Population-Based Use of Mental Health Services and Patterns of Delivery Among Family Physicians, 1992 to 2001

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Objective: To examine 9-year rates of family physician (FP) and psychiatrist use, as well as patterns of mental health services delivery by FPs.

Method: We used population-based data from Winnipeg, Manitoba, to construct mutually exclusive cohorts of adults treated for major or minor mental health disorders in fiscal years 1992–1993 to 2000–2001. For each year, we measured patterns of use in this population and patterns of mental health practice among FPs.

Results: The treatment prevalence rate was 224 per 1000 in 2000–2001 and 174 per 1000 in 1992–1993, and the rates for major and minor mental health disorders increased over the 9-year period by 15% and 31%, respectively. In 2000–2001, 92% of adults treated for mental illness saw at least one FP, and 45% saw an FP but no psychiatrist. Adults with major or minor mental health disorders visited an FP on average 9.1 and 6.9 times yearly, respectively, and FP visit rates remained relatively stable. There was a gradient in use by socioeconomic status: adults from communities with lower socioeconomic status had the highest rates of use. By 2000–2001, 24% of FPs billed for services related to psychosocial conditions as often as they did for the most frequent conditions seen in primary care.

Conclusion: Between 1992–1993 and 2000–2001, the study population’s patterns of FP and psychiatrist use remained relatively stable. In more recent years, FPs provided more mental health services than in previous years; this related to increased treatment prevalence rather than to increases in use per adult. FPs played a major role in the provision of mental health care.


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Clinical Implications

• Ninety-two percent of adults treated for a mental health disorder visited an FP over the course of 1 year; 45% visited at least one FP but no psychiatrist.
• Almost one-quarter (24%) of FPs provided services to address psychosocial conditions as often as they did for the most frequent conditions seen in primary care.
• In more recent years, FPs provided more mental health services than in previous years, which seems to relate to increased treatment prevalence rather than to increases in use per adult.

Limitations

• We relied on administrative billing data to define cohorts of adults with mental health conditions.
• We did not examine temporal patterns for use of mental health care providers other than FPs and psychiatrists.

Key Words: physician use, primary care, patterns of practice, prevalence, mental health care
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lthough we now know more about access to primary care among the general population in Canada (1), we know relatively less about the use of such care (or temporal trends in use) among vulnerable populations. A large and growing number of people across Canada have expressed concern that access to primary care in their communities has deteriorated precipitously (2). The perceived problem has become so acute that the nation’s health ministers committed new funds to “enhancing access to a health provider 24 hours a day, 7 days a week” (3, p 2).

Further, some research has shown a reduction in the comprehensiveness of care provided by FPs, with many practitioners no longer providing services such as obstetrical or inpatient care (4,5). In this paper, we examine temporal changes of FP use among adults treated for mental health disorders and the scope of mental health practice among the FP workforce in Winnipeg, Manitoba, between fiscal years 1992–1993 and 2000–2001. We also assess the use of psychiatrists to determine whether contact with these physicians has changed over time.

FPs play a significant role in the provision of mental health care in Canada, given that the population prevalence of mental illness is high (6–8). FPs outnumber psychiatrists roughly eightfold (9), and most people visit an FP at least once yearly (10). Over time, the provision of mental health services by FPs appears to have increased (11), which may be attributable to an increased prevalence of mental illness, an increased likelihood that patients will seek or receive care for mental health problems (12), the shift in provision of services from institutions to communities, and (or) new shared care arrangements (13).

The ability to access a regular source of primary care is critical. In Canada, FPs are patients’ usual first point of contact and gateway to the specialized components of the health care system. They also can offer long-standing patient–provider relationships, continuity of medical information, and coordination of care (14). Having a regular source of care has been associated with fewer hospitalizations, more appropriate use of specialized services (including emergency departments), improved health status, more appropriate use of clinical preventive services, fewer physician visits, and lower costs among the general population (15–19). Should people with mental health disorders increasingly have strained access to FPs, there are implications for policy-makers and health services administrators who seek to manage an effective and efficient health care system as well as for patients who seek long-term, continuous relationships with FPs.

