Gender differences in mental health service utilization among respondents reporting depression in a national health survey

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ABSTRACT

This study examined whether people who self-reported depression sought mental health treatment in the year after being interviewed, and how gender affected utilization. Depression data were obtained from the Canadian Community Health Survey (2000-01), and linked to medical records in Ontario (n = 24,677). Overall, women had higher rates of mental health service utilization, but there were no gender differences in rates of specialist care. The gender difference in mental health contact was greater for those without depression, as opposed to those with depression. Among those without depression, women were significantly more likely than men to use mental health services; however, rates were similar for women and men with depression. This finding suggests that men may be more likely than women to delay seeing a doctor for minor mental health concerns, but will seek help once a problem reaches a threshold.

Keywords: Depression; Gender; Mental Health Service Utilization; Survey; Medical Records

1. INTRODUCTION

Depression is a significant public health issue affecting an estimated 1 in 4 people over their lifetime [1]. Women consistently have diagnosed rates twice that of men; however, men are consistently more likely to die from suicide than women [2-5]. Not only does depression reduce quality of life, it is also associated with increased disability days and lower productivity at work [6,7].

Despite the impact of depression on social and physical functioning, many people do not seek care, with studies reporting a 12-month prevalence of mental health service use ranging from 36% - 56% [8-12]. Research demonstrates that women are more likely to seek mental health care than men, and this care is more likely to be from the primary (family physician/general practitioner) sector [11,13-15]. The role of gender with respect to specialized psychiatric services is less clear; some research shows greater use by men [11,16,17], some shows greater use by women [18], and other researches show no differential use by gender [13]. The specialty sector tends to treat more severe mental health problems, and gender-related factors that influence health seeking behavior may not be as relevant in cases of high need; the less severe the problem, the more social and attitudinal factors, such as recognition of symptoms, willingness to accept the sick role, and acceptance of help seeking without stigma, are likely to affect the decision to seek help [13,18-20]. Some findings suggest that primary care physicians might show greater willingness to treat women, preferring to refer men to specialists [11].

In Canadian settings, self-reported utilization rates

among those with depression range from 47% - 56% [8,9]. Previous research in the province of Ontario, the location for this study, found that 55% of individuals with depression self-reported seeking mental health care [8]. Medical administrative records linked to survey data are emerging as an alternate method to measure the relationship between service need and service use, given that self-reports of use do not always correlate with actual use [21-23]. Rhodes *et al.* [22], comparing respondents' recall of service use with their medical records, found that highly distressed persons at the time of interview were more likely to report mental health use. Palin *et al.* [23], found that the number of self-reported mental health visits to general practitioners exceeded estimates from administrative data, especially among those with major depression. Administrative data allow researchers to avoid potential biases by looking forward to service use after a respondent has reported depression. One study to date has undertaken a prospective examination of mental health service use by those with depression, showing that women and those with higher education were more likely to be seen by physicians [14].

Gender is often examined as a covariate in research on the use of mental health services among those with a psychiatric disorder, but fewer studies have examined gender interaction effects with psychiatric disorder. Data sources for these gender-based studies are often either self-report or medical records; more rare are studies that use linked self-report and medical records [13,18,24]. Among those studies specifically exploring gender effects on psychiatric outcomes, one study found that the gender difference was larger for general mental health services than for psychiatric services, although in both cases women reported greater use than men [18]. Another study [13] found that the relationship between gender and use depends not only on the existence of a disorder, but also on reported receptivity toward services. Among those with a recent psychiatric disorder, high receptivity to care resulted in an increase in primary sector mental health service for women, while men with high receptivity had significantly lower use of mental health services. In the specialty sector, positive attitudes towards mental health care increased the use of specialty services for men and women with a psychiatric disorder. Drapeau [24] also explored gender differences and found that professional anchorage (e.g., employment status) was a factor in the help seeking behaviour of men and women with respect to general mental health and psychiatric services. Specifically, the role of "worker" was found to hinder the use of general and psychiatric services in men, but was less influential for women. The point raised by these studies is that solely studying the main effects of gender in relation to other risk factors may fail to detect real effects of predisposing or enabling

factors. For example, the study by Leaf and Bruce [13] found that receptivity was not related to mental health service use until the data were disaggregated by gender and need. The current study will build on this line of research. The goals of this current study were: 1) to understand whether people who self-report major depressive disorder in a population survey seek treatment for mental health in the year after self-reporting depression, and 2) how gender affects mental health service utilization.

