REPORTING ON THE PREVALENCE OF DRUG AND ALTERNATIVE HEALTH PRODUCT USE FOR MENTAL HEALTH REASONS: RESULTS FROM A NATIONAL POPULATION SURVEY

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ABSTRACT

Background
Concomitant use of alternative health products with commonly prescribed medications has been associated with elevated risks of adverse effects.

Objective
The aim of this study was to determine the prevalence and determinants of the use of alternative health products and psychotropic drugs in the same year for mental health reasons and to examine this for specific psychiatric and physical conditions.

Methods
This study used data from the Canadian Community Health Survey: Mental Health and Well-Being cycle 1.2 carried out by Statistics Canada in 2002 on 36,984 Canadians. Multivariate analyses were carried out to identify determinants of health product use.

Results
Overall, 13% of Canadians reported the use of alternative health products. Among respondents with a psychiatric diagnosis, heart disease, high blood pressure and diabetes the rate was 20.0%, 12.0%, 12.6% and 9.4% respectively. Use of alternative health products and psychotropic drugs within the same year was reported by 21.3%. Determinants of alternative health product use included older age, female sex, higher education, and mental disorder, the use of cardiovascular drugs, consulting a health care provider for mental health reasons and reporting an unmet mental health need. People with diabetes were less likely to be users.

Conclusions
Concomitant use of alternative health products and psychotropic drugs for mental health reasons are prevalent. This increases the risk for potential drug-herb interactions. Health professionals need to be aware of patient alternative health product use, especially in the presence of co-morbid mental and physical conditions. Public health campaigns aimed towards increasing awareness and education may incite discussions between health professionals and patients on the risks and benefits of these products.

Key Words: *Psychotropic drug use; health product use for mental health problems; concomitant use*

The consumption of herbal and natural products to treat chronic physical and mental illnesses such as anxiety and depression[1-4] has increased during the past decade on the belief that they are 'safe'.[5,6] This is not the case. Recent reviews in the U.S. have associated the use of

alternative health products with adverse effects due to interactions with commonly prescribed medications.[7,8]

National surveys in the U.S., have reported a significant increase, from 33.8% in 1990 to 42.1% in 1997, in past year rates of alternative medicine use[1] and an increase in 12-month use ranging between 21.3% and 56.7% in respondents with a mental disorder.[2,3] In Canada, reports from the 2000-2001 National Population Health Survey (NPHS) showed a past 2-day prevalence of 9.3% in the general population for the use of a botanical or natural product.[9]

Studies have also shown that only about 30% of patients inform their family physicians about using vitamin supplements concurrently with prescription medications.[10-13] The patients' reasons for not informing their physicians included, believing it not to be sufficiently important, believing that the physician would not understand the reasons for their taking complementary and alternative medications, and fear of disapproval.[14-15] However, many physicians do not ask their patients about their herbal and vitamin supplement utilisation, nor do they always record the information that they are given by patients.[10,11] This may arise from the physician's beliefs or lack of knowledge about potential interactions of herbal preparations with medications.[15-17] The majority of these products are purchased in pharmacies; thus, increasing the role of the pharmacist in helping clients make safer choices regarding natural alternative health products used. Studies on Canadian pharmacists also showed that pharmacist knowledge of supplements is not adequate and that they also do not routinely document or ask clients about such product use[18]; and, the majority do not discuss potential drug-herb interactions with their clients.[19]

With the rise in chronic conditions in the aging population, and reports that 1 in five people are affected by a common mental disorder in their lifetime[20], the concomitant use of prescription drugs and alternative health products is expected to remain stable, if not rise. Further, the prevalence of drug interactions with alternative health products may increase, given the co-occurrence of common mental disorders with chronic conditions that are usually maintained with drug regimens. There is a need to better document the prevalence of alternative health product use for mental health problems among people with medical conditions and those using prescription drugs in the general Canadian population.

To our knowledge, no other recent study to date has reported on the past year prevalence of alternative health product use for mental health reasons with concomitant psychotropic drug use and co-morbid chronic conditions. The objectives of this study were to determine, using national survey data:

1) past year use of natural alternative health products for mental health reasons in the Canadian population,
2) who recommended the use of these products,
3) report the prevalence of use in people with various chronic diseases, and,
4) to identify determinants of use.

This study was carried out to help health professionals identify those most inclined to be users.

