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REVIEW

WILEY

Barriers in cancer trajectories of patients with pre-existing severe mental disorders—A systematic review

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Abstract

Background: Patients with pre-existing severe mental disorders are significantly less likely to receive guideline-recommended cancer treatment and seems to have a significantly lower rate of cancer survival compared to patients with cancer without mental disorders.

Aim: To perform a systematic review on barriers at patient-, provider- and system-levels in cancer trajectories of patients with pre-existing severe mental disorders.

Method: A systematic review was performed following the PRISMA guidelines (PROSPERO ID: CRD42022316020).

Results: Nine eligible studies were identified. Barriers at patient-level included lack of self-care and ability to recognize physical symptoms and signs. Provider-level barriers included stigma from health care professionals on mental disorders, whereas system-level barriers included fragmented health care and consequences of this.

Conclusion: This systematic review found that barriers at patient-, provider- and system-levels exist in cancer trajectories for patients with severe mental disorders,

causing disparities in cancer care. Further research is needed to improve cancer trajectories for patients with severe mental disorder.

KEYWORDS
"Delivery of Health Care"[Mesh], "Medical Oncology"[Mesh], "Mental Disorders"[Mesh], "Neoplasms"[Mesh], "Psycho-Oncology"[Mesh], cancer, oncology

1 | BACKGROUND

Patients with cancer and pre-existing severe mental disorders, including moderate to severe depression, bipolar disorder, schizophrenia, and other psychotic disorders,[1] is a particularly vulnerable group.[2] Compared to the general population, patients with severe mental disorders typically have a poorer physical health, unhealthy lifestyle and a lower social-economic status.[3,4]

The total prevalence of severe mental disorders in the general population is approximately 4.5%,[1] and patients with severe mental disorders have a higher risk of a cancer diagnosis for many cancer types.[5] Importantly, the mortality rate of patients with cancer and pre-existing severe mental disorders is 2.5–3 times higher than in patients with cancer without severe mental disorders.[6,7] Patients with pre-existing severe mental disorders are significantly less likely to receive guideline-recommended cancer treatment compared to patients with cancer without severe mental disorders.[8,9] Furthermore, mental health issues are found to be correlating with high-grade complications after cancer surgery.[10]

Barriers to adequate cancer treatment for these patients can be divided into patient, provider and system level barriers.[11] Patient-level barriers affecting cancer trajectories include factors concerning the patient and their disease for example, mental and physical resources. Provider-level barriers include the thoughts, actions and possible preconceptions toward the patient of health care professionals (HCPs). System-level barriers concern the structure of the healthcare system for example, distance between psychiatric and oncology departments. The three levels provide a framework for understanding how strategies impacting on these barriers may improve the quality of cancer care for patients with pre-existing severe mental disorders.[11]

Irwin et al.,[11] Howard et al.[12] and Leahy et al.[13] have previously reviewed issues concerning cancer trajectories in patients with pre-existing severe mental disorders. However, none of these are systematic reviews and none are thoroughly investigating barriers for anti-neoplastic treatment in the patient group. Hence, systematically collected evidence is needed on the specific barriers in cancer trajectories to improve cancer care for patients with pre-existing severe mental disorders.

The aim of this study was to perform a systematic literature review to identify barriers and challenges at patient-, provider- and system levels in cancer trajectories of patients with pre-existing severe mental disorders.

2 | METHODS

2.1 | Study design

This systematic review was conducted in accordance with The *Preferred Reporting Items for Systematic reviews and Meta-analysis* (PRISMA) guidelines from 2020 (Supporting Information S1: Appendix 1). The protocol was reported to the International Prospective Register of Systematic Reviews (PROSPERO): ID CRD420223 16020,[14] but the protocol has not been published.

2.2 | Eligibility criteria

To be considered relevant, the studies had to meet all of the following inclusion criteria:

- Population included:
  - In cancer trajectories
  - severe mental disorders (see introduction for specific diagnoses) prior to cancer diagnosis
  - Adults, 18+ years
- Topic:
  - Barriers or challenges to cancer treatment or care
- Studies:
  - Published from 1 January 2001 to 1 September 2022
  - English language

Studies were excluded in accordance with the following exclusion criteria:

- Studies with an aim outside the scope of the search for example, with focus on cancer screening
- Meta-analyses and reviews

2.3 | Information sources

A systematic literature search was performed in the databases PubMed, Embase, CINAHL, PsychInfo and Cochrane using the search strategy described below.

A manual search was performed by doing a citation search in Scopus using the most relevant studies and by searching references in relevant previous reviews.

2.4 | Search strategy

The databases were searched for studies including patients with cancer AND co-existing severe mental disorders. The search strings included both thesaurus terms and free-text search words.

