

SHORT COMMUNICATION

Does rural residence limit access to mental health services?

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ABSTRACT

Introduction: Rural residence may reduce access to specialized mental health services. The objective of this study was to examine the role of rural residence in relation to service utilization. Using Canadian data collected in 2002, service use was examined as a function of the presence of anxiety or mood disorders and rural/urban residence. Use of four different types of professional mental health services was examined in relation to rural residence and additional demographic, social, and health status factors known to predict use of services.

Methods: Data were obtained from Statistics Canada's Canadian Mental Health Survey Cycle 1.2. Rural residence was defined as living in a rural community with a population of 1000 or less. For all participants, associations between the presence of anxiety or mood disorders, rural/urban residence, and any service use or use of specialized mental health services (psychiatry and psychology) were examined. For participants who had used professional services, associations were examined between 17 predictor variables, including location of residence, and the use of four types of service providers (family doctor or GP; nurse, social worker, counsellor, or psychotherapist; psychiatrist; or psychologist). Predictors included demographic, social, and health status variables. Cross-tabulated counts and adjusted odds ratios with 99% confidence intervals based on bootstrapped variance estimates were used to evaluate predictors.

Results: Among the total sample ($n = 35\ 140$), 7.9% had used professional mental health services in the previous year. Among people who were likely to have had anxiety or mood disorders, rural or urban residence was not differentially related to past-year use of any professional services or specialized mental health services. Multivariate logistic regression was used to model factors predicting past year use of four different types of professional services. Location of residence was not a significant predictor of



service utilization. Age, sex, race, level of education, degree of psychological distress, chronicity of distress, and the presence of anxiety or mood disorders predicted type of service used.

Conclusions: The notion that rural residence limits access to mental health services was not supported. Other demographic and health status indicators such as age, sex, race, education, distress, and type of illness were more important predictors of service utilization. However, null findings related to geographic residence must be interpreted cautiously due to the small sample of rural residents who sought mental health services. The mental health system in Canada must provide a variety of professional services in order to meet the preferences of diverse groups, and mental health specialists must find ways to adequately support general practice physicians and counsellors who provide mental health services.

Key words: Canada, Canadian Community Health Survey, rural mental health, utilization.

Introduction

Canadian researchers have examined rural and urban residence in relation to mental health services utilization and have found few differences¹⁻⁵. However, the 1994/1995 National Population Health Survey (NPHS) revealed that 3% of urban residents but only 1% of rural residents reported consulting a psychologist in the previous year⁶. In the 2005 Canadian Community Health Survey (CCHS) rural residents were less likely than urban residents to report seeing medical specialists including psychiatrists⁷. This and other evidence suggests that rural residents are less likely than urban residents to receive specialized mental health care⁸⁻¹⁰. Some evidence indicates that compared with urban residents, rural residents might experience somewhat lower rates of mental disorders^{11,12}. Thus, rural residents might have less need for specialized mental health services than urban residents. However, factors other than rural and urban residence, such as age^{7,10}, education¹⁰, sex^{13,14}, social roles¹⁴, chronic medical conditions⁵, and type of mental condition^{2,4,5} are known to predict service utilization, including type of services used¹⁻⁵. Thus, a wide range of demographic, social and health factors must be considered together when evaluating the role of rural versus urban residence in utilization of the various types of mental health services.

Objectives

In the present study, Canadian data collected in 2002 in the CCHS on Mental Health and Well Being Cycle 1.2¹⁵ were analyzed to answer three specific questions:

1. Among people who have a probable anxiety or mood disorder, is rural or urban residence associated with:
 - a. any professional mental health service utilization
 - b. use of specialized mental health services (ie psychiatry or psychology)?
2. Among people who used professional mental health services in the previous year, what demographic and health status characteristics, including rural or urban location of residence, predicted use of a particular type of professional mental health service?

Methods

Data were from the CCHS on Mental Health and Well Being Cycle 1.2^{15,16}, conducted in 2002. The sample was selected using a multi-stage stratified cluster design based on the



Canadian Labour Force Survey. One person aged 15 years or older was randomly selected from sampled households. Younger people (15-24 years) and older adults (≥ 65 years) were over-sampled to ensure adequate sample sizes. Most interviews were conducted in person (86%), with the remainder conducted by telephone. Further methodological details are available elsewhere¹⁶. Data analyses were conducted using SPSS (www.spss.com) at a Statistics Canada Research Data Centre. This study was approved by the University of Northern British Columbia Research Ethics Board.

