Telephone Surveys as an Alternative for Estimating Prevalence of Mental Disorders and Service Utilization: A Montreal Catchment Area Study

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Background: Large-scale mental health surveys have provided invaluable information regarding the prevalence of specific mental disorders and service use for mental health reasons. Unfortunately, because vast surveys conducted face to face are very costly, many countries and provinces do not embark upon this path of research, thus depriving themselves of a rich source of data useful for service planning.

Method: As an alternative, the authors undertook a telephone survey with a sample of 893 residents from a Montreal catchment area. Mental disorders were assessed by the Composite International Diagnostic Interview Simplified (CIDIS), an instrument especially designed to be used in mail or telephone surveys. Service utilization was measured by an instrument similar to those used in recent large Canadian or American surveys.

Results: The prevalence rate for any mental disorder was lower in this study than in some large-scale epidemiological surveys reviewed. This could be explained by methodological differences, such as number of disorders covered and period of reference. With regard to specific mental disorders, results appeared very similar to those of other studies. Concerning service utilization, rates tended to be higher than in other studies, and this finding could reflect real differences between Quebec and other Canadian provinces or the United States.

Conclusions: Aside from being lower in cost, telephone surveys can yield results comparable to those obtained in large-scale epidemiological surveys conducted by means of face-to-face interviews.

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Key Words: telephone survey, mental disorders, service utilization, prevalence rates

The purpose of this paper is twofold. First, it presents prevalence rates of specific mental disorders in a sample of residents from a Montreal catchment area. Second, it describes use of mental health services by the general population and by persons with various specific disorders. The findings were derived from a telephone survey conducted by lay interviewers. This low-cost research method could be of value to those concerned with planning and policy making in the area of mental health services.

In Quebec, this type of information is at present virtually nonexistent for either the province as a whole or any of its subareas. The Santé Québec general health survey conducted in 1987 and 1992 provided only limited information relative to mental health issues (1,2). On both occasions, the main instrument used to assess mental or emotional problems was a psychological distress scale that did not allow diagnoses to be reached. Furthermore, questions intended to investigate service utilization either covered only the 2-week period prior to the survey or were not designed specifically to examine use of the broad array of services available for mental health reasons, which include professionals, paraprofessionals, and nonprofessionals, as well as a myriad of settings.

In the rest of Canada and in the United States, large-scale epidemiological surveys undertaken over the past 15 years have yielded useful information concerning mental health issues. In the 1980s, the Epidemiologic Catchment Area (ECA) Program in the United States was the first to make use of a highly standardized instrument, the Diagnostic Interview Schedule or DIS (3), which can be administered by trained lay interviewers, thus lowering the cost of such research. In this landmark study (4), more than 20 000 respondents were...
interviewed in 5 sites. In Canada, Bland and others (5) employed the same instrument in a community survey involving a sample of 3258 respondents from Edmonton, Alberta. In the early 1990s, another large-scale mental health survey was launched in the United States, namely, the National Comorbidity Survey or NCS (6). This study differed from the ECA survey on various counts: 1) the instrument used, the Composite International Diagnostic Interview or CIDI (7), was based on DSM-III-R rather than DSM-III criteria; 2) it also permitted diagnoses to be made on the basis of other classification systems, such as the International Statistical Classification of Diseases (ICD-10), thus improving the validity of comparisons with European studies; 3) the NCS was designed to investigate risk factors in addition to prevalence and incidence rates; and 4) the NCS was carried out with a real national probability sample of 8098 respondents aged 15 to 54 years. With essentially the same instruments and design, McMaster University and the Clarke Institute of Psychiatry in Canada conducted the Ontario Mental Health Survey (OMHS) as a supplement to a general health survey. A subsample of 9953 respondents aged 15 to 64 years was interviewed for this purpose (8).

