Comorbidity between lifetime eating problems and mood and anxiety disorders: Results from the Canadian Community Health Survey of Mental Health and Well-being (2002)

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Abstract:

This study was to examine profiles of eating problems (EPs), mood and anxiety disorders, and their comorbiditites, explore risk patterns for these disorders, and document differences in health service utilization in a national population. Data were from the Canadian Community Health Survey of Mental Health and Well-being. The lifetime prevalence of EPs was 1.70% among Canadians, compared to 13.25% for mood disorder, 11.27% for anxiety disorder, and 20.16% for any mood or anxiety disorder. Almost half of those with EPs also suffered with mood or anxiety disorders. A similar pattern in depressive symptoms was found among individuals with major depression and EPs, but individuals with EPs reported fewer symptoms. Factors associated with the comorbidity of EPs and mood and anxiety disorders were identified. Individuals with EPs reported more unmet needs. Patients with EPs should be concomitantly investigated for mood and anxiety disorders, as similar interventions may be effective for both.

Keywords

eating problems, disordered eating, comorbidity, mood and anxiety disorders, risk factors

Introduction

Mood and anxiety disorders are the most common mental disorders in the general population (e.g. Kessler, et al., 2009a; Kessler, et al., 2012). The presence of comorbidity among common mental disorders has been consistently reported (e.g., Boyd et al., 1984; Kessler, 1997; Kessler, Chiu, Demler, Merikangas, & Walters, 2005). Kendler et al. (2003) investigating genetic and environmental risk factors for common mental disorders found that common mental disorders might have two underlying dimensions, internalizing (with sub-dimensions of anxious-misery and fear) and externalizing disorders. Internalizing disorders correspond to mood and anxiety disorders, whereas substance use, antisocial behavior, and conduct disorders composed externalizing disorders. Similar genetic and environmental risk factors may be shared within internalizing disorders that may explain the high comorbidity between mood and anxiety disorders (e.g. Meng, Kou, Shi, Yu, & Huang, 2011)

Studies have reported high comorbidity between eating disorders and mood and anxiety disorders (e.g. Brietzke, Moreira, Toniolo, & Lafer, 2011; Dannon, Lowengrub, Iancu, & Kotler, 2004; Kaye, Bulik, Thornton, Barbarich, & Masters, 2004; Seeley, Kosty, Farmer, & Lewinsohn, 2011; Touchette, et al., 2011). Eating disorders are currently characterized by severe disturbances in eating behavior, including anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified category. McEIroy et al. (2011) found that eating disorders were prevalent among bipolar patients and were associated with earlier onset and severity of the bipolar disease. Fornaro et al. (2010) also found that bipolar spectrum disorders were associated with eating disorders. Dellava et al. (2011) confirmed that generalized anxiety

disorder and anorexia nervosa shared genetic and environmental elements, which may contribute to their high comorbidity.

Although the similar underlying pathological elements may explain the presence of comorbidity (e.g. Mauri, et al., 1996; Weich, et al., 2011), eating problems (EPs) may present as symptoms of mood and anxiety disorders; they can also present as separate mental disorders or co-occur with other mental disorders. In addition, psychiatric medications may also have an effect, or cause and/or aggravate eating problems (e.g. Bacaltchuk & Hay, 2003; Hay & Claudino, 2011; Mauri, et al., 1996). The expression and severity of eating problems vary.

Little research has been conducted assessing comorbidity between EPs and mood and anxiety disorders (e.g. Godart, et al., 2007). Given the high prevalence of comorbidity between eating problems and mood and anxiety disorders, the complex pathological explanation for the comorbidity, little research conducted to compare risk patterns, symptom patterns, health care utilization between EPs, mood and anxiety disorders, and their comorbidities, it is important to have a better understanding of the general profiles of these comorbidities. There is a further paucity of large-scale national data on the relationship between EPs and mood and anxiety disorders.

