Original Research

Excess Cancer Mortality in Psychiatric Patients

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Objectives: There are conflicting data on cancer incidence and mortality in psychiatric patients, although most studies suggest that while cancer mortality is higher, incidence is no different from that in the general population. Different methodologies and outcomes may account for some of the conflicting results. We investigated the association between mental illness and cancer incidence, first admission rates, and mortality in Nova Scotia using a standard methodology.

Method: A population-based record-linkage study of 247 344 patients in contact with primary care or specialist mental health services during 1995 to 2001 was used. Records were linked with cancer registrations and death records.

Results: Cancer mortality was 72% higher in males (95%CI, 63% to 82%) and 59% higher in females (95%CI, 49% to 69%) among patients in contact with mental health services. This was reflected in similarly elevated first admission rates. However, there was weaker and less consistent evidence for increased incidence. For several cancer sites, incidence rate ratios were lower than might be expected given the mortality and first admission rate ratios, and no higher than that of the general population. These were melanoma, prostate, bladder, and colorectal cancers in males.

Conclusion: People with mental illness in Nova Scotia have increased mortality from cancer, which cannot always be explained by increased incidence. Possible explanations for further study include delays in detection or initial presentation leading to more advanced staging at diagnosis, and difficulties in communication or access to health care.

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Clinical Implications

- People with mental illness, including people seen only in primary care, have a higher mortality from cancer. This cannot always be explained by increased incidence, especially in males.
- If lifestyle were the only explanation, incidence would consistently reflect the increased mortality rate. Other reasons might include delays in detection or initial presentation, as suggested by more advanced staging at presentation, and difficulties in communication or accessing health care.
- Efforts should be considered to address any inequities in the delivery of services, including screening and diagnosis or treatment for people with psychiatric illness, including those seen in primary care.

Limitations

- We relied on routine administrative data that may be subject to recording bias.
- There may have been additional influences on mortality such as marital status, length of time since first contact with services, educational status, and cancer staging that we could not control for in the analysis.
- As this was an epidemiologic study using administrative claims data, detailed clinical information, or information on risk factors such as smoking, was not available.

Key Words: *psychiatric disorder, cancer incidence, mortality*

Studies of cancer incidence and mortality in psychiatric patients have had mixed results. Some authors have reported lower than expected cancer incidence or mortality in psychiatric patients, while others have found no association.[1–3] Still others have found an increased risk of incidence or mortality.[4,5] Some of these discrepancies may be explained by differences between psychiatric diagnoses. Schizophrenia has particularly been associated with a reduced incidence of cancer.[6–11] In terms of specific sites, the risk of cancers of the lung, prostate, cervix, and uterus appear to be lower in patients with schizophrenia despite risk factors such as increased smoking,[12,13] while the risk for colon cancer is increased.[13] One of these studies also found that cancer rates for bipolar affective disorder were no different from those of the general population.[13] Explanations have included a tumour suppressor gene or enhanced natural killer cell activity.[14] Antipsychotics and lithium may also have protective effects.[15,16] On the other hand, antipsychotic medications have also been associated with an increased risk of colon cancer in patients with schizophrenia.[13]

The use of different methodologies and cancer outcomes may also account for some of the conflicting results. Some studies are restricted to patients in hospital.[13] In addition, cancer mortality may not be an ideal marker of the risk of cancer as it is affected by both susceptibility to developing the disorder, and subsequent survival rates.[17] Only one population-based study has evaluated both at the same time and showed that while people with mental illness in Western Australia did not show an increased incidence rate of cancer, they did have higher cancer mortality.[17] This suggests a higher cancer case fatality rate among people with mental illness. However, the sample was restricted to those in contact with specialist psychiatric services and did not include people treated in primary care, where most people are treated. All-cause mortality is higher for these patients too, and although the relative risk is lower than for patients seen in specialist services, patients with mental illness seen in primary care account for 72% of deaths from all causes in absolute terms.[18]

Another finding from Australia was that hospitalization rate ratios for many physical comorbidities are lower than corresponding mortality rate ratios, suggesting that people with mental illness may not receive the level of health care commensurate with their illness.[19]

Studies from Australia, where both private health insurance and hospitals play a sizable role in providing medically necessary care, may not apply to jurisdictions such as Canada with universal health care provision. We therefore compared cancer incidence, first admission, and mortality rates for people with psychiatric disorder with the general population of Nova Scotia. We specifically investigated whether any increase in mortality for psychiatric patients was reflected in the other 2 measures.