These large-scale mental health surveys have provided invaluable information regarding the prevalence of specific mental disorders and service use for mental health reasons. Unfortunately, because vast face-to-face interview surveys are very costly, many countries and provinces do not embark upon this path of research, thus depriving themselves of a rich source of data useful for service planning. Furthermore, American findings are difficult to generalize to Canada on account of the considerable differences between the 2 countries’ health systems (9,10). Within Canada itself, findings based on data collected in Edmonton or in Ontario are difficult to generalize to the province of Quebec, where rates of disorders, availability of resources, and attitudes toward mental health care differ from the rest of the country. In light of these factors, a telephone mental health survey appeared to be a feasible, low-cost alternative for obtaining information to assess the needs of a local area.

In this paper, we will report the findings from a telephone survey that was conducted as part of a larger, 2-stage study. The main goal of the latter was to validate a procedure for assessing needs for mental health care and services in the community (11), which explains the size of the sample.

Methods

Sampling

The community survey was conducted in the catchment area of Maisonneuve-Rosemont, located in east-end Montreal. According to the 1991 Statistics Canada Census, this area contained 356,077 inhabitants. It is primarily a working-class area, with some lower- and upper-class districts (12).

The sample was drawn in 2 steps from the list of telephone subscribers in the area. First, a private company (Publications Cole) provided us with a computer-generated list of 6053 subscribers, consisting of every twenty-eighth name on the original list of all subscribers. Second, the research team selected a random sample of 1725 names from this second list.

Instruments

The questionnaire employed was computerized to facilitate the work of interviewers, who had to select, on the basis of the diagnoses formulated, a number of subjects for face-to-face clinical interview in the second stage of the larger study. On average, telephone interviews lasted 30 minutes. The questionnaire included 3 main sections: 1) sociodemographic data; 2) service utilization; and 3) mental disorders.

The sociodemographic questions were derived from the 1987 Quebec Health Survey (1). The section on service utilization covered the following: 1) general use of health services in the past 12 months; 2) use of specific services for mental health reasons during lifetime, with follow-up questions on recency, past-year frequency, and satisfaction; and 3) attitudes and barriers relative to use of services for mental health problems. These questions were derived primarily from the OMHS (8).

Mental disorders were assessed by means of the CIDIS. This questionnaire, initially known as the DISSA, was designed by Kovess and Fournier (13) as a short instrument to be used in mail or telephone surveys (14). DISSA was an abridged version of the DIS, which covers the most prevalent diagnoses in the general population: panic attack, generalized anxiety, phobias, major depressive episode, dysthymia, and alcohol-related disorders. The presence of a disorder was established according to DSM-III criteria.

Validation of the DISSA against the clinical judgement of a psychiatrist showed that results yielded were comparable to those obtained with the DIS and even superior in the case of depressive disorders. The DISSA was subsequently adapted into the CIDI to meet the criteria of the DSM-III-R classification of mental disorders and to cover a wider range of diagnoses (somatoform and drug-related disorders).

The validity of this new version was assessed against the clinical judgement of psychiatrists in the present study and in 2 other studies conducted in France (Kovess and others, unpublished observations). According to the results of our study, agreement was very good for alcohol-related disorders (κ = 0.70) and fair for drug-related disorders and panic attack (κ = 0.42 and 0.39, respectively). A strict comparison between CIDI and clinical diagnoses of major depressive disorder revealed poor agreement. Agreement was better (κ = 0.47), however, when clinical diagnoses of the broader spectrum of mood disorders were compared with CIDIS diagnoses of major depression, which suggests that the CIDIS also identifies nonspecific depressive disorders or adaptation disorders with depressed mood. Similarly, agreement between CIDI and clinical diagnoses of dysthymia was poor. When CIDIS diagnoses of dysthymia were compared with
clinical assessments of the broader spectrum of mood disorders, the \( \kappa \) improved but remained low (\( \kappa = 0.33 \)). Concerning generalized anxiety, agreement between CIDIS and clinical assessments was poor in all comparisons. Overall agreement between CIDIS diagnoses of any nonsubstance-related disorder and corresponding clinical DSM-III-R diagnoses was fair (\( \kappa = 0.44 \)). Finally, a test performed with the Needs for Care Assessment Schedule—Community version (NFCAS-C) (11) showed good concordance between presence of a CIDIS diagnosis and need for care.