In an attempt to fill this information gap, we examined profiles of EPs and mood and anxiety disorders, and their comorbiditites, explored risk patterns for these disorders, and documented differences of the use of health services using national Canadian health survey data.

Methods

Data source

Data analyzed was from the Master Files of the Canadian Community Health Survey Mental Health and Well-being (CCHS 1.2), which was a national cross-sectional survey on the prevalence of a number of mental disorders among Canadians (Gravel & Beland, 2005). The CCHS 1.2 was conducted between May 2002 and December 2002, which enrolled a total of 36,984 individuals (aged 15+ years) representing a population of 24,996,593 Canadians aged 15+ in 2002. The survey objectives and data collection methods were approved by the steering committee of Statistics Canada. Respondents were informed that their participation in the survey was voluntary. The survey was an interview survey using computer assisted personal interviewing (CAPI) technology. All personal information collected or held by Statistics Canada is kept confidential and secure. The present study is a secondary analysis of data from the CCHS 1.2.

Measures

Mental disorders. The long form of the Composite International Diagnostic Inventory (CIDI) was used to diagnose the presence of common mental disorders (WHO, 1990). The CIDI is a standardized instrument for assessment of mental disorders and conditions that has been used in a series of WHO international surveys of mental health in a large number of countries (Kessler, *et al.*, 2004, 2005). The CIDI has been proved to have a good concordance with clinical diagnoses of mental disorders (e.g. Kessler, et al., 2009b; Haro, et al., 2006), and its diagnosis correspond to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)

(APA, 2000). The *lifetime* mood and anxiety disorders assessed consisted of major depression (MD), mania, social phobia, panic disorder, and agoraphobia.

Eating problems. The Eating Attitudes Test (EAT-26), an established measure of eating problems (e.g. Dotti & Lazzari, 1998), was used to identify persons with eating problems. The EAT-26 has 26 items, and its score ranges from 0 to 78. A higher score indicates a greater risk of disordered eating. Respondents with a score of 20 or over are usually being considered at risk of having an eating problem (e.g. Lane, Lane & Matheson, 2004).

Depressive symptoms. In order to assess patterns of symptoms in MD and EPs, the following lifetime depressive symptoms were asked during the interview, as they were part of items in the CIDI used to compute the final diagnosis of lifetime MD. The specific lifetime diagnostic depressive symptoms assessed included depressed mood, diminished interests or pleasures, significant weight changes, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness, loss concentration, and recurrent thoughts of death.

Socio-demographic, physical, and psychological predictors. Data were also collected on socio-demographic factors (age, gender, marital status, education, income, place of birth, employment, ethnicity, and place of residence), physical diseases, and psychological indicators (self-rated stress, self-rated mental health, self-rated physical health, and life satisfaction, and sense of belonging). All these variables were used as covariates in our analysis.

Health care services/ barriers to care. The *lifetime* overnight hospitalization, consultation with professionals, use of any resources, and unmet health needs indicators (availability, acceptability, and accessibility) were used as indicators of health care use and barriers to care.

'Availability' covered issues of having to wait too long for help, help not being available in area or at the time required. 'Acceptability' assessed incidents where individuals chose to do without health care either because of competing demands on their time or because of their attitude towards their illness, health care providers or the health care system. 'Accessibility' dealt with issues of cost, lack of transportation, lack of knowing how or where to get help, or issues such as childcare or scheduling.

Statistical analyses

A bootstrap procedure recommended by Statistics Canada, which utilized a set of 500 replicate sampling weights to take into account the complex survey sampling design, was used. This weighted data representing the Canadian national population was used in the analyses. Descriptive analyses were used to estimate the prevalence and socio-demographic distributions of EPs and mood and anxiety disorders, and to compare the prevalence of depressive symptoms between EPs and MD. Multivariate logistic regression was used to explore impact of risk indicators on disease occurrence. All analyses were conducted at the Saskatchewan Research Data Centre on the University of Saskatchewan campus, using SAS software, version 9.1 (SAS Institute Inc, Cary, NC).