Survey questions designed to detect the presence of specific symptoms were used to identify participants who were likely to have met diagnostic criteria for an anxiety or mood disorder¹⁷. This method permits estimates of the number of people who have a probable anxiety or mood disorder independent of access to professional diagnostic services, which may be lacking in some communities. The presence of some mental disorders of interest, such as schizophrenia and dementia, cannot be captured accurately using self-report methods, whereas other disorders of interest, such as eating disorders, were assessed via self-report in the CCHS Cycle 1.2 but were not considered in this study due to their low prevalence^{17,18}.

Dichotomous outcome variables reflecting participants' use of each of four types of professional services for mental, emotional, and/or alcohol or drug problems were derived from responses to questions about mental health service use. The outcome variables reflect whether, in the year prior to the survey, the person had a session of counselling or therapy of 15 min or longer with a professional, either in person or by telephone. The categories of mental health professions examined were: (i) family doctor or GP; (ii) nurse, social worker, counsellor or psychotherapist; (iii) psychiatrist; and (iv) psychologist¹⁸. Nurses, social workers, counsellors, or psychotherapists were grouped together because their mental health services (ie counselling) are similar. They are referred to as 'counsellors' throughout the remainder of this article. Psychiatrists and psychologists were defined as specialists whereas GPs and counsellors

were defined as non-specialists. A set of 17 predictor variables was selected for inclusion in regression analyses (Table 1). All 17 variables were significant predictors of mental health service use when considered individually.

Cross-tabulated counts and 99% confidence intervals (CI) based on bootstrapped variance estimates were used to examine associations between presence/absence of an anxiety or mood disorder, rural/urban residence, and any service utilization, or use of specialist services, in the previous year. Multivariate logistic regressions were used to evaluate associations between use of professional services and the predictor variables. Four regression analyses were conducted, one for each of four types of professional (family doctor/GP, counsellor, psychiatrist, psychologist). Using the Bonferroni correction, α was set at $p < 0.01$ (4 tests, α of $.05/4 = .0125$). Adjusted odds ratios (OR) with 99% CI based on bootstrapped variance estimates guided interpretation. The findings can be generalized to the population of Canadians aged 15 years or older living in private dwellings in the 10 provinces. The sample excluded people living in institutions, on Aboriginal reserves, and in some remote regions. The findings should be generalized only to urban and rural (but not remote) community-dwelling Canadians.

Results

From among the total sample ($n = 35140$), 7.9% had sought professional mental health services in the past year. Among the people who sought help from professionals, the weighted percentage that had seen each type of professional was: family doctor/GP 66.4%; counsellor 30.7%; psychiatrist 24.2%; psychologist 24.7% (the values sum to $>100\%$ because participants may have seen multiple professional types in the past year).



Table 1: Predictor variables¹⁷⁻²⁰

Predictor variable [†]	Description
Location of residence	Urban locations: populations of >1000, density of >400/km ² , and no discontinuous areas greater than 2 km. All other locations considered rural.
Age	In years.
Sex	Male; female.
Marital status	Single, never married; with partner; divorced, separated, widowed.
Parenting	Respondent living with a dependent child or not.
Employment status in past year	Secure; insecure.
Race	Caucasian; non-Caucasian.
Education	<High school; high school; post-secondary.
Self-rated health	"In general, would you say your health is ...?" Excellent/ Very good or good/ Fair or poor.
Chronic condition	Self-report of one or more physical and mental conditions lasting ≥6 months and diagnosed by a health professional.
Drinks alcohol type	Never; former; occasional; regular.
Binge drinking	Never; ≤once a month; >once a month.
Illicit drug use	Cannabis: any use, excluding one-time use; no use or one-time use.
Psychological distress	K-10, a 10-item scale measuring non-specific psychological distress, with higher scores reflecting greater distress [19].
Chronicity of distress	Degree of impairment associated with psychological distress in the past month (<usual, usual, >usual).
Social support	8-item emotional and informational support subscale of the Medical Outcome Study Social Support Survey [20]; higher scores reflect greater support.
Anxiety, or mood or anxiety disorder	Presence in the past year of symptoms that met DSM-IV diagnostic criteria for any of major depressive episode, manic episode, panic disorder, social phobia, or agoraphobia; based on responses to the World Mental Health version of the Composite International Diagnostic Interview.

[†]For more information see Statistics Canada[17,18].

