} where it was discovered that sexually transmitted diseases increased the chances of cancer screening, whereas Human Immunodeficiency Viruses decreased the chances of cancer screening. In the following sections, the results focus on the NPT constructs. Corresponding quotations from the review papers are detailed in Table 3.

3.4 | Coherence

Coherence refers to the sense-making work that individuals engage in when they encounter a new practice or intervention, such as cancer screening. It involves understanding and making sense of the screening's purpose, components, and how it relates to existing knowledge. Eight papers highlighted factors which impact upon how PwSMI make sense of cancer screening to enable them to decide about attending for screening.^{35,36,42,45,47,52-54} This included awareness and understanding of cancer screening, stigmatisation, social support (for example friends and family helping them to understand the need for screening), not being invited to screening, and cancer screening not being prioritised.

The social support that PwSMI received from their friends, family, and healthcare professionals was seen to be beneficial.^{36,45,54} The support received included supporting the PwSMI in knowing about cancer screening and encouragement to attend, helped PwSMI become more knowledgeable and more likely to attend cancer screening.⁴⁵

Awareness of cancer screening was discussed as a barrier for PwSMI,^{35,42,45,52} with some not knowing when breast cancer screening was needed, what it is, or what to expect during the mammogram.⁴² However, there was a more general awareness of cancer screening, including knowing the benefits of attending screening, such as living longer, being healthier, and avoiding further illness.^{35,45} One way that PwSMI could be made aware of cancer screening was via educational interventions⁴⁷ or mental health professionals promoting screening as part of their role. Yet, mental

TABLE 3 Normalisation Process Theory (NPT) quotations.

NPT constructs	Definition of construct	Quote/examples from paper (reference)
Coherence	How do people make sense of screening—knowledge of cancer and screening, for example, how will attending affect them?	<p><i>"The lady was laughing because I was shaking...I told her I was on medication that causes my hands to tremor. She could have been more understanding"</i> (Clifton et al., 2016)</p> <p><i>"Because I don't like doctors. I don't like them. They don't treat me very nice. Like at my health clinic, those people are nasty."</i> (Linz & Jerome-D'Emilia, 2022)</p> <p><i>Social support would be beneficial especially for patients with SMI who were perceived to have limited support networks</i> (Murphy et al., 2021)</p> <p><i>"It was only when I felt this big lump that I thought oh shit I'd better do something about it"</i> (Clifton et al., 2016)</p> <p><i>Clinicians identified clear communication and shared-decision making as necessary components for cancer screening and noted that education should be tailored to individuals with SMI.</i> (Murphy et al., 2021)</p> <p><i>"[Psychiatrist] To be honest I don't know much at all."</i> (Clifton et al., 2016)</p> <p><i>Clinicians discussed challenges where acute issues (e.g. knee pain) or a poorly controlled chronic disease (e.g. diabetes) took precedent over cancer screening. PCPs noted that mental illness symptoms were a high priority topic during visits.</i> (Murphy et al., 2021)</p> <p><i>"...they seem very needy and they need to sit down and can I have some more time and it's just a mammogram obviously to me"</i> (Clifton et al., 2016)</p> <p><i>Assessing sexual health was also generally ranked lower with the majority being only fairly or not confident providing advice on sexual health and checking women's needs, such as cervical screening, mammogram attendance or assessing menstrual cycle concerns.</i> (Howard & Gamble 2011)</p> <p><i>"It's my friend and my mum who will push me and say you should get this sorted out"</i> (Clifton et al., 2016)</p> <p><i>Post-hoc analysis of the individual items on the Decisional Balance questionnaire revealed that 55.6% of women in the Precontemplation group believed that a mammogram was not needed if a clinical breast exam was preformed compared to 18.5% of the women in the Action/Maintenance group and none in the Contemplation group.</i> (Lindamer et al., 2006)</p> <p><i>"It's not necessary for me, so it doesn't matter if you explain it to me"</i> (Yamada et al., 2022)</p> <p><i>"I didn't receive it because I had already had the screening before, and I thought I didn't need to take it again"</i> (Yamada et al., 2022)</p> <p><i>"It is worthwhile to encourage and explain screening in person. Many patients may not receive screening if they are only given materials to encourage screening (Nurse)".</i> (Yamada et al., 2022)</p> <p><i>And so I couldn't do what ... You know, worried about pains or ... when you can't even walk, you know. And I can't even concentrate—watching TV. And you're telling this doctor that, and she doesn't give a damn. And why go get a Pap smear or a mammogram when they'd probably ruin you more.</i> (Moravac, 2018).</p>
Cognitive participation	Working out how to take part in screening, for example, are there considerations such as time of day, travel to get to screening?	<p><i>"They wouldn't leave me alone...they kept texting me and I've chosen not to have it and I've told my GP I don't want to have it but they still send the letters...I just feel like they're really trying to pressure you into it".</i> (Clifton et al., 2016)</p> <p><i>Clinicians noted that continuous insurance coverage and accessibility to health services, particularly to in-network providers, were critical for cancer screening. They linked screening and timely follow-up with access to services and reliable transportation.</i> (Murphy et al., 2021).</p> <p><i>"It can be daunting especially when you are feeling so low.. and you get these letters. Sometimes I feel my head is going to explode".</i> (Clifton et al., 2016)</p> <p><i>"Sometimes when you are feeling low you don't tend to look after yourself"</i> (Clifton et al., 2016)</p> <p><i>All patients were felt to benefit from social support, but this was especially important for patients with SMI who were perceived to have limited support networks. A support person could be a family member, friend, or case manager to assist with appointments, logistics, and education.</i> (Murphy et al., 2021).</p>