Results

Lifetime profile of eating problems and mood and anxiety disorders

The survey found 424, 767 Canadians aged 15+ suffering with the lifetime EPs, which represented 1.70% of total Canadians population in 2002. Some 20.16% (5,038,798) of Canadians reported a lifetime mood or anxiety disorder, 13.25% a lifetime mood disorder (major depression, mania), and 11.27% a lifetime anxiety disorder (social phobia, panic disorder, agoraphobia). A total of 3,037,049 Canadians residents reported having MD at some point during their life. Table 1 presents descriptive analyses of lifetime mental disorders. Although EPs were less prevalent than mood and anxiety disorders among Canadians, similar demographic distributions of age and gender were found in those with EPs or mood and anxiety disorders. Women and younger individuals were more likely to report lifetime EPs and mood and anxiety disorders.

Health care services & barriers to care

Individuals with MD and mood disorders had higher rates of hospitalization, resources use, and consultations compared to those with EPs only. In terms of unmet health needs, individuals with EPs had the highest acceptability rate. No significant differences in accessibility and availability of treatment services were found for the mental disorders studied (Figure 1).

Lifetime eating problems and their comorbid mood and anxiety disorders

Table 2 presents the comorbidity between lifetime EPs and mood and anxiety disorders. Almost half (49.07%) of individuals with lifetime EPs were also affected with lifetime mood and anxiety disorders, including 33.15% of them with lifetime mood disorders and 33.86% with lifetime anxiety disorders. Some 30.99% of individuals with EPs also had major depression. In contrast, a small proportion (4.33%) of individuals with major depression also had a lifetime EP. Similarly, 4.14% of individuals with mood and anxiety disorders, 4.25% of mood disorders, and 5.10% of anxiety disorders also had lifetime EPs.

Those who were younger, had a greater stress, perceived poorer mental and physical health, had weaker links to community, and dissatisfied with life, were more likely to be comorbid. Comorbid individuals used more consultations and health resources, and rated mental health services as more acceptable (Data not shown).

Depressive symptoms of lifetime eating problems

The pattern of depressive symptoms reported in those individuals with lifetime EPs and MD was compared. Although people with EPs reported fewer depressive symptoms overall, the pattern of depressive symptoms was generally consistent between two groups (Figure 2).

Risk factors for lifetime eating problems and mood and anxiety disorders

To explore the epidemiologic patterns of EPs and mood and anxiety disorders further, univariate and multivariate logistic regression analyses were conducted. Table 3 shows relationships between selected factors and mental disorders. Being female, living in urban areas, having a chronic health problem, having a greater stress, and perceiving poorer mental health, were associated with lifetime EPs. Surprisingly, there was not an age gradient for EPs

in the results of the multivariate analyses. Being younger, female, born in Canada, not fully employed, not a Caucasian, having a chronic condition, having a greater stress, perceiving poorer mental health, and dissatisfied with life, were consistently associated with MD, mood and anxiety disorders, mood disorders, and anxiety disorders ($p<0.05$). Inconsistent findings were also noted. Urban residence was associated with MD and mood disorders ($p<0.05$). Poorer perceived physical health was significantly associated with mood and anxiety disorders. MD, mood and anxiety disorders, and mood disorders were associated with having weaker links to community and post-secondary education ($p<0.05$).

Discussion

We compared the profile of EPs and mood and anxiety disorders among Canadians using a national representative sample. The prevalence of lifetime EPs was 1.70%, and 20.16% for lifetime mood and anxiety disorders. Almost half of individuals with EPs (49.07%) also suffered from mood and anxiety disorders. Those with EPs and comorbid mood and anxiety disorders were more likely to be younger, more stressed, have weaker ties to community, perceive poorer mental and physical health, and be dissatisfied with life. They reported higher levels of the use of health services compared to those with EPs only. A similar pattern in depressive symptoms was found between MD and EPs, but individuals with EPs reporting fewer symptoms. Those who were male, married, living in rural areas, having no physical health problems, perceiving less stress and better mental health were less likely to have EPs and mood and anxiety disorders. Individuals with EPs had similar rates of health care utilization compared to those with mood and anxiety disorders, but reported a higher level of unmet mental health needs.

