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by Saeeda Khan

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Concurrent mental and substance use disorders in Canada

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Abstract

Based on results of the 2012 Canadian Community Health Survey–Mental Health, 1.2% of Canadians aged 15 to 64 (an estimated 282,000) experienced mental and substance use disorders concurrently in the previous year (at least one mood/anxiety disorder and one substance use disorder). Demographic, socioeconomic, health status and service use characteristics of the concurrent disorder group were compared with those of people who had only a mood/anxiety disorder or only a substance use disorder. Those with concurrent disorders had consistently poorer psychological health and higher use of health services and were more likely to report partially met/unmet needs than the substance use disorder group, even when demographic and socioeconomic factors and number of chronic health conditions were taken into account. Apparent similarities in health status, service use and partially met/unmet needs between the concurrent disorders and mood/anxiety disorder groups did not persist in multivariate analysis. The findings suggest that the complexity of concurrent disorders contributes to poorer psychological health outcomes and higher health service use, compared with having only a mood/anxiety disorder or a substance use disorder.

Keywords: Anxiety disorder, health status, mental health, mood disorder, service use

Concurrent disorders, also known as dual diagnosis or dual disorder, typically refer to the simultaneous occurrence of a mental and a substance use disorder.[1,2] Individuals with concurrent disorders often experience poorer physical health[3] and greater psychological distress[4] than do people with a single disorder. They may also receive less-than-optimal health care.[5] The complex health care needs of this subpopulation can result in long hospital stays, high readmission rates, and increased health care costs.[6-8]

The dual nature of concurrent disorders can trigger a self-perpetuating cycle that contributes to poor outcomes, including a high risk of relapse if the disorders are not treated simultaneously.[6,7] Integrating the delivery systems to treat concurrent mental health and substance use problems is a recognized challenge.[5,7,8,9]

While the disorders that most commonly co-occur are mood/anxiety and substance use disorders,[2] many other groupings have been examined—for instance, substance use with psychoses or with eating or gambling disorders.[2] This makes it difficult to trace prevalence rates across time, and can result in underestimation of the overall prevalence of concurrent disorders.[10]

Much of the literature has relied on older data[11,12] and examined lifetime rather than past 12-month measures, which increases the probability that the disorders were not present at the same time. More recent analyses[1,4,13] that focused on past 12-month disorders used the 2002 Canadian Community Health Survey Mental Health and Well-being, which collected information on a selection of mental disorders different from those in the present analysis.

This study is the first to use the 2012 Canadian Community Health Survey–Mental Health to examine the demographic and socioeconomic characteristics, health status and health care service use of people with concurrent disorders, compared with people who had a mood/anxiety or a substance use disorder only (see *The data*). Respondents with concurrent disorders were defined as those who, in the past 12 months, had at least one mood/anxiety disorder and at least one substance use disorder. The mood/anxiety disorders were major depressive episode, bipolar I/bipolar II disorder and generalized anxiety disorder. The substance use disorders were alcohol, cannabis and other drug abuse or dependence. Estimates were calculated for the household population aged 15 to 64 in the 10 provinces.

Prevalence (past 12-month) by disorder type

In 2012, an estimated 6.1% of the Canadian household population aged 15 to 64 had a mood/anxiety disorder in the previous year, and 3.8% had a substance use disorder (Table 1). An additional 1.2% (282,000) experienced concurrent mood/anxiety and substance use disorders, an estimate similar to the 1.7% prevalence of concurrent disorders based on results of the 2002 CCHS Mental Health and Well-being,[1] which measured a slightly different range of mental illnesses.

The prevalence of concurrent disorders did not vary significantly by sex—1.4% of men and 1.1% of women. However, consistent with the literature,[1,13,14] women were more likely than men to have a mood/anxiety disorder (7.8% versus 4.5%), and substance use disorders were more common in men than women (5.8% versus 1.9%).

The prevalence of concurrent disorders and substance use disorders declined with advancing age, whereas the prevalence of mood/anxiety disorders peaked at ages 25 to 44.

Marital and socioeconomic status

People with concurrent disorders were significantly more likely than those with a mood/anxiety disorder to be single, and significantly less likely to be married (Table 2). The high percentage of single people among those with concurrent disorders is partially attributable to their younger age profile: 43% were aged 15 to 24, compared with 20% of people with a mood/anxiety disorder.