Abbreviations used in this article

CIHI-DAD	Canadian Institute for Health Information—Discharge Abstract Database
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition
ICD-9	International Classification of Diseases—Ninth Revision
ICD-9-CM	International Classification of Diseases—Ninth Revision—Clinical Modification
MHOIS	Mental Health Outpatient Information System
NSCR	Nova Scotia Cancer Registry
PHAC	Public Health Agency of Canada
PHRU	Population Health Research Unit

Method

Data Sources

We evaluated the association between cancer mortality and psychiatric disorder for all patients of specialist services and primary care across Nova Scotia.

We used the following provincial administrative databases, held at the PHRU of Dalhousie University, to identify anyone in contact with health services for psychiatric problems[20]:

- The Medical Services Insurance database contains all fee-for-service claims by physicians including patient demographics, date of service, and diagnosis from the ICD-9-CM. This includes family physicians and psychiatrists.
- The CIHI-DAD includes admissions, separation dates, diagnoses, and procedures.
- MHOIS data contains service contacts, demographics, and diagnoses in the public sector. This includes contacts with all mental health clinicians, not just physicians.

This method is consistent with the definition used by PHAC for the surveillance of treated psychiatric disorders.[21,22] We included patients whose first psychiatric contact with primary or specialist services occurred between January 1, 1995, and December 31, 2001, and linked data using the provincial health card number as a unique identifier. Health card numbers are present in over 99% of records, irrespective of database, and encrypted to ensure confidentiality. We will describe these people as psychiatric patients for the rest of the paper. The Capital Health Research Ethics Board approved the protocol.

Administrative data have several advantages over community surveys or data derived from individual clinical settings.

They provide accessible longitudinal data for an entire jurisdiction at relatively little cost, and both Health Canada and PHAC have used administrative datasets for chronic disease surveillance.[21–23] Nevertheless, because these data were designed for billing purposes, rather than disease surveillance, studies have measured accuracy over jurisdictions, over time, and against other measures.

In reabstraction studies, the CIHI-DAD has an accuracy rate of 97% to 99% for demographic data, including sex, treating physician, admission and discharge dates, and discharge destination.[24,25] In the case of the MHOIS, psychiatric diagnoses recorded on MHOIS showed significant agreement with the relevant items in standardized clinical ratings completed by treating clinicians (the Health of the Nation Outcome Scales).[26]

Support for the validity of the Medical Services Insurance database comes from agreement across jurisdictions for the prevalence of morbidity using billings data from physicians. The prevalence of psychiatric disorders meeting PHAC's case definition, about 15%, was similar across Nova Scotia, British Columbia, Alberta, and Ontario.[21,22] The rate also remained stable over a 5-year period. Hospital admissions for these disorders, as captured by the CIHI-DAD, accounted for 0.5% of these patients; the remaining 99.5% were determined from billings by provincial physicians. This degree of stability across jurisdictions matches the findings of the National Diabetes Surveillance System, the prototype for chronic disease surveillance in Canada.[23]

Finally, although the administrative databases use ICD-9-CM diagnoses, mental health clinicians make their diagnoses using the DSM-IV.[27] Clinicians in publicly funded facilities attend DSM-IV training courses to improve diagnostic accuracy. All DSM-IV diagnoses have equivalent ICD-9-CM codes.

We then transferred this data file to Cancer Care Nova Scotia who linked it to the NSCR to identify cancer incidence rates for the cohort. The NSCR has population-based incidence data that date from 1964.[28] All malignant and in-situ tumours are reportable by law within the province. Other sources of data include pathology reports (1982 onwards) and death certificate information for all provincial deaths (from 1989 onwards). Registry operations meet the consensus on cancer registration standards outlined by both the Canadian Cancer Registry and the North American Association of Central Cancer Registries. The NSCR works collaboratively with Statistics Canada to ensure that Nova Scotia data are part of the national Canadian Cancer Registry. We classified cancers according to the ICD-9 classification of diseases at the 3-digit level. This classification followed the same system used for classifying cancers by the NSCR. The cancer sites selected for analysis were the most frequent cancers in males and females.

