Canadian Psychiatric Association
Association des psychiatres du Canada

Original Research

The Canadian Journal of Psychiatry / La Revue Canadienne de Psychiatrie
2016, Vol. 61(2) 80-85

DOI: 10.1177/0706743715625940
TheCJP.ca | LaRCP.ca
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Major Depression in Canada: What Has Changed over the Past 10 Years?

La dépression majeure au Canada : qu'est-ce qui a changé au cours des 10 dernières années?

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Abstract

Objective: Major depressive episodes (MDE) make an important contribution to disease burden in Canada. The epidemiology of MDE in the national population has been examined in 2 mental health surveys, one conducted in 2002 and the other in 2012. Our objective was to compare selected variables from the 2 surveys to determine whether changes have occurred in the prevalence, treatment, and impact of MDE.

Method: The World Health Organization World Mental Health Composite International Diagnostic Interview was used in both surveys and the MDE module (which was not modified) was scored using the same algorithm. Some variables assessing impact and management of MDE were also identical in the 2 surveys. The analysis was based on frequency estimates and associated 95% confidence intervals.

Results: The annual prevalence of MDE was 4.7% (95% CI 4.3% to 5.1%) in 2012, nearly identical to 4.8% (95% CI 4.5% to 5.1%) in 2002. Receipt of potentially adequate treatment (defined as taking an antidepressant or 6 or more visits to a health professional for mental health reasons) increased from 41.3% in 2002 to 52.2% in 2012, mostly due to an increase in respondents reporting 6 or more visits. Use of second generation antipsychotics also increased. There was no evidence of diminishing prevalence or impact (as assessed by symptoms of distress).

Conclusions: There appears to have been an increase in receipt of treatment for people with MDE and a changing pattern of management. However, it was not possible to confirm that the impact of MDE is diminishing as a result.

Abrégé

Objectif : Les épisodes de dépression majeure (EDM) contribuent substantiellement au fardeau des maladies au Canada. L'épidémiologie des EDM dans la population nationale a été examinée dans deux enquêtes de santé mentale, l'une en 2002 et l'autre en 2012. L'objectif de cette étude était de comparer les variables sélectionnées des deux enquêtes afin de déterminer si des changements ont eu lieu dans la prévalence, le traitement et l'impact des EDM.

Méthode : L'entrevue diagnostique composite internationale en santé mentale de l'OMS a été utilisée dans les deux enquêtes et le module EDM (qui n'a pas été modifié) a été noté à l'aide du même algorithme. Certaines variables évaluant l'impact et la prise en charge des EDM étaient également identiques dans les deux enquêtes. L'analyse était basée sur des estimations de la fréquence et sur les intervalles de confiance à 95 % associés.

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Résultats : La prévalence annuelle des EDM était de 4,7 % (IC à 95 % 4,3% à 5,1%) en 2012, presque identique au 4,8 % (IC à 95 % 4,5 % à 5,1 %) de 2002. La réception d'un traitement potentiellement adéquat (défini par la prise d'un antidépresseur ou par 6 visites ou plus à un professionnel de la santé pour des raisons de santé mentale) est passée de 41,3 % en 2002 à 52,2 % en 2012, majoritairement en raison d'une augmentation des répondants qui ont déclaré 6 visites ou plus. L'utilisation d'antipsychotiques de la deuxième génération s'est aussi accrue. Rien n'indiquait une diminution de la prévalence ou de l'impact (selon l'évaluation des symptômes de détresse).

Conclusions : Il semble y avoir eu une hausse de la réception d'un traitement pour les personnes souffrant d'un EDM ainsi qu'un modèle changeant de prise en charge. Il n'est toutefois pas possible de confirmer que l'impact des EDM diminue par conséquent.

Keywords
major depressive disorder, major depressive episodes, depression, population studies, cross-sectional studies, health care utilization, epidemiology

Major depression has been identified as a global public health priority and was ranked by the Global Burden of Disease Project as the second leading cause of disability adjusted life years in Canada.[1] While efforts have been made to compare different countries in terms of the prevalence and correlates of major depressive episode (MDE),[2,3] it has not generally been possible to make comparisons over time within countries due to modifications made to diagnostic interviews.[4,5] Comparisons over time are important for discerning whether progress against this condition is being made. Improved access to treatment and more effective treatment can theoretically decrease the prevalence and impact[6] of this condition. It is important to know whether such progress is occurring.