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Table 1

Prevalence of past 12-month concurrent, mood/anxiety and substance use disorders, by sex and age group, household population aged 15 to 64, Canada excluding territories, 2012

	Concurrent disorders[†]				Mood/Anxiety disorders only				Substance use disorder only			
	Estimated number '000	%	95% confidence interval		Estimated number '000	%	95% confidence interval		Estimated number '000	%	95% confidence interval	
			from	to			from	to			from	to
Total	282	1.2	1.0	1.5	1,434	6.1	5.7	6.7	898	3.8	3.5	4.3
Sex												
Male	158	1.4	1.1	1.7	523	4.5*	3.9	5.1	679	5.8*	5.1	6.6
Female[‡]	124	1.1	0.8	1.4	912	7.8	7.0	8.7	219	1.9	1.6	2.3
Age group (years)												
15 to 24[‡]	120	2.7	2.0	3.7	283	6.4	5.4	7.6	403	9.1	7.9	10.4
25 to 44	108	1.2*	0.9	1.6	612	6.6*	5.8	7.6	312	3.4*	2.8	4.1
45 to 64	53	0.6*	0.4	0.8	539	5.6*	4.9	6.3	183	1.9*	1.4	2.5

* significantly different from reference group (p < 0.05)
† major depressive episode, bipolar I/bipolar II disorder and/or generalized anxiety disorder with alcohol, cannabis and/or other drug abuse or dependence
‡ reference group
Source: 2012 Canadian Community Health Survey—Mental Health.

Table 2

Demographic and socioeconomic characteristics, by mood/anxiety and substance use disorder status, household population aged 15 to 64, Canada excluding territories, 2012

Demographic and socioeconomic characteristics	Concurrent disorders[†]			Mood/Anxiety disorder only			Substance use disorder only		
	%	95% confidence interval		%	95% confidence interval		%	95% confidence interval	
		from	to		from	to		from	to
Sex									
Male	56.1	47.4	64.4	36.4*	32.3	40.7	75.6*	71.3	79.4
Female	43.9	35.6	52.6	63.6*	59.3	67.7	24.4*	20.6	28.7
Age group (years)									
15 to 24	42.7	33.1	52.9	19.7*	16.9	23.0	44.9	39.5	50.3
25 to 44	38.4	29.2	48.5	42.7	38.5	46.9	34.8	30.0	39.9
45 to 64	19.0	13.8	25.5	37.6*	33.7	41.6	20.3	15.7	26.0
Marital status									
Married/Common-law	26.9[E]	19.0	36.5	45.6*	41.5	49.7	34.7	29.0	40.9
Widowed, separated, divorced	12.1[E]	8.2	17.3	15.7	12.6	19.4	3.7*	2.6	5.3
Single, never married	61.0	51.2	69.9	38.4*	34.5	42.5	61.5	55.4	67.1
Highest level of household education									
Secondary school graduation or less	20.5[E]	13.8	29.2	15.2	12.7	18.1	18.0	14.3	22.4
At least some postsecondary	69.2	59.4	77.6	76.1	72.5	79.4	73.7	68.8	78.1
Employment status									
Employed	59.6	50.3	68.3	52.1	48.1	56.2	72.8*	68.1	77.0
Unemployed	33.7	25.7	42.8	37.3	33.3	41.4	24.3	20.4	28.7
Not in labour force	6.5[E]	4.0	10.5	10.3	8.0	13.1	F	...	...
Household income adequacy quintile[‡]									
1 and 2 (lowest)	53.0	43.6	62.2	53.2	48.9	57.4	35.1*	30.3	40.2
3 (middle)	18.9[E]	12.5	27.5	18.1	15.1	21.4	17.8	14.1	22.3
4 and 5 (highest)	28.1	20.1	37.8	28.8	25.2	32.6	47.1*	41.5	52.7

... not applicable
E use with caution
F too unreliable to be published
* significantly different from concurrent disorders (p < 0.05)
† major depressive episode, bipolar I/bipolar II disorder and/or generalized anxiety disorder with alcohol, cannabis and/or other drug abuse or dependence
‡ based on ratio of household income to low-income cut-off
Source: 2012 Canadian Community Health Survey—Mental Health.

The distributions by household education, employment and household income status of individuals with concurrent disorders and of those with a mood/anxiety disorder did not differ significantly. By contrast, compared with people who had a substance use disorder, lower percentages of those with concurrent disorders were employed or in the top two household income adequacy quintiles, and a higher percentage were in the bottom two household income quintiles.

Physical and psychological health

An estimated 29% of people with concurrent disorders reported that they had at least two chronic conditions (Table 3). This was significantly below the percentage among those with a mood/anxiety disorder (39%), but significantly above the estimate for those with a substance use disorder (13%).

