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## Gender Differences in Use of Smoking Cessation Services and Resources: A Real-World Study of Ontario Smokers

Smoking cessation greatly reduces the health burden of tobacco use.<sup>1,2</sup> To help smokers quit smoking, many jurisdictions provide cessation services and resources, such as quitlines, cessation medications, quit programs, and quit contests. Many studies have explored awareness of cessation services and resources.<sup>3,4,5,6,7</sup> Little research is available on gender differences in use of smoking cessation services and resources.

**Key Message:** Health professionals should leverage the willingness of female smokers to accept assistance and routinely provide specific but strategic advice and pharmacotherapy to help them quit smoking.

Using the baseline data from the Smokers' Panel, an ongoing online survey of Ontario adult smokers and recent quitters administered by the Ontario Tobacco Research Unit (OTRU), this study explored gender differences in use of smoking cessation services and resources. Eligible participants were residents of Ontario, 18+ years old, who were current smokers or recent quitters (quit within the last three years). Participants were recruited through advertisements via Ontario smoking cessation services, such as Smokers' Helpline, the Smoking Treatment for Ontario Patients (STOP) program, Ontario Lung Association, Ottawa Heart Institute, Quit Contest programs and public health units, as well as word of mouth. In total, this analysis included 1006 male and 1757 female participants who answered the questions about use of cessation services and resources when trying to quit or reduce smoking.

Female participants were more likely to be White (87% vs. 80%) and more educated (post-secondary: 62% vs. 56%); however, they were less likely to: be single (30% vs. 35%), try to quit more times ( $\geq 6$  quit attempts: 22% vs. 28%), or have high confidence in quitting or staying smoke free (53% vs. 59%), compared to male participants. There were no differences by gender in age, employment, household income, smoking status, and self-perceived addiction to cigarettes.

The majority of participants in the Smokers' Panel used at least one type of cessation services/resources (95%). There was no significant difference in any use of cessation services/resources by gender (95% vs. 94%). However, there were significant differences in use of individual service/resource.

Compared to male participants, female participants were more likely to use:

- The nicotine patch (63% vs. 58%)
- Varenicline (29% vs. 24%)
- Smokers' Helpline phone (13% vs. 10%)
- Smokers' Helpline online (27% vs. 21%)
- Self-help materials (23% vs. 15%)
- Alternative methods (such as acupuncture, hypnosis, laser therapy, herbal remedies and e-cigarettes: 23% vs. 19%)

Male participants were more likely to use nicotine gum (47% vs. 43%), compared to female participants. With regard to combination use of cessation services/resources, female participants were more likely to use all types of services/resources, including pharmacotherapy (nicotine replacement therapy, bupropion and varenicline) and recommended behavioural therapy (individual or group counselling, health professional advice, Smokers' Helpline, quit programs and self-help materials) with quit contests or alternative methods than male participants (59% vs. 53%) (Table 1).

Multiple logistic regression analyses<sup>i</sup> confirmed that, compared to male participants, female participants were more likely to use the nicotine patch (adjusted odds ratio, AOR 1.39, 95% confidence interval, CI 1.15-1.67), varenicline (AOR 1.37, 95% CI 1.13-1.66), Smokers' Helpline phone (AOR 1.37, 95% CI 1.06-1.78), Smokers' Helpline online (AOR 1.43, 95% CI 1.17-1.73), self-help materials (AOR 1.81, 95% CI 1.45-2.25) and alternative methods (AOR 1.40, 95% CI 1.14-1.72); while male participants were no longer more likely to use nicotine gum than female participants (AOR

<sup>i</sup> Controlling for age, race, education, marital status, employment, income, self-perceived addiction, confidence of quitting or staying smoke-free, smoking status, and number of previous quit attempts.

0.88, 95% CI 0.74-1.02). With regard to combination use of cessation services/resources, female participants were more likely to use pharmacotherapy and recommended behavioural therapy with a quit contest or alternative methods (AOR 1.76, 95% CI 1.20-2.57), compared to male participants. There was no difference in other types of combination use of cessation services/resources between males and females.