2. MATERIALS AND METHODS

2.1. Data Sources

Data used to investigate the relationship between self-reported major depressive disorder and mental health utilization were obtained from two data sources housed at the Institute for Clinical Evaluative Sciences. Mental health service use data were obtained from the Ontario Health Insurance Plan (OHIP). These data contain physician visit and procedure claims which include service and diagnostic codes, fees for service provided and date of service. Data on self-reported depression and socio-demographic characteristics were obtained from the Ontario Linking file of the Canadian Community Health Survey (CCHS) 1.1 collected in the 2000-2001 cycle. This is the only cycle that provides depression data for all individuals in Ontario. Later cycles either only asked about mental health to a subset of the population or not at all. The CCHS is a nationally representative cross-sectional survey designed to collect information on health determinants, outcomes and health service utilization among non-institutionalized, aged 12^+ Canadians [25]. The linking file includes all respondents from Ontario who, when surveyed, agreed to have their responses linked to administrative data for research purposes. The Ontario response rate was 82.0% (39,278) of which 90.8% of respondents agreed to linkage. The CCHS and the OHIP data were linked using an encrypted ID; 92.1% were successfully linked giving a final linked sample of 32,848. We restricted the linked sample to those aged 18 to 74 which eliminated 6,887 records (n = 25,961). Finally, records with missing values on the outcome or covariates (n = 12,845% of the sample), with the exception of income, were eliminated, giving a final sample of 24,677. Ethics approval was obtained from the St. Michael's Hospital and Sunnybrook Health Sciences Centre Re-search Ethics Review Boards.

2.2. Mental Health Service Use

Mental health service utilization was defined using a combination of service and diagnostic codes used by Ontario physicians. When mental health services are provided, physicians may assign either a mental health

specific service code (when a visit exceeds 20 minutes in length) or a general service code (for shorter visits) [26,27]. The list of codes can be found in a validation paper by Steele *et al.*, and include diagnostic codes for psychotic disorders, non-psychotic disorders (including anxiety and depression), substance abuse disorders and social problems [26]. This same study, comparing patient surveys and administrative claims, found that claims data are reasonable for identifying whether patients had mental health care. The diagnostic code is a three-digit International Classification of Diseases (ICD) code with one code associated with each visit. While Ontario has services that are covered under alternate payment plans (e.g. Community Health Centres) fewer than 5% of medical services are provided outside of the OHIP claims system.

Use was defined as at least one visit to a physician for mental health reasons. Those who had at least one visit to a Family Physician/General Practitioner (FP/GP; but no visit to a specialist) were defined as primary users. Those who made one or more visits to a specialist were classified as specialist users. Individuals who saw both primary care physicians and specialists were included in the specialist category.

2.3. Measures

Depression was measured using the Composite International Diagnostic Interview – Short Form (CIDI-SF) for Major Depression, a predictive instrument developed at the University of Michigan Survey Research Centre [28]. It was designed to detect episodes of major depression occurring in the year prior to the interview. In this analysis, respondents were identified as having major depression if the predictive algorithm indicated a 90% probability of major depression. This translates to affirmative responses for at least five of the eight symptoms comprising the "A" criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), with at least one of these being a depressed mood or loss of interest [29].

Gender and mental illness status are the main predictors in the analysis. Socio-demographic variables associated with mental health utilization [24] are included as control variables in the analysis—marital status, educational attainment, annual household income, ethno-racial origin, immigration status and urban or rural location. We also adjust for several health behaviours known to differ by gender and which are associated with health utilization, including smoking status, drinking level and self-reported health [30-33].