Two surveys have assessed MDE in the national population of Canada, the Canadian Community Health Survey: Mental Health and Well-Being (2002 CCHS)[7,8] and the Canadian Community Health Survey–Mental Health (2012 CCHS).[9] For ease of language, these surveys are referred to here as the 2002 CCHS and 2012 CCHS. Some aspects of the 2 survey interviews were modified, including the specific diagnostic modules included, but the MDE module was repeated in an identical fashion. However, the bipolar disorders algorithms were changed. For this reason, major depressive disorder (MDD) (which requires an exclusion of those with past manic, hypomanic, or mixed episodes) was not comparable across the 2 surveys. However, repetition of an identical MDE module after 10 years provides one of the first opportunities internationally to describe changes over time in the epidemiology of this condition. There is reason to hope that positive changes would have occurred at the population level. The burden of MDE, as reflected by its prevalence, is related both to the incidence of new episodes and the duration of those episodes. Increased help seeking and more effective treatment should diminish the duration of episodes and their recurrence, which should in theory diminish the annual prevalence of MDE and reduce the level of distress associated with episodes.

To structure our comparisons of the 2 data sets, we formulated hypotheses based on the idea that public health progress is being made against this condition: 1) that due to increasing mental health literacy and diminishing stigma, treatment-seeking for major depression would have increased over the 10 years between these 2 surveys, 2) that the frequency of potentially adequate treatment would also have increased. Further, we hypothesized that such changes would have resulted in diminished burden of illness manifesting as 3) diminished prevalence of past-year MDE among people with lifetime MDE and diminished distress among those with past year MDE.

Methods

Data Sources

The 2002 and 2012 CCHS surveys had similar design characteristics, as has been described previously.[7,10] Each survey was conducted by Statistics Canada using a representative national sample of household residents selected predominantly using an area frame designed for the Labour Force Survey. The target populations included people aged 15 years or older living in private occupied dwellings (about 98% of the Canadian population). In each survey, 1 person aged 15 years or older was randomly selected from each household using a probability of selection that depended on household composition. Efforts were made whenever possible to interview respondents in person at their place of residence. In the 2002 CCHS there was an 86.5% household-level response rate, and among responding households, there was an 89% person-level response rate, leading to an overall response rate of 77% and a final sample of 36 984 respondents. The 2012 CCHS had a slightly lower overall response rate of 69% and a final sample of 25 113.

Assessment of Major Depressive Episode

Both annual and lifetime prevalence were assessed in the 2002 CCHS and 2012 CCHS surveys using the World Mental Health Composite International Diagnostic Interview (WMH-CIDI).[11] The WMH-CIDI has been used in more than 40 countries' national mental health surveys as a

component of the World Mental Health Surveys Initiative. Copies of the instrument are available online.[12] This diagnostic interview is fully structured, meaning that all questions are fully scripted for use by trained lay interviewers.

Use of Mental Health Services

Both surveys included a module that assessed visits and consultations with mental health professionals during the 12 months preceding the interview. Past-year hospitalization was also assessed. For example, the 2012 CCHS module included the item: "During the past 12 months, have you seen, or talked on the telephone to, any of the following people about problems with your emotions, mental health or use of alcohol or drugs?" Response options included: psychiatrist, family doctor or general practitioner, psychologist, nurse, social worker, counsellor, or psychotherapist (multiple responses were allowed). The 2002 CCHS asked: "During your lifetime, have you ever seen, or talked on the telephone, to any of the following professionals about your emotions, mental health or use of alcohol or drugs?" Which was followed by a similar list of professionals and each affirmative response was followed by a question that determined whether the contact had occurred in the past year. Hospitalization (at least overnight) was assessed using similar items. The number of visits or contacts with each professional or nonprofessional source of care was elicited through detailed follow-up questions.

Treatment

The 2002 and 2012 CCHS surveys included a health service use module (see above), as well as a medication use module. The medication use module records the names of all medications taken in the 2 days preceding the interview for problems with "your emotions, mental health or use of alcohol or drugs." In addition to tabulating the use of medications, potentially adequate treatment was defined for the purposes of our study either as reporting 6 or more mental health-related visits to a specific type of health professional in the previous year or reporting the use of an antidepressant (AD). Randomized controlled trials of cognitive-behavioural treatments have generally required at least 6 visits, a very small number requiring only 4.[13] Use of second-generation antipsychotics (SGAs) and benzodiazepines was also tabulated, although these were not treated as ADs in the algorithm for potentially adequate treatment.