Survey questions about anxiety and mood symptoms revealed that 8.3% of the overall sample were likely to have met the diagnostic criteria for one or more anxiety or mood disorder. Among rural residents with probable anxiety or mood disorders, 38.3% (99% CI: 29.8-46.9%) sought help from a professional in the past year. Urban residents with probable anxiety or mood disorders consulted professionals at a similar rate of 42.5% (99% CI: 38.8-46.2%). Among rural residents who had probable anxiety or mood disorders, 16.1% (99% CI: 9.9-22.3%) consulted mental health specialists (psychiatrists or psychologists). Urban residents with probable anxiety or mood disorders consulted specialists at a similar rate of 22.2% (99% CI: 19.4-25.0%). These analyses indicate that rural and urban people with probable anxiety or mood disorders were equally likely to use mental health services, whether these were specialized or not.

Multivariate logistic regression analyses focused on those people who used mental health services in the previous year. These analyses identified factors that significantly predict use of particular types of professional services, given any use. Rural

versus urban residence was not a significant predictor for any type of professional mental health services when other demographic, social, and health status characteristics were taken into account (Table 2). People were more likely to see a *family doctor/GP* regarding mental, emotional, or alcohol/drug problems if they were older or had a probable anxiety or mood disorder in the previous year. People were more likely to see a *counsellor* if they were not Caucasian or had experienced an usual amount of chronicity of distress (compared with less than usual) in the previous month. Younger people were less likely to see a counsellor. People were more likely to see a *psychiatrist* if they had completed high school (compared with not completed). People were less likely to see a psychiatrist if they were younger, were not Caucasian, or used illicit drugs. People were more likely to see a *psychologist* if they had completed high school (compared with not completed), had a chronic health condition, had greater psychological distress, or had a probable anxiety or mood disorder in the previous year. People were less likely to see a psychologist if they were female or if they had usual (compared with less than usual) chronicity of distress in the previous month.



Table 2: Factors predicting whether people did or did not talk to a given type of professional about mental, emotional, or drug and alcohol problems in the past year

Predictor variable	GP	Counselor	Psychiatrist	Psychologist
Geographic location				
Urban	1.00	1.00	1.00	1.00
Rural	1.08 (0.71-1.63)	1.24 (0.82-1.89)	0.70 (0.43-1.14)	0.71 (0.46-1.10)
Age	1.03 (1.01-1.04)*	0.98 (0.96-0.99)*	0.98 (0.97-1.00)*	1.00 (0.99-1.01)
Sex				
Male	1.00	1.00	1.00	1.00
Female	1.14 (0.81-1.58)	1.35 (0.98-1.85)	0.80 (0.55-1.18)	0.54 (0.39-0.75)*
Marital status				
Single-never married	1.00	1.00	1.00	1.00
With partner	0.85 (0.51-1.42)	1.25 (0.80-1.97)	0.75 (0.45-1.27)	0.76 (0.48-1.20)
Divorced-separated-widowed	1.09 (0.71-1.66)	0.72 (0.47-1.10)	0.64 (0.39-1.05)	0.68 (0.44-1.07)
Parenting				
No	1.00	1.00	1.00	1.00
Yes	1.23 (0.86-1.76)	1.20 (0.86-1.67)	1.13 (0.75-1.69)	0.93 (0.64-1.33)
Employment status				
Secure	1.00	1.00	1.00	1.00
Insecure	0.93 (0.58-1.48)	1.18 (0.79-1.75)	0.98 (0.58-1.66)	1.18 (0.74-1.90)
Race				
Caucasian	1.00	1.00	1.00	1.00
Other races	1.04 (0.62-1.76)	1.71 (1.04-2.80)*	0.45 (0.22-0.92)*	1.33 (0.77-2.31)
Education				
Less than high school	1.00	1.00	1.00	1.00
High school complete	0.73 (0.48-1.10)	1.09 (0.76-1.57)	1.79 (1.12-2.86)*	1.54 (1.02-2.33)*
Post-secondary complete	0.88 (0.57-1.37)	1.06 (0.69-1.62)	1.28 (0.77-2.15)	1.35 (0.86-2.11)
Self-rated health				
Excellent	1.00	1.00	1.00	1.00
Good or very good	1.50 (0.85-2.67)	0.74 (0.43-1.26)	1.08 (0.59-1.98)	1.29 (0.68-2.44)
Poor or fair	1.14 (0.75-1.74)	0.68 (0.45-1.04)	1.16 (0.70-1.90)	1.13 (0.66-1.93)
Chronic health condition				
No	1.00	1.00	1.00	1.00
Yes	1.24 (0.82-1.87)	1.12 (0.73-1.70)	0.79 (0.50-1.25)	2.02 (1.14-3.60)*
Social support	0.98 (0.81-1.18)	1.03 (0.86-1.24)	1.06 (0.87-1.29)	0.90 (0.75-1.08)
Type of drinker				
Never drank	1.00	1.00	1.00	1.00
Former drinker	1.15 (0.57-2.34)	0.66 (0.30-1.45)	1.69 (0.72-3.98)	0.71 (0.33-1.51)
Occasional	1.48 (0.69-3.14)	0.87 (0.39-1.96)	0.69 (0.28-1.69)	0.67 (0.31-1.45)
Regular	1.50 (0.71-3.17)	1.22 (0.54-2.79)	1.36 (0.59-3.13)	0.86 (0.41-1.82)
Binge drinking				
Never	1.00	1.00	1.00	1.00
Once a month or less	0.90 (0.55-1.46)	1.10 (0.69-1.75)	0.91 (0.51-1.63)	0.71 (0.40-1.25)
More than once a month	1.11 (0.75-1.64)	1.33 (0.90-1.98)	0.80 (0.49-1.31)	0.71 (0.45-1.13)
Illicit drug use				
No	1.00	1.00	1.00	1.00
Yes	1.46 (0.97-2.21)	1.22 (0.77-1.94)	0.64 (0.41-.99)*	0.65 (0.40-1.05)
Psychological distress	1.01 (0.98-1.03)	0.99 (0.97-1.02)	1.02 (1.00-1.05)	1.05 (1.02-1.07)*
Chronicity of distress				
Less than usual	1.00	1.00	1.00	1.00
Usual	1.05 (0.66-1.65)	1.64 (1.07-2.51)*	0.91 (0.57-1.45)	0.51 (0.32-0.79)*
More than usual	0.86 (0.59-1.25)	1.46 (0.99-2.16)	0.81 (0.53-1.24)	0.86 (0.55-1.34)