Similar percentages of people with concurrent disorders or a mood/anxiety disorder perceived their health to be fair or poor (35% and 37%); the figure among those with a substance use disorder was significantly lower (17%). Mood/Anxiety disorders and substance use disorders have been shown to be bidirectionally associated with chronic conditions.[15,16] The presence of a chronic condition can precipitate a mood/anxiety or a substance use disorder, while some chronic conditions can be triggered by a mood/anxiety disorder or a substance use disorder.[17-19]

Individuals with concurrent disorders were significantly more likely than those with a substance use disorder to perceive their mental health to be fair or poor (53% versus 9%) and to report high life stress (51% versus 22%). Differences between the perceived mental health and life stress of the concurrent disorders and mood/anxiety disorder groups were not significant.

Fully 91% of those with concurrent disorders reported high psychological distress, significantly above the percentages among those with a mood/anxiety (79%) or a substance use (34%) disorder.

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Service use

Individuals with concurrent disorders (76%) were more likely than those with only a mood/anxiety (67%) or substance use disorder (21%) to have received help for their emotions, mental health or substance use in the past 12 months (Table 4). This was generally the case for both formal and informal consultations, except that the percentages of the concurrent disorders and mood/anxiety disorder groups reporting formal sources did not differ significantly.

Despite the high percentages who reported health care consultations, 39% of those with concurrent disorders perceived that they had an unmet or only partially met need for mental health care. This was four times the figure for people with a substance use disorder (10%), but not statistically different from the figure for those with a mood/anxiety disorder (32%). Similarly, an earlier study showed higher odds of unmet needs among people with concurrent disorders, when service use, socio-demographic characteristics, psychological distress, and mental health status were taken into account.[4]

Multivariate regression

Even with adjustments for the effects of age, sex, marital status, household education, employment status, household income and the number of chronic conditions, the analysis revealed significantly poorer self-perceived mental health and higher psychological distress among individuals with concurrent disorders, compared with those who had only a mood/anxiety disorder or a substance use disorder (Table 5). These results confirm findings from the descriptive analysis (Table 3).

As well, when socio-demographic factors and chronic conditions were taken into account, individuals with concurrent disorders had significantly higher odds of health service use and higher odds of partially met or unmet health care needs than did people with only a mood/anxiety or a substance use disorder. Again, the results confirm findings from the descriptive analysis (Table 4).

Table 3

Physical and psychological health status, by mood/anxiety and substance use disorder status, household population aged 15 to 64, Canada excluding territories, 2012

Physical and psychological health indicators	Concurrent disorders[†]			Mood/Anxiety disorder only			Substance use disorder only		
	%	95% confidence interval		%	95% confidence interval		%	95% confidence interval	
		from	to		from	to		from	to
Chronic physical conditions[‡]									
None	36.1	27.9	45.2	33.4	29.7	37.4	61.5*	55.9	66.9
One	34.9	26.7	44.0	27.6	23.7	32.0	25.0	20.4	30.3
Two or more	29.1	21.5	38.0	38.9*	35.1	42.9	13.4*	10.4	17.2
Self-perceived physical health									
Excellent/Very good (high)	28.5	21.5	36.6	28.9	25.2	32.9	47.6*	42.3	52.9
Good	36.7	28.1	46.2	34.1	30.5	38.0	35.8	31.1	40.7
Fair/Poor (low)	34.8	26.0	44.8	36.8	32.8	41.0	16.6*	12.8	21.3
Self-perceived mental health									
Excellent/Very good (high)	15.9[E]	10.7	23.0	19.4	16.1	23.2	50.8*	45.8	55.8
Good	31.6	23.4	41.1	32.2	28.4	36.1	40.1	35.0	45.5
Fair/Poor (low)	52.5	43.6	61.2	48.4	44.3	52.6	9.0*	6.8	11.8
Self-perceived life stress									
Not at all/Not very stressful (low)	9.1[E]	5.7	14.2	11.4	8.9	14.5	33.6*	28.5	39.1
A bit stressful	39.6	30.9	49.1	37.6	33.8	41.6	44.6	39.5	50.0
Quite a bit/Extremely stressful (high)	51.2	41.6	60.7	50.9	46.8	54.9	21.7*	17.3	27.0
Psychological distress score[§]									
High distress	90.6	84.6	94.4	79.1*	75.8	82.1	33.7*	29.0	38.8

[E] use with caution
* significantly different from concurrent disorders (p < 0.05)
[†] major depressive episode, bipolar I/bipolar II disorder and/or generalized anxiety disorder with alcohol, cannabis and/or other drug abuse or dependence
[‡] diabetes, asthma, arthritis, back problems excluding fibromyalgia or arthritis, migraine, chronic bronchitis/emphysema/COPD, epilepsy, heart disease, high blood pressure, cancer, efforts of stroke, bowel disorder/Crohn's disease, Alzheimer's disease or other dementia, chronic fatigue syndrome, or multiple chemical sensitivities
[§] based on 10-item Kessler pscyhological distress score (ranging from 0 to 40), with higher scores indicating greater distress; 9 or more indicated high distress
Source: 2012 Canadian Community Health Survey—Mental Health.