2.4. Statistical Analysis

To account for unequal probabilities of selection, seasonality and non-response, descriptive statistics are presented as weighted sample frequencies, percentages and means. Sampling weights and the bootstrap technique were used to calculate accurate estimates and associated confidence intervals respectively, adjusting for design effects [34,35]. The observed variance is the bootstrap estimate of variance, from which accurate 95% confidence intervals can be calculated. The sampling weights were provided by Statistics Canada. Data publication guidelines of Statistics Canada were followed throughout the analysis, including suppression of low cell counts (<10). SAS version 9.2 (SAS Institute Inc., Cary, NC, USA) was used for data manipulation and statistical analysis. The Rao-Scott chi-square (χ^2) test was used to test the differences in frequencies between two groups. The study was conducted in Ontario, Canada, where there is universal medical coverage; every permanent resident of Ontario is eligible for health care with no deductibles or co-payments [36].

The association between self-reported major depression and mental health service utilization was examined using logistic regression [37]. Two models were fit to the data. Model 1 examined the association between the covariates and any mental health visit. Model 2 examined specialist (1) versus primary only (0) visits among the sub-set of respondents who had a mental health visit.

3. RESULTS

Table 1 shows descriptive statistics by gender and for the full sample. There were few gender differences with the noted exception of depression and high-risk drinking. The overall prevalence of major depression in the sample was 7.8%, 10.4% for females and 5.2% for males. The prevalence of high risk drinking, while low overall, was twice as high among males (4.1%) in comparison to females (1.7%).

Table 2 shows male and female prevalence of mental health utilization (at least 1 visit) by socio-demographic and behavioral risk factors for those with and without self-reported depression. Overall, the rate of mental health service use in the year post-interview for the full sample was significantly higher (p < 0.001) among females (22.3%) than males (13.3%), with an overall rate of 17.9%. Prevalence of mental health utilization was consistently higher for females across most variables relative to males regardless of depression status. Prevalence of mental health utilization among those self-reporting depression was slightly higher for men who were single, 50 to 59 years of age, and having incomes of $20,000 to $39,999 (note small cell sizes). Two gender differences are of note. For respondents without major depression the prevalence of a mental health visit among: high-risk drinkers was 20.4% for females and 7.1% for males; and those reporting poor self-rated heath was 30.3% for females and 18.7% for males. **Table 3** shows mental health utilization rates by depression status, gen-

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Table 1. Sample descriptive statistics by socio-demographic characteristics and gender.