METHODS

Data

This study utilized cross-sectional data on health care resource use and the presence of mental disorders from the Canadian Community Health Survey: Mental Health and Well-Being cycle 1.2 (CCHS 1.2) carried out by Statistics Canada in 2002 on 36,984 adult Canadians. The CCHS 1.2 cross-sectional survey targeted the non-institutionalized adult population not living in Aboriginal reserves or remote northern communities, and included individuals aged 15 years and over. Approaches to random sampling varied slightly, but all included a stratified, multistage, clustered area sample design. The overall response rate for the CCHS 1.2 in Canada was 77%. More details about the CCHS 1.2 content and methods are presented elsewhere.[21]

Past Year Alternative Health Product use for Mental Health Reasons

The main outcome variable of interest in this study was the past year use of an alternative health product for mental health reasons was ascertained with a 'yes' or 'no' response to the

following question: "*Many people use other health products such as herbs, minerals or homeopathic products for problems with emotions, alcohol use, etc. In the past 12 months, have you used any of these health products?*" The survey also captured whether a professional recommended the use of these health products.

The Presence of Disorders and Chronic Conditions

This current study was limited to past year presence of any of the following common mental disorders: major depressive episode, anxiety disorder (i.e. agoraphobia, social phobia, and panic disorder), alcohol abuse or dependence. The presence of a disorder was assessed using the WMH-CIDI[22], a fully structured diagnostic interview based on DSM-IV criteria.[23] The presence of an unmet mental health need in the past year was also considered. The presence of a chronic condition was also collected. This was defined as the presence of a long term condition (high blood pressure, any heart disease and diabetes) lasting more than 6 months that has been diagnosed by a health professional. The use of psychotropic medication (anxiolytics, mood stabilizers, antidepressants, stimulants, and antipsychotics) in the past year; and the use cardiovascular drugs in the last two days was also considered.

Statistical Analyses

Logistic regression was used to model alternative health product use for mental health reasons as a function of the presence of a common mental disorder, a reported unmet mental health need, and the use of a psychotropic drug while also considering the presence of a chronic condition such as high blood pressure, heart disease, diabetes, the presence of a cardiovascular drug, age, sex, marital status, education, income (total adjusted for the number of people living in household), consulting a health care provider for mental health reasons in the past year, and the presence of insurance that covers all or part of the cost of prescription medications. The multivariate model presented includes variables that significantly explained alternative health product use in the bivariate analyses. Multicollinearity among the variables was not observed. Estimates and 95% confidence interval were obtained from the BOOTVAR program developed by Statistics Canada.[24] Estimates of prevalence rates and 95% CIs presented are weighted. Differences in proportions were assessed using chi-square statistics. Data were analysed using SAS™ software version 8 of the SAS System.

RESULTS

The characteristic of the study sample and the associations between alternative health product uses are presented in Table 1. Overall, the results show that 13.3% (95% CI: 12.9% - 30.4%) of Canadians reported having used products such as herbs, minerals or homeopathic products for mental health problems in the past year. Among respondents with a common mental disorder, the rate reached 20.0% (95% CI: 18.9 – 21.1%). Among Canadians having used these products in the past year, 28.5% (95% CI: 26.7% – 30.4%) reported that these products were recommended by a health professional. Among the professionals listed, over half [51.4%, (95% CI: 47.6% – 55.2%)] of respondents reported that a family doctor / GP recommended the use of these products (*see Figure 1*).

Overall, the most widely used products were vitamins [62.6%, (95% CI: 60.6% – 64.6%)], followed by any other product [40.0%, (95% CI: 38.0% – 42.0%)], ginseng [14.0%, (95% CI: 12.5% – 15.6%)], chamomile [13.1%, (95% CI: 11.7% – 14.6%)], gingko biloba [11.2%, (95% CI: 10.0% – 12.5%)] and St-John's wort [8.4%, (95% CI: 7.3% – 9.6%)] (*see Figure 2*). The use of alternative health products among respondents with a common mental disorder, heart disease, high blood pressure or diabetes is presented in figure 2. These conditions have also been found to be highly co-morbid with common mental disorders: 10.4%, 8.6%, and 9.0%, respectively

TABLE 1 Canadian population reporting the use of alternative health products, their demographic and clinical characteristics