Table 4

Health service use and perceived health care needs, by mood/anxiety and substance use disorder status, household population aged 15 to 64, Canada excluding territories, 2012

Service use and perceived health care needs	Concurrent disorders[†]			Mood/Anxiety disorder only			Substance use disorder only		
	%	95% confidence interval		%	95% confidence interval		%	95% confidence interval	
		from	to		from	to		from	to
In past 12 months:									
Received help[‡]	75.5	67.1	82.3	66.5*	62.3	70.6	21.0*	17.4	25.2
Formal consultation[§]	64.9	55.8	73.0	59.2	54.9	63.4	16.2*	12.8	20.2
Informal consultation[††]	78.2	70.5	84.3	64.4*	60.2	68.3	31.2*	26.9	35.9
Perceived health care needs									
None	12.0[E]	7.2	19.3	23.6*	20.2	27.4	74.9*	70.5	78.9
All needs met	44.4	35.4	53.7	42.2	37.9	46.7	14.9*	11.9	18.5
Partially met or not met	39.3	31.2	48.1	32.1	28.2	36.3	9.6*	7.3	12.7

[E] use with caution
* significantly different from concurrent disorders (p < 0.05)
[†] major depressive episode, bipolar I/bipolar II disorder and/or generalized anxiety disorder with alcohol, cannabis and/or other drug abuse or dependence
[‡] information, medication, counselling or therapy for problems with emotions, mental health or use of alcohol or drugs
[§] psychiatrists, family doctors and general practitioners, psychologists, nurses or social workers/counselors/psychotherapists
[††] family, friends, co-workers/supervisors/bosses, teachers/school principals, employee assistance programs, internet resources, self-help groups, telephone help-lines or others
Source: 2012 Canadian Community Health Survey—Mental Health.

Table 5

Adjusted odds ratios relating self-perceived health status and service use to mood/anxiety and substance use disorder status, household population aged 15 to 64, Canada excluding territories, 2012

Self-perceived health status, service use in past 12 months, and mood/anxiety and substance use disorder status	Adjusted† odds ratio	95% confidence interval	
		from	to
Physical health (fair/poor versus good/very good/excellent)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.90	0.51	1.57
Substance use disorder only	0.61	0.32	1.14
Mental health (fair/poor versus good/very good/excellent)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.58*	0.37	0.92
Substance use disorder only	0.10*	0.05	0.17
Life stress (quite a bit/extremely versus a bit/not very/not at all)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.78	0.51	1.21
Substance use disorder only	0.34*	0.21	0.56
Psychological distress§ (high versus not high)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.37*	0.19	0.73
Substance use disorder only	0.06*	0.03	0.12
Received help†† (yes versus no)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.43*	0.25	0.75
Substance use disorder only	0.10*	0.06	0.17
Formal consultation‡‡ (yes versus no)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.61*	0.38	0.98
Substance use disorder only	0.13*	0.08	0.22
Informal consultation§§ (yes versus no)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.44*	0.26	0.74
Substance use disorder only	0.14*	0.08	0.23
Health care needs (partially/not met versus all needs met)			
Concurrent disorders‡	1.00	...	...
Mood/Anxiety disorder only	0.47*	0.30	0.74
Substance use disorder only	0.14*	0.08	0.24

... not applicable

* significantly different from concurrent disorders (p < 0.05)

† adjusted for age, sex, marital status, household education, employment status, household income adequacy quintile, and number of chronic conditions

‡ major depressive episode, bipolar I/bipolar II disorder and/or generalized anxiety disorder with alcohol, cannabis and/or other drug abuse or dependence

§ based on 10-item Kessler pscyhological distress score (ranging from 0 to 40), with higher scores indicating greater distress; 9 or more indicated high distress

†† information, medication, counselling or therapy

‡‡ psychiatrists, family doctors and general practitioners, psychologists, nurses or social workers/counselors/psychotherapists

§§ family, friends, co-workers/supervisors/bosses, teachers/school principals, employee assistance programs, internet resources, self-help groups, telephone help-lines or others

Source: 2012 Canadian Community Health Survey—Mental Health.