Classification of Mental Disorders

The PHAC case-definition includes ICD-9 diagnoses from 290 to 319, inclusive. We also included nonspecific mental disorders outside Chapter 5 of ICD-9, such as injury of undetermined intention or psychosocial factors influencing health status, to ensure comparability with previous Australian work.[17] We did not include non-Chapter 5 diagnoses of primary care patients, as they would not necessarily be psychiatric.

We included contacts with primary or specialist services. We used a hierarchy of inpatient, compared with outpatient, and specialist, compared with primary care, reflecting both the increasing percentage of patients with severe mental illness and data reliability. It also allowed comparison with Australian data.[17] We grouped disorders into dementia and other organic conditions (290 to 294), schizophrenia (295), other nonaffective psychoses (297, 298.0, and 298.1), alcohol and (or) drug disorders (303 to 305), mood disorders (affective psychoses and [or] depression to 296, 298.2 to 298.9, 300.4, and 311), neuroses (300 except 300.4), personality disorders (301), adjustment reactions (308 to 309), and other mental disorders (all remaining Chapter 5 diagnoses and those outside Chapter 5).

Calculation of Rates and Ratios

Rates were calculated using the inception cohort method.[19] The start of follow-up was the date of each patient's first contact with a clinician. Patients were censored at the time of occurrence of the event under study, death, or December 31, 2001. The cohort was limited to people whose first contact with a clinician occurred in the study period, excluding people whose first contact occurred prior to the start of follow-up. This avoids the possibility of survivorship bias, which could otherwise occur if cancer risk changes with time since first contact with a clinician.[19] We derived mortality rates from the Statistics Canada Vital Statistics Database. Person-years at risk were calculated separately for each outcome. We calculated age- and sex-adjusted mortality, first admission, and incidence rates for carcinoma using the average population distributions in Nova Scotia from 1995 to 2001 inclusive as the standard weights. We then calculated rate ratios relative to the rate in the general Nova Scotia population using 95%CIs to test for significance. Variance of the standardized rate ratios was calculated using expansion in Taylor series, using a logarithmic transformation of the ratio.[29]

We assessed whether the rate ratios for mortality, first admission, and incidence in psychiatric patients were significantly different from the general population of Nova Scotia as

Table 1 Comparing incidence, first admission, and mortality rates in males

	Cancer incidence		First admission rate		Mortality rate	
Cancer	Rate ratio	95%CI	Rate ratio	95%CI	Rate ratio	95%CI
Prostate	1.01	0.95 to 1.07	1.22	1.12 to 1.32	1.39	1.17 to 1.65
Trachea, bronchus, lung	1.45	1.37 to 1.52	1.78	1.63 to 1.94	1.88	1.71 to 2.06
Colorectal	1.05	0.99 to 1.13	1.54	1.38 to 1.72	1.62	1.35 to 1.94
Melanoma	1.05	0.92 to 1.21	1.16	0.89 to 1.51	2.18	1.34 to 3.44
Brain	1.88	1.65 to 2.15	2.44	1.92 to 3.10	2.64	1.92 to 3.62
Bladder	1.03	0.89 to 1.13	1.41	1.23 to 1.61	1.99	1.48 to 2.67
Non-Hodgkin lymphoma	1.52	1.36 to 1.67	1.98	1.68 to 2.33	1.69	1.28 to 2.22
Leukemia	1.35	1.17 to 1.49	1.81	1.48 to 2.21	1.73	1.26 to 2.37
Stomach	1.30	1.14 to 1.51	1.43	1.10 to 1.85	1.62	1.18 to 2.23
Pancreas	1.24	0.94 to 1.41	1.34	1.03 to 1.75	1.53	1.17 to 1.99
Unknown primary	1.69	1.48 to 1.82	1.98	1.64 to 2.39	2.02	1.63 to 2.49
Total	1.21	1.18 to 1.24	1.52	1.47 to 1.58	1.72	1.63 to 1.82

indicated by 95%CIs that included a value of 1.0. We also assessed whether there were differences between mortality, first admission, and incidence rate ratios.