Health system review committees and the College of Family Physicians of Canada have attempted to tackle recent concerns about access to care by pointing to shortages of FPs and recommending an immediate increase in the number of these providers (20–22). However, fast-track policies to increase supply assume that issues of accessibility can be resolved by simply increasing the ratio of FPs to the population they serve. This measure of supply, however, tells little about the amounts and types of mental health services delivered by FPs. Since doctors are known to control the scope of their practices (23), individual FPs might have increased or decreased the amount of mental health services they deliver.

This population-based study used data from Winnipeg, Manitoba—a large city where, like others in Canada, FPs report unhappiness with workloads and workforce shortages and citizens express difficulty in finding and accessing FPs (24). We are aware of no other population-based studies in Canada that assess temporal patterns of physician use among adults with mental health disorders or the scope of mental health practice among FPs over such a long period of time.

Methods

Our analyses relied on anonymous physician and population registry data, as well as on Manitoba health service use data from 1991–1992 to 2000–2001. The completeness and accuracy of the population and physician registries, services data, and diagnostic fields have been previously assessed (25,26).

To create a study population of adults treated for mental health disorders for each fiscal year from 1992–1993 to 2000–2001, we used diagnostic codes from FP and specialist physician claims and hospital discharge abstracts for 2-year periods. We use the term “treatment prevalence” to refer to this population, rather than the term “prevalence,” because we identify people who received treatment for a mental health disorder. The use of administrative data to create diagnosis-specific study populations is an accepted epidemiologic technique, and the use of 2 years of data is intended to enhance specificity and sensitivity (27).

We identified adults (aged 18 years and over, including individuals in continuing care facilities) who were treated for mental health disorders and classified them as having a major mental health disorder, a minor mental health disorder, or neither. Individuals were deemed to have a major mental health disorder if they had been assigned an ICD-9 diagnosis code of 295 to 299, which includes schizophrenia, paranoid condition, and major depression. Individuals without a major mental disorder were classified as having a minor mental health disorder if they had received an ICD-9 diagnosis code of 300 or 301, 306 to 309, or 311, which includes mild affective,
neurotic, and personality disorders. This assignment algorithm has been previously validated (28,29). At the population level, treatment prevalence estimates for mental illness yield similar results to those from survey and clinical studies (29).

For each study year, we calculated the proportion of adults treated for mental health disorders who visited only an FP, only a psychiatrist, both an FP and a psychiatrist, or neither type of physician. We calculated the annual number of physician visits as well as age- and sex-standardized visit rates, using 1991–1992 as the standard. We counted all FP visits irrespective of the diagnosis associated with each one; therefore, our visit-based measures assess the use of FPs for any reason, including mental health care. We stratified our analyses by physician type (that is, FP or psychiatrist) and SES (as measured by the median household income of each individual’s enumeration area). (The methodology used to derive income quintiles is available at www.umanitoba.ca/academic/centres/mchp/concept/concept.frame.shtml.)

Measures of FPs’ scope of mental health practice were derived from diagnostic codes extracted from claims data in the study years for Winnipeg FPs who received a salary (roughly 7% of FPs in 2000–2001) or fee-for-service remuneration and who worked on a full-time ambulatory care basis. For each FP, we calculated the proportion of the total annual patient visits wherein the principal diagnosis was from one of the following categories: depression, anxiety, and neuroses; substance abuse; tobacco abuse; behaviour problems; attention-deficit disorder; family and social problems; schizophrenia and affective psychosis; or personality disorders. To do this, we used a grouper algorithm developed at Johns Hopkins University that assigns approximately 9400 ICD-9 or ICD-9-CM diagnostic codes to 190 expanded diagnosis clusters. These clusters can be further collapsed into 26 distinct groups called “major expanded diagnosis clusters.” A full description of our methods is available elsewhere (10).

### Results

**Use of Physicians Among People With Mental Health Disorders**

Between 1992–1993 and 2000–2001, the population in Winnipeg aged 18 years or over remained relatively unchanged (496,260 in 1992–1993 and 502,572 in 2000–2001). In 2000–2001, the treatment prevalence rate of all mental health disorders (major and minor) was 224 per 1000. As summarized in Table 1, we found a 29% increase in the proportion of adults treated for one or more mental health disorders over this 9-year period, a 15% increase in the proportion of adults treated for major mental disorder (treatment prevalence of 30 per 1000 in 2000–2001), and a 31% increase in the proportion of adults treated for minor mental health disorders (treatment prevalence of 194 per 1000 in 2000–2001).