TABLE 3 (Continued)

NPT constructs	Definition of construct	Quote/examples from paper (reference)
		<p><i>"I feel quite confident that I've met a lot of different people, different personalities and it helps you to adapt in different situations"</i> (Clifton et al., 2016)</p> <p><i>"I wasn't keeping any appointments; I couldn't be on time . . . I put a glass of water on each windowsill because I was afraid to think if someone came in... I wouldn't leave the house unless it was a dire emergency."</i> (Linz & Jerome-D'Emilia, 2022)</p> <p><i>The participants suggested that providing transportation, utilizing a mammography van, sending reminders, and using incentives all facilitated getting screened.</i> (Linz & Jerome-D'Emilia, 2022)</p>
Collective action	The operational work of going to and completing the screening.	<p><i>"I may have paranoia, so waiting in a room full of other people...that's not good..."</i> (Clifton et al., 2016)-</p> <p>Clinicians also identified individual concerns, such as testing logistics (e.g. bowel preparation for colonoscopy), personal experience (e.g. trauma, stigma), lack of motivation, and fear of a positive test result. PCPs noted that mental health symptoms, such as apathy or anxiety, influenced motivation. Personal experience and the presence of delusions and paranoia were thought to influence a patient's decision-making process around cancer screening (Murphy et al., 2021).</p> <p><i>"Because people get scared with mammograms, mammograms are a scary thing. Because, think about it, likesomebody who does find a lump, and then they, they're worried, you know what I mean? . . . Like, oh my God, what if it is cancer?"</i> (Linz & Jerome-D'Emilia, 2022)</p> <p><i>"I don't like being touched very much. I have a problem with it. . . Especially taking my pants off. I have real bad trauma with that. Yeah, that brings up stuff from the past, flashbacks, stuff like that, I have PTSD."</i> (Linz & Jerome-D'Emilia, 2022)</p> <p><i>"Think about negative symptoms of schizophrenia and chaotic lifestyle, in and out of hospital, drugs and alcohol, depression, all these things and plus I guess if they don't go to the GP..."</i>. (Clifton et al., 2016)</p> <p>Education and training needs the MHNs overwhelmingly felt that they had not received enough education and training on physical health care with 75% not receiving any whilst working in the mental health trust (Howard & Gamble 2011).</p> <p><i>"Sometimes knowing when all our patients have appointments can be a bit difficult for us unless we get a letter or they come with a letter"</i>. (Clifton et al., 2016)</p> <p><i>"I had quite a few clients who got struck off by the GP because either they are perceived as not following the rules or they are perceived as rude to the receptionists"</i>. (Clifton et al., 2016)</p> <p><i>"Our priority is, you know, engagement, stabilisation and not cancer screening"</i> (Clifton et al., 2016)</p> <p>I don't trust doctors. Doctors are not Gods. And they don't have wisdom. It doesn't matter if they have years and years of experience. And also, the reason why ...5 years ago my GP (general practitioner) passed away, and he was a very old man. And he was the best. And you know, he was a gentleman. And he treated me like a lady. And ... now I don't have anybody. (Moravac, 2018)</p>

health professionals felt they needed training in providing advice on cervical, breast, and colorectal cancer screening, and lacked knowledge of the cancer screening programmes.^{35,45,52}

In addition, characteristics of the PwSMI diagnosis were found to impede individuals understanding and decision-making processes when deciding if cancer screening is something they wished to engage in, such as if they experienced delusions and paranoia.³⁶ Similarly, if the individual had personal experiences of trauma and stigma, lacked motivation, and/or was fearful of having a positive test result, these all contributed to their decision not to attend cancer screening.^{36,53,54}

A barrier found to impede participation was stigmatisation and cancer screening staff's negative attitudes towards SMI.^{36,45,53,54} PwSMI felt some screening staff were unaware of individuals mental health diagnosis and did not understand the effects that this had upon their physical health; while others felt, some screening staff were supportive and understanding. It was also found that non-mental health professionals, including doctors, held stigmatising views,⁴⁵ for example, doubting whether cancer screening is needed for PwSMI.⁴² It was also highlighted that PwSMI's other healthcare needs (such as diabetes, mental illness symptoms, smoking habits, and alcohol and illicit substance use) were found to be prioritised

over cancer screening due to time limitations the doctors had to discuss the patient's needs and priorities.^{35,36} This may be one reason why PwSMI are not invited to cancer screening, and in turn may act as a barrier for them (not) knowing about it and being enabled to make an informed decision as to whether they attend, or not.⁴⁵

3.5 | Cognitive participation

Cognitive participation refers to the individual and collective efforts required to engage with and enact the new practice. It involves acquiring the necessary skills, knowledge, and resources, to work out how to attend the screening. Five papers explored factors that relate to how the person with a SMI decides whether to attend cancer screening.^{35,36,39,45,54}

As previously highlighted, social support was beneficial. In terms of cognitive participation, the findings highlight that support is needed to help PwSMI arrange the appointment to attend cancer screening.^{36,39,45} Reminder letters and texts have been used to encourage participation and support people to make appointments to attend the cancer screening, however, some PwSMI found them intrusive.⁴⁵

Transport was seen as a barrier in accessing breast and cervical screening,^{36,45} as some PwSMI were unable to drive or access their own transport, while accessing public transport impacted their mental health, leading to feelings of anxiety.⁴⁵ This was often exacerbated if the appointment was at an unfamiliar location. Colorectal cancer screening seemed to hold the fewest barriers for PwSMI⁴⁵ as it is completed at home, therefore, removing the need to travel.⁴⁵