Regression Analysis

We used Cox regression to compare the risk of each outcome in the PHRU data from time of first contact for psychiatric disorder until the end of follow-up. We included principal psychiatric diagnosis, age (in 10-year increments), sex, socioeconomic status, and treatment setting and residence (metropolitan Halifax or elsewhere in the province). We derived income levels using the average household income from the 1996 Census for psychiatric patients' postal codes at the time of initial contact, and divided them into quarters.

We assessed medical comorbidity leading to admission, as recorded in the CIHI-DAD, over the year prior to study entry using the modified Charlson-Deyo Index. This contains 19 categories of comorbidity, primarily defined using ICD-9 codes. Each category has an associated weight, based on the adjusted risk of 1-year mortality. The overall score reflects the cumulative increased likelihood of 1-year mortality: the higher the score, the greater the risk.[30]

As the analysis was carried out within the administrative databases held at PHRU, we were only able to study the outcomes (death or first admission) captured by the data. We were not able to investigate predictors of cancer incidence recorded in the NSRC because of the nature of the data sharing agreement.

Results

Incidence, First Admission, and Mortality Rates

There were 247 344 people in contact with mental health services in the study cohort. This represents just over 25% of Nova Scotia's total population of 936 130 in 2005.[31] After their first contact with mental health services, 4690 people had cancers diagnosed. Tables 1 and 2 show the distribution of incident cancers by cancer site and sex. The most common cancer sites were trachea, bronchus, and lung (n = 877), colorectal (n = 634), prostate (n = 550), and breast (n = 492). Between 1995 and 2001, 2486 psychiatric patients in the study cohort died from cancer.

The cancer incidence rate in psychiatric patients was 730 per 100 000 person-years in males (95%CI, 702 to 758 per 100 000 person-years) and 577 per 100 000 person-years in females (95%CI, 552 to 603 per 100 000 person-years). This was significantly higher than rates in the general Nova Scotia population of 603 per 100 000 person-years in males (95%CI, 594 to 611 per 100 000 person-years) and 442 per 100 000 person-years in females (95%CI, 435 to 448 per 100 000 person-years) as shown by the corresponding rate ratios (Tables 1 and 2). The incidence rate ratio varied from 1.88 for brain cancer in males (95%CI, 1.65 to 2.15) to 0.91 for melanoma in females (95%CI, 0.73 to 1.07). There were several cancer sites where incidence was no higher than for the general population. These were colorectal and prostate cancer for males, ovarian cancer for females, and bladder cancer and skin melanoma for both sexes (Tables 1 and 2).

Table 2 Comparing incidence, first admission, and mortality rates in females

	Cancer incidence		First admission rate		Mortality rate	
Cancer	Rate ratio	95%CI	Rate ratio	95%CI	Rate ratio	95%CI
Breast	1.11	1.05 to 1.18	1.26	1.16 to 1.38	1.52	1.30 to 1.78
Trachea, bronchus, lung	1.49	1.38 to 1.59	1.46	1.30 to 1.65	1.62	1.42 to 1.86
Colorectal	1.45	1.34 to 1.56	1.47	1.31 to 1.66	1.78	1.48 to 2.15
Melanoma	0.91	0.73 to 1.07	1.11	0.84 to 1.47	1.37	0.64 to 2.92
Brain	1.56	1.25 to 1.94	2.15	1.58 to 2.93	1.66	1.08 to 2.54
Bladder	1.04	0.81 to 1.33	1.31	1.03 to 1.66	1.15	0.59 to 2.24
Cervix	1.33	1.12 to 1.57	1.97	1.55 to 2.52	1.73	1.09 to 2.75
Uterus	1.25	1.04 to 1.39	1.37	1.09 to 1.72	3.09	1.98 to 4.83
Ovary	1.15	0.99 to 1.35	1.55	1.24 to 1.93	1.39	1.02 to 1.89
Non-Hodgkin lymphoma	1.30	1.06 to 1.45	1.20	0.96 to 1.51	0.87	0.57 to 1.32
Leukemia	1.29	1.07 to 1.55	1.26	0.96 to 1.65	1.28	0.85 to 1.93
Stomach	1.54	1.23 to 1.92	1.46	1.04 to 2.05	1.86	1.28 to 2.70
Pancreas	1.41	1.12 to 1.65	1.36	1.03 to 1.79	1.50	1.14 to 1.97
Unknown primary	2.04	1.72 to 2.25	1.81	1.51 to 2.18	1.88	1.51 to 2.36
Total	1.31	1.27 to 1.34	1.39	1.34 to 1.45	1.59	1.49 to 1.69