Lifetime and Past-Year Depression

Lifetime MDE (the occurrence of 1 or more episodes of MDE in a person's life) is unlikely to be a sensitive indicator to changes in access or effectiveness of treatment since an episode that is rapidly and successfully treated is not differentiated from delayed treatment or an absence of treatment by this parameter.[14] Past-year prevalence among people with lifetime episodes may be an indicator of improved management since long-term treatment may lower the duration of episodes and the rate of recurrence. For this reason, we estimated the annual prevalence of MDE in the subset of respondents who reported lifetime MDE.

Distress and Self-Rated Mental Health

The Kessler-6 (K-6) distress scale was included in both surveys. The 6 items on the scale were derived from an extensive pool of items from other scales. Item response theory and receiver-operator analyses were used in the development process.[15] The K-6 items elicit ratings in response to 6 symptoms: response items range from none of the time to all of the time, targeting the preceding 4 weeks. In people with past-year and lifetime MDE, we estimated the mean K-6 rating and the frequency with which respondents exceeded a commonly used high distress cut-point of 13[15] on the scale. Presumably, improved management of MDE would result in lower levels of distress.

Analysis

The analysis was conducted at the Regional Data Centre on the University of Calgary campus. The analysis primarily used frequency estimates (in the case of the K-6 a mean was also calculated) and associated 95 per cent confidence intervals, calculated using a recommended using a set of replicate bootstrap weights to account for design effects.

Results

Table 1 presents demographic features of the 2 samples, reported as weighted frequencies. The 2 samples were similar, except that in 2012 a smaller proportion lacked secondary education. The prevalence of MDE was almost identical in the 2 surveys. The lifetime prevalence in 2012 was 11.3% (95% CI 10.7% to 11.9%), compared with 12.2% (95% CI 11.8% to 12.7%) in 2002. Annual prevalence was 4.7% (95% CI 4.3% to 5.1%) in 2012 and 4.8% (95% CI 4.5% to 5.1%) in 2002. In 2012, the percentage of respondents with lifetime MDEs reporting a past year episode was 41.9% (95% CI 39.1% to 44.8%), nearly identical to the percentage in 2002 (39.5%, 95% CI 37.4% to 41.6%).

Table 2 shows the frequency of mental health consultations, by health professional group in the total population and for respondents with past year MDE. Predictably, the frequencies are dramatically higher among people with MDE than those without. There is an increased frequency of consultation with most types of professionals between 2002 and 2012. Table 2 also shows the frequency of 6 or more visits to each type of health professional. For psychologists, there was a large increase in the proportion having 6 or more visits. A sizable increase also occurred in the social worker, counsellor, or psychotherapist category. In total,

Table 1. Demographic features of the study samples[a].

Variable		2012 CCHS % (95% CI)[b]	2002 CCHS % (95% CI)[b]
Female, sex		50.7 (50.7 to 50.7)	50.8 (50.8 to 50.8)
Age, mean		45.7 (45.5 to 45.8)	44.0 (43.9 to 44.0)
Marital status	Married or common law	60.1 (59.2 to 61.0)	61.7 (61.2 to 62.3)
	Single	27.0 (26.3 to 27.7)	25.4 (25.0 to 25.9)
	Widowed, separated, or divorced	12.9 (12.3 to 13.6)	12.8 (12.5 to 13.2)
Low education, no secondary education		17.8 (17.0 to 18.6)	24.8 (24.1 to 25.4)
Employment	Working and (or) absent from job	68.5 (67.5 to 69.4)	68.5 (67.8 to 69.2)
	Permanently unable to work	2.7 (2.4 to 3.0)	2.1 (1.9 to 2.3)
	Not working	28.8 (27.9 to 29.7)	29.4 (28.7 to 30.0)

[a]$n = 25\,113$ for the 2012 CCHS and 36 984 for the 2002 CCHS.
[b]Unless otherwise specified.

Table 2. Frequency of mental health visits to health professionals.