		Total sample distribution		Use of health products (N=4908; 13.3%)		
		N	**%**	**N**	**%**	**p value***
Sex	Male	18178	49.2%	1923	10.6%	<0.0001
	Female	18806	50.8%	2986	15.9%	
Age	≤ 19 years versus	3290	8.9%	289	8.8%	<0.0001
	20-39 years	12637	34.2%	1758	13.9%	
	40-59 years	13480	36.5%	1931	14.3%	
	60 years +	7577	20.5%	930	12.3%	
Education	Less than secondary or Secondary	16274	44.4%	1775	10.9%	<0.0001
	Some post secondary or Post secondary	20354	55.6%	3099	15.2%	
Income	Low (1st , 2nd quintiles) versus	3402	10.2%	366	10.8%	<0.0001
	Middle (3rd , 4th quintile)	18994	56.8%	2514	13.2%	
	High (5th quintile)	11072	33.1%	1662	15.0%	
Marital status	Married/Common Law	22801	61.7%	3014	13.2%	0.67
	Single/divorced/ separated	14132	38.3%	1890	13.4%	
Consulted for a mental health reason, past year	Yes	3524	9.6%	854	24.2%	<0.0001
	No	33265	90.4%	4041	12.2%	
Medication insurance coverage	Yes	28133	76.1%	3900	13.9%	<0.0001
	No	8851	23.9%	1008	11.4%	
Presence of a common mental disorder	Yes	3721	10.4%	743	20.0%	<0.0001
	No	32186	89.6%	4000	12.4%	
Major Depression	Yes	1769	4.8%	381	21.6%	<0.0001
	No	35053	95.2%	4493	12.8%	
Anxiety	Yes	1719	4.8%	361	21.0%	<0.0001
	No	34328	95.2%	4387	12.8%	
Alcohol dependence	Yes	948	2.6%	161	17.0%	0.006
	No	4732	97.4%	4732	13.2%	
Psychotropic medication, past year	Yes	3484	9.5%	740	21.3%	<0.0001
	No	33319	90.5%	4167	12.5%	
Antidepressants	Yes	2151	5.8%	462	21.5%	<0.0001
	No	34656	94.2%	4446	12.8%	
Anxiolytics	Yes	2023	5.5%	442	21.9%	<0.0001
	No	34782	94.5%	4466	12.8%	
Mood stabilisers	Yes	409	1.1%	83	20.4%	<0.0001
	No	36380	98.9%	4820	13.3%	
Antipsychotics	Yes	133	0.4%	17	12.7%	0.82
	No	36671	99.6%	4890	13.3%	
Stimulants	Yes	120	0.3%	27	22.3%	0.004
	No	36688	97.7%	4880	13.3%	
Unmet mental health need	Yes	1677	4.5%	390	23.3%	<0.0001
	No	35161	95.5%	4514	12.8%	
Heart Disease	Yes	2013	5.4%	242	12.0%	0.09
	No	34971	94.6%	4667	13.3%	
High blood pressure	Yes	5478	14.8%	689	12.6%	0.10
	No	31506	85.2%	4219	13.4%	
Diabetes	Yes	1790	4.8%	168	9.4%	<0.0001
	No	35194	95.2%	4740	13.5%	
Cardiovascular drugs, past 2 days	Yes	1203	3.3%	243	20.2%	<0.0001
	No	35781	96.7%	4665	13.0%	

* p value for chi-square statistics for the difference in proportion of individuals regarding alternative health product use. Any mental disorder including the presence of major depression, anxiety, and or alcohol abuse/ dependence in the past year. Anxiety disorder such as the presence of agoraphobia, social phobia or panic disorder in the past year.

FIG. 1 Breakdown of health professionals recommending alternative health products among users.

