

Determinants Associated with the Utilization of Primary and Specialized Mental Health Services

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Abstract The study aims to compare variables associated with the exclusive and joint use of primary and specialized care for mental health reasons by individuals diagnosed with a mental disorder in a Montreal/Canadian catchment area. Data were collected from a random sample (2,443 individuals). Among 406 people, diagnosed with a mental disorder 12 months pre-interview, 212 (52%) reported having used healthcare services. Compared to users of primary care only, people who sought both primary and specialized care presented more mental disorders and lower quality of life. People using only specialized healthcare received significantly less social support than persons using primary care exclusively and lived in neighborhoods with a high proportion of rental housing. Healthcare service provision should favor social networking and enable social cohesion and integration, particularly in neighborhoods with a high proportion of rental housing. Shared care and enhanced collaboration with other public and community-based resources should be encouraged.

Keywords Services use · Primary care · Specialized healthcare · Mental health · Determinants

Introduction

Despite the availability of effective treatment, a very high proportion of people suffering from mental disorder do not use healthcare services [1–3]. A recent meta-analysis of 27 studies found that only 26% of Europeans suffering from a mental disorder in a 12-month period sought professional help [4]. According to the 2002 Canadian Community Health

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Survey of Mental Health and Well-Being (CCHS 1.2), only 39% of Canadians used services for mental health reasons [5]. These findings suggest that mental healthcare systems must do a better job of identifying individuals who need care and must help remove clinical and societal barriers to health services.

The burden of mental disorder has prompted various countries to improve their mental healthcare system by strengthening primary care. Primary care is considered less stigmatizing, more accessible, and no costlier than specialized healthcare [6]; yet, hospital and psychiatric care continue to occupy a central place in the system [7]. A substantial proportion of people suffering from severe mental disorders (schizophrenia, bipolar disorder) or common mental disorders (anxiety, depression) are still treated primarily by psychiatrists [8]. Some are followed by a case manager (nurse or social worker), whose main function is to reduce hospital admission, promote the use of community-based services, and enhance their clients' quality of life [9].

Patterns of mental healthcare service use have been investigated in many epidemiological studies. Multiple psychiatric diagnoses [2], schizophrenia, major depression, anxiety disorder [10], severity of symptoms [11] and self-perceived needs [12] are the clinical variables most often associated with service use. Several studies have found that service use for mental health reasons is associated with being: female [3, 13]; aged 25–64 [1], previously or currently married [11]; and post-secondary-educated [3]. Social support [14] is also a strong predictor of mental health service use.

Some studies have compared the profile of people who consult various categories of professionals. Females mainly consult general practitioners; men are more likely to seek specialized services [3]. People with higher socio-economic status tend to use more psychiatrists and psychologists [15]. General practitioners offer care mainly to patients with common mental disorders, such as depression and anxiety [16]. Less is known about the differences between users of primary and specialized care in the general population. Generally, studies on specialized healthcare users (psychiatric emergencies or hospitalization) focus on people with severe mental disorder, such as schizophrenia [17, 18]. To our knowledge, no study has analyzed characteristics that differentiate users of both primary care and specialized healthcare from users of either primary or specialized care exclusively.

Since the objective of current mental healthcare reforms is to improve primary care and enhance the performance of the healthcare system [19], more in-depth knowledge is needed on variables associated with primary care and specialized healthcare utilization by persons with mental disorders. The study aims to compare variables associated with the exclusive use of either primary or specialized care and their joint use for mental health reasons by persons residing in a Montreal catchment area who were diagnosed with a mental disorder. The study made use of Andersen's behavioral model [20]—which posits that health service use is determined by predisposing, enabling, and needs-related factors—to identify variables associated with mental healthcare service use.

Methods

Study Design, Setting and Selection Criteria

The study is based on an epidemiologic catchment area in Montreal, Canada's second-largest city with a population of 3.6 million. The catchment area has a population of 258,000 and encompasses a wide variety of social structures, socio-economic status,

education, healthcare service availability, and neighborhood dynamics and security profile [21].