The lifetime prevalence of eating disorders in adults of Western countries is estimated to be about 0.6% for anorexia nervosa and 1% for bulimia nervosa (e.g. Hudson, Hiripi, Pope, & Kessler, 2007; Jacobi, et al., 2004). Estimates of the lifetime prevalence of anorexia nervosa range from 1.2% to 2.2% (e.g. Bulik, et al., 2006; Keski-Rahkonen, et al., 2006), and 1.5% to 2.3% for bulimia nervosa (e.g. Hudson, et al., 2007; Keski-Rahkonen, et al., 2009). In general our findings of the prevalence of EPs are consistent with previous literature. The spectrum of EPs ranges from mildly abnormal eating habits to life-threatening chronic disease. The range

of prevalence of eating disorders among different studies may be explained by different instruments, sample' sources, life course of EPs, or naturally occurring differences.

Recently, a US study investigating associations between psychosocial impairment and comorbid disorders in bulimic syndromes found that individuals with bulimic syndrome and a comorbid anxiety disorder had worse psychosocial functioning than either disorder alone (e.g. Bodell, Brown, & Keel, 2011). They suggested the importance of addressing comorbid disorders in individuals with bulimic syndromes. Keel et al. (2005) examined comorbidity and shared transmission between eating pathology and mood and anxiety disorders. They consistently found a significant comorbidity between eating disorders and mood and anxiety disorders. They suggest that EDs and mood and anxiety disorders have a shared pathology. King-Kallimanis et al. (2009) found that mood disorders and anxiety disorders frequently co-occurred in a US nationally representative community sample. Our study also found half of the people with EPs had mood and anxiety disorders.

As expected, we found that those with EPs and comorbid mood and anxiety disorders were more likely to be young, experience more stress, have weaker links to the community, poorer perceived mental and physical health, be more dissatisfied with life, and report higher levels of the use of health services compared to those with EPs only. Individuals who were male, married, living in rural areas, with no medical condition, and who perceived less stress and better mental health were less likely to report EPs and mood and anxiety disorders. Respondents with EPs had similar rates of health services use compared to those with mood and anxiety disorders, but reported more unmet health needs. Schneiderman et al. (2005) reviewing the relationship between stress and health found stressors had a significant impact on mood, sense of well-being, behavior, and health. High levels of stress were related to major

depression, anxiety disorders, cognitive impairment, substance abuse, EPs, sleep problems, smoking, accidents, etc. Few studies have discussed risk factor profiles between pure and comorbid mental disorders. de Graaf et al. (2002) explored the risk factor profile for pure and comorbid 12 month mood disorders. They found all risk factors associated with pure mood disorders (non-cohabitation, somatic comorbidity, parental psychiatric history, and childhood trauma) were also associated to anxiety-comorbid mood disorder; the comorbid condition was also related to being female, younger age, lower education, and unemployment. Likewise, our study found that all risk factors associated with EPs were also related to mood and anxiety disorders, but mood and anxiety disorders had a larger risk set.

This study adds to the literature by comparing risk patterns, symptom patterns, health care utilization between EPs, mood and anxiety disorders, and their comorbidities, and providing a better understanding of the general profiles of these comorbidities. Further, this is a large-scale national data on the relationship between EPs and mood and anxiety disorders. To our knowledge, this is the first study to investigate the depressive symptom pattern between individuals with EPs and MD. Notably, the symptom pattern was consistent between EPs and MD, although EPs reported symptoms less frequently. Santos et al. (2007) assessed the relationship between eating disorders and depressive symptoms in adolescents. They found eating attitudes and depressive symptoms were strongly and positively correlated. As the EAT-26 scores increase, so do depressive symptoms.