Variable	Male (%, n)	Female (%, n)	Total (%, n)
Depression Status			
Major depression	(5.2, 619)	(10.4, 1466)	(7.8, 2085)
No Major depression	(94.8, 10,834)	(89.6, 11,758)	(92.2, 22,592)
Age group			
18 - 29	(22.3, 2033)	(21.5, 2474)	(21.9, 4507)
30 - 39	(23.0, 2476)	(22.4, 2822)	(22.7, 5298)
40 - 49	(22.9, 2635)	(23.1, 2873)	(23.0, 5508)
50 - 59	(16.5, 2003)	(16.2, 2231)	(16.4, 4234)
60 - 74	(15.3, 2306)	(16.7, 2824)	(16.0, 5130)
Marital status			
Married/common law	(66.4, 7292)	(65.7, 7928)	(66.0, 15,220)
Divorced/widowed/separated	(7.1, 1375)	(13.8, 2773)	(10.5, 4148)
Single	(26.5, 2786)	(20.6, 2523)	(23.5, 5309)
Ethno-racial origin			
Caucasian	(83.9, 10,564)	(83.6, 12,175)	(83.7, 22,739)
Other	(16.1, 889)	(16.4, 1049)	(16.3, 1938)
Immigration status			
Recent immigrants (<10 years)	(6.7, 336)	(7.0, 417)	(6.9, 753)
Non-recent immigrants	(93.3, 11,117)	(93, 12,807)	(93.1, 23,924)
Educational attainment			
Less than high school	(17.7, 2529)	(17.6, 2780)	(17.6, 5309)
High school	(31.0, 3357)	(33.4, 4205)	(32.2, 7562)
Postsecondary	(51.4, 5567)	(49.0, 6239)	(50.2, 11,806)
Annual household income			
Income missing	(17.0, 1704)	(20.1, 2571)	(18.6, 4275)
Income < $20,000	(5.9, 928)	(8.2, 1684)	(7.1, 2612)
Income $20,000 - $39,999	(12.8, 1897)	(15.5, 2504)	(14.2, 4401)
Income $40,000 - $59,999	(16.4, 2082)	(15.8, 2051)	(16.1, 4133)
Income $60,000 - $79,999	(16.8, 1922)	(15.5, 1843)	(16.2, 3765)
Income >= $80,000	(31.1, 2920)	(24.8, 2571)	(27.9, 5491)
Smoking status			
Current smoker	(29.9, 3598)	(24.9, 3632)	(27.3, 7230)
Non-smoker	(70.1, 7855)	(75.1, 9592)	(72.7, 17,447)
Level of drinking risk			
High risk	(4.1, 565)	(1.7, 232)	(2.9, 797)
Non-drinker/low risk	(95.9, 10,888)	(98.3, 12,992)	(97.1, 23,880)
Self-reported health			
Fair/poor	(10.9, 1497)	(11.5, 1755)	(11.2, 3252)
Excellent/very good/good	(89.1, 9956)	(88.5, 11,469)	(88.8, 21,425)
Urban/rural location			
Rural	(15.5, 2573)	(14.5, 2617)	(15, 5190)
Urban	(84.5, 8880)	(85.5, 10,607)	(85.0, 19,487)

Table 2. Prevalence of at least one mental health visit by socio-demographic characteristics and gender.