The catchment area includes six neighborhoods, ranging in population from 23,205 to 90,640. Immigrants represent 25% of the population (vs. 26% in Montreal). The proportion of low-income households is 33% (vs. 23% in the province of Quebec and 35% in Montreal). Incidence of psychological distress in low-income populations in Canada is particularly high, namely 29% compared with 19% for the population above the low-income threshold [22]. Healthcare services are delivered mainly by three organizations: two health and social service centers (created through the merger of a general hospital, community local service centers, and nursing homes) offering primary and specialized healthcare; and a psychiatric hospital delivering specialized care (second and third-line services). Mental healthcare services in the area are also provided by about 40 medical clinics, a similar number of private psychologists, and 16 community-based agencies, all of which deliver primary care.

To be included in the survey, participants had to be aged 15–65 and reside in the study area. The sample was equally distributed among the various neighborhoods. Interviews were conducted at home using portable computers. Only one person per household was selected using procedures and criteria taken from the Canadian Community Health Survey (CCHS.1.2). The research was approved by an ethics board committee. Data were collected randomly from June to December 2009 by previously trained interviewers. A random selection of 2,443 individuals took part in the survey. A full description of the study has been published [21].

Variables, Measurement Instruments and Data Collection

Variables assessed in the study are displayed in Table 1, along with the measurement instruments that were employed. Several instruments were used to measure specific health and psychosocial parameters (Table 2).

The dependent variable related to individuals diagnosed with mental disorders in the previous 12-month period who used primary care only, specialized healthcare only, or both care jointly. Individuals had at least one of the following diagnoses: major depressive disorder, mania, social phobia, agoraphobia, panic disorder, post-traumatic stress disorder, or alcohol and drug dependence. Specialized healthcare refers to services offered in psychiatric or general hospitals and detoxification centers. Primary care included community-based local service centers, general practitioners and psychologists in private clinics, drugstores, self-help groups, and telephone help lines. Variables were categorized in accordance with Andersen's behavioral model: predisposing factors, enabling factors, and needs-related factors, and health service utilization (see Table 1).

Analyses

Univariate, bivariate, and multivariate analyses were performed. Univariate analyses consisted of frequency distribution for categorical variables and mean values for continuous variables. Bivariate analyses were used to assess variables associated with the exclusive and joint use of primary and specialized care using simple multinomial logistic regression (alpha value set at 0.10). All associations yielding a P value <0.10 were used to build a multinomial logistic regression model (alpha value at 0.05). The total variance explained by the model was calculated using Nagelkerke Pseudo-R square.

Table 1 Variables assessed in the study

Predisposing factors
Socio-demographic variables ^I
Age
Gender
Marital status
Household composition and size
Education
First language
Country of birth
Importance attributed to spirituality
Frequency of participation in religious activities
Health beliefs
Quality of life ^{II}
Self-perception of mental and physical health
Justice system
History of imprisonment
Enabling factors
Economic factors
Income (personal, household, main source)
Territory
Neighborhood
Neighborhood characteristics ^{III–IX}
Social support ^X
Social stigma ^{XI}
Geospatial variables
Walking distance to health services
Driving distance to health services
Proportion of homeownership
Proportion of rental housing
Proportion of people who moved a year ago
Unemployment rate among the population aged 25 and over
Active population aged 15 years and over
Average family income after taxes
Average household income after taxes
Proportion of recent immigrants
Needs
Mental disorders (types and number) ^{XII–XV}
Victim of violence
History of aggressive behavior ^{XVI}
Psychological distress ^{XVII}
Impulsiveness ^{XVIII}
Emotional problems
Health service utilization
Services are provided in hospitals (including hospitalization), mental health centers, rehabilitation centers, private clinics, pharmacies, and in the voluntary sector (e.g., self-help groups, crisis-line services).
Professionals consulted included: psychologists, general practitioners, psychiatrists, case managers, toxicologists, nurses, social workers, psychotherapists, pharmacists, other health professionals.