Limitations of this study included: 1) EPs were determined by a cut-off point of 20 on the EAT-26. Although the EAT-26 scale has been widely used to indicate eating problems, it does not provide a clinical diagnosis of eating disorder, but identifies abnormal eating habits and concerns about weight (Lane, Lane & Matheson, 2004); 2) data analyzed were drawn from a

national cross-sectional study; the risk profiles identified are associative not causal; 3) lifetime measures used maybe a source of recall bias; 4) data analyzed was from the CCHS 1.2, conducted at 2002. Although the data is not quite up-to-date, this is the latest national data on EPs in Canada, and; 5) the relatively small number of the people with 12-month EPs limited further analysis due to the confidentiality data release requirements of Statistics Canada.

Our findings have important clinical relevance for practice. A significant proportion of individuals with EPs also had comorbid mood and anxiety disorders. Patients with lifetime EPs should be investigated concomitantly for mood and anxiety disorders. Earlier intervention before the onset of comorbidity may reduce the complexity of treatment (e.g. de Graaf, Bijl, Smit, Vollebergh, & Spijker, 2002). Those with EPs had more unmet mental health needs, which warrants further exploration. Although there were some differences of risk factor profiles between EPs and mood and anxiety disorders in the present study there were substantial similarities. Similar primary interventions may be effective against different mood and anxiety as well as eating disorders (e.g. Brown, Harris, & Eales, 1996).

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Table 1 Descriptive analyses of selected lifetime mental health problems, Canada 2002

Mental health problems	Groups	Prevalence (%)	CV	95% Confidence Interval	
				Lower	Upper
Mood and anxiety disorders	Total	20.16	1.51	19.56	20.75
	Males	16.60	2.54	15.77	17.42
	Females	23.60	1.95	22.70	24.50
	Age 15-25	19.82	3.58	18.43	21.22
	Age 26-45	22.51	2.28	21.51	23.52
	Age 46-60	23.70	3.09	22.27	25.13
	Age 61+	11.38	3.92	10.51	12.26
Major depression	Total	12.15	2.08	11.66	12.64
	Males	9.16	3.61	8.51	9.81
	Females	15.04	2.58	14.28	15.80
	Age 15-25	10.39	4.95	9.38	11.40
	Age 26-45	13.90	3.15	13.04	14.76
	Age 46-60	14.60	4.00	13.45	15.74
	Age 61+	7.28	5.17	6.54	8.01

Mood disorders	Total	13.25	1.99	12.73	13.77
	Males	10.41	3.37	9.72	11.10
	Females	15.99	2.47	15.22	16.77
	Age 15-25	12.04	4.67	10.94	13.14
	Age 26-45	15.09	3.03	14.19	15.99
	Age 46-60	15.82	3.82	14.63	17.00
	Age 61+	7.53	5.08	6.78	8.28
Anxiety disorders	Total	11.27	2.11	10.80	11.74
	Males	9.62	3.55	8.95	10.29
	Females	12.87	2.71	12.19	13.55
	Age 15-25	11.93	5.18	10.71	13.14
	Age 26-45	12.76	3.22	11.95	13.56
	Age 46-60	13.16	4.48	12.01	14.32
	Age 61+	5.35	5.88	4.73	5.97
Eating problems	Total	1.70	6.58	1.48	1.92
	Males	0.52	15.13	0.37	0.68
	Females	2.84	7.23	2.43	3.24

	Age 15-25	1.85	11.89	1.42	2.28
	Age 26-45	1.91	8.52	1.59	2.23
	Age 46-60	1.56	12.57	1.18	1.94
	Age 61+	1.32[E]	25.93	0.65	2.00

CV, Coefficient of variation

[E] Use with caution

Table 2 Comorbid lifetime eating problems and mood and anxiety disorders, Canada 2002