Variables	Self-reported Major Depression			No Depression		
	Males (%, n)	Females (%, n)	Total (%, n)	Males (%, n)	Females (%, n)	Total (%, n)
Age group						
18 - 29	(34.0, 36)	(36.1, 124)	(35.5, 160)	(8.8, 156)	(17.5, 361)	(12.9, 517)
30 - 39	(42.2, 56)	(45.5, 169)	(44.3, 225)	(10.4, 229)	(20.1, 495)	(15.1, 724)
40 - 49	(41.9, 63)	(53.9, 213)	(50.3, 276)	(12.6, 312)	(20.1, 490)	(16.3, 802)
50 - 59	(53.1, 54)	(50.7, 111)	(51.5, 165)	(14.2, 253)	(20.7, 409)	(17.4, 662)
60 - 74	(44.7, 24)	(52.8, 67)	(49.9, 91)	(13.5, 289)	(18.5, 469)	(16.1, 758)
Marital status						
Married/common law	(39.8, 102)	(45.0, 304)	(43.4, 406)	(11.5, 751)	(19.2, 1333)	(15.3, 2084)
Divorced/widowed/Separated	(51.0, 58)	(57.4, 222)	(55.8, 280)	(16.4, 209)	(21.9, 518)	(20.0, 727)
Single	(41.4, 73)	(40.9, 158)	(41.1, 231)	(10.9, 279)	(18.1, 373)	(14.0, 652)
Ethno-racial origin						
Caucasian	(41.7, 214)	(45.4, 634)	(44.2, 848)	(11.6, 1128)	(19.6, 2045)	(15.5, 3173)
Other	(43.2, 19)	(51.6, 50)	(48.7, 69)	(12.2, 111)	(18.1, 179)	(15.2, 290)
Immigration status						
Recent (<10 years)	-	(35.4, 12)	(48.8, 20)	(10.8, 34)	(21.6, 84)	(16.3, 118)
Non-recent	(40.6, 225)	(46.6, 672)	(44.6, 897)	(11.7, 1205)	(19.2, 2140)	(15.4, 3345)
Educational attainment						
Less than high school	(36.0, 65)	(50.3, 145)	(44.7, 210)	(12.3, 304)	(21.3, 498)	(16.8, 802)
High school	(39.0, 66)	(47.6, 242)	(45.2, 308)	(10.4, 323)	(18.3, 649)	(14.4, 972)
Postsecondary	(47.3, 102)	(43.0, 297)	(44.5, 399)	(12.2, 612)	(19.4, 1077)	(15.7, 1689)
Annual household income						
Missing	(50.7, 30)	(45.2, 108)	(47.0, 138)	(10.3, 166)	(19.1, 421)	(15.1, 587)
Income < $20,000	(52.1, 48)	(62.1, 165)	(59.0, 213)	(16.8, 165)	(25.0, 335)	(21.5, 500)
Income $20,000 - $39,999	(41.3, 51)	(37.4, 118)	(38.8, 169)	(13.9, 219)	(20.4, 425)	(17.5, 644)
Income $40,000 - $59,999	(34.3, 41)	(51.5, 114)	(45.4, 155)	(10.8, 214)	(19.8, 345)	(15.2, 559)
Income $60,000 - $79,999	(36.0, 26)	(47.4, 84)	(43.7, 110)	(11.4, 201)	(15.3, 272)	(13.2, 473)
Income >= $80,000	(40.9, 37)	(39.0, 95)	(39.6, 132)	(11.2, 274)	(19.4, 426)	(14.8, 700)
Smoking status						
Current smoker	(41.7, 117)	(48.1, 320)	(45.8, 437)	(13.1, 431)	(21.6, 630)	(16.8, 1061)
Non-smoker	(42.1, 116)	(44.9, 364)	(44.0, 480)	(11.1, 808)	(18.7, 1594)	(15.0, 2402)
Level of drinking risk						
High risk	(27.0, 10)	(31.5, 11)	(28.8, 21)	(7.1, 41)	(20.4, 31)	(10.9, 72)
Non-drinker/low risk	(42.8, 223)	(46.5, 673)	(45.3, 896)	(11.8, 1198)	(19.4, 2193)	(15.6, 3391)
Self-reported health						
Excellent/very good/good	(35.2, 128)	(40.9, 427)	(39.1, 555)	(10.9, 986)	(18.2, 1837)	(14.5, 2823)
Fair/poor	(55.8, 105)	(60.2, 257)	(58.6, 362)	(18.6, 253)	(30.3, 387)	(24.3, 640)
Urban/rural location						
Rural	(31.6, 29)	(45.1, 103)	(41.0, 132)	(9.6, 230)	(17.1, 384)	(13.2, 614)
Urban	(43.2, 204)	(46.3, 581)	(45.3, 785)	(12.0, 1009)	(19.8, 1840)	(15.9, 2849)

[a]Cell counts less than 10 are suppressed.

der and type of care. Among those with major depression, the overall mental health service utilization (primary and specialist care combined) rates did not vary significantly by gender. Mental health service utilization rates for this

Table 3. Percentage of respondents with and without self-reported depression with at least 1 mental health visit by gender.

	Self-reported Major Depression			No Depression		
Utilization	Males (%, n)	Females (%, n)	Total (%, n)	Males (%, n)	Females (%, n)	Tota (%, n)
Overall utilization	41.6 (242)*	46.2 (704)	44.7 (946)	11.7 (1279)***	19.6 (2273)	15.6 (3552)
Primary (FP/GP)^	24.6 (150)**	30.4 (490)	28.5 (640)	9.2 (1039)***	16.5 (1977)	12.8 (3016)
Specialist	17.0 (92)	15.8 (214)	16.2 (306)	2.5 (240)	3.0 (296)	2.8 (536)
No contact	58.4 (402)	53.8 (802)	55.3 (1204)	88.3 (9862)	80.4 (9710)	84.4 (19,572)

^Family physician/general practitioner. *p = 0.18; **p = 0.06; ***p < 0.001.

group were 46.2% among women and 41.6% among men (p = 0.18). Also, among those with major depression, women were somewhat more likely than men to visit a primary care provider for a mental health visit although this just bordered significance at the 0.05 level (30.4% vs. 24.6% respectively, p = 0.06). Specialty mental health service utilization rates among those with depression were 15.8% among women and 17.0% among men, but did not reach statistical significance (p = 0.66).