Although some of the validation results were “poor” and never exceeded “very good,” it must be borne in mind that study parameters were very stringent. There is no denying that validations performed with general population subjects on a current diagnosis basis normally yield lower agreement values than those with clinical samples over a lifetime reference period (15,16). In this light, and especially when compared with validation studies of other standardized psychiatric interviews, the above results can be considered good in general.

**Procedures**

Three lay interviewers received 2 days’ training on how to use the computerized questionnaire and were supervised daily by a research assistant during the study period. The interviews were performed between October 1992 and April 1993.

An introductory letter was sent to each selected telephone subscriber explaining the purpose of the survey, the selection process, and the importance of their participation. All the adults in a household were eligible, but subjects not sufficiently fluent in French were excluded. The Kish selection method (17) was used to choose the person to be interviewed in the household. Considerable efforts were made to reach selected respondents. These were dropped only after 9 unsuccessful attempts had been made at different hours of the day and on different days of the week. Refusals were followed up.

**Final Sample and Statistical Analyses**

From the original sample of 1725 subscribers, 318 were excluded for the following 3 main reasons: incorrect telephone number (n = 98), lack of sufficient fluency in French (n = 107), and failure to be reached after a minimum of 9 telephone calls (n = 113). Another 512 persons refused to participate, thus yielding a response rate of 63.6%. Because 2 files were excluded owing to human error, the data presented are for 893 respondents.

Table 1 gives unweighted data regarding the sociodemographic characteristics of the respondents. The sample proved disproportionate in comparison with figures for the area from the 1991 Statistics Canada Census. The data were consequently weighted by sex, age, and marital status. Weighted data were used in all analyses of the prevalence rates of mental disorders and service utilization and of the relationship between these 2 variables.

**Results**

Table 2 gives lifetime and 6-month prevalence estimates for 6 CIDIS diagnoses, individually and grouped. Lifetime prevalence refers to the proportion of subjects who ever had a specific disorder at any point in their lifetime, whereas 6-month prevalence refers to the proportion of subjects who presented with a disorder in the 6 months prior to the interview. As DSM-III-R exclusion criteria were not considered, subjects could present with more than one diagnosis. The first and second columns of the table show a considerable difference between lifetime and 6-month prevalences for one or more of the 6 disorders assessed (40.1% versus 13.0%). The most common specific diagnoses were for affective disorders, with lifetime and 6-month prevalence rates of 31.4% and 8.4%, respectively.

The third and fourth columns show 6-month prevalences by sex. Significant differences were observed for 2 specific disorders only: women presented a higher prevalence of panic attack, and men had a higher prevalence of alcohol-related disorders. No significant differences were observed across age groups.

Comorbidity was also examined. Where 6-month diagnoses are concerned, 30.5% of subjects with an affective disorder also presented with an anxiety disorder. Inversely, 50.7% of subjects with an anxiety disorder presented with an affective disorder. Of the subjects with affective or anxiety disorders, 11.3% also presented with a substance-related disorder. Finally, more than one-third (36.4%) of subjects with a substance-related disorder also presented with a nonsubstance-related disorder.

Table 3 gives the utilization rates for the various types of services and settings used for mental health reasons. The top part of the table lists professional caregivers and other human-
service or voluntary-sector providers. The same subject could have used more than one of these services. Thirty-four percent of the respondents contacted at least one of these services for mental health reasons in their lifetime, and 12.8% did so in the past year. The lower part of the table lists various service settings, including Quebec’s local health and social service centres (CLSC). General practitioners were the professionals most frequently consulted for mental health reasons; psychologists came second. In terms of settings, if we bear in mind that the same subject could have used more than one service setting, then an estimated 1.5% of the population sought care in hospital (emergency and admission) or psychiatric outpatient settings in the past year. A much larger percentage of respondents, however, turned to general practitioners and other professionals in private practice. The third and fourth columns of Table 3 give one-year utilization rates by sex. As we can see, women were more likely than men to use services for mental health reasons, especially the services of general practitioners and other health professionals.