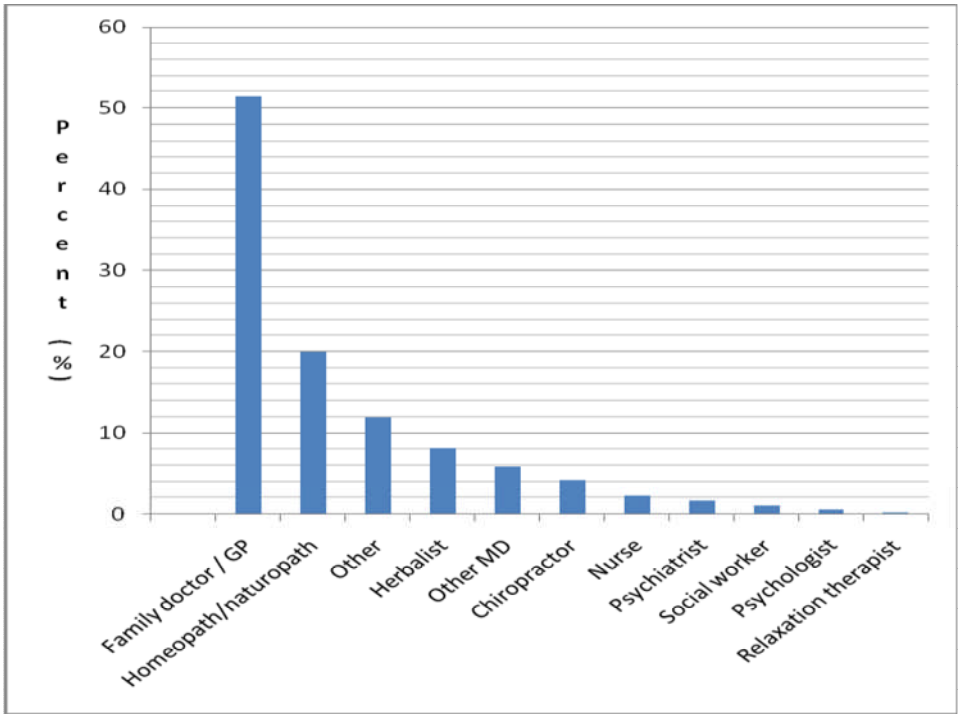
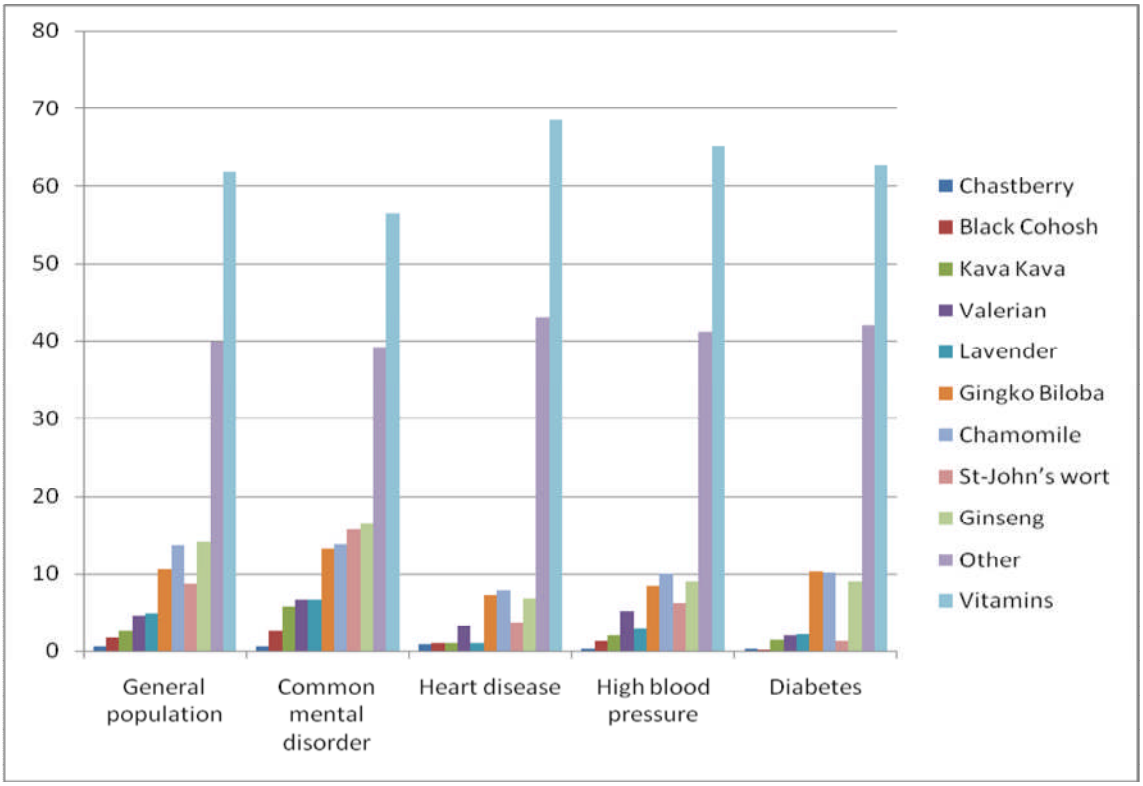


FIG. 2 Prevalence of alternative health product use in the general population and by mental health and chronic disease problem.