Main problem	Comorbid problem	Prevalence, %	CV	95% Confidence Interval	
				Lower	Upper
Eating problems	Major depression	30.99	8.82	25.63	36.34
Eating problems	Mania	7.56	16.87	5.06	10.06
Eating problems	Panic	14.65	15.35	10.24	19.06
Eating problems	Social phobia	22.27	10.56	17.66	26.88
Eating problems	Agoraphobia	7.24	19.52	4.47	10.01
Eating problems	Mental disorder [A]	49.07	6.79	42.54	55.60
Eating problems	Mood disorder [B]	33.15	8.50	27.62	38.67
Eating problems	Anxiety disorder	33.86	8.61	28.14	39.57
Major depression	Eating problems	4.33	9.44	3.53	5.14
Mania	Eating problems	5.46	17.48	3.59	7.32
Panic	Eating problems	6.87	15.88	4.73	9.01
Social phobia	Eating disorder	4.69	10.46	3.73	5.66
Agoraphobia	Eating problems	8.04	19.19	5.02	11.06

Mental disorder	Eating problems	4.14	7.56	3.52	4.75
Mood disorder	Eating problems	4.25	9.13	3.49	5.01
Anxiety disorder [C]	Eating problems	5.10	8.77	4.23	5.98

CV, Coefficient of variation

[A] Mental disorder includes major depression, mania, panic, social phobia, and agoraphobia.

[B] Mood disorder includes major depression and mania.

[C] Anxiety disorder includes panic, social phobia, and agoraphobia.

Table 3 Multivariate logistic regression for lifetime Eating problems and mood and anxiety disorders

Factors	Categories	Eating problems		Major depression		Mood and anxiety disorders		Mood disorders		Anxiety disorders	
		OR	95%CI	OR	95%CI	OR	95%CI	OR	95%L	OR	95%CI
Age	15-25	-[A]	-[A]	1		1		1		1	
	26-45	-[A]	-[A]	1.24	1.05-1.47	1.13	0.99-1.30	1.17	0.99-1.38	1.12	0.95-1.33
	46-60	-[A]	-[A]	1.22	1.01-1.47	1.12	0.96-1.31	1.14	0.95-1.37	1.12	0.92-1.37
	61+	-[A]	-[A]	0.64	0.50-0.81	0.54	0.45-0.64	0.57	0.44-0.72	0.55	0.44-0.69
Gender	Males	1		1		1		1		1	
	Females	5.29	3.73-7.50	1.66	1.49-1.86	1.47	1.35-1.61	1.54	1.38-1.71	1.30	1.16-1.45
Marriage	Married/Common law	1		1		1		1		1	

	Single	1.38	0.98-1.93	1.15	1.00-1.32	1.14	1.01-1.29	1.15	0.99-1.32	1.16	1.00-1.34
	Widowed, separated, divorced	0.68	0.51-0.91	1.78	1.54-2.06	1.61	1.42-1.82	1.88	1.64-2.16	1.17	1.00-1.36
Education	Post-secondary graduation	-[A]	-[A]	1		1		1		-[A]	-[A]
	<Post-secondary education	-[A]	-[A]	0.98	0.81-1.17	1.06	0.92-1.22	1.00	0.84-1.19	-[A]	-[A]
	Secondary school graduation	-[A]	-[A]	0.80	0.69-0.93	0.88	0.79-1.00	0.82	0.71-0.94	-[A]	-[A]
	< Secondary school graduation	-[A]	-[A]	0.68	0.59-0.78	0.84	0.75-0.94	0.73	0.64-0.85	-[A]	-[A]
Birth place	Other	-[A]	-[A]	1		1		1		1	
	Canada	-[A]	-[A]	1.31	1.08-1.60	1.37	1.16-1.62	1.26	1.04-1.54	1.42	1.17-1.71
Place of living	Rural	1		1		-[A]	-[A]	1		-[A]	-[A]
	Urban	1.47	1.11-1.94	1.19	1.05-1.36	-[A]	-[A]	1.17	1.03-1.33	-[A]	-[A]
Employment	Full employed	-[A]	-[A]	1		1		1		1	