Table 4 gives the rates of utilization of services for persons with a current disorder. Professionals, programs, and service settings were grouped under 4 sectors following the procedure of Regier and others (18) and Narrow and others (19). Caution should be exercised in interpreting results, however, given that certain disorders were present in only a handful of respondents in the past 6 months. Overall, about 44% of those with a current disorder used services for mental health reasons in the past year, with little variance across the specific disorders. The specialty mental and addictive sector and the general medical health system were used more frequently than the other sectors. Three specific disorders did not follow the same general pattern of service use as the others. Generalized anxiety disorder yielded a higher rate of utilization of the general medical health system, whereas alcohol- and drug-related disorders were associated with greater recourse to the voluntary support network, which includes self-help groups such as Alcoholics Anonymous.

Discussion

Comparisons with Other Studies

For the purposes of the discussion, we present 2 tables in which results obtained in Montreal are compared with those observed in the large-scale epidemiological mental health surveys discussed briefly earlier in the paper (that is, ECA,
Table 4. Past-year rates of utilization of services for mental health reasons (%) among cases with a DSM-III-R 6-month diagnosis (N = 893; weighted data)

<table>
<thead>
<tr>
<th>Services</th>
<th>Panic disorder (n = 13)</th>
<th>Generalized anxiety (n = 33)</th>
<th>Major depression (n = 69)</th>
<th>Dysthymia (n = 46)</th>
<th>Alcohol-related disorder (n = 26)</th>
<th>Drug-related disorder (n = 7)</th>
<th>Any of these (n = 116)</th>
<th>None of these (n = 777)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty mental or addiction service</td>
<td>21.8</td>
<td>5.4</td>
<td>25.2</td>
<td>22.8</td>
<td>27.2</td>
<td>22.4</td>
<td>20.5</td>
<td>1.9</td>
</tr>
<tr>
<td>General medical health systems</td>
<td>20.3</td>
<td>35.3</td>
<td>16.8</td>
<td>17.2</td>
<td>24.3</td>
<td>22.6</td>
<td>19.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Human services professional</td>
<td>27.9</td>
<td>10.3</td>
<td>16.3</td>
<td>17.4</td>
<td>9.8</td>
<td>6.8</td>
<td>13.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Voluntary support network</td>
<td>10.8</td>
<td>9.4</td>
<td>12.5</td>
<td>14.4</td>
<td>24.2</td>
<td>34.6</td>
<td>11.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Total</td>
<td>53.7</td>
<td>42.2</td>
<td>46.7</td>
<td>46.1</td>
<td>53.4</td>
<td>51.8</td>
<td>43.5</td>
<td>5.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Services</th>
<th>Panic disorder (n = 13)</th>
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<th>Drug-related disorder (n = 7)</th>
<th>Any of these (n = 116)</th>
<th>None of these (n = 777)</th>
</tr>
</thead>
</table>
| Psychiatry, psychologists, and psychotherapists or hospitalization, emergency visits, outpatient clinics, and detox outpatient services.  
Family physicians, other medical specialists.  
Employee assistance program, clergy, social workers, other health professionals (eg, nurse), and alternative health professionals (eg, acupuncturist), or social services and CLSC.  
Hot lines, self-help groups, drop-in centres.