Additionally, a concern raised by PwSMI was the negative attitudes and the feeling of being stigmatised by screening staff.^{45,54} Through a cognitive participation lens, PwSMI worried about what staff would think and say, which impacted their decision to return and participate in cancer screening again. In addition, PwSMI expressed feelings of 'stress', with cancer screening impacting negatively upon their 'already busy lives'.^{45,54} Motivation to attend or complete the screening was also hindered by the consequences of their mental illness, for example, when feeling depressed or mentally unwell, PwSMI tended to not care about themselves.^{45,54}

Having access to health services was seen to positively influence how PwSMI decide to attend cancer screening,³⁶ however, this differed amongst countries. For example, in the USA, individuals are required to purchase insurance to cover the costs of their screening, however, in other countries, such as the UK, it is a free service. When thinking about how to engage with PwSMI, some healthcare professionals (including mental health nurses, clinicians, and screening staff) appeared apprehensive and uncomfortable around tailoring conversations for PwSMI. This could make it difficult for PwSMI to take part in screening as they may not feel supported or confident to take part. However, others recognised the benefits of good communication and empathy with their patients.^{35,36,45}

3.6 | Collective action

Collective action refers to the collaborative work and coordination needed to work out how to complete the screening. Eight papers identified factors that related to how PwSMI operationalised going to and completing the screening, such as the cancer screening environment.^{35,36,38,45,46,51,53,54}

Based upon previous experiences, some PwSMI were afraid to return to breast cancer screening, due to it having been "a rushed appointment"⁴⁵ and feeling screening staff were rough, which discouraged the person from going back.⁴⁵ The anticipation of a negative experience significantly affected PwSMI, especially for breast and cervical screening, for example, worrying that it would be traumatising, embarrassing or that it would result in "bad news".⁴⁵

People with severe mental illness documented multiple factors in relation to breast and cervical cancer screening, that impeded their ability to attend screening.^{45,46} These included noise levels (which often aggravated mental health symptoms), location of the appointment, arranging childcare, and remembering to attend the appointment.^{45,54} Regarding the location of the appointment, there was a preference that screening took place in a familiar location, or closer to home.⁴⁵ It was noted that, if notice was provided, reasonable adjustments could be made to support the person in attending screening, such as being offered a longer appointment. However, this was often seen as a difficulty as the person themselves would need to request these adjustments, as opposed to their doctors or screening services offering this automatically.⁴⁵

People with severe mental illness felt that their relationship with health professionals was poor (for example poor engagement and/or communication) and were concerned about attending cancer screening.^{45,53,54} Having good communication was not only needed between the person attending the appointment, and the screening staff, but for care systems to communicate with each other.^{36,45,54} Specifically, there was a concern that a lack of integration between services (for example mental health/hospital in-patient and screening services) and using different computer systems may cause problems, for example, the screening staff had no way of knowing if the person had any specific needs or when they were due for cancer screening. This may be in part due to there being no systematic approach to identifying and overcoming barriers for individual patients.³⁶ Therefore, a more integrated approach between services has been recommended.^{38,51}

Physicians and psychiatrists also identified accessibility barriers for PwSMI attending or completing cancer screening; these included how they will carry out the screening (for example engaging in shared decision-making and assessing capacity),³⁶ income and insurance coverage, exclusion clauses for health insurance^{36,45} and being excluded from GP's registers (so PwSMI may not be invited for screening). Additional barriers were centred around the lack of confidence in being able to assess capacity or tailor conversations toward their patients. It also appeared that cancer screening may not be a priority for clinicians.^{35,45} However, this prioritisation seemed to depend on the role of the healthcare professionals, and whether it

was focused on mental or physical health, as some did document that promoting cancer screening was a priority and acknowledged that part of their role was to encourage those who were involved in physical health checks.⁴⁵ Whereas it was found that mental health professionals may not undertake physical health promotion activities and additional training was recommended to improve awareness and knowledge of guidelines or policies relating to the physical health needs of individuals with SMI.^{35,45}

4 | DISCUSSION

The aim of this mixed methods systematic review, underpinned by NPT, was to identify the barriers and facilitators for PwSMI deciding to attend, and then access cancer screening of the cervix, breast, and colon. The results from this systematic review have found mixed results as to whether individual demographic characteristics affected cancer screening uptake, except for income, where all papers that measured it found that the higher the household income, the greater the chance of attending cancer screening. Common barriers to attending cancer screening were spread across all the NPT constructs and included poor communication, stigmatising attitudes, and accessibility problems such as no access to transportation. Similarly, common facilitators were also spread across all the NPT constructs and included social support from friends, family, and healthcare providers, being offered longer appointments, and the screening being at a familiar location.

Our review found that both PwSMI and healthcare providers agreed that stigmatising attitudes and poor relationships existed which discouraged PwSMI from attending cancer screening. Our review also found that inadequate communication between PwSMI and healthcare staff hindered PwSMI's engagement in cancer screening and clearer explanations of the process and more promotion of cancer screening were needed to raise awareness. Previous research has discovered that negative attitudes, lack of communication, and biases among healthcare providers can contribute to the barriers faced by PwSMI attending breast and cervical cancer screening.^{55,56} For example, poor communication between health care professionals and PwSMI contributes to the lack of knowledge about the person's mental illness,⁵⁷ leading to a lack of effort in encouraging PwSMI to attend cancer screening, such as sending out reminder letters.⁵⁸ Previous literature has also highlighted the need for cancer screening promotion and encouragement from healthcare professionals^{55,59} with mental health nurses, screening nurses, and oncology nurses performing an essential role in increasing screening adherence for PwSMI.⁶⁰

