

Factors associated with uptake of HIV testing in Canada: A nationally representative study

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Abstract

Although HIV testing is essential for early detection and treatment of the virus, there are very few studies in Canada that explore the factors associated with the uptake of HIV testing at the national level. Using the 2015-16 Canadian Community Health Survey and applying logistic regression analysis, we examine the associations between HIV testing and factors identified by the Andersen's behavioural model of healthcare utilization. We find that a range of predisposing, enabling, and need factors are significantly associated with HIV testing. For example, compared to the oldest respondents (i.e., 55-64), their younger counterparts (i.e., 45-54, 35-44, and 25-34) are more likely to have been tested for HIV. Furthermore, formerly (OR=2.02, p<0.001) and never married (OR=1.67, p<0.001) respondents are more likely to have been tested for HIV than currently married ones. Also, women are more likely to have been tested for HIV than men (OR=1.13, p<0.001). Compared to those in Atlantic Canada, respondents in Quebec (OR=1.96, p<0.001), Ontario (OR=1.44, p<0.001), Prairies (OR=1.37, p<0.001), British Columbia (OR=1.99, p<0.001), and territories (OR=2.22, p<0.001) are all more likely to have been tested for HIV. We also observe that respondents within higher income categories (i.e., \$80,000 or more, \$60,000-\$79,999, \$40,000-\$59,999, \$20,000-\$39,999) are all less likely to have been tested for HIV than those within the lowest category (i.e., less than \$20,000). Finally, respondents who did not use condom during last sexual intercourse are more likely to have been tested for HIV than those who did (OR=1.42, p<0.001). Based on these findings, we provide several important suggestions for policymakers and future research.

Background

1. Canada has prioritized HIV testing in addressing HIV infections in the country
2. While there has been emphasis on testing, it is generally assumed that people would automatically test if testing resources are available
3. There is currently a range of studies that explore the determinants of HIV testing among sub-populations in Canada
4. There is no national level study looking at the factors associated with the uptake of HIV testing in Canada
5. Exploring the factors associated with the uptake of HIV testing would help inform policy on realigning policy and resources to ensure increased levels of HIV testing

Methods

❖ Data

1. Data were obtained from 2015-2016 Canadian Community Health Survey (CCHS) public use microdata file.
2. Data is cross-sectional that collects information on health and health behaviours among Canadians living in the 10 provinces and 3 territories (n=55,464).

❖ Measures

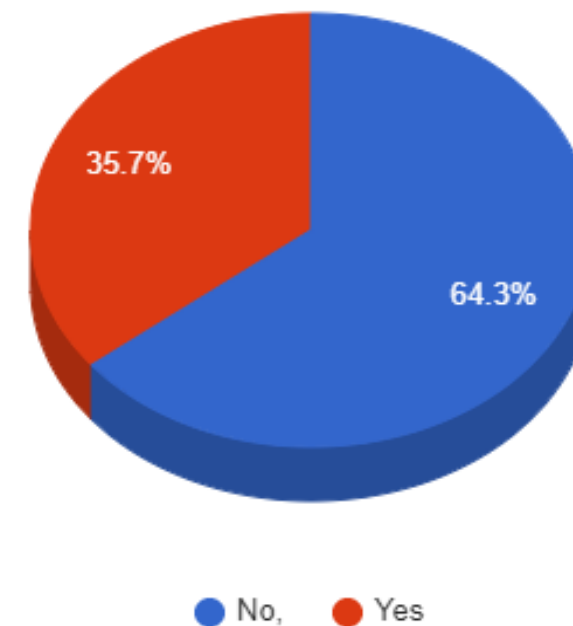
- Dependent Variable: Ever had a test for HIV
- Binary variable coded as "0" = never tested and "1" = ever tested
- Explanatory Variables-Andersen's framework of health care utilization:
 - Predisposing factors
 - Enabling factors
 - Need factors