Table 5. Comparison of prevalence rates of mental disorders across studies

<table>
<thead>
<tr>
<th>Study characteristics</th>
<th>Montreal</th>
<th>ECAa</th>
<th>Edmontonb</th>
<th>NCSc</th>
<th>OMHSd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument</td>
<td>CIDIS</td>
<td>DIS</td>
<td>DIS</td>
<td>DIS</td>
<td>CIDI</td>
</tr>
<tr>
<td>Diagnostic criteria</td>
<td>DSM-III-R</td>
<td>DSM-III</td>
<td>DSM-III</td>
<td>DSM-III-R</td>
<td>DSM-III-R</td>
</tr>
<tr>
<td>Age range</td>
<td>18 and over</td>
<td>18 and over</td>
<td>18 and over</td>
<td>15 to 54</td>
<td>15 to 64</td>
</tr>
<tr>
<td>Prevalence period</td>
<td>6-month</td>
<td>1-year</td>
<td>6-month</td>
<td>1-year</td>
<td>1-year</td>
</tr>
<tr>
<td>Sample size</td>
<td>893</td>
<td>19 640</td>
<td>3258</td>
<td>8098</td>
<td>9953</td>
</tr>
<tr>
<td>Study results</td>
<td>13.0</td>
<td>20.0</td>
<td>17.1 (13.7)y</td>
<td>29.5</td>
<td>17.8</td>
</tr>
<tr>
<td>Major depressive episode</td>
<td>7.7</td>
<td>3.7</td>
<td>3.2</td>
<td>10.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Panic attack</td>
<td>1.4</td>
<td>0.9</td>
<td>0.7</td>
<td>2.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Generalized anxiety disorder</td>
<td>3.7</td>
<td>3.8</td>
<td>—</td>
<td>3.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Substance-related disorder</td>
<td>3.4</td>
<td>—</td>
<td>6.3</td>
<td>11.3</td>
<td>5.1</td>
</tr>
<tr>
<td>Alcohol</td>
<td>3.1</td>
<td>6.3</td>
<td>5.4</td>
<td>9.7</td>
<td>4.4</td>
</tr>
<tr>
<td>Drug</td>
<td>0.8</td>
<td>2.5</td>
<td>1.7</td>
<td>3.6</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Table 6 provides service utilization rates by sector for the studies for which data were available, namely, the ECA, the OMHS, and the present study. Those from the NCS are yet to be published, and those from the Edmonton study are comparable only for overall use of services. The rate of overall

Edmonton, NCS, and OMHS). Table 5 gives 6-month or one-year prevalence rates (depending on the study) of any disorder and specific mental disorders. The comparison shows that the prevalence rate of any disorder was lower in our study (13.0%) than in the others (17.1% to 29.5%). This difference could be due to the number of disorders covered in the studies, which was certainly smaller in our case owing to the choice of instrument (that is, CIDIS). The period of reference for the prevalence rates may also have been a factor. For example, in the Edmonton study, which had the same period of reference, the data available for any disorder excluding phobias (that is, the same range of disorders as in our study) showed that the prevalence rate (13.7%) was almost exactly the same as ours. Regarding the prevalence rates of specific mental disorders, our results for panic attack were similar to those observed in other studies; for major depressive episode, they were somewhere in between; for generalized anxiety, they were similar to 2 studies but different from the third; and for substance-related disorders, they were lower. In summary, although there are differences between our study and the others, these are not immense. Although our results are at times closer to those of one study in particular, they are seldom entirely at odds with those of the others.

As was the case in the ECA study (20), no gender differences emerged regarding the overall current disorder rate. In addition, rates of specific disorders were similar to those of the ECA when a gender dominance was present; in both studies, rates of panic attack were higher among women and those of substance-related disorders were higher among men. The fact that the present study did not share the other gender differences found in the ECA (that is, rates of depressive episode and generalized anxiety higher among women) could be due to the relatively small sample size. The results of the Quebec Health Survey, conducted in 1987 and then repeated in 1992, however, did show growing rates of psychological distress among men, with rates similar to those for women (2).