Negative experiences in healthcare settings of PwSMI can lead to mistrust and discourage PwSMI from returning to cancer screening. People with severe mental illness described having negative experiences of breast and cervical cancer screening by having a rushed appointment, screening staff being rough, and generally describing the whole experience as traumatising. This could be explained by cancer screening staff and healthcare professional's admittance that

they felt ill-equipped to deal with the mental health needs of PwSMI during their screening, leading to staff members low confidence in consulting and communicating with their patient.³⁶ This is supported by previous literature which found that low confidence and negative attitudes towards PwSMI during screening appointments contributed to the delay in PwSMI going for screening,^{61,62} with a recommendation that more education surrounding mental illness for cancer screening staff and healthcare professionals is needed.⁵⁷

Access to breast and cervical cancer screening was also found to be difficult for PwSMI, by needing access to public transportation to attend the appointment, knowing how to attend an appointment at an unfamiliar location, having the time and motivation to attend the appointment, and more specifically to the USA, the insurance and costs to have the screening. McWilliams⁶³ also identified these accessibility factors as barriers to attending cancer screening, as well as other factors that our review did not highlight, including PwSMI having low value in their own health and the fear of leaving home. In an attempt to reduce these barriers, initiatives have been implemented where people can choose where to complete cervical cancer screening, such as local sexual health clinics or walk-in centres⁶⁴ which could then reduce the travel and associated cost of transportation. However, these services have only been established in some parts of England.⁶⁴ Transportation services should be available to individuals who face challenges in accessing screening facilities. In addition, offering flexible appointment times for PwSMI may be beneficial, which has been recommended by Jo's Trust⁶⁵ who have been working with GP surgeries and clinics to offer drop-in services which can offer flexible appointment and a dedicated environment for cervical screening.⁶⁵

All barriers identified in relation to cancer screening were related to cancers of the breast and cervix and were similar across all the countries that were reviewed. This could be attributed to the higher number of papers which specifically looked at breast and/or cervical screening, and for the papers which looked at all cancer screenings, breast and cervical were addressed more frequently. This is also evident in previous literature, whereby more research has been published for breast and cervical cancer screening as opposed to colorectal screening.⁶⁶ A recent systematic review⁶⁷ exploring non-participation in colorectal cancer screening found three common reasons why the general population do not participate; awareness and lack of knowledge about the screening, negative reactions to the process and consequences of screening (for example discomfort and embarrassment), and practical constraints and healthcare professional's influence (for example having other priorities and lack of trust in doctors). However, in our review, when looking at colorectal cancer screening for PwSMI, it was found that it held the fewest barriers when compared to the other two screenings, as making appointments, and interacting with health professionals were not needed, and PwSMI preferred to complete their screening at home. Interestingly, a recent scoping review shows uptake levels for colorectal screening for PwSMI to be lower than the general public, therefore, further investigations into the barriers and facilitators of this cancer screening and for this specific population are warranted.⁶⁸

Facilitators to breast and cervical cancer screening centred around the social support received from family, friends, and health-care staff, which encouraged PwSMI to attend their appointment. This included PwSMI receiving help to make their appointment, having somebody attend their appointment with them and understanding the screening process. Arnold⁶⁹ highlights the importance of effective communication in relation to breast cancer screening, whereby they encourage mammographers to speak with and listen to patients to gather information for the examination and the patient's medical record to be able to address differences in patients' mental states. Additionally, Lamontagne⁷⁰ discovered psychosocial support and trust between patients and staff were a facilitator to help PwSMI obtain screening. Furthermore, from the mental health professionals' point of view, it was generally agreed that offering PwSMI a longer appointment could help to overcome some of the identified barriers and that care systems should communicate better with each other to help PwSMI attend cancer screening. This is consistent with previous literature which emphasises the need for an integrated approach to cancer screening, combining both the mental health and physical needs of individuals, through shared decision-making, exchanging information between services, and integrating multidisciplinary services.^{71,72}

4.1 | Clinical implications

This review has highlighted the range of barriers and facilitators PwSMI face in deciding to attend and then access cancer screening. Very little qualitative research has been conducted with PwSMI and cancer screening, especially in the UK. Future research should focus on addressing the challenges PwSMI face when attending and accessing cancer screening so that a deeper understanding can be gained via qualitative methods. This will help to support PwSMI make informed decisions about their healthcare in a person-centered way, as supported by the Equality Act 2010. The Equality Act 2010 is a legal framework enabling people to access services in the UK, including healthcare services⁷³ (similar to the 'Equal Health Care for All Act' in the USA).⁷⁴ Within the Act, it is emphasised that reasonable adjustments must be made where it is reasonable to do so.

The identification of the barriers and facilitators from this review, can support decision making and access to screening to ensure everyone has equal access to the healthcare setting or service. Policy and practice implications for cancer screening among PwSMI should therefore prioritise integration, education, adaptations, and barrier reductions. Firstly, to reduce the barriers outlined above, training programmes for healthcare providers should include education on mental health, reducing stigma and effective communication with PwSMI. Providers need to be equipped with the knowledge and skills to address the unique challenges faced by this population, including understanding the impact of SMI on cancer screening participation and providing appropriate support during the screening process. Additionally, targeted educational campaigns to raise awareness about the importance of cancer screening among PwSMI should be

supported. They should be tailored to address the specific needs and concerns of this population, eliminate misconceptions, and provide accessible information in an easy-read format.