First Admission and Mortality Rates

First admission and mortality rate ratios were higher than incidence in psychiatric patients for both males (Table 1) and females (Table 2). In terms of specific cancer sites, we observed the highest cancer mortality and admission rate ratios for brain cancers in men. In women, the highest mortality rate ratio was for cancer of the uterus, while the highest admission rate ratio was for brain cancer followed by cervical cancer. Cancers of unknown primary site showed high admission and mortality rates in both sexes.

Comparing Incidence and Mortality Rates for Specific Cancer Sites

There were important differences between incidence and mortality rate ratios for several cancer sites. In some cases, such as cancers of the brain, stomach, trachea, bronchus, and lung, incidence and mortality rate ratios were similarly raised, compared with the general population. In a second group, such as bladder cancer in females, both incidence and mortality were no higher than that of the general population.

However, in a third group, mortality was higher than might be expected from the incidence. In this group, mortality was higher than that of the general population, but incidence was not. These were melanoma, prostate, bladder, and colorectal cancers in males (Table 1).

Predictors of First Admission and Mortality

We used Cox regression to analyze risk factors for first admission and mortality while adjusting for confounders such as age and sex (Table 3). The risk of first admission for cancer was 57% higher in psychiatric patients. Admission risk was also significantly associated with male sex, increasing age, lower socioeconomic status, metropolitan as opposed to rural residence, the presence of clinically important comorbidity, and psychiatric disorder (Table 3). The same variables were also significantly associated with increases in mortality rates, with the exception of metropolitan residence (Table 3). Patients from rural, as opposed to metropolitan, areas had significantly increased mortality, which was the reverse of our findings for first admissions.

Sensitivity Analyses by Psychiatric Diagnosis and Treatment Setting

We reran our models to investigate any differences in first admission or mortality rate ratios by psychiatric diagnosis and treatment setting. We were unable to separately analyze mortality in patients with personality disorders in the absence of Axis I comorbidity because of insufficient numbers. Patients with dementia had significantly lower rate ratios for first admission (0.87; 95%CI, 0.77 to 0.98) and cancer mortality (0.69; 95%CI, 0.56 to 0.85). Patients with schizophrenia did not show significantly higher rate ratios for first admission (1.48; 95%CI, 0.96 to 2.30) and mortality (1.49; 95%CI, 0.71 to 3.14). All other Axis I diagnoses were associated with higher rate ratios for admission and (or) mortality.

While higher than the general population, there was little difference in first admission rate ratios between those who had

Table 3 Risk factors for mortality and first admissions (adjusted)

	First admission		Mortality	
Variable	Adjusted rate ratios	95% CI	Adjusted rate ratios	95%CI
Sex, male	1.60	1.59 to 1.61	1.79	1.77 to 1.81
Age (change/decade[a])	1.26	1.23 to 1.28	1.37	1.32 to 1.42
Income quarter				
$49 562	1.00	n/a	1.00	n/a
$40 184 to $49 561	1.04	1.01 to 1.07	1.06	1.0 to 1.12
$33 776 to $40 183	1.04	1.01 to 1.07	1.07	1.01 to 1.13
$0 to $33 775	1.10	1.07 to 1.17	1.08	1.02 to 1.14
Residence				
Rural	1.00	n/a	1.00	n/a
Metropolitan	1.05	1.03 to 1.08	0.95	0.91 to 0.99
Medical comorbidity	7.90	7.72 to 8.08	7.92	7.61 to 8.24
Psychiatric disorder	1.57	1.52 to 1.62	1.29	1.21 to 1.36

[a]Added risk per decade of first admission or mortality

n/a = not applicable

seen a psychiatric specialist (1.81; 95%CI, 1.40 to 2.33), and those who had only seen a general practitioner (1.61; 95%CI, 1.54 to 1.66). Mortality rate ratios showed a similar pattern for those seen in psychiatric settings (2.03; 95%CI, 1.35 to 3.05) and those seen in primary care (1.29; 95%CI, 1.21 to 1.38).