Note: measuring instruments are indicated by superscript numbers

Table 2 Measurement instruments

	Name	Description
Predisposing factors		
I	Canadian Community Health Survey (CCHS) 1.2* (Statistics Canada 2001)	Survey questionnaire for socio-demographic characteristics. Yes/no and multiple-choice questions Non-Likert scale non-Likert scale questions
II	Satisfaction with Life Domains Scale* (SLDS)	20 items Organized in 5 domains: daily living and social relationships, living environment, autonomy, intimate relationships, and leisure 7-Point Likert scale questions Cronbach alpha: 0.92
Enabling factors		
III	Sense of Community Scale (SCS)	8 items
IV	Community Participation Scale (CPS)	6 items Measures association between crime victimization, social organization, and participation in neighborhood organization Yes/no and 4-point Likert scale questions Cronbach alpha: 0.73–0.89
V	Resident Disempowerment Scale (RDS)	3 items
VI	Sense of Collective Efficacy (SCE)	Evaluates the effect of social and institutional mechanisms on people living in the neighborhood Complex literature review of 40 relevant studies published from mid 1990s–2001
VII	Neighborhood Disorder Scale (NDS)	9 items
VIII	Physical Conditions of the Neighborhood (PCN)	7 items
IX	Facility in Neighborhood (FN)	13 items Measures 3 domains: availability, utilization, and quality 10-Point scale questions Cronbach alpha: 0.40–0.90
X	Social Provisions Scale* (SPS)	24 items Measures six domains: emotional support, social integration, reassurance about value, material help, counseling and information, need to feel useful 4 point-Likert scale questions Cronbach alpha: 0.92
XI	Devaluation-Discrimination Scale (DDS)	12 items Review of 123 empirical articles (1995–2003) 6-Point Likert scale questions Cronbach alpha: 0.68–0.99
Needs		
XII	Composite International Diagnostic Interview* (CIDI), (Statistics Canada 2000)	Screening of mental disorders, including the most frequent mental disorders (depression, bipolar disorder, post-traumatic stress disorder, and anxiety disorders: social phobia, agoraphobia, and panic disorder) Yes/no and multiple choice non-Likert scale questions

Table 2 continued

	Name	Description
XIII	Drug Abuse Screening Test (DAST) ^a	20 items Inquires about consequences of drug abuse and neuro-adaptive symptoms Yes/no questions Cronbach alpha: 0.74
XIV	Alcohol Use Disorders Identification Test* (AUDIT)	10 items Measure the degree of dependence and risky alcohol consumption 2 or multiple choice questions Cronbach alpha: 0.88
XV	Parental Psychiatric History (PPH)	Measures mental disorders in parents and relatives Non-Likert scale questions
XVI	Modified Observed Aggression Scale* (MOAS) for aggressive behaviors	Assesses 4 categories of aggressive behavior: verbal aggression, aggression to propriety, self-inflicted aggression, physical aggression
XVIII	K-10 Psychological Distress Scale* (K-10 PDS)	10 items 5-Point Likert scale questions Area under the receiver operating characteristic curve of SMI: 0.854
XVIII	Barratt Impulsivity Scale* (BIS)	30 items Organized in three categories: motor impulsivity, cognitive impulsivity, impulsivity due to lack of planning 4-Point scale questions

^a Measurement instruments validated in the French-speaking population

Results

Among the 2,443 persons who took part in the survey, 406 (17%) experienced at least one episode of mental disorder in the 12 months before the interview and were selected for analysis. Among them, 212 (52%) reported having used a healthcare service or consulted a professional for reason of mental health and were included in the following analyses. As shown in Table 3, the sample was divided into three groups: use of primary care only (27%); use of specialized healthcare only (21%); or use of both (52%).