4.2 | Study limitations

This review held a number of strengths, it is the first review, to the authors knowledge that has synthesised the global literature in relation to PwSMI deciding to attend and then accessing cervical, breast and colorectal cancer screening. Additionally, the review was theoretically informed using NPT, and did not exclude any papers by year. However, there were limitations to the review, definitions of SMI vary across the globe and some included papers stated that the participants had SMI but focused upon a number of conditions, including Schizophrenia, Bipolar disorder, major depression, and psychosis. Another limitation that needs to be considered is the review's exclusion of studies that were not written in the English language; therefore, it is possible certain studies were missed and not included in the review. Some papers were low in quality, but these were included due to the limited evidence identified and the papers were not 100% double sifted. Lastly, lung cancer screening was excluded as the review focused on the three English national screening programmes that are offered, therefore further research will be needed in this area.

5 | CONCLUSION

This mixed methods systematic review highlights the barriers faced by PwSMI attending cancer screening, which were found to be both varied and interconnected. Barriers to cancer screening included poor communication between health care professionals and PwSMI, stigmatising attitudes, and accessibility problems such as no access to transport and noisy waiting rooms. The facilitators, which helped PwSMI attend cancer screening included social support from friends, family, and healthcare providers, being offered longer appointments, and the screening being at a familiar location. Overcoming these barriers and promoting the facilitators requires a person-centred approach that recognises the needs and challenges faced by this population and addresses stigma, improves awareness, enhances access to healthcare services, and encourages positive relationships between healthcare providers and PwSMI. By addressing these challenges, we can strive to ensure that all individuals, regardless of their mental health status, have fair and equal access to cancer screening.

AUTHOR CONTRIBUTIONS

Kate Sykes and Jill Barker obtained funding to complete the work and conceived the work with support from Emma L. Giles. Kehinde K. Kanmodi registered the review on PROSPERO. Julie Hogg completed the database search. Emma Tuschick, Kate Sykes, Jill Barker, Emma L. Giles, Susan Jones, Kehinde K. Kanmodi were involved in sifting.

Emma Tuschick and Kate Sykes completed data extraction, critical appraisal. Emma Tuschick completed the original synthesis of data, with review and refinement from Kate Sykes, Jill Barker, Emma L. Giles, Susan Jones and Jula Sill. Emma Tuschick developed the original manuscript, with revision from Jill Barker, Emma L. Giles, Susan Jones and Jula Sill. All authors approved the final version of the manuscript and have agreed to be accountable for all aspects of the work.

ACKNOWLEDGEMENTS

We would like to thank members of the North-East and North Cumbria Research Design Service Consumer Panel who provided feedback on the initial design and purpose of this research prior to submission to the funder. In addition, we would like to thank the wider advisory group and experts by experience who have aided in the development and design of the research and continue to provide support and insight. We would also like to thank the North-East and North Cumbria Integrated Care System Mental Health Programme for their support. We would also like to thank the contributions of our wider research team, Dr Rebekah McNaughton, and Chinedu Igwilo, for their input into the study funding application and involvement in earlier phases of this study. This project is funded by the National Institute for Health and Care Research (NIHR) [Applied Research Collaboration North East and North Cumbria (NIHR200173)]. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicting interests.

DATA AVAILABILITY STATEMENT

The protocol of the study is available on PROSPERO. The extracted data from the included studies is available from the corresponding author upon request.

ETHICAL STATEMENT

Ethical approval was not sought or required for this systematic review.