Table 2: cont'd

Predictor variable	GP	Counselor	Psychiatrist	Psychologist
Anxiety or mood disorder				
No	1.00	1.00	1.00	1.00
Yes	2.07 (1.52-2.83)*	1.20 (0.86-1.66)	0.87 (0.61-1.24)	1.86 (1.29-2.68)*

*Significant at $p < 0.01$.

OR values were rounded to one decimal place except for ORs involving continuous variables (ie age, psychological distress, social support), where ORs were rounded to two decimal places. One point increase on a continuous variable's scale corresponds to the reported change in the odds of seeking professional mental health services (eg for age, an OR=0.98 means that for each year of increasing age there was 2% less likelihood of using professional services).

Cell entries reflect adjusted ORs with bootstrapped variance estimates (99% CI)

Discussion

The objective of this population-based study was to evaluate the role of rural residence in relation to utilization of different types of professional mental health services. Place of residence was considered along with other demographic, social, and health status factors that predict use of professional services. When considering people with probable anxiety or mood disorders, rural residence was not an important factor in predicting any service use or use of specialized mental health services. Use of particular types of services varied as a function of age, sex, race, level of education, degree of psychological distress, chronicity of distress, and the presence of probable anxiety or mood disorders. These findings imply that if rural residents have a probable anxiety or mood disorder, they receive professional and specialized mental health care at similar rates to urban residents. The findings indicate that the mental health system in Canada must continue to provide a variety of professional services in order to meet the preferences of diverse groups. In view of these diverse preferences, mental health specialists must find and use strategies to provide appropriate supports to non-specialists who provide care to people with mental disorders²¹. Involvement of specialists in assessment of complex conditions, treatment planning, and when individuals do not respond to standard care, would reduce demands on specialized services while maximizing benefits.

Limitations

This study has limitations that affect generalization and interpretation of the results. The rural residents represented in this analysis did not live in Aboriginal reserve communities, remote communities, or Canada's northern territories, and the findings cannot be generalized to these communities, which are likely to have more restricted access to mental health professionals. The numbers of rural residents seeking professional help were relatively small, resulting in large confidence intervals. Some of the predictor variables were likely to be correlated with location of residence, but interactions among location of residence and other predictors could not be evaluated due to the relatively small number of rural residents who sought professional care. Residence location was measured at the time the survey was completed and might have changed in the previous year. The professionals identified as non-specialists are likely to have a wide variety of training and experience in mental health service provision, whereas the specialists might or might not have experience in treating anxiety and mood disorders. Finally, the quality and effectiveness of mental health services were not examined, and if examined, they might reveal important differences between rural and urban Canada.

Future research should focus on identifying elements required for treatment success for particular disorders and whether those elements vary across communities of different sizes. Small scale studies of service models



specifically designed for rural communities would further our understanding of how to serve rural residents more effectively.

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