Among those without major depression, there was a significant gender difference in overall mental health service utilization. Mental health service utilization rates for this group were 19.6% among women and 11.7% among men (p < 0.001). Among those without major depression, women were significantly more likely than men to visit a primary care provider for a mental health visit. Primary care mental health service utilization rates for this group were 16.5% among women and 9.2% among men; for women, the rate was almost double that for men (p < 0.001). Specialty mental health service utilization rates for this group were 2.8% overall, with very little variation between men and women.

We next examined gendered patterns of mental health service utilization using logistic regression models (**Table 4**). The intent was to understand how depression and gender were associated with mental health service use. Model 1 shows the associations between the gender-depression interaction, other relevant covariates and any mental health contact. The presence of a significant interaction term between gender and depression indicates that there were gender differences in mental health contact for those with and without depression. To understand the interaction we show the calculated probability of a mental health visit (based on estimates in Model 1) in **Figure 1**. Among those without major depression, a smaller proportion of males used mental health services (13%) in comparison to females (21%), while the probabilities were more similar for those with depression. The gender difference was 8% for those without depression, compared to only 5% among those with depression (p = 0.01).

Among the other covariates, the use of mental health services was significantly higher among respondents aged 50 to 59, those reporting a household income less than $20,000, current smokers, and those reporting poor/fair health. The use of mental health services was significantly lower among respondents who were high-risk drinkers and those living in rural locations.

Model 2 examined the risk factors for the sub-sample of respondents who had contact with mental health services, specifically looking at those who saw specialists versus those who saw primary care physicians only. Compared to model 1, the gender-depression interaction was not significant when considering use of specialists versus primary care physicians (OR = 1.08; CI = 0.62 - 1.87). Although non-significant the interaction points to a potential trend in higher specialist usage among males; additional analysis looking only at the main effect of gender showed that women were 22% less likely to see a specialist for mental health care at borderline significance (OR = 0.78; CI = 0.60 - 1.01). Individuals aged 18 to 29, those who were married/divorced, those who had an income $20,000 to $39,999 and those living in rural areas were significantly less likely to see a specialist, whereas those who had a high school education and reported fair/poor health were significantly more likely to see a specialist.

4. DISCUSSION

This study explored gender differences in use of mental health services among adult men and women who self-reported depression in a national population health survey. The study used a unique dataset with self-reported depression and socio-demographic characteristics linked to medical records. In general, the female rate of mental health service use was almost 10% higher than the rate among males. Not surprisingly, depression had a strong and significant association with mental health contact overall.

Our findings showed that less than half of the respondents self-reporting (44.7%) major depression had contact with the health system for mental health reasons, suggesting a potential gap between self-reported depression and use of mental health services. Actual utilization rates in the administrative data among those depressed were lower than self-reported utilization rates previously reported in the literature [8,9]. Additional research is

Table 4. Odds ratios & 95% confidence intervals for primary and specialist mental health care utilization by gender and depression adjusting for covariates.