ORCID

Emma Tuschick  <https://orcid.org/0000-0001-5498-2300>

Jill Barker  <https://orcid.org/0000-0002-9881-1084>

Kehinde K. Kanmodi  <https://orcid.org/0000-0001-9906-3826>

REFERENCES

- National Institute for Health and Care Research. Cancer Screening across the World is Failing People with Mental Illness; 2020. <https://evidence.nihr.ac.uk/alert/cancer-screening-across-the-world-is-failing-people-with-mental-illness/>
- NHS England. Improving Physical Healthcare for People Living with Severe Mental Illness (SMI) in Primary Care: Guidance for CCGs; 2018. <https://www.england.nhs.uk/publication/improving-physical-healthcare-for-people-living-with-severe-mental-illness-smi-in-primary-care-guidance-for-ccgs/>
- Public Health England. Severe Mental Illness (SMI) and Physical Health Inequalities: Briefing; 2018. <https://www.gov.uk/government/publications/severe-mental-illness-smi-physical-health-inequalities/severe-mental-illness-and-physical-health-inequalities-briefing>
- NHS England. Core20PLUS5 (Adults) – an Approach to Reducing Healthcare Inequalities; 2021. <https://www.england.nhs.uk/about/equality/equality-hub/national-healthcare-inequalities-improvement-programme/core20plus5/>
- Public Health England. Severe Mental Illness (SMI): Inequalities in Cancer Screening Uptake Report; 2021.
- Kisely S, Crowe E, Lawrence D. Cancer-related mortality in people with mental illness. *JAMA Psychiatr.* 2013;70(2):209-217. <https://doi.org/10.1001/jamapsychiatry.2013.278>
- Kaerlev L, Iachina M, Trosko O, Qvist N, Ljungdahl PM, Nørgård BM. Colon cancer patients with a serious psychiatric disorder present with a more advanced cancer stage and receive less adjuvant chemotherapy-A Nationwide Danish Cohort Study. *BMC Cancer.* 2018;18:1-10. <https://doi.org/10.1186/s12885-018-4879-3>
- World Health Organization. Cancer - Screening and Early Detection; 2010. <https://www.who.int/europe/news-room/fact-sheets/item/cancer-screening-and-early-detection-of-cancer>
- World Health Organization. A Short Guide to Cancer Screening Increase Effectiveness, Maximize Benefits and Minimize Harm; 2022:1-45.
- NHS England. Screening and Earlier Diagnosis; 2023. <https://www.england.nhs.uk/cancer/early-diagnosis/screening-and-earlier-diagnosis/>
- Solmi M, Firth J, Miola A, et al. Disparities in cancer screening in people with mental illness across the world versus the general population: prevalence and comparative meta-analysis including 4 717 839 people. *Lancet Psychiatry.* 2020;7(1):52-63. [https://doi.org/10.1016/s2215-0366\(19\)30414-6](https://doi.org/10.1016/s2215-0366(19)30414-6)
- Syons-Nibbs L Making Screening More Accessible for People with a Severe Mental Illness - PHE Screening; 2018. <https://phescreening.blog.gov.uk/2018/11/22/making-screening-more-accessible-for-people-with-a-severe-mental-illness/>
- Office for Health Improvement & Disparities. Premature Mortality in Adults with Severe Mental Illness (SMI); 2023. <https://www.gov.uk/government/publications/premature-mortality-in-adults-with-severe-mental-illness/premature-mortality-in-adults-with-severe-mental-illness-smi>
- NHS.UK. NHS Long Term Plan; 2023. <https://www.longtermplan.nhs.uk/>
- GOV.UK. Levelling Up; 2023. <https://levellingup.campaign.gov.uk/>
- Department of Health & Social Care. Mental Health and Wellbeing Plan: Discussion Paper; 2023. <https://www.gov.uk/government/consultations/mental-health-and-wellbeing-plan-discussion-paper-and-call-for-evidence/mental-health-and-wellbeing-plan-discussion-paper>
- Jelenc M, Albrecht T. Development of a policy paper on national cancer control programmes. *Eur J Publ Health.* 2017;27(Suppl_3). <https://doi.org/10.1093/eurpub/ckx189.003>
- Sykes K, Tuschick E, Giles EL, Kanmodi KK, Barker J. A protocol to identify the barriers and facilitators for people with severe mental illness and/or learning disabilities for PErson Centred Cancer Screening Services (PECCS). *PLoS One.* 2022;17(11):e0278238. <https://doi.org/10.1371/journal.pone.0278238>
- Munn Z, Stern C, Aromataris E, Lockwood C, Jordan Z. What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences. *BMC Med Res Methodol.* 2018;18(1):5. <https://doi.org/10.1186/s12874-017-0468-4>
- Haddaway NR, Collins AM, Coughlin D, Kirk S. The role of Google Scholar in evidence reviews and its applicability to grey literature