As an example, PubMed were searched using the search string: ((("Bipolar Disorder"[Title/Abstract] OR "Bipolar Disorder"[MeSH Terms] OR "major depression"[Title/Abstract] OR "unipolar depression"[Title/Abstract] OR "Schizophrenia"[Title/Abstract] OR "Schizophrenia"[MeSH Terms:noexp] OR "Mental Disorders"[Title/Abstract] OR "Mental Disorders"[MeSH Terms:noexp]) AND ("neoplasm"[Title/Abstract] OR "Neoplasms"[MeSH Terms])) NOT ("meta-analysis"[Publication Type] OR "review"[Publication Type] OR "systematic review"[Filter])) AND (2001/1/1:2022/9/1[pdat]). The search strategy for all databases appears in Supporting Information S1: Appendix 2.

2.5 | Study selection

The search results were imported to a citation manager (Endnote software) and duplicates were removed.

The studies were examined first by title, then by abstract and finally by full text. The first author (TMB) reviewed all papers by title, later, several authors reviewed by abstract (TMB, LEF, KBB, MAN). At last, first and last author reviewed by full text.

2.6 | Data collection process and quality assessment

Relevant data were extracted from the included studies and collected in a standard form with the following headings: Author, Year of publication, Country of origin, Study design and focus, Population, Key findings, Patient-level factors, Provider-level factors, System-level factors. For the definition of factor levels in this systematic review, see Table 1. The first author was responsible for extracting the data which was validated by the last author (MAN) who assessed the full-text of the included papers to check the accuracy of the data extraction process.

The qualitative studies were assessed according to the Critical Appraisal Skills Programme (CASP) for qualitative studies[15] and the quantitative studies were assessed according to the Newcastle-Ottawa Scale[16] modified for cross-sectional studies[17] (Supporting Information S1: Appendix 3).

3 | RESULTS

3.1 | Study selection

The PRISMA Flow chart of the study selection is presented in Figure 1. The initial searches revealed 6352 papers, but after removal of duplicates, a total of 5385 studies from the primary search and three papers found by hand search were screened, leaving 5388 papers for further investigation.

A total of 5202 papers were excluded by title. Of the remaining 186 papers, 165 were excluded after screening by abstract. Consequently, 21 papers were read full text and nine of these met all the inclusion criteria and were thus included.

3.2 | Characteristics of included papers

Data from the included papers are presented in Table 2 along with the quality assessment.

Four of the included papers were qualitative studies including interviews with HCPs. The quality assessment showed fairly good quality of included qualitative studies. Etoh et al. sent a questionnaire with open-ended questions to 439 HCPs from rural and urban institutions in Okayama, Japan.[18] D'Alton et al. did semi-structured interviews with 28 HCPs from acute hospitals in Dublin, Ireland,[19] Sinding et al. interviewed 11 social workers who had been working with at least one individual with severe mental disorder and subsequently diagnosed with cancer at a multisite hospital in Ontario, Canada[20] and Suh et al. did semi-structured interviews with 29 participants (11 patients, 15 HCPs, 3 administrators) and performed clinical observations in the USA.[21]

Only Suh et al. included perspectives from patients,[21] and no papers included perspectives from relatives.

Five of the papers were based on quantitative studies where the main reason for not reaching high quality in the assessment was either a lack of a control group or a lack of documented comparison with the control group. Yamada et al. included

TABLE 1 Definition of level factors.

Patient-level factors	Provider-level factors	System-level factors
Factors affecting cancer trajectories, concerning the patient, their mental disease for example, what patients are capable of managing at the given moment. Mental and physical resources.	Factors affecting cancer trajectories, concerning the health care professionals, their thoughts, actions and possible bias about the patient.	Factors affecting cancer trajectories concerning how the system is organized for example, distance between locations of psychiatric and oncology consultations, accessibility to insurance coverage etc.