When looking at the concomitant use of psychotropic medications, the results show that 9.5% (95% CI: 9.2% – 9.8%) of Canadian respondents used anxiolytics, antidepressants, mood stabilizers, antipsychotics or stimulants in the past year. Among these psychotropic prescription users, 21.3% (95% CI: 19.8% - 22.6%) reported also having used alternative health products within that same year. Apart from vitamins and other products, St-John's wort was the most widely used followed by chamomile, ginseng and gingko biloba (Figure 3). The prevalence of alternative health product use was similar among respondents who also had a prescription for anxiolytics, antidepressants, or mood stabilizers (Figure 3).

FIG. 3 Prevalence of alternative health product and concomitant psychotropic and cardiovascular drug use.

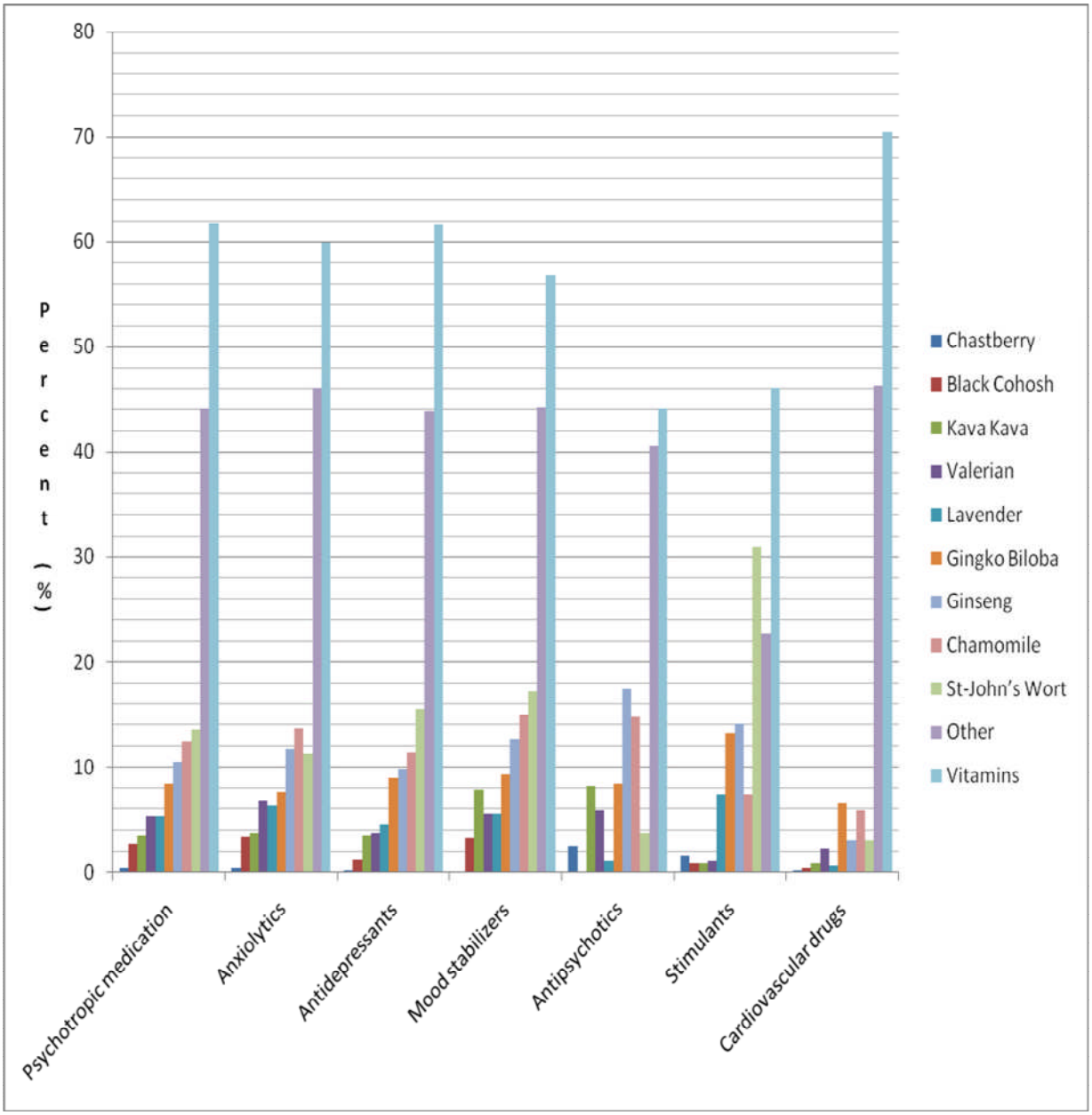


Table 2 presents the multivariate analysis of health product use. The following determinants of use were identified: older age, female sex, higher education and income; the presence of a common mental disorder (1.27 OR, 95% CI: 1.06 – 1.52), the use of cardiovascular drugs (1.42 OR, 95% CI: 1.07 – 1.90); reported unmet mental health need (1.49 OR, 95% CI: 1.18 – 1.88); consulting a health care provider for mental health reasons (1.78 OR, 95% CI: 1.48 – 2.13); and reported diabetes (0.70 OR, 95% CI: 0.51 – 0.94).

TABLE 2 Results of the multivariate analyses of past year use of alternative health products and determinants of use in Canadians.

	***Adjusted OR (95% CI)**
Age (dichotomous)	
≤ 19 years	REFERENCE
> 20 years	1.37 (1.06 – 1.77)
Sex (Female)	1.57 (1.40 – 1.76)
Education (dichotomous)	
Less than secondary / Secondary	REFERENCE
Some post secondary/ Post secondary	1.36 (1.21 – 1.53)
Income	
Low (1^{st} , 2^{nd} lowest quintiles)	0.64 (0.51 – 0.80)
Middle (3^{rd} , 4^{th} quintiles)	0.89 (0.79 – 1.00)
High (5^{th} highest quintile)	REFERENCE
Has insurance for prescription medication	1.15 (0.99 – 1.32)
Consulted for a mental health reason in past year	1.78 (1.48 – 2.13)
Unmet mental health need	1.49 (1.18 – 1.88)
Presence of a common mental disorder	1.27 (1.06 – 1.52)
Psychotropic drug use in the past year	1.16 (0.96 – 1.41)
Cardiovascular drug use in the past two days	1.42 (1.07 – 1.90)
Diabetes	0.70 (0.51 – 0.94)

** Odds Ratios presented are adjusted for all other variables presented in the model.

DISCUSSION

