Cardiovascular preventive care for patients with serious mental illness

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Abstract

Objective To determine whether patients with serious mental illness (SMI) are receiving preventive care for cardiovascular disease at the same rate as those without SMI in an interprofessional practice with a mandate to care for persons with barriers to access to the health care system.

Design Quality improvement exercise using a case-matched retrospective chart review.

Setting Somerset West Community Health Centre in downtown Ottawa, Ont.

Participants All patients with SMI were adult, current primary care patients from the Somerset West Community Health Centre with a recorded diagnosis of SMI (bipolar affective disorder, schizophrenia, or other psychosis) during the 2-year period from June 1, 2013, to May 31, 2015. Two control patients (current primary care patients without SMI and matched for age and sex) were randomly chosen for each patient with SMI.

Main outcome measures They had at least 1 record in their electronic chart during the 2-year study period of measurement of blood pressure, weight, body mass index, smoking status, lipid screening results, or diabetes screening results. Prevention score was calculated as the number of preventive tests documented out of the possible 6. Secondary measures included age, sex, comorbidities (diabetes, hypertension, or hyperlipidemia), mental illness diagnosis, involvement of a psychiatrist, and involvement of a mental health case worker.

Results Patients with SMI had higher rates of diabetes, hypertension, and dyslipidemia. Screening rates for the 6 outcome measures were very similar between patients with and without SMI. Patients with SMI who were under the care of a psychiatrist or who had a case worker had more complete screening results than those who had neither provider.

Conclusion As expected, patients with SMI had higher rates of metabolic comorbidities than control patients had. Screening rates for cardiovascular risk factors were similar in the 2 groups. Involvement of mental health case workers and psychiatrists in the patients' care might be linked to more complete preventive screening.

EDITOR'S KEY POINTS

- This study, which examined cardiovascular preventive care for patients with serious mental illness (SMI), found that preventive care services were recorded at almost the same rate in people with and without SMI.
- The interprofessional primary care practice in this study, with a mandate to provide care to people with barriers to access to the health care system, provides cardiovascular preventive care for people with SMI at similar rates to other practices internationally.
- The addition of a psychiatrist or a mental health case worker to the care team seems to improve the completeness of preventive care delivered.

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La prévention cardiovasculaire chez les patients atteints de maladie mentale sévère

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Résumé

Objectif Vérifier si les patients souffrant d'une maladie mentale sévère (MMS) reçoivent autant de soins en prévention cardiovasculaire que ceux qui n'ont pas de MMS, et ce, dans le contexte d'une clinique mandatée pour traiter des personnes qui ont des difficultés à accéder au système de santé.

Type d'étude Une revue rétrospective de dossiers pour déterminer les interventions qui améliorent la qualité de vie, avec des patients témoins appariés.

Contexte Le Centre de santé communautaire Somerset Ouest du centre-ville d'Ottawa, en Ontario.

Participants Les patients souffrant de MMS étaient tous des adultes suivis au Centre de santé communautaire Somerset Ouest sur une période de 2 ans s'étendant du 1er juin 2013 au 31 mai 2015. Les MMS mentionnées aux dossiers comprenaient des maladies bipolaires, des schizophrénies ainsi que d'autres psychoses. Pour chacun des patients souffrant d'une MMS, on a choisi au hasard deux témoins jumelés en fonction de l'âge et du sexe qui n'avaient pas de MMS et qui recevaient des soins primaires à la clinique.

Principaux paramètres à l'étude Au cours des 2 ans de l'étude, des mesures de la tension artérielle, du poids, de l'indice de masse corporelle, du statut tabagique et du profil lipidique ou d'un dépistage pour le diabète ont été consignées au moins une fois dans le dossier électronique des participants. Le score pour la prévention a été calculé comme le nombre d'examens préventifs consignés au dossier, sur un total possible de 6. Les paramètres secondaires comprenaient l'âge, le sexe, la comorbidité (diabète, hypertension ou hyperlipidémie), le diagnostic de maladie mentale, l'intervention d'un psychiatre et la participation d'un travailleur social.

Résultats Les patients souffrant de MMS avaient un plus haut taux de diabète, d'hypertension et de dyslipidémie. Les taux de dépistage pour les 6 interventions désignées étaient très semblables entre ceux qui avaient ou qui n'avaient pas de MMS. Ceux qui avaient une MMS et qui étaient suivis par un psychiatre ou par un travailleur social avaient plus de résultats de dépistages par rapport à ceux qui n'avaient pas ce type de suivi.