This study showed there were gender differences in use of smoking cessation services/resources among adult smokers in Ontario. Although the relative rates of use of these services/resources were higher among female than male smokers, the absolute differences were not large, ranging from 3.2 percentage points for use of varenicline to 7.6 percentage points for use of self-help materials. The finding that females were more likely to seek assistance with quitting is consistent with other research.<sup>8</sup> Gender differences may affect the assistance provided to smokers in the clinical setting and, ultimately, cessation outcomes.

Health professionals should leverage this willingness to accept assistance and routinely provide specific but strategic advice and pharmacotherapy to help smokers quit smoking. More research is needed to understand how programs and services can be targeted to male smokers to increase their likelihood of utilizing these programs. It is worth noting that 10% of participants attended quit contests only, but did not use any other recommended cessation services/resources, such as pharmacotherapy or behavioural therapy. Providing quit contests may attract this group of smokers into the cessation system and ultimately this group of smokers may receive effective cessation services/resources and quit smoking. A recent study<sup>9</sup> reports that multiple quit contests resulted in a significantly higher 6-month continuous abstinence rate compared to a single contest.

Limitations of this study include the non-random sample of smokers and self-report of use of cessation services retrospectively. Findings of this study may not be generalizable to the general population of smokers.

**Table 1: Smoking Cessation Services/Resources Ever Used by Participants, Overall and by Gender, Smokers' Panel Baseline Survey, Ontario, Canada 2013-2017**

Use of Cessation Services/Resources	Overall % (N)	Male % (N)	Female % (N)	P Value
Use of Any Cessation Services/Resources	(n=2763)	(n=1006)	(n=1757)	0.10
Yes	94.8 (2618)	93.8 (944)	95.3 (1674)	
No	5.2 (145)	6.2 (62)	4.7 (83)	
Use of Individual Cessation Service/Resource (all that apply)	100.0 (2763)	100.0 (1006)	100.0 (1757)	
Nicotine patch	61.1 (1688)	57.8 (581)	63.0 (1107)	<b>0.0065</b>
Nicotine gum	44.6 (1233)	47.2 (475)	43.1 (758)	<b>0.038</b>
Nicotine lozenge	20.3 (560)	21.2 (213)	19.7 (347)	0.37
Nicotine inhaler	23.3 (643)	24.1 (242)	22.8 (401)	0.46
Varenicline (Champix)	27.1 (750)	24.3 (244)	28.8 (506)	<b>0.0098</b>
Bupropion (Zyban)	25.8 (714)	25.1 (253)	26.2 (461)	0.53
Individual counselling	14.3 (396)	12.8 (129)	15.2 (267)	0.087
Group counselling	7.9 (218)	8.8 (89)	7.3 (129)	0.16
Smokers' Helpline phone	12.3 (339)	10.2 (103)	13.4 (236)	<b>0.014</b>
Smokers' Helpline text	4.2 (117)	3.8 (38)	4.5 (79)	0.37
Smokers' Helpline online	24.4 (675)	20.8 (209)	26.5 (466)	<b>0.0007</b>
Health professional advice <sup>a</sup>	24.0 (662)	23.7 (238)	24.1 (424)	0.78
Quit program from a public health unit	17.0 (470)	16.3 (164)	17.4 (306)	0.45
Quit program from a study or an organization	15.6 (430)	15.6 (157)	15.5 (273)	0.96
Self-help materials <sup>b</sup>	19.7 (545)	14.9 (150)	22.5 (395)	<b>&lt;0.0001</b>
Alternative method <sup>c</sup>	21.2 (587)	18.5 (186)	22.8 (401)	<b>0.0074</b>
Quit contest <sup>d</sup>	39.0 (1077)	39.5 (397)	38.7 (680)	0.69
Mobile quit app	2.5 (69)	2.2 (22)	2.7 (47)	0.43
Use Patterns of Cessation Services/Resources				<b>0.0056</b>
No use of cessation services/resources	5.2 (145)	6.2 (62)	4.7 (83)	
Quit contest <sup>d</sup> only	10.0 (276)	11.4 (115)	9.2 (161)	
Alternative method <sup>c</sup> only or with quit contest <sup>d</sup>	0.9 (26)	1.3 (13)	0.7 (13)	
Recommended behavioural therapy <sup>e</sup> only	4.4 (121)	4.1 (41)	4.6 (80)	
Recommended behavioural therapy <sup>e</sup> with quit contest <sup>d</sup> or alternative method <sup>c</sup>	2.5 (68)	2.1 (21)	2.7 (47)	
Pharmacotherapy <sup>f</sup> only	6.1 (168)	6.0 (60)	6.1 (108)	
Pharmacotherapy <sup>f</sup> with quit contest <sup>d</sup> or alternative method <sup>c</sup>	14.2 (392)	16.1 (162)	13.1 (230)	
Pharmacotherapy <sup>f</sup> and recommended behavioural therapy <sup>e</sup> or with quit contest <sup>d</sup> or alternative method <sup>c</sup>	56.7 (1567)	52.9 (532)	58.9 (1035)	