Variable	Model 1: Mental health contact[*]	Model 2: Specialist vs. primary care[**]
Gender		
Female	1.81 (1.60, 2.06)	0.76 (0.55, 1.05)
Male	1.00	1.00
Major depression (MD)		
MD	4.64 (3.64, 5.92)	2.10 (1.32, 3.34)
No	1.00	1.00
Gender (female) × MD	0.68 (0.50, 0.92)	1.08 (0.62, 1.87)
Age group		
18 - 29	0.84 (0.69, 1.03)	0.57 (0.34, 0.96)
30 - 39	1.06 (0.89, 1.25)	0.88 (0.57, 1.36)
40 - 49	1.15 (0.97, 1.35)	1.12 (0.76, 1.66)
50 - 59	1.21 (1.01, 1.44)	1.35 (0.93, 1.97)
60 - 74	1.00	1.00
Marital status		
Married/common law	0.93 (0.79, 1.09)	0.47 (0.32, 0.68)
Divorced/widowed/separated	1.07 (0.87, 1.31)	0.48 (0.32, 0.72)
Single	1.00	1.00
Ethno-racial origin		
White	1.04 (0.87, 1.25)	1.06 (0.69, 1.63)
Non-white	1.00	1.00
Immigration status		
Recent immigrants (<10 yrs)	1.14 (0.85, 1.52)	0.86 (0.42, 1.76)
Non-recent immigrants	1.00	1.00
Educational attainment		
Less than high school	0.90 (0.78, 1.04)	0.89 (0.65, 1.22)
High school	0.90 (0.79, 1.02)	1.37 (1.05, 1.78)
Postsecondary	1.00	1.00
Annual household income		
Income missing	0.99 (0.84, 1.16)	0.83 (0.59, 1.20)
Income < $20,000	1.27 (1.04, 1.56)	0.78 (0.50, 1.23)
Income $20,000 - $39,999	1.03 (0.85, 1.23)	0.65 (0.43, 0.97)
Income $40,000 - $59,999	1.01 (0.86, 1.18)	0.70 (0.46, 1.06)
Income $60,000 - $79,999	0.88 (0.73, 1.06)	0.69 (0.42, 1.12)
Income >= $80,000	1.00	1.00
Smoking status		
Current smoker	1.17 (1.04, 1.32)	1.22 (0.94, 1.60)
Non-smoker	1.00	1.00
Level of drinking risk		
High risk	0.70 (0.49, 0.98)	1.15 (0.52, 2.57)
Non-drinker/low risk	1.00	1.00
Self-reported health		
Fair/poor	1.85 (1.62, 2.11)	2.09 (1.58, 2.78)
Excellent/very good/good	1.00	1.00
Urban/rural location		
Rural	0.83 (0.73, 0.94)	0.66 (0.46, 0.95)
Urban	1.00	1.00

[**]Only respondents with contact with the health system (n = 4,380) were included in the model.
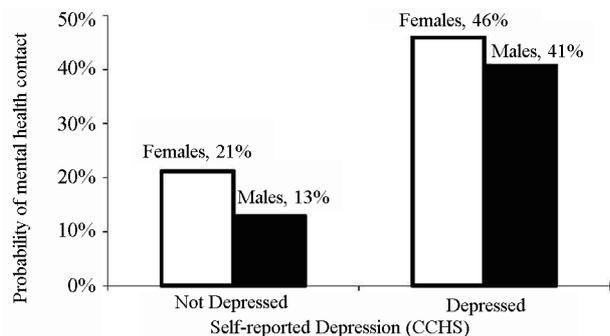
Figure 1. Probability of mental health contact for respondents with and without depression by gender.

important to understand why people in need of care do not reach out to the health care system. For example, some ethnic groups may not be comfortable accessing or prefer to use non-medical services, a finding that we were not able to explore in the data due to under-sampling of specific ethnic groups in the CCHS [38,39]. Stigma may also deter people from accessing services [40,41]. Public health campaigns that inform the public of available services and when it is important to seek services can help to educate and reduce the stigma associated with mental illness. Finding ways to enable better detection of those in need of mental health services in the primary care setting can ensure people get the help they need.

Women with depression were somewhat more likely to seek mental health services from primary care providers than men, but there were no significant gender differences in rates of specialty care. The significant interaction between gender, depression and mental health contact may be related to gender differences in help-seeking behaviour. Men may be more likely than women to delay seeing a doctor for minor mental health concerns, but will seek help once a mental health problem reaches a certain threshold. This idea has the support of previous research which has found that once men recognized they had an emotional problem, they were equally as likely as women to use mental health services [42]. Previous research has also shown that men with depression were as likely as women to seek mental health specialty services, which is in accordance with the findings of this study [11,14,43].