Conclusion

In 2012, an estimated 282,000 Canadians aged 15 to 64 (1.2%) had experienced both a mood/anxiety disorder and a substance use disorder in the previous year. The socio-demographic characteristics of this group set them apart from those with only a mood/anxiety disorder or a substance use disorder. As well, compared with the two latter groups, people with concurrent disorders had poorer psychological health, higher health service use, and were more likely to report partially met or unmet needs. These findings suggest that the complexity of concurrent disorders contributes to poorer psychological health status and higher service use, compared with having only a mood/anxiety disorder or a substance use disorder. ■

The data

Estimates were based on the cross-sectional 2012 Canadian Community Health Survey–Mental Health (CCHS-MH), which collected information on lifetime and 12-month prevalence of selected mental health and substance use disorders. The CCHS-MH was conducted from January through December in 2012, with a response rate of 68.9%. It excluded residents of institutions, the territories, reserves and other Aboriginal settlements, and full-time members of the Canadian Forces.

The use of survey sampling weights ensured that the results were representative of the Canadian population. To address the complex survey design, bootstrap weights were applied to obtain reliable variance estimates (95% confidence intervals).[20] Multivariate logistic regression was used to analyze associations between disorder groups and health status and service use.

The analysis pertains to the household population aged 15 to 64 who had a mood/anxiety disorder and/or a substance use disorder in the past 12 months. Because of missing information on these disorders, 41 respondents were excluded. The final study sample of 2,460 included 267 people with concurrent disorders, weighted to represent an estimated population of 282,000.

Mood/Anxiety and substance use disorders were identified using a modified version of the World Health Organization Composite International Diagnostic Interview 3.0 (WHO-CIDI) past 12-month measures,[21] which had been developed and validated for the 2012 CCHS-MH.[22]

Highest level of household education was grouped into two categories: secondary graduation or less versus at least some postsecondary. Employment status indicated whether respondents had been employed, unemployed, or not in the labour force during the two weeks before the interview. Income adequacy quintiles of the ratio of household income to the low-income cut-off[23] were grouped into three categories: lowest two, middle, and highest two.

Physical conditions diagnosed by a health professional, which had lasted six months or more, were summed and categorized as 0, 1, or at least 2 chronic conditions. The conditions were: diabetes, asthma, arthritis, back problems excluding fibromyalgia or arthritis, migraine, chronic bronchitis/emphysema/COPD, epilepsy, heart disease, high blood pressure, cancer, effects of stroke, bowel disorder/Crohn's disease/colitis, Alzheimer's disease or other dementia, chronic fatigue syndrome, and multiple chemical sensitivities.

Three groups were defined for self-perceived physical health and mental health: excellent/very good (high), good, and fair/poor (low). Self-perceived life stress was categorized into three groups: not at all/not very stressful (low), a bit stressful, and quite a bit/extremely stressful (high). Psychological distress was measured using the 10-item Kessler Psychological Distress Scale,[24] which ranges from 0 to 40, with higher scores indicating greater distress; scores of 9 or more identified high distress.[14]

Help in the past 12 months comprised information, medication, counselling or therapy for problems with emotions, mental health, or use of alcohol or drugs. *Formal* help referred to psychiatrists, family doctors and general practitioners, psychologists, nurses, and social workers/counselors/psychotherapists. *Informal* help referred to family members, friends, co-workers/supervisors/bosses, teachers/school principals, employee assistance programs, internet resources (online diagnoses, finding help, discussing with others/online therapy/other), self-help groups, telephone help-lines, and others.

Perceived need for mental health care in the past 12 months was categorized as: no perceived need, all needs met, or needs partially/not met. Specific needs were for: information, medication, counselling, and/or other help.

The results of this study should be considered in the context of several limitations. The information was self-reported and has not been verified. Moreover, the WHO-CIDI is not a clinical diagnosis. Because the mood/anxiety disorder and substance use disorder occurred during the same 12-month period, it was assumed that they were simultaneous; however, this was not necessarily the case. The prevalence rates are not comparable to the 2002 CCHS owing to differences in the disorders included and the instruments used to identify them. Prevalence rates of concurrent disorders are underreported because the 2012 CCHS-MH measured only certain mood/anxiety and substance use disorders and excluded others (for example, psychoses, eating and gambling disorders). The survey also excluded some populations among whom the prevalence of concurrent disorders may be high—people who are institutionalized, Aboriginal people living on reserves, and homeless individuals.[1,6,11]

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