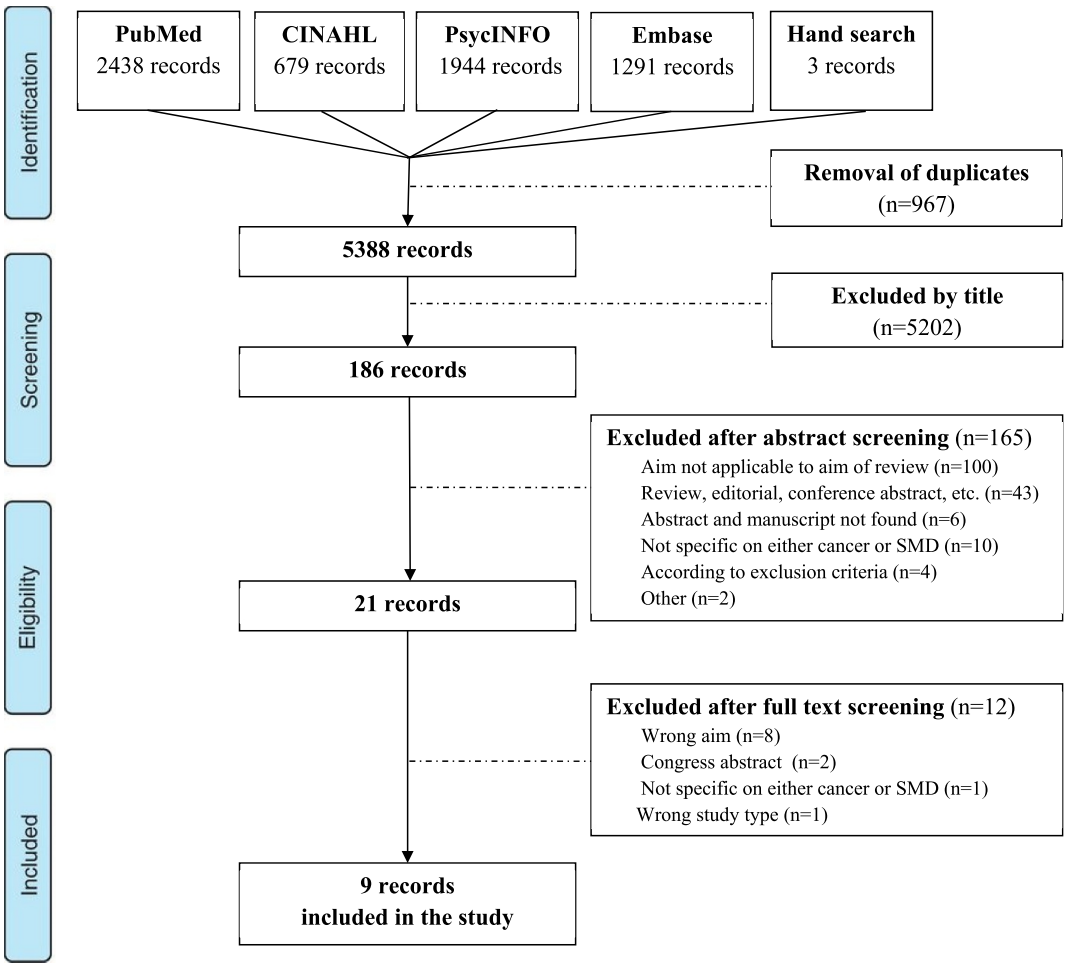

FIGURE 1 PRISMA flow chart of the study selection process.

questionnaire answers from 388 Japanese cancer care physicians, pharmacists, nurses, palliative care physicians, and medical social workers from 19 hospitals.[22] Four papers reviewed medical records: Farasatpour et al. included 56 patients with pre-existing schizophrenia or schizoaffective disorder and 478 controls who were all diagnosed with breast cancer during 1999–2005 in the national Department of Veterans Affairs, USA[23] and Irwin et al. included 95 patients with pre-existing schizophrenia spectrum disorders diagnosed with breast cancer between 1993 and 2005, treated at the Harvard Cancer Centre and the Partners Healthcare System, USA.[24] Hwang et al. and Abdullah et al. included 55 and 40 patients, respectively, with pre-existing schizophrenia or schizoaffective disorder who were diagnosed with breast cancer during 1999–2005 in the national Department of Veterans Affairs, USA.[25,26]

Four studies focused exclusively on breast cancer[23–26] while the remaining studies included patients with various cancer diagnoses.[18–22] The psychiatric diagnoses included were schizophrenia and schizoaffective disorder,[23,25,26] schizophrenia spectrum disorder,[24] depression[21] and severe mental disorders collapsed according to previous definition.[18–20,22] Two of the studies were from Asia,[18,22] one from Europe[19] and six were from North America.[20,21,23–26] Five studies had been conducted within the past 5 years,[18,19,21,22,24] while four dated back to 2012–2015.[20,23,25,26]

3.3 | Patient-level barriers

Six of the included papers reported barriers at patient-level. Some of the barriers referred to consent to treatment and to continued care.[19,23,24] For example, it could be difficult for patients with schizophrenia to deal with the cancer diagnosis due to negative symptoms of schizophrenia such as withdrawal and decreased expression of emotions.[23] At the same time patients with pre-existing severe mental disorders seemed to struggle with information about diagnosis and treatment plan, thus making the communication prior to obtaining consent more challenging.[19,22]

Adherence is reported to be an essential factor to optimal cancer care.[19] Farasatpour et al. reported that 15 of the 56 patients (27%) seemed to have problems with adherence,[23] Abdullah et al. reported that 26 of 50 (52%) patients were reluctant to take recommended medication[26] and in the study by Hwang et al., eight of the 25 (32%)

TABLE 2 Overview of data from included papers.