	Part employed	-[A]	-[A]	1.18	1.03-1.36	1.23	1.10-1.37	1.20	1.06-1.37	1.25	1.10-1.42
	Unemployed	-[A]	-[A]	1.16	0.99-1.36	1.10	0.97-1.26	1.12	0.96-1.30	1.05	0.90-1.21
Ethnicity	Others	-[A]	-[A]	1		1		1		1	
	Caucasian	-[A]	-[A]	1.61	1.28-2.03	1.55	1.28-1.89	1.58	1.27-1.97	1.41	1.14-1.75
Chronic	No	1		1		1		1		1	
condition	Yes	1.78	1.26-2.50	1.82	1.58-2.09	1.68	1.50-1.88	1.83	1.60-2.10	1.55	1.36-1.78
Self-perceived	No	1		1		1		1		1	
stress	A bit	1.49	1.06-2.09	1.23	1.06-1.42	1.34	1.21-1.48	1.22	1.07-1.40	1.45	1.27-1.64
	Extremely	2.17	1.58-2.97	1.88	1.62-2.19	2.06	1.80-2.35	1.90	1.64-2.20	2.05	1.75-2.41
Self-perceived	Good	1		1		1		1		1	
mental health	Fair	1.29	0.95-1.75	1.84	1.64-2.06	1.73	1.55-1.94	1.84	1.64-2.05	1.72	1.53-1.93

	Poor	2.62	1.84-3.73	4.93	4.18-5.81	4.63	3.94-5.43	5.02	4.27-5.90	4.15	3.49-4.93
Self-perceived	Good	-[A]	-[A]	-[A]	-[A]	1		-[A]	-[A]	-[A]	-[A]
physical health	Fair	-[A]	-[A]	-[A]	-[A]	1.02	0.92-1.14	-[A]	-[A]	-[A]	-[A]
	Poor	-[A]	-[A]	-[A]	-[A]	1.17	1.01-1.36	-[A]	-[A]	-[A]	-[A]
	Strong	-[A]	-[A]	1		1		1		-[A]	-[A]
	Somewhat strong	-[A]	-[A]	0.88	0.73-1.07	0.92	0.79-1.06	0.91	0.75-1.08	-[A]	-[A]
Belonging to	Somewhat weak	-[A]	-[A]	0.95	0.77-1.15	1.07	0.92-1.25	0.97	0.81-1.17	-[A]	-[A]
local	Very weak	-[A]	-[A]	1.23	1.00-1.53	1.22	1.03-1.44	1.23	1.01-1.50	-[A]	-[A]
Life	Satisfied	-[A]	-[A]	1		1		1		1	
satisfaction	Acceptable	-[A]	-[A]	1.27	1.10-1.46	1.56	1.39-1.75	1.35	1.18-1.54	1.63	1.41-1.89
	Dissatisfied	-[A]	-[A]	1.76	1.48-2.10	1.80	1.51-2.15	1.77	1.49-2.09	1.70	1.40-2.07