Predisposing Factors

In general, females used more healthcare services for mental health reasons than males (63% vs. 37%). Conversely, males made greater use of specialized healthcare (53% vs. 47%; beta: 0.830; $P = 0.015$). Participants with post-secondary education were marginally less likely to seek specialized healthcare (beta: -0.604 ; $P = 0.076$).

Enabling Factors

Participants with higher scores for social support were more likely to use primary care (0.048; $P = 0.003$) and less likely to use specialized care (beta: -0.063 ; $P < 0.001$). Those with higher scores for global quality of life were significantly associated with more primary-care service use (beta: 0.023; $P = 0.009$). Living in a neighborhood with a high

Table 3 Frequency distribution of variables associated with primary care, specialized healthcare and joint primary and specialized care utilization

	Primary care 57 (26.9%)		Specialized healthcare 44 (21.0%)		Both primary and specialized care 111 (52.1%)		Total 212 (100.0)	
<i>Predisposing factors</i>								
Gender [<i>n</i> (%)]								
Males	18	31.3	23	52.6	37	33.3	78	36.8
Females	39	68.7	21	47.4	74	66.7	134	63.2
Age [Mean (SD)]	39.3	11.9	42.2	14.0	41.2	12.5	40.9	12.6
Post-secondary education [<i>n</i> (%)]	32	56.2	19	42.8	65	58.6	116	54.7
<i>Enabling factors</i>								
Social support score [Mean (SD)]	80.2	9.7	69.4	10.8	76.4	11.8	76.1	11.6
Global quality of life score [Mean (SD)]	99.2	18.5	90.6	15.7	91.6	20.4	93.4	19.2
Household size [Mean (SD)]	2.2	1.3	1.9	1.4	2.1	1.2	2.1	1.3
Proportion of recent immigrants in the neighborhood (<1 year) [Mean (SD)]	14.2	7.3	15.8	7.3	12.9	7.1	13.9	7.2
<i>Needs-related factors</i>								
Total number of mental disorders per person [Mean (SD)]	1.38	0.773	1.41	0.722	1.61	0.924	1.51	0.849
Lifelong victims of violence	34	59.6	26	57.7	73	66.3	133	62.7
Lifelong aggressive behavior [<i>n</i> (%)]	26	45.5	29	66.2	61	55.4	117	55.0
Psychological distress [Mean (SD)]	15.2	8.1	16.3	6.5	16.8	7.8	16.3	7.7
Types of mental health disorders in the 12 months before interview								
Major Depressive Episodes	35	61.6	22	48.6	72	65.2	129	60.8
Alcohol Dependence	8	14.4	13	30.2	21	19.3	43	20.3
Drug Dependence	6	10.4	9	19.9	20	17.7	34	16.2
Anxiety disorders	18	32.3	13	28.7	36	32.7	67	31.7
Social phobia	12	21.4	9	19.3	20	18.0	41	19.2
Panic disorder	7	12.2	2	4.3	13	11.9	22	10.4
Agoraphobia	5	8.7	4	9.3	10	9.3	19	9.1
Mania	4	6.7	2	5.2	17	15.5	23	11.0
Post-traumatic stress disorder (PTSD)	2	3.0	2	4.6	4	3.8	8	3.8

proportion of rental housing seemed to be associated with more frequent use of specialized healthcare ($\beta = 0.015$; $P = 0.013$) and less frequent use of primary care and specialized care jointly ($\beta = -0.009$; $P = 0.059$).