Author, year of publication, country of origin	Study design and focus	Population	Key findings	Patient-level factors	Provider-level factors	System-level factors	Quality assessment
Etoh et al., 2021, Japan[18]	Open-ended questionnaire study. Cancer focus: No specific type. Psychiatric focus: Severe mental disorder.	439 medical/welfare professionals at rural and urban institutions in Okayama Prefecture. Cancer prof.: Physicians, palliative care physicians, pharmacists, nurses. Psychiatric prof.: Physicians, social workers, nurses, psychologists Primary care prof.: Physicians, nurses, therapists	10 categories of issues in cancer care for people with mental disorders. 12 proposed solutions to cancer care disparities.	- Difficulties in noticing physical abnormalities and communicating symptoms - Lack of self-care - Refusing treatment - Very individual and diverse issues	- Issues related to stigma around mental disorder - Difficulties in assessing patient's decision-making capacities and self-care abilities amongst cancer care professionals - Lack of time to communicate with patients and coordinate with their primary psychiatric care services for cancer professionals - Psychiatric professionals lacking provision of information about cancer prevention and lacking encouragement to participate in cancer screening	- Isolation and lack of support - Obstacles to transport - Socioeconomic factors limiting opportunities to improve health - Several issues to do with fragmentation of care.	8/10[a]
D'Alton et al., 2021, Ireland[19]	Semi-structured interview study Cancer focus: Cancer in general Psychiatric focus: Schizophrenia, bipolar disorder and major depressive disorder	28 healthcare prof. at 3 acute hospitals in Dublin Professionals including nurses, social workers, psychologists, oncologists and psychiatrists	1. Fragmentation of care 2. HCPs understanding of SMHD 3. Complex nature of presentation. 4. Specialized care needs	- Lack of compliance. - Difficulties comprehending information about diagnosis and treatment plan. - Neglect of self-care needs - Self-neglect symptom-checking and support when undergoing chemotherapy - Vulnerability in relation to patients' ability to administer the treatment and self-care required - Feeling uncomfortable in unknown, new settings	- Stigma and preconceptions toward individuals with SMHD - Providers feeling ill-equipped to deal with mental health needs - HCPs having a limited understanding of SMHD - Difficulties in determining the amount of information the patients want and are able to comprehend - Difficulties determining whether cancer or SMHD care should be prioritized (medical interaction etc.)	- Fragmentation of care - Who is responsible for a patient's care when new symptoms surface during cancer trajectories - Insufficient resources available - Postcode-dependent access to mental health services	9/10[a]

TABLE 2 (Continued)

Author, year of publication, country of origin	Study design and focus	Population	Key findings	Patient-level factors	Provider-level factors	System-level factors	Quality assessment
Sinding et al., 2013, Canada[20]	Interview study Cancer focus: Cancer in general terms Psychiatric focus: No specific	11 social workers working with people with serious mental disease who were diagnosed with cancer in a multisite academic hospital in Ontario, Canada They worked in either medical or mental health settings, none in oncology settings	- Patient's own experience of physical health concerns was discredited - Health care culture and organization compromising care for individuals with SMD and cancer - Altered relationships between patients, families and prof. in cancer diagnosis	N/A	- Stigma around mental disease - Decisions made about the need to see a social worker bypassing the patient with mental disease - Bias in meeting with the patient with mental disease - Expecting for "someone else" to take care of things	- Individuals with mental disease often gets "channeled" to mental health services regardless of their present symptoms or concerns - Lack of coordination between health care services - Compartmentalization of care systems	9/10[a]
Suh et al., 2020, USA[21]	Semi-structured interview and clinical observational study Cancer focus: No specific type Psychiatric focus: Depression	29 participants including behavioral health provider, medical providers, administrators and patients	- The health care system is overwhelmed and lacks resources - When depression and cancer care are both at the cancer center, the mental health care ends abruptly with cancer care - There is a lack of smooth transition from hospital to home	- Anxiety toward chemotherapy infusions, thus requiring support from for example, BHPs' physical appearance - Patients canceling appointments because they feel sick or experience side effects from cancer treatment - Acute cancer treatment taking focus from depression care - Practical things getting in the way of depression treatment - Depressive symptoms impairing oncology treatment	N/A	- Medical interactions - Overbooked schedule of the psychosocial cancer care team - Stem-cell-transplants only managed in few locations - Depression care ending abruptly because cancer treatment is completed - Long waiting lists for behavioral/psychiatric prof. - Limited access to manage psychiatric medication - Great physical distances between available treatments - Logistical burden of behavioral health providers - Limited access to social workers	9/10[a]

(Continues)

TABLE 2 (Continued)