Conclusion Comme prévu, les patients avec une MMS avaient des taux plus élevés d'anomalies métaboliques concomitantes que les patients témoins. Les taux de dépistage pour les facteurs de risque cardiovasculaire étaient semblables dans les 2 groupes. Les meilleurs résultats des patients suivis par des psychiatres ou des travailleurs sociaux pourraient s'expliquer par un plus grand nombre de dépistages d'ordre préventif.

POINTS DE REPÈRE DU RÉDACTEUR

- Cette étude, qui portait sur la prévention cardiovasculaire chez les personnes atteintes d'une maladie mentale sévère (MMS), a révélé que les services de soins préventifs étaient dispensés presqu'au même taux aux personnes atteintes d'une MMS et aux autres personnes.
- Mandatée pour traiter des personnes ayant certaines difficultés à accéder au système de santé, la clinique interprofessionnelle de soins primaires choisie pour cette étude dispense des soins de prévention cardiovasculaire aux personnes atteintes de MMS à des taux semblables à ceux d'autres cliniques à travers le monde.
- L'ajout d'un psychiatre et d'un travailleur social en santé mentale à l'équipe de soignants semblerait avoir amélioré l'ensemble des soins préventifs dispensés.

Cet article a fait l'objet d'une révision par des pairs.
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People with serious mental illness (SMI), such as schizophrenia and bipolar disorder, have a life expectancy as much as 25 years shorter than the general population has. Much of this excess mortality is owing to cardiovascular disease.[1] International studies demonstrate inequities between people with SMI and the general population in the provision of preventive care services for cardiovascular disease[2] and a lack of attention to physical health conditions in psychiatric care[3] despite position statements calling for improvement.[4,5] As well, existing clinical guidelines recommend scheduled monitoring for metabolic risk factors in patients prescribed antipsychotic medication[6] and switching antipsychotic therapy if a patient experiences weight gain of more than 5% of his or her initial weight.[7] The National Health Service in the United Kingdom has instituted payment incentives for general practitioners to provide metabolic screening for patients with SMI, but disparities in care still exist.[8] Although Canadian studies discuss gaps in primary care for patients with SMI,[9] we could not find any references that specifically described cardiovascular preventive care for patients with SMI in Canada.

Community health centres (CHCs) are interprofessional primary health care settings with a mandate to serve patients with barriers to the health care system,[10] including patients with SMI. Community health centres have a variety of staff members who provide traditional primary care services as well as social services and community services to address the social determinants of health.[11] We hypothesized that CHC patients with SMI would receive fewer of the recommended metabolic screening tests than CHC patients without SMI would, despite the richness of resources in the CHC setting. We wished to determine if there were any patient or health care system characteristics that were linked to better preventive care in this population.

METHODS

Design

We conducted a comprehensive literature search of the MEDLINE database using MeSH headings and key words related to mental disorders, screening, cardiovascular disease, and primary health care. Finding no references from Canada, we conducted a case-matched retrospective chart review of patients with SMI and age- and sex-matched control patients without SMI.

Sample frame

We included all patients aged 18 years and older who were ongoing primary care patients of a physician or nurse practitioner at Somerset West Community Health Centre in Ottawa, Ont, for the entire period between June 1, 2013, and May 31, 2015.

Selection of participants

Patients with SMI were identified by an electronic data pull of SMI diagnosis (bipolar affective disorder, schizophrenia, or other psychotic disorders) and confirmed by a manual review of the chart for 1 of the above diagnoses documented by a physician. Eligible patients with SMI included those with concurrent diagnoses such as other mental health conditions or substance use. We did not assess whether the patients were taking antipsychotic medication. Control patients had no recorded diagnosis of SMI (confirmed by manual chart review) and were matched by age and sex in a 2:1 ratio with each patient with SMI. Patients with and without SMI were excluded if they were pregnant, they died during the study period, or they did not have at least 1 clinic visit during the study period.

Outcome measures

We searched manually in the electronic charts for records of the following measurements at least once during the 2-year study period: blood pressure, weight (in kg), body mass index (BMI), smoking status (smoker or non-smoker), full lipid profile results, and diabetes screening results (hemoglobin A_{1c} level, fasting glucose level, or oral glucose tolerance). Body mass index and weight were both included because, although BMI is the recommended means to screen people for obesity, serial weight measures were more likely to be recorded when assessing a patient for weight gain. Previous quality improvement activities at our health centre had demonstrated low adherence to measurement of waist circumference in all patient groups. Thus, despite recommendations to assess patients for diabetes risk by measuring waist circumference, we elected not to include it. To provide an overall picture of preventive care, a prevention score was computed for each patient with and without SMI by counting the total number of preventive measures recorded, with a possible maximum of 6. We also manually reviewed charts to determine the specific SMI diagnosis, comorbidities (diabetes, hypertension, or hyperlipidemia), ongoing care by a psychiatrist, and ongoing involvement of a mental health case worker from outside the CHC. Timing of initial diagnosis was not recorded, as this was impossible to discern accurately from the patient charts. A selection of the charts was reviewed by both investigators to ensure consistent coding, and interrater reliability was very high.