Most adults treated for mental health disorders saw an FP at least once in 2000–2001: 45.0% saw an FP but no psychiatrist; 47.3% saw both an FP and a psychiatrist; 2.4% saw a psychiatrist but no FP; and 5.3% saw neither type of physician (Table 2). Over the 9-year study period, we found that adults treated for mental health disorders increasingly visited an FP exclusively (that is, 38.8% in 1992–1993 and 45.0% in 2000–2001). The proportion of adults who visited both an FP and a psychiatrist declined slightly (from 52.1% to 47.3%), as did the proportion who visited a psychiatrist exclusively (from 3.7% to 2.4%).

In 2000–2001, adults treated for major mental health disorders visited FPs on average 9.09 times annually for all their health concerns (crude rate). Standardized FP visit rates among this population declined by 2% over the period (Figure 1). A gradient in FP visit rates by SES status was evident in all periods, with the lowest SES community visiting FPs roughly 50% more often than did the highest SES community. Standardized psychiatrist visit rates among adults treated for major mental health disorders declined by 8% over the period, and the greatest decrease (19%) was among those in the lowest-income communities. Visit rates among the most affluent communities remained relatively constant (Figure 2). In 1992–1993, adults from lower SES communities had the highest rates of psychiatrist use, but there were only small differences in psychiatrist use across SES groups by 2000–2001.

In 2000–2001, adults treated for major mental health disorders visited FPs on average 6.9 times yearly for mental health or other conditions (crude rate). Standardized visit rates dropped by 7% between 1992–1993 and 2000–2001, and the decline primarily occurred during the more recent periods (Figure 3). FP visit rates for adults with minor mental disorders residing in the least affluent communities were roughly 40% higher than the rates for those who resided in the most affluent ones. Standardized psychiatrist visit rates among adults with minor mental health disorders declined by roughly

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### Table 1 Treatment prevalence major and minor mental disorders per 1000 adult population in Winnipeg, 1992–1993 and 2000–2001

<table>
<thead>
<tr>
<th>Disorder Type</th>
<th>1992–1993</th>
<th>2000–2001</th>
<th>Change over the period (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any mental disorder(s)</td>
<td>174</td>
<td>224</td>
<td>29</td>
</tr>
<tr>
<td>Minor mental disorder(s)</td>
<td>148</td>
<td>194</td>
<td>31</td>
</tr>
<tr>
<td>Major mental disorder(s)</td>
<td>26</td>
<td>30</td>
<td>15</td>
</tr>
</tbody>
</table>
30% between 1992–1993 and 2000–2001, and this decline was most substantive among adults residing in the highest SES communities (Figure 4). In 1992–1993, adults with minor mental health disorders living in the most affluent communities visited psychiatrists about 30% more frequently (a difference of about one visit) than did those from the poorest areas; however, only small differences between SES communities existed in 2000–2001.

Provision of Mental Health Services by FPs

Between 1992–1993 and 2000–2001, the number of Winnipeg FPs providing full-time ambulatory care declined slightly (from 265 to 256) (10). Using diagnostic data from their medical claims, we estimated that only a few FPs (4%) coded psychosocial conditions as the principal diagnosis during 10% or more of their patient encounters (Figure 5). By 2000–2001, this proportion rose to 24%; in other words, close to 1 in 4 FPs coded psychosocial conditions as the principal diagnosis for 10% or more of their patient visits. In accordance with other researchers (29), we found that most mental health care (90%) delivered by FPs was for depression and anxiety disorders. By comparison, the most frequent nonmental health conditions seen by FPs in Winnipeg in 2000–2001 included cardiac, ear, and musculoskeletal disorders, respectively accounting for 10%, 9%, and 9% of all FP encounters (data not shown).