- searching. *PLoS One*. 2015;10(9):e0138237. <https://doi.org/10.1371/journal.pone.0138237>
21. Goss C, Lowenstein S, Roberts I, DiGiuseppi C. Identifying controlled studies of alcohol-impaired driving prevention: designing an effective search strategy. *J Inf Sci*. 2007;33(2):151-162. <https://doi.org/10.1177/0165551506068376>
 22. Effect of Maryland behavioral health homes on cancer screening in women with serious mental illness. *J Gen Intern Med*. 2020;34(2 Suppl).
 23. Increasing access to cancer care for individuals with serious mental illness. *Psycho Oncol* 28(Suppl 1); 2019.
 24. Hong QN, Fàbregues S, Bartlett G, et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Educ Inf*. 2018;34(4):285-291. <https://doi.org/10.3233/efi-180221>
 25. Noyes J, Booth A, Flemming K, et al. Cochrane Qualitative and Implementation Methods Group guidance series—paper 3: methods for assessing methodological limitations, data extraction and synthesis, and confidence in synthesized qualitative findings. *J Clin Epidemiol*. 2018;97:49-58. <https://doi.org/10.1016/j.jclinepi.2017.06.020>
 26. Dixon-Woods M. Using framework-based synthesis for conducting reviews of qualitative studies. *BMC Med*. 2011;9(1):1-2. <https://doi.org/10.1186/1741-7015-9-39>
 27. May CR, Albers B, Bracher M, et al. Translational framework for implementation evaluation and research: a normalisation process theory coding manual for qualitative research and instrument development. *Implement Sci*. 2022;17(1):19. <https://doi.org/10.1186/s13012-022-01191-x>
 28. Finch TL, Girling M, May CR, et al. Improving the normalization of complex interventions: part 2 - validation of the NoMAD instrument for assessing implementation work based on normalization process theory (NPT). *BMC Med Res Methodol*. 2018;18(1):135. <https://doi.org/10.1186/s12874-018-0591-x>
 29. May CR, Finch T, Ballini L, et al. Evaluating complex interventions and health technologies using normalization process theory: development of a simplified approach and web-enabled toolkit. *BMC Health Serv Res*. 2011;11(1):245. <https://doi.org/10.1186/1472-6963-11-245>
 30. Anku PJ, Amo-Adjei J, Doku DT, Kumi-Kyereme A. Integration of tuberculosis and HIV services: exploring the perspectives of co-infected patients in Ghana. *Global Publ Health*. 2017;13(9):1192-1203. <https://doi.org/10.1080/17441692.2017.1385823>
 31. Davidoff F, Dixon-Woods M, Leviton L, Michie S. Demystifying theory and its use in improvement. *BMJ Qual Saf*. 2015;24(3):228-238. <https://doi.org/10.1136/bmjqs-2014-003627>
 32. Murray E, Treweek S, Pope C, et al. Normalisation process theory: a framework for developing, evaluating and implementing complex interventions. *BMC Med*. 2010;8(1):63. <https://doi.org/10.1186/1741-7015-8-63>
 33. May C A rational model for assessing and evaluating complex interventions in health care. *BMC Health Serv Res*. 2006;6(1):86. <https://doi.org/10.1186/1472-6963-6-86>
 34. McEvoy R, Ballini L, Maltoni S, O'Donnell CA, Mair FS, Macfarlane A. A qualitative systematic review of studies using the normalization process theory to research implementation processes. *Implement Sci*. 2014;9(1):2. <https://doi.org/10.1186/1748-5908-9-2>
 35. Howard L, Gamble C. Supporting mental health nurses to address the physical health needs of people with serious mental illness in acute inpatient care settings. *J Psychiatr Ment Health Nurs*. 2010;18(2):105-112. <https://doi.org/10.1111/j.1365-2850.2010.01642.x>
 36. Murphy KA, Stone EM, Presskreischer R, Mcginty EE, Daumit GL, Pollack CE. Cancer screening among Adults with and without serious mental illness. *Med Care*. 2021;59(4):327-333. <https://doi.org/10.1097/mlr.0000000000001499>
 37. Murphy KA, Daumit GL, Mcginty EE, Stone EM, Kennedy-hendricks A. Predictors of cancer screening among Black and White Maryland Medicaid enrollees with serious mental illness. *Psycho Oncol*. 2021;30(12):2092-2098. <https://doi.org/10.1002/pon.5815>
 38. Domino ME, Kilany M, Wells R, Morrissey JP. Through the looking glass: estimating effects of medical homes for people with severe mental illness. *Health Serv Res*. 2017;52(5):1858-1880. <https://doi.org/10.1111/1475-6773.12585>
 39. Ouk M, Edwards JD, Colby-Milley J, Kiss A, Swardfager W, Law M. Psychiatric morbidity and cervical cancer screening: a retrospective population-based case-cohort study. *CMAJ Open*. 2020;8(1):E134-E141. <https://doi.org/10.9778/cmajo.20190184>
 40. Kodl MM, Powell AA, Noorbaloochi S, Grill JP, Bangerter AK, Partin MR. Mental health, frequency of healthcare visits, and colorectal cancer screening. *Med Care*. 2010;48(10):934-939. <https://doi.org/10.1097/mlr.0b013e3181e57901>
 41. Martens PJ, Chochinov HM, Prior HJ, Fransoo R, Burland E. Are cervical cancer screening rates different for women with schizophrenia? A Manitoba population-based study. *Schizophrenia Res*. 2009;113(1):101-106. <https://doi.org/10.1016/j.schres.2009.04.015>
 42. Lindamer LA, Wear E, Sadler GR. Mammography stages of change in middle-aged women with schizophrenia: an exploratory analysis. *BMC Psychiatr*. 2006;6(1):49. <https://doi.org/10.1186/1471-244x-6-49>
 43. Heyding RK, Cheung AM, Mocarski EJM, Moineddin R, Hwang SW. A community-based intervention to increase screening mammography among disadvantaged women at an inner-city drop-in center. *Women Health*. 2008;41(1):21-31. https://doi.org/10.1300/j013v41n01_02
 44. Murphy KA, Daumit GL, Bandara SN, et al. Association between the Maryland medicaid behavioral health home program and cancer screening in people with serious mental illness. *PS*. 2020;71(6):608-611. <https://doi.org/10.1176/appi.ps.201900299>
 45. Clifton A, Burgess C, Clement S, et al. Influences on uptake of cancer screening in mental health service users: a qualitative study. *BMC Health Serv Res*. 2016;16(1):257. <https://doi.org/10.1186/s12913-016-1505-4>
 46. Grove LR, Gertner AK, Swietek KE, et al. Effect of enhanced primary care for people with serious mental illness on service use and screening. *J Gen Intern Med*. 2021;36(4):970-977. <https://doi.org/10.1007/s11606-020-06429-2>
 47. Fujiwara M, Yamada Y, Shimazu TT, et al. Encouraging participation in colorectal cancer screening for people with schizophrenia: a randomized controlled trial. *Acta Psychiatr Scand*. 2021;144(4):318-328. <https://doi.org/10.1111/acps.13348>
 48. Domino ME, Wells R, Morrissey JP. Serving persons with severe mental illness in primary care-based medical homes. *Psychiatr Serv*. 2015;66(5):477-483. <https://doi.org/10.1176/appi.ps.201300546>
 49. Chochinov HM, Martens PJ, Prior HJ, Fransoo R, Burland E. Does a diagnosis of schizophrenia reduce rates of mammography screening? A Manitoba population-based study. *Schizophrenia Res*. 2009;113(1):95-100. <https://doi.org/10.1016/j.schres.2009.04.022>
 50. Abrams MT, Myers CS, Feldman SM, et al. Cervical cancer screening and acute care visits among medicaid enrollees with mental and substance use disorders. *Psychiatr Serv*. 2012;63(8):815-822. <https://doi.org/10.1176/appi.ps.201100301>
 51. Kilbourne AM, Pirraglia PA, Lai Z, et al. Quality of general medical care among patients with serious mental illness: does colocation of services matter? *Psychiatr Serv*. 2011;62(8):922-928. https://doi.org/10.1176/ps.62.8.pss6208_0922
 52. Yamada Y, Fujiwara M, Shimazu T, et al. Patients' acceptability and implementation outcomes of a case management approach to encourage participation in colorectal cancer screening for people with schizophrenia: a qualitative secondary analysis of a mixed-method randomised clinical trial. *BMJ Open*. 2022;12(6):e060621. <https://doi.org/10.1136/bmjopen-2021-060621>