Discussion

Strengths and Limitations

There is literature on the adverse affects of depression on survival from cancer, especially breast cancer.[32–34] There is also literature on the incidence of carcinoma in schizophrenia, and whether this is lower than that of the general population.[35,36] Lastly, there is limited literature comparing incidence and mortality in patients of specialist psychiatric services.[17] To our knowledge, this is the first study to investigate cancer incidence, first admission, and mortality rates in people with psychiatric disorder that includes primary care, where most patients receive treatment. Our findings therefore give a fuller picture of the relation between psychiatric disorder and cancer.

We found that overall age-standardized cancer mortality was 70% higher in male and 59% higher in female psychiatric patients than the general population. After adjusting for other demographic factors and comorbidity, there was a 29% excess mortality in psychiatric patients. First admissions showed a similar pattern. One in 5 Canadians have a psychiatric illness within their lifetime; therefore, any increase in mortality and hospital admissions in this population is of great public health concern.

There was weaker and less consistent evidence for increased incidence. For some cancers, incidence rate ratios were lower than what might be expected from the corresponding mortality and first admission rates, and no higher than that of the general population. These sites were melanoma, colorectal, bladder, and prostate cancer in males. These findings suggest that increases in mortality for cancer cannot be solely explained by greater incidence, and that there is a greater case fatality rate for some cancers in psychiatric patients.

There are several limitations. We used routinely collected administrative data that may be subject to recording bias, especially for diagnosis. Most data concerning the validity of our case definition of treated psychiatric disorder are for overall morbidity rather than specific diagnoses. We have therefore emphasized overall psychiatric morbidity, not subcategories, to minimize possible bias. We were unable to study the effects of lifestyle factors such as alcohol or tobacco use. Smoking status, in particular, is a potential confounder of outcome in many forms of cancer. However, this would not explain our finding of an increased risk of mortality and first admission for several cancer sites in the presence of an incidence that was no higher than that of the general population. We were unable to separately study the relation between psychiatric disorder and every type of cancer (for example, Hodgkin disease) because of small numbers.

However, we included all cancers in calculations of overall incidence, first admission, and mortality rate ratios.

Administrative data do not contain indicators of disease severity or disability. We also could not consider the effect of marital status, length of time since first contact with services, educational level, or psychiatric legal status. However, studies from Australia and the United States showed no difference in all-cause mortality rates between involuntary and voluntary patients.[17,37] Unlike cancer registries in several other countries, Canadian registries do not have information on cancer staging. Our results on the effect of variables such as income or rurality apply to this particular cohort in contact with psychiatric services, and may not generalize to other populations. Finally, although we were able to adjust for age and sex through standardization of mortality, first admission, and incidence rate ratios for males and females, we were only able to adjust for other confounders such as socioeconomic status and comorbid illness for mortality and first admission, not for incidence. Our findings require further study. The definitive way of comparing incidence, first admission, and mortality rates would be a prospective cohort study with adjustment for some of the previously mentioned confounders.

Comparison With Previous Studies

This study and work from Australia, which used a similar methodology, allow a comparison between health systems with and without universal health coverage.[17] Both studies found strong and consistent elevations in the mortality rate ratios but weak and inconsistent evidence for elevated incidence rate ratios. The incidence for several important cancer sites in psychiatric patients is actually no higher than that of the general population, notably in males.

The high mortality rate for brain cancers, especially for men, is also consistent with the Australian study.[17] These authors were able to review the case notes of some of the cohort and found that most were older patients whose first contact with psychiatric services occurred only months prior to death. Our results confirm the need to exclude such diagnoses in older men presenting for the first time with psychiatric disorder.

Unlike previous work that compared first admission and mortality rates for a range of physical comorbidities,[19] the rate ratios for first admissions were not lower that those for mortality after adjusting for sociodemographic and other potential confounders. Our data do not therefore support the suggestion that people with mental illness are not receiving the level of acute health care commensurate with their illness, at least in the particular example of first admission for cancer.