Author, year of publication, country of origin	Study design and focus	Population	Key findings	Patient-level factors	Provider-level factors	System-level factors	Quality assessment
Yamada et al., 2022, Japan[22]	29-Item close-ended questionnaire study Cancer focus: No specific type Psychiatric focus: Severe mental disorder	1. 388 (58.4%) cancer care physicians, pharmacists, nurses, palliative care physicians, and medical social workers at 17 designated cancer hospitals and two small-scale hospitals 2. Topics in questionnaire were: 1. Difficulties in diagnosing and treating patients with cancer who have mental disorders (18 items) 2. Difficulties or insufficiencies in collaborations among health care providers (5 items) 3. Insufficiencies of in-hospital and community medical systems (6 items)	Most (73.5%–81.5%) cancer care professionals found difficulties with - Support for decision-making - Assessment of treatment adherence - Assessment of physical symptoms	The following issues were rated high: "Difficulties in diagnosing and treating cancer": - Support for decision-making - Assessment of treatment adherence - Assessment of physical symptoms were perceived as most difficult (73.5%–81.5% of respondents)	N/A	"Difficulties or insufficiencies in collaboration among multidisciplinary health care Providers": - Advance consultation and sharing information with the patient's primary psychiatric care provider was perceived as most difficult (52.2%). "Insufficiencies of in-hospital and community medical Systems": - Education to provide reasonable accommodation was perceived as most insufficient (47.4%)	7/10[b]
Farasatpour et al., 2013, USA[23]	Retrospective medical record review Cancer focus: Breast cancer Psychiatric focus: Schizophrenia or schizoaffective disorder	56 patients with either schizophrenia or schizoaffective disorder who later developed breast cancer, from Department of Veterans Affairs facilities. Control group containing 478 patients 68% of patient were female. All patients had health insurance	Patients presenting with delay were more likely to display disruptive behavior and to delay further treatment	Disorganized thoughts and disruptive behavior - Compliance difficulties - Negative schizophrenic symptoms - Suicidal behavior - Substance abuse - Delay in seeking medical attention due to positive or negative schizophrenic symptoms	- Physicians missing the diagnosis, delaying further treatment or not paying attention to symptoms, all causing delay in the seeking medical attention - Psychiatrists not performing physical examinations and thereby risking missing physical symptoms	- Inability to afford health insurance - Inability to find transportation - Physical disability	8/10[b]

TABLE 2 (Continued)

Author, year of publication, country of origin	Study design and focus	Population	Key findings	Patient-level factors	Provider-level factors	System-level factors	Quality assessment
				- Inability to understand how to navigate the system - Verbally abusing and physically attacking caregivers			
Irwin et al., 2017, USA[24]	Retrospective medical record review Cancer focus: Breast cancer Psychiatric focus: Schizophrenia spectrum disorder	95 patients with Schizophrenia spectrum disorder diagnosed at least 1 year prior to breast cancer (1993–2005) Patients from Dana-Farber/Harvard cancer center and the Partners Healthcare System	Lack of documented psychiatric care (OR = 4.56, 95% CI = 1.37, 15.15) and antipsychotic medication (OR = 4.97, 95% CI = 1.90, 12.98) predicted disruptions in cancer care	N/A	- Oncologists not assessing whether mental disease is treated - Oncologists rarely consulting psychiatry (1%–10%) - Mental disease not being recognized at cancer diagnosis	- Fragmentation of mental health care and cancer care for example, patients' cancer treatment being disrupted when they are hospitalized for a psychiatric purpose	9/10[b]
Hwang et al., 2012, USA[25]	Retrospective medical record review Cancer focus: Breast cancer patients who were eligible for adjuvant chemotherapy Psychiatric focus: Schizophrenia spectrum disorder	55 patients with schizophrenia, later developed breast cancer that appeared to be curable, and were candidates for adjuvant chemotherapy The patient treatment file of the national Department of Veterans Affairs was searched to identify patients with diagnostic codes for schizophrenia or schizoaffective disorder who were also diagnosed with breast cancer during 1999–2005	A high prevalence of disordered thoughts and unwarranted disruptive behaviors were observed	Disordered thoughts, for example: Paranoia 65% Auditory hallucinations 49% Delusions 47% Abnormal affect 45% Suspiciousness 36% Lack of insight 31% Visual hallucinations 31% Ideas of reference 25% Confusion 23% Unwarranted disruptive behaviors, for example: Refusal to take antipsychotic medication 45% Refusal of endocrine therapy 32% Suicidal ideation 31% Refusal of cytotoxic chemotherapy 31% Attempted suicide 22%	N/A	N/A	8/10[b]

(Continues)

TABLE 2 (Continued)