Table 2 Percentages of adults with mental disorders seen by FPs, psychiatrists, or both, 1992–1992 to 2000–2001

<table>
<thead>
<tr>
<th>Year</th>
<th>No visits</th>
<th>FP only</th>
<th>Psychiatrist only</th>
<th>FP and psychiatrist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992–1993</td>
<td>5.4</td>
<td>38.8</td>
<td>3.7</td>
<td>52.1</td>
</tr>
<tr>
<td>1993–1994</td>
<td>5.4</td>
<td>38.2</td>
<td>3.5</td>
<td>52.9</td>
</tr>
<tr>
<td>1994–1995</td>
<td>5.2</td>
<td>39.2</td>
<td>3.1</td>
<td>52.5</td>
</tr>
<tr>
<td>1995–1996</td>
<td>5.2</td>
<td>39.7</td>
<td>3.1</td>
<td>52.5</td>
</tr>
<tr>
<td>1996–1997</td>
<td>5.0</td>
<td>40.0</td>
<td>3.0</td>
<td>51.9</td>
</tr>
<tr>
<td>1997–1998</td>
<td>5.2</td>
<td>40.3</td>
<td>2.9</td>
<td>52.1</td>
</tr>
<tr>
<td>1998–1999</td>
<td>4.8</td>
<td>41.5</td>
<td>2.8</td>
<td>51.6</td>
</tr>
<tr>
<td>1999–2000</td>
<td>5.1</td>
<td>42.6</td>
<td>2.6</td>
<td>51.1</td>
</tr>
<tr>
<td>2000–2001</td>
<td>5.3</td>
<td>45.0</td>
<td>2.4</td>
<td>49.7</td>
</tr>
</tbody>
</table>
Discussion

One of the most important findings of this study was that adults treated for mental health disorders visited FPs at roughly the same frequency over the last decade, a period of time that started with widespread perceptions of physician surpluses, at least in urban areas, and ended with announcements of severe shortages. Further, the relative stability in visit rates among this patient population occurred during a period of increased treatment prevalence of mental disorders. Despite relative stability over the period for the entire population with mental health disorders, the FP visit rates among adults with minor mental health disorders declined modestly between 1998–1999 and 2000–2001.

The pathway to mental health care has many levels: the first is prevalence in the community, and the second includes the proportion of the population who seek help. Next, primary care physicians accurately identify (or not) a psychiatric disorder (30). For some, the pathway includes referral or direct access to a psychiatrist and (or) inpatient admission (31). Treatment prevalence identifies people who have been diagnosed in primary, secondary, or tertiary settings. An important strength and limitation of the present study, therefore, is the reliance on administrative data to calculate treatment prevalence. This methodology may underreport true prevalence if a large portion of adults with mental health disorders do not receive medical care, and it may inaccurately identify adults whose physicians code a mental disorder to rule out this type of condition (that is, false positives). More important, administrative data are now the only information source available to profile historic trends in population morbidity and physician use.

The 2-year treatment prevalence rates we calculated for more recent periods are slightly higher than the 1-year prevalence rates calculated with survey methods (7,8,32), likely because of the longer study period. Our 2-year rates are roughly equivalent to the 5-year treatment prevalence rates reported in another study (29). Notably, we document substantive temporal increases in treatment prevalence, particularly of minor mental health disorders. These trends may be due to changes in the incidence and (or) duration of mental health illnesses, to an increased likelihood that people seek mental health care, and (or) to the propensity of physicians to recognize, diagnose, and (or) record mental health diagnoses. Unfortunately, no historic trend analysis of these issues exists in Canada, and our finding of increased treatment prevalence points to the need to conduct such work.
Most adults (92%) treated for mental health disorders saw an FP at least once in 2000–2001, which suggests that FPs are involved in caring for most adults who receive physician and hospital services. Although adults with mental health disorders can directly access specialized care, most receive services via primary care. In our study, one-half of this population received FP care only and did not visit a psychiatrist in any single year. These findings support the notion that access to primary care is critically important for people with mental illness and may explain why FPs identify a lack of psychiatric consultants as a major issue in caring for people with mental disorders (33). Consequently, efforts to improve case finding and (or) strengthen the effectiveness of mental health services should include FPs. Another weakness of this study is that we were only able to assess use of FPs and psychiatrists; we could not assess use of other mental health care professionals, such as clinical psychologists and social workers.