Results of this study, involving data analyses of a large representative Canadian sample, indicate that 13% of Canadians report the use of alternative health products for mental health reasons. Among respondents with a common mental disorder the rate increased to 20.0%, which is similar to reports published elsewhere.[2] Also, reported in this study, the past year prevalence of alternative health product use was 12.0%, 12.6% and 9.4% among respondents with heart disease, high blood pressure and diabetes, respectively. Among respondents reporting a prescription for a psychotropic medication and the use of a cardiovascular drug, the rates of use reached 21.3% and 20.2%, respectively. This study also shows that 28.5% of Canadians reported that the alternative health products used were recommended by a health professional and in over 50% of those cases products were recommended by a family doctor or GP.

The most common alternative health products used are ginseng, gingko biloba and St-John's wort, which have been reported as the top bestselling alternative health products.[25] These alternative health products however have also been associated with drug-herb adverse events in

individuals with cardiovascular disease, hypertension and diabetes.[5-8,26-34] Further, ginkgo biloba, used for memory and cardiovascular disease, has been found to interact with trazodone, a sedative and antidepressant[7,28] and with risperidone, an atypical antipsychotic drug.[7] The product kava-kava, used for anxiety disorders, has been associated with adverse interactions when concurrently taken with other sedatives.[4] Valerian, used to reduce anxiety and as a sleep-aid, has been reported to increase the sedative properties of lorazepam, and to interfere with selective serotonin reuptake inhibitors.[4,27,29,32]

The literature also shows that depressed individuals will often self-medicate with St. John's wort, which has been reported to be equivalent to antidepressants in the short-term treatment of mild to moderate major depressive disorder.[35] St. John's wort is reported to, overall, cause the most adverse interactions of all health remedies with various prescription medications due to its effect on drug metabolism via induction of the hepatic cytochrome P450 system.[36] Studies have shown that St. John's wort interacts with various SSRIs to produce a central serotonin syndrome.[37-39] The consumption of St. John's wort for depression can also reduce levels of oral contraceptives[40], digoxin[41], cyclosporine[42,43], and HIV protease inhibitors[44] to produce adverse drug reactions such as mania, hypomania, phototoxicity, and cardiovascular collapse.