53. Moravac CC. Reflections of homeless women and women with mental health challenges on breast and cervical cancer screening decisions: power, trust, and communication with care providers. *Front Public Health*. 2018;6:30. <https://doi.org/10.3389/fpubh.2018.00030>
54. Linz S, Jerome-D'Emilia B. Barriers and facilitators to breast cancer screening for women with severe mental illness. *J Am Psychiatr Nurses Assoc*;2022;10783903221140600.
55. Eriksson EM, Lau M, Jönsson C, et al. Participation in a Swedish cervical cancer screening program among women with psychiatric diagnoses: a population-based cohort study. *BMC Publ Health*. 2019;19(1):313. <https://doi.org/10.1186/s12889-019-6626-3>
56. Peterson D, Cunningham R. Experiencing breast cancer in the context of mental illness in New Zealand. *Kotuitui*. 2020;15(1):236-245. <https://doi.org/10.1080/1177083x.2020.1728346>
57. D'Alton P, O'Meara R, Langford S, et al. Barriers to cancer care for people with significant mental health difficulties: what healthcare staff say? *Psycho-Oncology*. 2021;30(12):2032-2038. <https://doi.org/10.1002/pon.5790>
58. Yee EFT, White R, Lee S, et al. Mental illness: is there an association with cancer screening among women veterans? *Women's Health Iss*. 2011;21(4):S195-S202. <https://doi.org/10.1016/j.whi.2011.04.027>
59. Fujiwara M, Inagaki M, Nakaya N, et al. Cancer screening participation in schizophrenic outpatients and the influence of their functional disability on the screening rate: a cross-sectional study in Japan. *Psychiatr Clin Neurosci*. 2017;71(12):813-825. <https://doi.org/10.1111/pcn.12554>
60. Céspedes P, Sánchez-Martínez V, Lera-Calatayud G, Vila-Candel R, Cauli O, Buigues C. Delay in the diagnosis of breast and colorectal cancer in people with severe mental disorders. *Cancer Nurs*. 2020;43(6):E356-E362. <https://doi.org/10.1097/ncc.0000000000000727>
61. Dalton SO, Suppli NP, Ewertz M, Kroman N, Grassi L, Johansen C. Impact of schizophrenia and related disorders on mortality from breast cancer: a population-based cohort study in Denmark, 1995–2011. *Breast*. 2018;40:170-176. <https://doi.org/10.1016/j.breast.2018.06.002>
62. Tuesley KM, Jordan SJ, Siskind DJ, Kendall BJ, Kisely S. Colorectal, cervical and prostate cancer screening in Australians with severe mental illness: retrospective nation-wide cohort study. *Aust N Z J Psychiatr*. 2019;53(6):550-558. <https://doi.org/10.1177/0004867418814945>
63. McWilliams L, Groves S, Howell SJ, French DP. The impact of morbidity and disability on attendance at organized breast cancer-screening programs: a systematic review and meta-analysis. *Cancer Epidemiol Biomarkers Prev*. 2022;31(7):1275-1283. <https://doi.org/10.1158/1055-9965.epi-21-1386>
64. NHS. How to Book Cervical Screening; 2023. <https://www.nhs.uk/conditions/cervical-screening/how-to-book/#:~:text=Most%20cervical%20screening%20is%20done,to%20book%20the%20appointment%20online.&text=In%20some%20parts%20of%20England,or%20walk%20in%20centre%20instead>
65. Jo's Cervical Cancer Trust. Drop-in Cervical Screening Clinics; 2020. <https://www.jostrust.org.uk/professionals/cervical-screening/drop-in-clinic>
66. Kirkøen B, Berstad P, Hoff G, et al. Type and severity of mental illness and participation in colorectal cancer screening. *Am J Prev Med*. 2023;64(1):76-85. <https://doi.org/10.1016/j.amepre.2022.08.011>
67. Le Bonniec A, Meade O, Fredrix M, et al. Exploring non-participation in colorectal cancer screening: a systematic review of qualitative studies. *Social Sci Med*. 2023;329:116022. <https://doi.org/10.1016/j.socscimed.2023.116022>
68. Jørgensen MD, Mikkelsen EM, Erichsen R, Thomsen MK. Mental illness and participation in colorectal cancer screening: a scoping review. *Scand J Gastroenterol*. 2022;57(10):1216-1226. <https://doi.org/10.1080/00365521.2022.2073185>
69. Arnold L. Patient care, communication, and safety in the mammography suite. *J Med Imag Radiat Sci*. 2016;45(2).
70. Lamontagne-Godwin F, Burgess C, Clement S, et al. Interventions to increase access to or uptake of physical health screening in people with severe mental illness: a realist review. *BMJ Open*. 2018;8(2):e019412. <https://doi.org/10.1136/bmjopen-2017-019412>
71. Chambers M. Approaches towards optimizing individualized, high-quality, evidence-informed care. *Health Expect*. 2017;20(4):529-530. <https://doi.org/10.1111/hex.12607>
72. Grassi L, Riba MB. Disparities and inequalities in cancer care and outcomes in patients with severe mental illness: call to action. *Psycho Oncol*. 2021;30(12):1997-2001. <https://doi.org/10.1002/pon.5853>
73. Heslop P, Turner S, Read S, Tucker J, Seaton S, Evans B. Implementing reasonable adjustments for -disabled people in healthcare services. *Nurs Stand*. 2019;34(8):29-34. <https://doi.org/10.7748/ns.2019.e11172>
74. Schiff AB. Text - H.R.8436 - 116th Congress (2019-2020): Equal Health Care for All Act; 2020.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Tuschick E, Barker J, Giles EL, et al. Barriers and facilitators for people with severe mental illness accessing cancer screening: a systematic review. *Psychooncology*. 2024;e6274. <https://doi.org/10.1002/pon.6274>