Unlike the ECA study, no age differences were found for either overall current disorder rates or specific disorder rates. The sample size of our study could again explain this matter.
utilization of services for mental health reasons was very similar in the Montreal and ECA studies; the OMHS rate was lower. The Montreal rate was similar also to the one observed in the Edmonton study (12.9%), where the range of services covered was narrower. Although the Montreal and ECA studies were similar in terms of global rates, they differed on a per-sector basis: Montreal rates were higher for utilization of the specialty mental service or addictive sector and lower for use of the general medical health system. Although the instruments used were almost exactly the same in the Montreal and Ontario studies, the OMHS produced distinctly lower rates of use. The Montreal study reported a higher rate in the specialty sector but a similar rate for use of the general medical system. In fact, the utilization rate in the specialty mental service or addictive sector was highest in Montreal and lowest in Ontario. Finally, the differences between the Montreal and Ontario studies could be attributable to the specialty sector and, more specifically, to the greater use of psychologists observed in the former. This difference could stem from the greater availability of psychologists in Quebec, as suggested in another paper (21). Regarding gender differences, women were found to have a higher rate of service utilization, as has been the case in other studies.

More than half of this study’s respondents with a mental disorder used services, a much higher proportion than in any other study. Two hypotheses can be ventured to explain this result: 1) in Montreal, more people with mental disorders use services because there is a greater availability of services (that is, there are more psychologists in Quebec than in the other provinces, and there is a larger number of resources in Montreal than in the rest of the province or the country as a whole, proportionally speaking); and 2) the CIDIS diagnoses identify need for care better than do other instruments.

Representativeness of the Sample

Despite the relatively large size of the sample for such a catchment area, representativeness may have been under-
Conclusion

The results of this study could be useful for planning mental health services in the catchment area where the study was conducted. In addition, the study underscored the many advantages of telephone surveys: 1) less costly than face-to-face surveys; 2) adequate response rate; 3) availability of validated instruments; 4) relatively short training for lay interviewers; 5) reasonable duration of interview (about 30 minutes); and 6) results comparable to those obtained in large-scale epidemiological surveys. Data collection for the purpose of service planning has consequently become more feasible and accessible.

Clinical Implications

- Our study findings will be useful for service planning and policy making.

Limitations

- The study sample may have limited representativeness.

Acknowledgement

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References


Résumé

Historique : Les grandes enquêtes de santé mentale ont fourni de précieux renseignements sur la prévalence des troubles mentaux spécifiques et sur l’utilisation des services pour des motifs de santé mentale. Hélas, en raison du coût très élevé de ces enquêtes où les entrevues se font en face à face, plusieurs pays et provinces ne peuvent entreprendre ce type de recherche et se privent ainsi d’une source importante de données utiles pour la planification des services.

Méthode : En guise de solution de rechange, les auteurs ont mené une enquête téléphonique auprès d’un échantillon de 893 résidents d’un secteur socio-sanitaire montréalais. Le Composite International Diagnostic Interview Simplified, un instrument spécialement conçu pour les enquêtes menées par téléphone ou par la poste, a été utilisé pour évaluer la prévalence de troubles mentaux. L’utilisation des services a été mesurée à l’aide d’un instrument similaire à ceux utilisés lors d’enquêtes canadiennes et américaines récentes.

Résultats : Le taux de prévalence de l’ensemble des troubles mentaux observé dans cette étude était plus faible que celui rapporté dans d’autres grandes enquêtes épidémiologiques. Certains aspects méthodologiques, tels que le nombre de troubles mesurés et la période de prévalence considérée, permettent d’expliquer cette différence. Les taux de prévalence des troubles mentaux spécifiques obtenus dans cette étude sont, en revanche, très similaires à ceux des autres études. Les taux d’utilisation de services apparaissent plus élevés que ceux observés dans les autres enquêtes, et cela semble refléter des différences réelles entre le Québec et d’autres provinces canadiennes ou les États-Unis.

Conclusions : Cette étude montre bien que les enquêtes téléphoniques sont non seulement moins coûteuses, mais qu’elles permettent de produire des résultats comparables à ceux des grandes enquêtes menées par le biais d’entrevues en face à face.