Possible Explanations

There is a common assumption that lifestyle factors, such as alcohol or tobacco use, explain the increased mortality from cancer for patients with psychiatric disorder.[17,18] If that were the sole explanation, incidence would consistently reflect the increased mortality rate. Our study and work from Australia suggest psychiatric patients are no more likely to develop some cancers than the general population but still have increased mortality for the same condition. There may be several explanations for this increased case fatality rate. One might be that psychiatric patients are presenting later, and with more advanced disease, than the general population.[17] In Canada, information on staging is not included in the cancer registry; therefore, this information could only be collected clinically or by case note review. However, cancer registries elsewhere do contain such data.

Another possibility is reduced access to general medical care. Although first admission rates reflected the increased mortality risk for psychiatric patients, access may be harder for interventions that are more elective. This inequity would be of concern, and would confirm work from Ontario showing that other marginalized populations, such as those of low income, are less likely to receive specialist procedures such as adjuvant or palliative radiotherapy.[38,39]

Decreased uptake of screening could also explain the increased mortality for breast cancer in females, or colorectal and prostate cancer in males. As a result, psychiatric patients may therefore only present when symptoms or signs become more obvious in later stages of the disease. Clearly, ability to pay is not the sole determinant. Is this owing to problems in registering with a family physician, missed appointments, or difficulties in communication or scheduling appointments? Finally, psychiatric patients may have a worse prognosis even after adjusting for staging at presentation. Survival from cancer is associated with levels of depression,[32–34] emotional expression, and support.[40] This has mostly been studied in relation to breast cancer[33,40] but has also been found in lung, colon, head and neck, prostate, uterine, ovarian, and colon and rectal cancers.[32,34] Some work suggests that people with depression prior to the diagnosis of the cancer have a worse survival rate than those with depression following diagnosis.[32] This would be the situation that would apply to our cohort of patients.

Conclusions

People with mental illness in Nova Scotia have increased mortality from cancer, which cannot always be explained by increased incidence. Further study is needed to identify possible reasons for this. It is also unclear why the relation between psychiatric morbidity and cancer varies by both sex and site. For instance, the greatest disparity between incidence and mortality occurs in males.

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Résumé : La mortalité par cancer excessive chez les patients psychiatriques

Objectifs : Il y a des données contradictoires sur l'incidence du cancer et la mortalité chez les patients psychiatriques, bien que la plupart des études suggèrent que même si la mortalité par cancer est plus élevée, l'incidence n'en est pas différente de celle de la population générale. Différentes conclusions et méthodologies peuvent expliquer certains des résultats contradictoires. Nous avons recherché l'association entre la maladie mentale et l'incidence du cancer, les taux de première hospitalisation, et la mortalité en Nouvelle-Écosse à l'aide d'une méthodologie standard.

Méthode : Une étude de couplage de dossiers dans la population de 247 344 patients en contact avec des soins primaires ou des services d'un spécialiste en santé mentale de 1995 à 2001 a été utilisée. Les dossiers étaient couplés avec les registres de cancer et les enregistrements de décès.

Résultats : La mortalité par cancer était 72 % plus élevée chez les hommes (95 % IC, 63 % à 82 %) et 59 % plus élevée chez les femmes (95 % IC, 49 % à 69 %), parmi les patients en contact avec des services de santé mentale. Cela se reflétait dans les taux de première hospitalisation semblablement élevés. Toutefois, les données probantes d'une incidence accrue étaient plus faibles et moins cohérentes. À plusieurs sièges du cancer, les ratios des taux d'incidence étaient plus faibles que ce qui pouvait être escompté, étant donné les ratios des taux de mortalité et de première hospitalisation, et ils n'étaient pas plus élevés que ceux de la population générale. Il s'agissait de mélanomes, de cancer de la prostate, de la vessie et du cancer colorectal chez des hommes.

Conclusion : En Nouvelle-Écosse, les gens souffrant de maladie mentale ont une mortalité accrue par cancer, qui ne s'explique pas toujours par une incidence accrue. Des explications possibles pour de futures études sont entre autres les délais de détection ou de présentation initiale qui mènent à des phases plus avancées lors du diagnostic, et les difficultés de communication ou d'accès aux soins de santé.