Needs-Related Factors

Lifelong aggressive behavior tended to be negatively associated with primary-care use ($\beta = -0.527$; $P = 0.091$) and positively associated with specialized healthcare use ($\beta = 0.590$; $P = 0.095$). Persons presenting with two mental health disorders tended to use specialized healthcare more frequently, with alcohol dependence being positively associated ($\beta = 0.706$; $P = 0.066$) and the occurrence of major depressive episodes

Table 4 Variables independently associated with specialized healthcare and both second-line and primary care, as compared to utilization of primary care: multinomial logistic regression

	Specialized healthcare					Both specialized healthcare and primary care utilization				
	B	Signif.	OR	95% CI		B	Signif.	OR	95% CI	
				LL	UP				LL	UP
Enabling factors										
Social support	−.094	0.000	0.910	0.865	0.958	−.009	0.683	0.991	0.950	1.034
Overall quality of life	0.002	0.878	1.002	0.972	1.034	−.031	0.014	0.969	0.945	0.994
Proportion of rental housing in the neighborhood	0.017	0.041	1.017	1.001	1.034	0.004	0.474	1.004	0.992	1.017
Needs-related factors										
Number of mental disorders	1.207	0.056	3.343	0.971	11.512	1.104	0.040	3.016	1.050	8.662

Nagelkerke pseudo R-square: 22.6%

negatively associated (beta = -0.629 ; $P = 0.065$). Finally, mania was associated with the use of both primary and specialized care (beta = 1.047 ; $P = 0.033$).

Multinomial Logistic Regression Model

Among needs-related factors, one variable was retained in the final model: persons with a greater number of mental disorders are more likely to use both primary care and specialized healthcare as well as (marginally) second-line services only as compared to primary care (Table 4). Three variables associated with enabling factors are included in the final model. Compared with users of primary care only, persons who use both primary and specialized care experience lower quality of life overall. Compared with users of primary care only, persons who use specialized healthcare only receive significantly less social support. Finally, living in neighborhoods with a high proportion of rental housing is associated with specialized healthcare use. No predisposing factors are included in the final model. This model explains 23% of the total variance.

Discussion

The aim of this study is to compare variables associated with the exclusive and joint use of primary and specialized care for mental health reasons by persons diagnosed with a mental disorder, residing in a catchment area in Montreal, Canada.

In comparison to previous research [23, 24], the study revealed that the proportion of persons affected by a mental disorder in a 12-month period and who used healthcare services was relatively high (near 50%). The proximity of a psychiatric hospital may account for the high mental healthcare service use recorded in the catchment area. Usually, persons with a mental disorder tend to live near their treatment center. Furthermore, the proportion of low-income households was also particularly high in the study setting. According to some studies, needs are more prolific in deprived urban areas [25].

Only a moderate proportion of global service use (23%) was accounted for by the variables included in our final model. However, this is consistent with findings in most previous studies on the behavioral model's ability to predict service use [12, 13]. In addition, the study did not include the full spectrum of psychiatric disorders such as schizophrenia which may account for a greater utilization of resources, especially specialized care [26].

According to the behavioral model [20], needs are the primary predictors of service utilization. It is to be expected that persons with a greater number of mental and/or dependence disorders would consult various primary care and specialized healthcare services. Several authors have pointed out the association between service consumption and number of psychiatric disorders [2, 12]. Persons with multiple mental and/or dependence disorders present a higher level of psychological distress [27], poorer functioning [28] and increased risk of suicide [29]. Due to their significant psychological pain, they feel greater impetus to seek treatment [27] and use health services more intensively. They require specialized healthcare services but also primary care (for example, self-help groups) to function in the community. Conversely, persons suffering from depression or anxious disorder only can be treated in primary care by a general practitioner or psychologist without need of specialized healthcare services, especially in contexts where mental health training and best practices have been implemented [30].

The association between primary care and specialized healthcare utilization and lower quality of life may be explained by the fact that persons with multiple mental and/or substance disorders suffer more adverse social consequences (stigma, stress, interpersonal conflict, financial problems, and others), thereby negatively impacting their quality of life [27]. A previous study in the same catchment area [31] also revealed that low-income earners presented with low levels of satisfaction with regard to quality of life.