❖ Technique

- Multivariate logistic regression

Results

Univariate Results_Ever Tested for HIV



Multivariate analysis of 'ever tested for HIV' in Canada

	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Age of respondents						
55-64	1.00		1.00		1.00	
45-54	1.81***	1.64 1.99	1.81***	1.65 2.00	1.86***	1.69 2.05
35-44	3.24***	2.94 3.56	3.24***	2.94 3.57	3.39***	3.08 3.73
25-34	2.67***	2.42 2.94	2.65***	2.40 2.93	2.84***	2.58 3.14
18-24	0.97	0.84 1.11	0.99	0.86 1.14	1.09	0.94 1.25
Racial minority status						
White	1.00		1.00		1.00	
Non-white	0.86**	0.77 0.96	0.85**	0.76 0.95	0.87**	0.77 0.97
Immigrant status						
Native-born	1.00		1.00		1.00	
Recent immigrants	1.46***	1.25 1.71	1.40***	1.20 1.64	1.43**	1.22 1.68
Established immigrants	0.89	0.79 1.01	0.89	0.79 1.00	0.90	0.80 1.02
Marital status						
Currently married	1.00		1.00		1.00	
Formerly married	2.05***	1.85 2.26	1.90***	1.71 2.12	2.02***	1.82 2.25
Never married	1.58***	1.46 1.72	1.49***	1.37 1.62	1.67***	1.53 1.82
Gender						
Male	1.00		1.00		1.00	
Female	1.15***	1.08 1.23	1.15***	1.08 1.22	1.13***	1.06 1.20
Location of residence						
Atlantic Canada	1.00		1.00		1.00	
Quebec	1.97***	1.79 2.18	1.97***	1.78 2.18	1.96***	1.77 2.17
Ontario	1.40***	1.27 1.55	1.42***	1.28 1.58	1.44***	1.30 1.59
Prairies	1.32***	1.19 1.47	1.36***	1.23 1.51	1.37***	1.24 1.52
British Columbia	1.95***	1.73 2.19	1.97***	1.76 2.22	1.99***	1.77 2.23
Territories	2.13***	1.75 2.60	2.21***	1.81 2.69	2.22***	1.82 2.71
Level of education						
More than high school	1.00		1.00		1.00	
High school	0.82***	0.76 0.88	0.80***	0.74 0.86	0.80***	0.74 0.86
No high school	0.93	0.83 1.05	0.88*	0.78 0.99	0.87*	0.77 0.99
Employment status						
Full-time	1.00		1.00		1.00	
Part-time	0.98	0.89 1.09	0.96	0.86 1.06	0.95	0.86 1.06
Unemployed	1.08	0.99 1.16	1.01	0.93 1.09	1.01	0.94 1.09
Household income						
Less than \$20,000	1.00		1.00		1.00	
\$20,000-\$39,999	0.85*	0.73 0.98	0.84*	0.72 0.98	0.84*	0.72 0.98
\$40,000-\$59,999	0.72***	0.62 0.83	0.72***	0.62 0.84	0.72***	0.62 0.84
\$60,000-\$79,999	0.74***	0.63 0.86	0.73***	0.63 0.86	0.73***	0.63 0.86
\$80,000 or more	0.68***	0.59 0.78	0.67***	0.58 0.77	0.67***	0.58 0.77
Used condom during last sex						
Yes	1.00		1.00		1.00	
No	1.42***	1.32 1.54	1.42***	1.32 1.54	1.42***	1.32 1.54
Wald x2	1369.51***		1434.88***		1512.75***	
Log pseudolikelihood	-10831927		-10814931		-10778933	

*p<0.05, **p<0.01, ***p<0.001

Conclusion

1. HIV testing is low in Canada, less than 40% of Canadians have ever tested for HIV
2. Overall, HIV testing in Canada is informed by predisposing, enabling and need factors
3. Policy should increase attention on targeting more Canadian youths to test for HIV
4. There is the need to remove barriers that inhibit minority populations from accessing HIV testing services
5. Given that immigrants are required to undergo HIV testing before migrating to Canada, they are more likely to have ever tested for HIV. Policy should continue to engage them while targeting native-born Canadians with the opportunity to test
6. The observed geographical differences calls for increased attention on Atlantic Canada where HIV testing may be lacking behind
7. There should be the opportunity to make HIV messaging and testing more appealing to Canadians with low educational attainment given that they are less likely to test for HIV
8. Furthermore, there is an urgent need for more research to understand the inverse relationship between increasing income and HIV testing. Potentially, people with higher income may be engaged in forms of employment that makes it difficult to make time to test for HIV
9. While the use of condoms should still be encouraged as part of Canada's HIV policy response, regular HIV testing should still be encouraged for everyone including those who regularly use condoms
10. There is the need for HIV policy making in Canada to take a holistic approach that incorporates predisposing, enabling and need factors in people's willingness to test for HIV

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