Greater mental health service utilization among women overall reflects previous research showing that women, in general, use more medical services than men [20, 44]. Women may be more health conscious, more aware of symptoms and may be better at translating feelings of distress into problem recognition [20,45]. One study found that women were more likely to perceive having an emotional problem than were men who had a similar level of symptoms [42].

Physicians may be partly responsible for some of the observed differences in mental health system contact.

Evidence suggests that doctors are more likely to ask questions about feelings and emotions of their female patients, which could explain some of the higher mental health service use in the primary sector among women [13]. Future research could focus on gender differences in mental health specialty referral patterns and whether severity of illness influences the level of care received by men and women (e.g., primary care or specialist).

A novel finding of this study was that the gender difference in mental health contact was significantly greater for those without depression, as opposed to those with depression; a finding that does not seem to have been reported previously in the literature. While men have a lower prevalence of depression and lower rates of overall mental health service use, the results suggest that, among those with depression, the gap between male and female utilization is smaller, implying that men may increase use of services in response to depression. The nature of the relationship between gender and mental health utilization is complex. Some studies found no effect on utilization patterns by gender [46,47]. Drapeau [18] found that women were more likely to use both general and psychiatric mental health services than men. Roberge [48] found that women used general medical health services more than men with no difference in specialty service use by gender. In another study, Wang [49] found that women were less likely than their male counterparts to use psychiatry services and complementary alternative medicine only, but more likely to use general medical or other mental health specialty. His earlier study also found that males were more likely than females to use mental health specialty care [11]. These latter findings are in contrast to our finding that there were no significant differences in use of specialized services, albeit the lack of significance might be partially explained by the small sample of respondents actually seeing specialists. Drapeau [24] suggests that the role of worker hinders the use of general and psychiatric services in men, but not among women.

In this study, medial service use was captured using a broad mental health definition not specific to care for depression [26]. This could explain the relatively high rate (~16%) of mental health utilization among those without depression. The use of a likelihood of 90% on the CIDI-SF restricted the analysis to those with major depression meaning that respondents with depressive symptomatology below the cut point for major depression were considered asymptomatic. This limitation is reflected in other studies. Wang *et al.* [10] found that 19.2% of a nationally representative sample in the United States were using health care sector mental health services with no self-reported CIDI diagnosis for any mental health condition.

Under-sampling by ethnicity impeded our ability to

perform more detailed mental health utilization analyses by ethnic groups and represented an important data limitation of the CCHS. In an effort to capture aspects of ethnicety, we included a dichotomous measure of ethno-racial origin (White vs. Non-white) and a measure of recent immigration status (within the last 10 years).

Homeless and institutionalized people were not surveyed in the CCHS. Both populations would be expected to have higher than average rates of depression, and potentially inadequate access to care [50,51]. This analysis did not include non-medical providers, so it is plausible that people with depression are seeing alternative providers such as psychologists, social workers, clergy [38, 39]. Lin *et al.* [52] found that physicians provide the majority of mental health services, and that people see more than one kind of provider. Depression was measured in the year prior to use. It is possible that some people did not require mental health services in the year after self-reporting depression; for example, those whose depression was episodic and subsided earlier in the year. A further limitation is that depression was measured at a single point in time, but future research is planned to take a longitudinal approach. Lastly, some of the non-significant findings may reflect small cell sizes which limited our power to detect gender differences between those who saw primary care physicians versus those who saw specialists

The findings indicate that over 50% of Ontarians who reported depression did not use available physician based mental health services. This represents a sizeable proportion of the population who potentially did not access care when needed. The finding that men with depression were as likely as women to visit a specialist warrants further study given that gender-based findings on accessing specialty services remain inconsistent in the current literature. Regardless of gender, however, the use of specialists was especially low among those aged 18 to 29 and those living in rural areas. Primary care physicians making referrals to specialists might benefit from this knowledge to increase access among these sub-populations. Overall, the gender gap in the use of services is smaller for men and women who self-reported major depression than those who did not self-report depression. This can be viewed positively as it contradicts the perception in the field that men are less likely than women to access care when experiencing major emotional problems.

5. ACKNOWLEDGEMENTS

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