Studies have found that persons with limited or unhelpful social networks are more likely to use mental healthcare services [13, 14]. Social support has positive effects on mental or physical health. Conversely, social vulnerability may increase the risk of depression or anxious disorder [28]. Impairment in work, social withdrawal, and conflicts with family members are common reasons for hospitalization or seeking professional help [32]. It is interesting to note that limited social support is associated with the use of specialized healthcare only, and not with primary care and specialized care jointly. A possible explanation is that some primary care services (such as self-help groups) can help to create a social network for persons with mental or dependence disorders.

Finally, exclusive second-line service utilization is associated with a higher ratio of rental housing in the neighborhood. This may be due to the fact that homeowners enjoy higher per-capita income, which facilitates access to a greater range of resources [3], such as private psychologists whose services are not covered by the public healthcare insurance system in Quebec or the rest of Canada. Another explanation would be that tenants exhibit less residential stability and thus possess less knowledge about healthcare services in their neighborhood. Moreover, persons living in rented accommodations may receive less social support from neighbors as compared with homeowners.

Conclusions

Our results reveal that among persons using healthcare services for mental health reasons, a majority use primary care and specialized care jointly. These individuals possess a distinct profile that differentiates them from users of primary care or specialized healthcare only.

They suffer from more numerous mental disorders and have lower quality of life compared to persons who use specialized healthcare services exclusively. Primary care utilization is associated with the availability of more social networks. Since persons who suffer from multiple mental disorders experience disability in many areas of their lives—including stressful environments and fewer opportunities to create and sustain healthy relationships and a satisfying lifestyle—they should be the target of healthcare service providers. Service providers should favor action that promotes social networking and self-help as well as social cohesion and integration, particularly in neighborhoods where the ratio of rental housing to homeownership is high. Healthcare providers should also favor shared-care initiatives and enhanced collaboration with other government and community-based resources, including municipalities, educational institutions, and organizations in the labor market.

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References

1. Wang PS, Lane M, Olfson M, et al.: Twelve-month use of mental health services in the United States. *Archives of General Psychiatry* 62:629–640, 2005
2. Kessler RC, Zhao S, Katz SJ, et al.: Past-year use of outpatient services for psychiatric problems in the National Comorbidity Survey. *American Journal of Psychiatry* 156:115–123, 1999
3. Vasiliadis HM, Lesage A, Adair C, et al.: Do Canada and the United States differ in prevalence of depression and utilization of services. *Psychiatric Services* 58:63–71, 2007
4. Wittchen H-U, Jacobi F: Size and burden of mental disorders in Europe—A critical review and appraisal of 27 studies. *European Neuropsychopharmacology* 15:357–376, 2005
5. Lesage A, Vasiliadis H-M, Gagné M-A, et al.: Prevalence of mental illness and related service utilization in Canada: An analysis of the Canadian Community Health Survey. Mississauga, 2006
6. Jenkins R, Strathdee, G.: The integration of mental health care with primary care. *International Journal of Law and Psychiatry* 23:277–291, 2000
7. Thornicroft G, Tansella M: Balancing community-based and hospital-based mental care. *World Psychiatry* 1:84–90, 2002
8. Regier DA, Goldberg D, Burns BJ, et al.: Specialist/generalist division of responsibility for patients with mental disorders. *Archives of General Psychiatry* 39:219–224, 1982
9. D’Ercole A, Struening E, Curtis JL, et al.: Effects of diagnosis, demographic characteristics, and case management on rehospitalization. *Psychiatric Services* 48:682–688, 1997
10. Leaf PJ, Livingston MM, Tischler GL, et al.: Contact with health professionals for the treatment of psychiatric and emotional problems. *Medical Care* 23:1322–1337, 1985
11. Parslow RA, Jorm AF: Who uses mental health services in Australia? An analysis of data from the National Survey of Mental Health and Wellbeing. *Australian and New Zealand Journal of Psychiatry* 34:997–1008, 2000
12. Lemming MR, Calsyn RJ: Utility of the behavioral model in predicting service utilization by individuals suffering from severe mental illness and homelessness. *Community Mental Health Journal* 40:347–364, 2004
13. Carr VJ, Johnston PJ, Lewin TJ, et al.: Patterns of service use among persons with schizophrenia and other psychotic disorders. *Psychiatric Services* 54:226–235, 2003
14. Albert M, Becker T, McCrone P, et al.: Social networks and mental health service utilisation. A literature review. *International Journal of Social Psychiatry* 44:248–266, 1998
15. Alegria M, Bijl RV, Lin E, et al.: Income differences in persons seeking outpatient treatment for mental disorders. *Archives of General Psychiatry* 57:383–391, 2000
16. Kushner K, Diamond R, Beasley JW, et al.: Primary care physicians’ experience with mental health consultation. *Psychiatric Services* 52:838–840, 2001
17. Pasic J, Russo J, Roy-Byrne P: High utilizers of psychiatric emergency services. *Psychiatric Services* 56:678–684, 2005