Author, year of publication, country of origin	Study design and focus	Population	Key findings	Patient-level factors	Provider-level factors	System-level factors	Quality assessment
Abdullah et al., 2015, USA[26]	Retrospective medical record review Cancer focus: Breast cancer patients who were eligible to ART Psychiatric focus: Schizophrenia spectrum disorder	40 patients with schizophrenia, later developed breast cancer that appeared to be curable, and were candidates for adjuvant radiation therapy The patient treatment file of the national Department of Veterans Affairs was searched for diagnostic codes of schizophrenia or schizoaffective disorder and breast cancer during 1999–2005	A high prevalence of disordered thoughts and unwarranted disruptive behaviors were observed Of the 40 patients who were considered candidates for ART, only 22 were offered ART and 5 of those 22 refused it In all 17/40 (43%) received ART	Symptoms as barriers, for example: Paranoid symptoms (70%) Abnormal affect (50%) Suspicious of their caregivers (43%) Delusions (45%) Lack of insight (30%) Auditory hallucinations (58%) Visual hallucinations (33%) Verbal abuse directed at caregivers (70%) Physical violence directed at caregivers (66%) Suicidal ideation (78%) Homicidal ideation (76%)	N/A	N/A	8/10[b]

Abbreviations: ART, adjuvant radiation therapy; HCPs, healthcare providers'; N/A, not applicable; OR, odds ratio; Prof., Professional; SMD, severe mental disease; SMHD, significant mental health difficulties.

[a]Quality assessment of the included qualitative studies using CASP Qualitative Studies Checklist.[15] Ten points indicate maximum quality. See Supporting Information S1: Appendix 3.

[b]Quality assessment of the included quantitative studies using the Newcastle-Ottawa Scale (NOS) modified for cross-sectional studies.[16,17] Ten points indicate maximum quality. See Supporting Information S1: Appendix 3.

patients with schizophrenia declined the offered postoperative endocrine therapy.[25]

HCPs reported barriers in patients' lack of self-care and lack of noticing physical symptoms and signs.[18,19] Lack of self-care was assumed to account partly for the problem in more complications to breast cancer surgery and in case of challenges of completing treatment with curative intent to patients with schizophrenia spectrum disorder compared with controls.[23] Also, some patients declined the need for support during chemotherapy.[19] Undergoing chemotherapy demands a certain level of self-care according to side effects, for example, in relation to diarrhea, bleeding etc. and knowing when to contact the oncological department is essential to avoid fatal outcomes.[18,19]

Several of the included papers emphasized the importance of psychiatric treatment for optimal cancer care.[21,23,24,26] Irwin et al. found that lack of psychiatric treatment when starting cancer treatment was a significant predictor of disruption in cancer care for patients with schizophrenia.[24] For patients with schizophrenia spectrum disorder, barriers in cancer trajectories were found in positive and negative symptoms of schizophrenia such as hallucinations and lack of an emotional expression.[23,25,26] Also, fear of interacting with other people were barriers affecting engaging in cancer treatment.[23,25,26] Depressive symptoms such as lack of initiative also impaired the oncological treatment. It was not uncommon for patients to cancel appointments due to fatigue etc.[21]

3.4 | Provider-level barriers

Several barriers were reported at provider-level. HCPs expressed a barrier in assessing patients' decision-making capacity[18,22] and determining patients' ability to comprehend information when for example, getting consent to treatment.[19,22] On the other hand, Sinding et al. claimed that providers make decisions on behalf of the patient by involving a social worker without consulting the patient first.[20] Also, providers in oncology and primary care felt ill-equipped to deal with severe mental disorders.[19] These findings all suggest a challenge in the lack of education of HCPs in relation to severe mental disorders. Stigma was an important factor occurring when the HCPs defined the patients by their mental disorder and failed to see them as individuals.[18] Etoh et al., Sinding et al. and D'Alton et al. all emphasized the barrier of stigma around mental disorders.[18–20]

Psychiatric professionals expressed that they had thorough knowledge of the patient, the patient's preferences, and what was considered normal/abnormal for the patient, and the professionals were responsible for noticing the patients' physical symptoms.[18,23] They found themselves to play an important part in the parallel care journeys.[20,21] Therefore, it created a barrier when psychiatric professionals did not perform physical examinations during consultations, thus risking missing physical diseases[23] and HCPs themselves found it difficult to assess physical symptoms in patients with mental disorders.[22] Irwin et al. reported that mental disorder was not always recognized in the cancer trajectory,[24] and Etoh et al. found that cancer HCPs did not have enough time to communicate with the patients and to coordinate with their primary psychiatric services.[18] Furthermore, cancer HCPs were reported to have difficulties distinguishing between psychiatric and cancer symptoms, that is, diagnostic overshadowing, and patients' physical symptoms were incorrectly ascribed to their mental disorder.[19,22] All of the above are examples of barriers in the co-operation between oncology and psychiatry in the cancer trajectory, but Sinding et al. also found evasion of responsibility since HCPs sometimes expected someone else to take action,for example, the general practitioner.[20]