Importantly, the proportion of FPs who coded psychosocial conditions as the principal diagnosis for 10% or more of their patient encounters increased from 4% to 24% of the FP workforce over the study period. This level of service delivery approaches that of the most commonly seen conditions in family practice (for example, services directed to cardiac or musculoskeletal conditions). If a relation between volume and quality of mental health care exists, these temporal changes, wherein increasing proportions of FPs provide more mental health care, may be positive. Conversely, should FPs feel unprepared for these higher volumes, our analysis suggests a growing need for more shared care arrangements.

We found that most full-time ambulatory care FPs in Winnipeg coded psychosocial conditions as the main diagnosis for fewer than 10% of their encounters with patients, which is not surprising, given the generalist nature of family practice. However, another weakness of our study is that we were unable to determine the extent to which psychosocial conditions were addressed during visits wherein other diagnoses were the main reasons for the encounters. Indeed, others have estimated that the treatment prevalence of mental health disorders in primary care is roughly 25% and that the identification and management of mental health disorders consumes between 25% and 50% of FPs’ time (33). Additionally, a 2001 survey conducted by the College of Family Physicians of Canada indicated that 83% of FPs reported that they offer mental health care (34). Together these findings suggest that, although mental health care may not be the primary reason for FP encounters, mental health disorders likely “come into play” during the course of providing other primary care services.
For the most part, patterns of FP service use in Winnipeg among adults with mental health disorders appear to be related to medical necessity. For instance, adults with major mental health disorders visited an FP more often than did those treated for minor mental disorders in our study, and both patient populations visited an FP roughly twice as often as did the average Winnipegger (10). Additionally, a gradient exists in FP visit rates among adults with mental health disorders, such that those who reside in the lowest SES communities have higher levels of use than those who reside in the highest SES communities. We know from other research in Winnipeg that adults treated for mental health disorders who live in the lowest SES communities use hospital care much more than do those who live in more affluent communities, which is consistent with their poor overall health status (29). These findings, along with other research results (35,36), support the notion that universal access to FP services ensures that people deemed most at risk of needing this care receive more care than those presumed to be least at risk for poor health.

However, these physician service use findings did not all hold when we assessed the use of psychiatrist physicians among adults with minor mental disorders. Although adults treated for major mental health disorders visited psychiatrists almost twice as often as did those with minor mental disorders, adults treated for minor mental illness residing in the most affluent communities visited psychiatrists more often than did adults residing in the poorest communities. However, these unexpected disparities in use attenuated over the period. Other research conducted in Winnipeg using data from 1996–1997 demonstrated that the use of FP and hospital services was closely related to health status (as measured by premature mortality rates), whereas the use of specialist physicians was not (37). In this study, we found that, in 1992–1993, adults treated for major mental disorders who lived in low-income communities visited psychiatrists almost half as often as did adults from more affluent communities. However, this gradient in use decreased over time.

The good news is that adults treated for mental disorders in Winnipeg have retained their patterns of use of primary and specialist physician care despite perceptions of declining access among the general population. Moreover, the primary care system has responded to apparent increases in the treatment prevalence of mental health disorders (or the increased likelihood that affected people will seek care) by ensuring continued levels of service for this population. As a result of increased treatment prevalence, one-quarter of the Winnipeg FP workforce bill for services related to psychosocial conditions as often as for the other conditions most frequently seen in primary care. It seems that efforts to reform primary care and improve the management of mental disorders must consider the important role and contribution of FP services. The not-so-good news is that we are unable to determine whether the increases we saw in treatment prevalence are related to changes in the diagnostic coding practices of doctors or to other factors.
sizable shifts in the mental health of the study population. Clearly, our work demonstrates the need to examine and monitor temporal patterns of mental health to plan health care for Canadians.

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References

17. Lambrew JM, DeFriese GH, Carey TS, Ricketts TC, Biddle AK. The effects of having a regular doctor on access to primary care. Med Care 1996;34:138–51.
Résumé : L’utilisation des services de santé mentale dans la population et les modes de prestation des médecins de famille, de 1992 à 2001

Objectif : Sur une période de 9 ans, examiner les taux d’utilisation des médecins de famille (MF) et des psychiatres, ainsi que les modes de prestation des services de santé mentale des MF.