18. Ledoux Y, Minner P: Occasional and frequent repeaters in a psychiatric emergency room. *Social Psychiatry and Psychiatric Epidemiology* 41:115–121, 2006
19. WHO (2001) *The World Health Report 2001—Mental health: New understanding, new hope*. World Health Organization, Geneva
20. Andersen RM: Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior* 36:1–10, 1995
21. Caron J, Tousignant M, Pedersen D, et al.: La création d'une nouvelle génération d'études épidémiologiques en santé mentale. *Santé mentale au Québec* 32:225–238, 2007
22. Caron J, Liu A: A descriptive study of the prevalence of psychological distress and mental disorders in the Canadian population: Comparison between low-income and non-low income populations. *Chronic Diseases in Canada* 30:84–94, 2010
23. Tempier R, Meadows GN, Vasiliadis HM, et al.: Mental disorders and mental health care in Canada and Australia: Comparative epidemiological findings. *Social Psychiatry and Psychiatric Epidemiology* 44:63–72, 2009
24. Andrews G, Issakidis C, Carter G: Shortfall in mental health service utilisation. *British Journal of Psychiatry* 179:417–425, 2001
25. McCrone P, Leese M, Thornicroft G, et al.: Reliability of the Camberwell assessment of need—European version. EPSILON Study 6. *British Journal of Psychiatry* 177:s34–s40, 2000
26. Chaput YJ, Lebel M-J: Demographic and clinical profiles of patients who make multiple visits to psychiatric emergency services. *Psychiatric Services* 58:335–341, 2007
27. Castel S, Rush BR, Urbanoski K, et al.: Overlap of clusters of psychiatric symptoms among patients of a comprehensive addiction treatment service. *Psychology of Addictive Behaviors* 20:28–35, 2006
28. De Graaf R, Bijl RV, Ten Have M, et al.: Pathways to comorbidity: The transition of pure mood, anxiety and substance use disorders into comorbid conditions in a longitudinal population-based study. *Journal of Affective Disorders* 82:461–467, 2004
29. Merikangas KR, Mehta MA, Molnar BE, et al.: Comorbidity of substance use disorders with mood and anxiety disorders; results of the international consortium in psychiatric epidemiology. *Addictive Behaviors* 23:893–907, 1998
30. Olfson M, Marcus SC, Druss B, et al.: National trends in the use of outpatient psychotherapy. *American Journal of Psychiatry* 159:1914–1920, 2002
31. Caron J, Tempier R, Mercier C, et al.: Components of social support and quality of life in severely mentally ill low income individuals and a general population group. *Community Mental Health Journal* 34:459–475, 1998
32. Guzzetta F, Miglio R, Santone G, et al.: First-ever admitted psychiatric inpatients in Italy: Clinical characteristics and reasons contributing to admission: Findings from a national survey. *Psychiatry Research* 176:62–68, 2010

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