	Total population estimates		Past-year major depression	
Health professionals consulted	2012 CCHS % (95% CI)	2002 CCHS % (95% CI)	2012 CCHS % (95% CI)	2002 CCHS % (95% CI)
Psychiatrist				
Any consultation	2.2 (2.0 to 2.5)	2.0 (1.8 to 2.2)	21.3 (18.0 to 24.7)	19.7 (17.2 to 22.2)
≥6 visits	1.0 (0.8 to 1.1)	0.8 (0.7 to 0.9)	10.3 (7.8 to 12.8)	9.8 (8.0 to 11.7)
Family doctor or general practitioner				
Any consultation	6.8 (6.3 to 7.3)	5.3 (5.0 to 5.6)	45.1 (40.6 to 49.6)	40.6 (37.3 to 43.9)
≥6 visits	1.7 (1.4 to 1.9)	1.3 (1.2 to 1.5)	15.3 (12.1 to 18.5)	14.2 (11.6 to 16.7)
Psychologist				
Any consultation	2.4 (2.1 to 2.7)	2.0 (1.7 to 2.2)	18.1 (14.2 to 22.0)	13.9 (11.6 to 16.1)
≥6 visits	1.3 (1.0 to 1.5)	0.8 (0.7 to 0.9)	11.2 (7.6 to 14.8)	6.3 (4.7 to 7.9)
Nurse				
Any consultation	1.0 (0.8 to 1.2)	0.5 (0.4 to 0.6)	7.6 (5.4 to 9.8)	4.8 (3.6 to 6.0)
≥6 visits	0.3 (0.2 to 0.4)	0.2 (0.2 to 0.3)	2.4 (1.4 to 3.5)	2.2 (1.4 to 2.9)
Social worker, counsellor, or psychotherapist[a]				
Any consultation	3.2 (2.9 to 3.6)	2.2 (2.0 to 2.5)	24.0 (20.5 to 27.6)	16.7 (13.3 to 18.0)
≥6 visits	1.7 (1.5 to 2.0)	0.9 (0.8 to 1.0)	15.0 (12.0 to 18.0)	7.1 (5.5 to 8.8)
Any health professional				
≥6 visits[b]	4.7 (4.3 to 5.1)	3.2 (2.9 to 3.4)	39.5 (35.1 to 43.8)	27.6 (24.4 to 30.7)

[a]Survey item referred to social workers only in the 2002 CCHS.
[b]≥6 visits to any 1 or more individual category of health professional.

39.5% (95% CI 35.1% to 43.8%) of respondents with past-year MDE reported 6 or more visits to a health professional in 2012, an increase of more than 10% since 2002 (27.6%, 95% CI 24.4% to 30.7%). Combined with AD use as an indicator of potentially adequate treatment, 52.2% (95% CI 47.8% to 56.6%) of people with past-year MDE were receiving potentially adequate treatment, compared with 41.3% (95% CI 37.9% to 44.7%) in 2002. The proportion of people with past-year MDE who reported that they had been admitted to hospital for reasons related to mental health in 2012 was identical at 5.5% in each survey.

Among people with past-year MDE, the frequency of AD use was similar in 2012 (33.9%, 95% CI 29.4% to 38.4%) and 2002 (29.9%, 95% CI 26.8% to 33.1%). Among people with past-year MDE, the frequency of benzodiazepine or related *z* drug sedative–hypnotics use was also comparable between the 2 surveys: 8.5% (95% CI 6.3% to 10.7%) in 2012 and 8.4% (95% CI 6.7% to 10.1%) in 2002. However, in the general population, benzodiazepine or related *z* drug use diminished from 2.3% (95% CI 2.1% to 2.5%) in 2002 to 1.3% (95% CI 1.1% to 1.5%) in the 2012 survey.

The frequency of use of SGAs increased from 0.2% (95% CI 0.2% to 0.35%) in 2002 to 0.9% (95% CI 0.7% to 1.0%) in 2012 in the overall general population. Among people with past-year MDE, the frequency of use was 7.0% (95% CI 5.2% to 8.8%) in the 2012 survey, comparable with the frequency of sedative–hypnotic use in this group, and much higher than the frequency in people with past-year MDE in 2002, which was 1.9% (95% CI 1.1% to 2.6%).

The mean distress rating among people with past year MDE was 9.8 (95% CI 9.4 to 10.2) in the 2012 survey, similar to that of 2002 (9.1, 95% CI 8.7 to 9.4). When distress was examined as a percentage exceeding the standard K-6 cut-point for serious disorders (≥13), in 2012 28.5% (95% CI 24.5% to 32.5%) exceeded the cut-point, comparable with the 2002 frequency, which was 25.6% (95% CI 22.9% to 33.1%).