RESULTS

Characteristics of patients with and without SMI are presented in **Table 1**. We confirmed 106 patients with SMI whose mean age was 54 years (range 20 to 87 years). Of these, 52% had a diagnosis of schizophrenia and

38% had a diagnosis of bipolar affective disorder. In total, 54 patients with SMI were women and 52 were men. There were 212 age- and sex-matched control patients. Patients with SMI had higher rates of diabetes, hypertension, and dyslipidemia. The number of patients with SMI with diabetes was found to significantly higher (P=.018) than the number of control patients with diabetes. Screening rates for the 6 outcome measures were very similar between patients with and without SMI. Only the rate of diabetes screening was found to be significantly higher (P=.006) in the patients with SMI compared with the control patients. Patients with SMI who were under the care of a psychiatrist or who had a case worker had higher prevention scores than those who had neither provider.

Table 1. Characteristics of patients with and without SMI: *Of the patients with SMI, 38% were diagnosed with bipolar affective disorder, 52% were diagnosed with schizophrenia, and 10% were diagnosed with other psychoses (schizoaffective disorder, psychosis not yet diagnosed, etc).*

CHARACTERISTIC	PATIENTS WITH SMI, N = 106	CONTROL PATIENTS (NO SMI), N = 212	*P* VALUE
Mean (range) age, y	54 (20-87)	54 (20-87)	NA
Female sex, %	51	51	NA
Comorbidities, %			
• Diabetes	28	17	.018*
• Hypertension	38	33	.453
• Dyslipidemia	43	39	.079
Screening tests recorded, %			
• Blood pressure	83	89	.155
• Body mass index	48	54	.341
• Weight	70	68	.898
• Smoking status	92	92	> .99
• Lipid screening results	73	62	.079
• Diabetes screening results	85	71	.006*
Prevention score, %			
• 0	0	1	.305
• 1	8	7	> .99
• 2	6	10	.286
• 3	11	9	.549
• 4	14	21	.171
• 5	23	14	.081
• 6	38	38	> .99

NA—not applicable, SMI—serious mental illness.
*Variable differed significantly between the 2 groups (P<.05).

DISCUSSION

Based on international literature, we had expected that rates of cardiovascular preventive care would be lower in patients with SMI, even in a setting designed to provide care to people with barriers to access to health care services. Instead, we found that preventive care had been delivered at almost the same rate in people with and without SMI. Other than BMI measurement, which was low in patients with and without SMI, the rates of recording of preventive care services in our sample were fairly similar and in some cases superior to those we could find elsewhere.[12] Patients with SMI also had more recorded cardiovascular comorbidities than control patients had, which should have led to more frequent use of some of the preventive tests we measured. We were only able to discern a difference in the rate of testing for diabetes, which was (appropriately) higher in the patients with SMI, who had a higher frequency of diagnosed diabetes than the control patients had.

Also of interest was our finding that having a psychiatrist or mental health case worker involved in the care of the patient might have allowed for more complete screening. Primary care providers often have to deal with "competing demands" on their time with patients, leaving little time for preventive care, which is often assessed as a less pressing issue.[13] If the primary care provider is not also doing most of the mental health care (in the case of sharing a patient with a psychiatrist) or having to organize testing and follow-up (in the case of working with a mental health case worker), then there might be more time available to address prevention and fewer barriers to actually having the testing completed. A care team that includes a psychiatrist or a mental health case worker is broader than teams found in most primary care practices. This observation underlines the importance of working with community mental health agencies in the care of patients with SMI.

Strengths and limitations

The strengths of our study included being able to access the full primary care health records for patients with and without SMI and having a relatively large number of patients with SMI in a single practice. On the other hand, our measures are process measures only, and might in some cases be indicative of completeness of documentation rather than actual delivery of care. We also have no way of knowing whether performing preventive testing in this population actually leads to better care for patients or improved clinical outcomes. Future research could examine whether improved preventive testing is linked to better outcomes. In addition, it is very important to determine the mechanisms through which primary care practices can work with important community resources in an integrated manner to provide care for people with different needs.

Conclusion

Our interprofessional primary care practice with a mandate to provide care to people with barriers to access to the health care system can provide cardiovascular preventive care for people with SMI at similar rates to other practices internationally. The addition of a psychiatrist or a mental health case worker to the care team seems to improve the completeness of preventive care delivered.

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Contributors

Both authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

Dr Muldoon is an employee of Somerset West Community Health Centre. The authors have no other competing interests to declare.

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