Determinants of health product use for mental health reasons included the presence of a common mental disorder, which was positively associated with use; whereas, the presence of diabetes was negatively associated with use. The findings did not show respondents with a prescription for a psychotropic medication to be less likely to use alternative health products; however, respondents using cardiovascular drugs were more likely to use alternative health products during the same year. As was seen, St-John's wort and gingko biloba were used and this raises concerns regarding concomitant use and the possibility of herb-drug interactions as previously described. Also noteworthy, respondents reporting an unmet mental health need were more likely to use alternative health products for their mental health. Another interesting finding is that people who consulted with a health care provider during the year for a mental health reason were more likely to use an alternative health product. This goes against the idea that people who consult for their mental health problems, and are more likely to receive a prescription, would be less likely to use over the counter products or inversely, people who do not consult are more likely to use alternative health products.

Further, in this study, respondents with insurance for a prescription medication were not significantly more likely to use alternative health products. In contrast, a study conducted by Strum & Sherbrourne (2001) showed higher use of alternative medication among respondents not having insurance and having long delays in receiving medical therapy.[45] In a more recent study focusing on bipolar disorder, Perron et al. (2009) did not find an association between insurance or access to services and the use of alternative medication use.[46]

In our study, more education and a higher income were more likely associated with the use of alternative health products for mental health reasons. In the NHPS study, the use of alternative health products and supplements for physical ailments was not restricted by personal income or education levels.[9] It was estimated that 23% of alternative health products and supplements are consumed by people over 50 years of age.[6,9] In our study, for mental health reasons, this estimate reached 12.3% for respondents over 60 years of age. These important observed prevalence rates in Canada are of great relevance given that older age is associated with increased drug interactions because seniors consume more drugs and they metabolize and excrete drugs more slowly. In a study of 86 community-dwelling elderly women, women that were taking up to eight prescription medications were also consuming up to 11 alternative health products on a regular basis, and of great concern is that they only reported a third of their total consumption of alternative health products to their physicians.[47] Another study of the elderly showed that up to one-third were at risk for potential interactions.[48]

Although our results are based on a large representative sample of the Canadian population, they bear some limitations. Analyses were based on data collected from the CCHS 1.2, which excluded people living in the Territories and residing in institutions and group homes. The results from our study may therefore not apply to

these groups that tend to have more complex mental health problems and different patterns of mental health service use. Further, the study sample surveyed included people between the age of 15 and 18, which may exhibit different patterns of alternative health product use with respect to mental illnesses than the older population. Our results were based on self reported data, which may be subject to recall bias and a social desirability bias. Also, participation in the survey was voluntary and may under- or over represent people with mental illness. Further, given the fact that the question framed for each specific type of alternative herbal product used did not reiterate the statement 'for mental health reasons' it is possible that we are overestimating the use for emotional reasons. The data collected in this study were cross-sectional in nature and it is not possible to confirm the simultaneous use of both medications and alternative health products but only the possible risk of this. Further, alternative health products used were collected for the past 12 months; whereas, the use of cardiovascular drugs was assessed in the last two days limiting our conclusions with regards to concomitant use. It is also not possible, given the data, to ascertain temporal relationships between health product use for mental health reasons and unmet mental health needs, the presence of mental health problems, and psychotropic and service use. It is not possible, for instance, to determine whether the use of alternative health products was a consequence from dissatisfaction with mental health services received.

CONCLUSION

Alternative health products such as herbs, teas and supplements are widely used for common mental disorders and not uncommonly people using these products have received a recommendation from their family physician or GP. Concerns dissipate when one observes that the most common alternative health products used are vitamin supplements. The most troublesome possible interactions regard St-John's wort, widely used for depression, and protease inhibitors and warfarin for cardiovascular problems. Future research should focus on obtaining recent data on actual simultaneous use and interactions between these products and commonly used drugs. The majority of alternative health products are bought in pharmacies. Considering that these health professionals are the most widely consulted, not only for chronic conditions, but also for common mental disorders such as depression and anxiety, as well as the main prescribers for most medications, it is of great importance that family physicians/GPs, pharmacists and other health professionals be educated in the potential interactions of prescription and non-prescription medications with alternative health products and supplements. Further, public health campaigns aimed towards increasing awareness and discussion between health professionals and patients on the risks of alternative health products use will surely lead to a decrease in fatal adverse events related to the concomitant use of these products and prescription medications for mental health reasons among people with co-morbid chronic conditions.

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