Conclusion

This analysis was guided by conjecture that the frequency and adequacy of depression treatment would be increasing in the population, hopefully leading to better outcomes for this condition. There are substantial limitations in the ability to assess such questions using survey data, but such data provides one of the few objective sources of information about such questions. A comparison of results from these 2 surveys, conducted 10 years apart, suggest that there has been in increase in multiple visits to health professionals among people with major depression. The increase was seen across various professions, but most notably with clinical psychologists, social workers, or psychotherapists. An increase in 6 or more past-year visits among people with past-year MDE may indicate the increasing use of short term psychotherapies, or at least patterns of access to care that are consistent with delivery of short-term psychotherapies. However, the content of those sessions or the quality of psychotherapy cannot be determined from survey data. With addition of about 20% of people with past-year MDE who were taking ADs, the overall increase in the proportion of the population with past-year MDE that are receiving potentially adequate treatment has increased about 10% over the past 10 years and is now about 50%. It should be noted that AD use is measured over the 2 days preceding the survey. Some patients may have been successfully treated for past-year episodes and then may have discontinued their treatment. Also, among people taking ADs, the survey did not collect information about their dosage, adherence, or duration of treatment, such that the adequacy of treatment could not be determined.

These findings are consistent with positive changes in the direction of better treatment for depression. More people are seeking treatment and their pattern of contact with the health system is consistent with receipt of a higher standard of care. However, more specific conclusions are not possible due to limitations of the data source. For example, some proportion of people with 6 or more visits to a health professional for reasons of mental health may not have received an evidence-based treatment. Conversely, some may have achieved excellent outcomes with a smaller number of visits.

Unfortunately, our conjecture that outcomes would have improved over the past 10 years was not borne out by the findings. The prevalence of past-year episodes among people with lifetime MDE was comparable in the 2 surveys, as were levels of distress among people with past-year MDE.

Regarding pharmacotherapy, diminished use of benzodiazepines may be a positive development, as concerns have frequently been expressed about the over-use of these medications. Past studies have suggested a frequency of use in the range of 3%,[16,17] whereas the 2012 estimate was less than one-half of this frequency, with confidence intervals indicating that the difference is too large to be due to random variation. Among people with MDE, the frequency of benzodiazepine or *z* drugs was much higher and did not change over the 10-year period examined. An increased use of SGAs, both in the general population and among people with MDE was observed, consistent with reports from other data sources.[18]

Apart from the difficulty of assessing the adequacy of treatment, the diagnostic measure used in these surveys was a fully structured interview administered by lay interviewers. This approach to measurement is not as accurate as a clinical assessment. The surveys did not include a measure of depressive symptom severity, rather they included a measure of nonspecific distress, the K-6. The K-6 may have been insensitive to changes in MDE outcomes. The time periods for the variables assessed did not always coincide. For example, the diagnostic interview assessed past-year MDE whereas the K-6 covered the preceding month and the medication use items covered only the past 2-days, which led to potential underestimation of AD use. Another limitation of the survey data is that many potentially relevant variables were not measured in the same way in the 2 surveys, such that comparisons could not be made. This applied, for example, to substance-related comorbidities and suicidal ideation. Another limitation is that the analysis was based on MDE rather than MDD. However, recent estimates of MDD prevalence,[10] and those using multiple data sources confirm unchanging prevalence[19,20] in Canada. Similarly, the leveling off of AD use is also consistent with other recent Canadian data sources.[21] MDE may be a better target of measurement than MDD in view of problems with performance of the WMH-CIDI bipolar disorders module.[22]

The lack of improvement in MDE prevalence or in the associated distress level is likely to reflect a combination of many factors. First, the crude outcome assessments available in these population surveys may not be sufficiently sensitive to detect small improvements. Second, clinical services may not be sufficiently effective currently to produce the sort of robust improvements that would be evident in epidemiologic data. Third, there may be offsetting effects. For example, the incidence of MDE may be increasing at the same time that better treatment is reducing the duration and recurrence of episodes, such that the prevalence and distress levels may be unchanging as a result.

Conclusion

Some indicators of depression treatment appear to have improved over the past 10 years. However, the available data suggest that there is much additional room for improvement.

Also, it has not yet been possible to document the impact of such changes, if these are occurring, on population health status.

Acknowledgements

Dr Patten is a Senior Health Scholar with Alberta Innovates, Health Solutions. Keltie McDonald is supported by a Canadian Institutes of Health Research (CIHR)/Queen Elizabeth II Graduate Scholarship. This work was supported by a CIHR operating grant (MOP-130415). The study also received support from a Hotchkiss Brain Institute Grant "Depression in the Community." The analysis was conducted at Prairie Research Data Centre which is part of the Canadian Research Data Centre Network (CRDCN). The services and activities provided by the CRDCN are made possible by the financial or in-kind support of the Social Sciences and Humanities Research Council of Canada, the CIHR, the Canada Foundation for Innovation (CFI), Statistics Canada and participating universities whose support is gratefully acknowledged. The views expressed in this paper do not necessarily represent the CRDCN's or that of its partners.

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