3.5 | System-level barriers

A recurrent barrier at system-level was the fragmentation of somatic and mental health care,[18–20,24] when for example, hospitalization with a psychiatric episode resulted in disruption of cancer treatment.[24] The fragmentation of care often left the HCPs in a dilemma, causing them to not always manage to deliver the best care.[20] Sinding et al. reported that if severe mental disorders was registered in a patient's medical record, these patients were often directed to mental health services through acute care facilities, regardless of their current symptoms being somatic or psychiatric.[20] Additionally, it was difficult to determine which team was responsible for the patient's care, when new symptoms occurred.[19] This was further complicated by a busy health care system, with insufficient resources to meet the needs of patients with cancer and pre-existing severe mental disorders.[19] This was emphasized by Suh et al. reporting an overbooked schedule of the psychosocial care team at the cancer center and lack of available appointment slots with both behavioral and psychiatric care providers.[21] Yamada et al. emphasized an insufficiency in in-hospital education and training to provide sufficient accommodation for patients with mental disorders.[22] Participants in the study by D'Alton et al. argued that in caring for these patients, more time, funding and staff were required to meet the extensive needs.[19]

Several of the included papers also highlighted logistics such as distance between health care services,[21] transportation[23] and postcode-dependent access to mental health services[19] along with socioeconomic factors[15] as contributing to disparities in health care.

Another barrier associated with the interaction or even competition between oncology and psychiatry was found in the interaction between psychotropic drugs and cancer treatment.[19,21] Steroids used in cancer care for example, increases the risk of psychotic episodes. This barrier could diminish the quality and access to cancer treatment for patients with pre-existing severe mental disorders.

4 | DISCUSSION

The current systematic review on barriers in cancer trajectories for patients with pre-existing severe mental disorders found several barriers at patient-, provider- and system-levels. The main patient-

level barriers were lack of self-care, low adherence, communication challenges and insufficient psychiatric treatment. The main provider-level barriers included stigma, lack of knowledge about mental disorder among HCPs and diagnostic overshadowing. At system-level the main barriers were related to fragmentation of care, logistics and limited resources.

Most included studies included only the view of HCPs obtained through interviews or questionnaires[18–20,22] or indirectly through review of medical records.[23–26] Only Suh et al. included patients' perspectives through interviews.[21] None of the papers included the perspective of the relatives and families of patients with cancer and pre-existing severe mental disorders.

4.1 | Comparison with existing literature

The review paper by Irwin et al. emphasized the severity of psychiatric symptoms including disorganization and negative symptoms as a patient-level factor, creating a barrier to cancer care for patients with pre-existing severe mental disorders.[11] Howard et al. stated that psychiatric symptoms result in difficulties in adhering to treatment,[12] which is in accordance with the current review. Thus, optimal psychiatric treatment is crucial in cancer trajectories of patients with pre-existing severe mental disorders.[24] However, the finding of adherence as a barrier should be considered, possibly making it difficult for patients with pre-existing severe mental disorders to continue psychiatric treatment. Law et al. reported that only 12% of patients with schizophrenia were compliant with treatment for 1 year,[27] presenting adherence as a major barrier to treatment for these patients, a finding that support the findings in the present systematic review.

Both reviews by Grassi et al. and Howard et al. described barriers in the limited resources of patients with cancer and pre-existing severe mental disorders and their lack of ability to make decisions.[12,28] Also, findings of problems related to consent[28] and medical comorbidity[12] were consistent with the results of the current systematic review.

Both this present systematic review as well as Howard et al. and Grassi et al. emphasized that cognitive impairment (a positive schizophrenic symptom) might cause misunderstandings for the patient and complicate communication, suggesting that clear and careful communication is required of the physician.[12,28]

At provider-level, Irwin et al. suggested inadequate training of HCPs as a barrier in explaining why communication with these patients can be challenging[11] and Grassi et al. emphasized the importance of provider education,[28] which is in line with our findings.

Similarly, to our findings, Grassi et al., Howard et al. and Irwin et al. stated that stigma constitutes a barrier.[11,12,28] The study by Lerbæk et al. did not concern cancer care as such but examined how mental HCPs accounted for their responsibility and actions in the relation to managing the physical health of patients with severe mental disorders.[29] They conducted focus group interviews with nurses, psychologists, social and healthcare workers, etc., discussing six themes on management of physical health issues in patients with severe mental disorders. They found a latent discriminating attitude and stigma from HCPs toward mental disorder, for example, when they did not act on physical health problems due to the severity of the mental health issues.[29]

Since this current systematic review predominantly found documentation of the point of view of HCPs, it is relevant to consider data in the light of these findings. If the narrative of patients with a mental disorder amongst healthcare professionals is disparaging, it might influence the way HCPs think and interact in both mental health care and cancer care in this patient group, resulting in restrained options and maybe even poorer opportunities for these patients. At the same time, there is no doubt that patients with cancer and pre-existing severe mental disorders constitute a vulnerable group that may be challenging to help and guide through the cancer trajectories.