OR, odds ratio; CI, Confidence interval

-[A] for variables not included in the final model

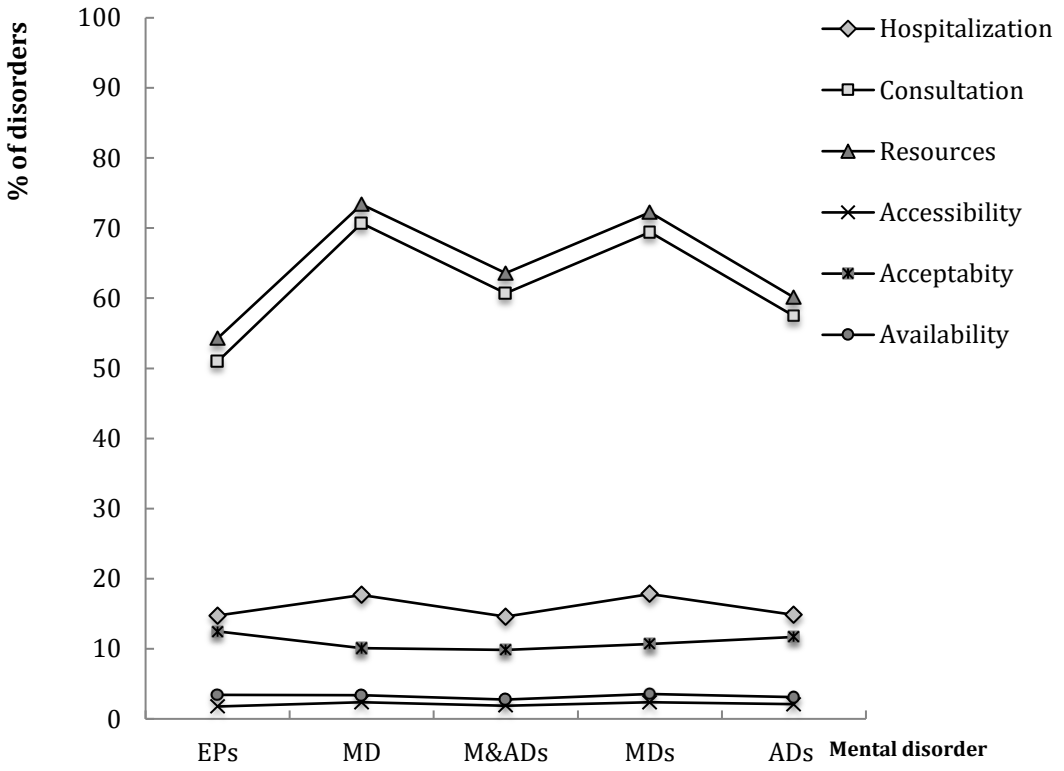

Figure 1. Mental health utilization and unmet health needs of lifetime eating problems (EPs), major depression (MD), mood and anxiety disorders (M&ADs), mood disorders (MDs), and anxiety disorders (ADs), Canada 2002

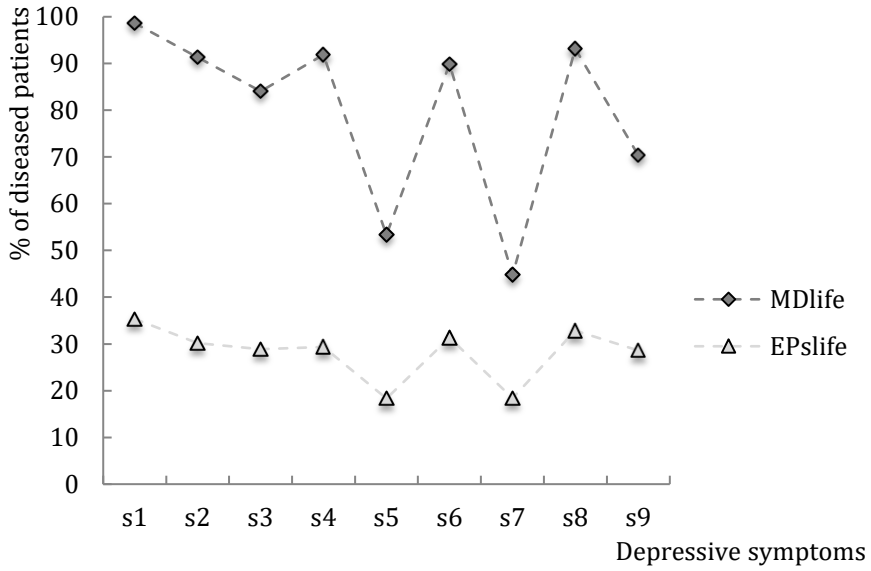

Figure 2. Comparison of depressive symptoms patterns: lifetime eating problem (EPs) and major depression (MD), Canada 2002

Note. s1=depressed mood; s2= diminished interests or pleasures; s3= significant weight changes; s4= insomnia or hypersomnia; s5= psychomotor agitation or retardation; s6= fatigue or loss of energy; s7= feelings of worthlessness; s8= loss concentration; s9=recurrent thoughts of death.