<sup>a</sup> Health professional advice, including advice by a physician, nurse, dentist or pharmacist.

<sup>b</sup> Self-help materials, including self-help books and websites.

<sup>c</sup> Alternative cessation methods, including acupuncture, hypnosis, laser therapy, herbal remedies, and e-cigarettes for quitting.

<sup>d</sup> Quit contests, including "Driven to Quit", "First Week Challenge Contest", "Leave the Pack Behind", "Quit and Get Fit", and "Run to Quit".

<sup>e</sup> Recommended behavioural therapy, including individual or group counselling, health professional advice, Smokers' Helpline, quit programs, and self-help materials.

<sup>f</sup> Pharmacotherapy, including nicotine replacement therapy, bupropion and varenicline.

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### References

- <sup>1</sup> Jha P, Ramasundarahettige C, Landsman V, Rostron B, Thun M et al. 21st-century hazards of smoking and benefits of cessation in the United States. *New England Journal of Medicine* 2013;368:341-50.
- <sup>2</sup> Toll BA, Rojewski AM, Duncan LR, Latimer-Cheung AE, Fucito LM et al. “Quitting smoking will benefit your health”: the evolution of clinician messaging to encourage tobacco cessation. *Clinical Cancer Research* 2014;20:301-9.
- <sup>3</sup> Grimshaw G, Stanton A, Blackburn C, Andrews K, Grimshaw C et al. Patterns of smoking, quit attempts and services for a cohort of 15- to 19-year-olds. *Child: Care, Health and Development* 2003;29:457-64.
- <sup>4</sup> Kerr S, Watson H, Tolson D, Lough M, Brown M. Smoking after the age of 65 years: a qualitative exploration of older current and former smokers' views on smoking, stopping smoking, and smoking cessation resources and services. *Health & Social Care in the Community* 2006;14:572-82.
- <sup>5</sup> Hutcheson TD, Greiner KA, Ellerbeck EF, Jeffries SK, Mussulman LM, Casey GN. Understanding smoking cessation in rural communities. *The Journal of Rural Health* 2008;24:116-24.
- <sup>6</sup> Kaufman A, Augustson E, Davis K, Finney Rutten LJ. Awareness and use of tobacco quitlines: evidence from the Health Information National Trends Survey. *Journal of Health Communication* 2010;15 264-78.
- <sup>7</sup> Wang YT, Sung HY, Tsai YW. Educational differences in awareness and use of the outpatient smoking cessation services program in Taiwan. *International Journal of Healthcare* 2017;3:50-7.
- <sup>8</sup> Zhu S, Melcer T, Sun J, Rosbrook B, Pierce JP. Smoking cessation with and without assistance: a population-based analysis. *American Journal of Preventive Medicine* 2000;18:305-11.
- <sup>9</sup> Popp J, Nyman JA, Luo X, et al. Cost-effectiveness of enhancing a Quit-and-Win smoking cessation program for college students. *The European Journal of Health Economics* 2018;Apr 23.