Howard et al. emphasized the importance of continued psychiatric treatment during cancer interventions,[12] which can also be interpreted as a system-level barrier and responsibility, as different clinical departments need to co-operate in the treatment of this group of patients considering fragmentation of care, possible drug interactions and side-effects.

Irwin et al. illuminated that electronic medical records may be unavailable if the patient has consulted a psychiatrist documenting in a separate health care system.[11] This adds to the barriers of fragmentation of care, underlining the extent of the problem identified in the current systematic review.

4.2 | Study limitations

The limitation of using the level-factor model was the risk of missing barriers that did not fit into the pre-defined categories, for example, if barriers in relation to relatives exist. Also, the model did not consider barriers that overlap levels or affect factors on a different level. For example, the fragmentation of care was considered a system-level barrier, but it also affected provider-level factors, because HCPs worked in the fragmented healthcare system, which may cause the care they provide to be compromised. Another limitation of using the level factor model occurred when the studies included, who also used the level factor model, for example, Etoh et al. and Hwang et al., had another definition of the level factors than we did.[18,21,25] Etoh et al. for example, accentuated isolation and lack of support as a system-level factor and referring to the definition of level factors applied in the current study (Table 1), we would classify isolation and lack of support as patient-level factors.[18]

One of the limitations of this review was that only nine papers were included. A possible explanation is that not all relevant studies were identified during the literature search, but the lack of research on this topic also accounts for a large part of the explanation. Another limitation is that the included studies only represent health care systems in North America, Asia and Ireland and the generalizability to other health care systems is thus sparse. We limited our search to

papers published in English, which may represent a bias, however, the far most relevant papers are published in English, even in Europe.

4.3 | Clinical implications

This systematic review included mainly studies in the context of non-European healthcare systems as only one paper was conducted in a European context. This means that the results may not be directly transferable to a European health care system.

Cancer trajectories for patients with severe mental disorders must be optimized to improve the prognosis for this patient group. This systematic review recommends prevention of disruption of cancer treatment by addressing psychiatric comorbidity at cancer diagnosis.[24] Specifically, a formal psychiatric evaluation is suggested with the purpose of guiding the oncologist when it comes to the patient's resources, risk of self-harm, ability to make decisions about their own medical care, need for accompaniment and medical specifications.[24–26] Hence, there is a need for HCPs working in oncology to get briefed on the specific patient in relation to their psychiatric morbidity. As Sinding et al. point out, it has a positive effect when the network around the patient, both relatives and HCPs in charge of the treatment, gather and talk about the cancer diagnosis and treatment.[20] Also, Hwang et al. and D'Alton et al. shed light on the benefits of a greater involvement of psychiatry during cancer treatment, suggesting multidisciplinary teams in cancer trajectories of patients with severe mental disorders.[19,25,26] Sinding et al. suggest social workers as key players when it comes to connecting the parallel journeys in cancer care for these patients, providing assistance with organizing and keeping track of appointments, treatment etc.[20]

5 | CONCLUSION

Current literature suggests barriers at patient-, provider and system-levels in cancer trajectories among patients with severe mental disorder. The most important barriers include patients' lack of self-care and ability to recognize physical symptoms and signs, stigma from HCPs concerning mental disorder, and fragmentation of care.

After reviewing the literature systematically, it can be concluded that further research is needed to optimize cancer trajectories for this patient group. Primarily, the perspectives of patients and their families on barriers are relevant. Knowledge of these barriers are necessary to further study care models and interventions to optimize cancer trajectories for patients with severe mental disorders.

AUTHOR CONTRIBUTIONS

Terese Myhre Bentson has concepted and designed the study, done the initial searches, screened all papers, extracted data and drafted the manuscript. Mette Asbjoern Neergaard has supervised all of the above and has together with Terese Myhre Bentson, Louise E. Fløe, Josefine M. Bruun and Kirstine B. Bøndergaard screened all papers by abstract and full text. All authors have made substantial contributions to interpretation of data, revising the manuscript critically for important intellectual content and given final approval of the version to be published.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest.

DATA AVAILABILITY STATEMENT

The full search strategy is provided in Supporting Information S1: Appendix 2, by which all papers can be achieved. The included papers are all references in the manuscript.

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SUPPORTING INFORMATION

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

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