



Understanding COVID-19 vaccine confidence in People living with HIV in Canada: A pan-Canadian survey

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BACKGROUND

While the advent of safe and effective COVID-19 vaccines for the general population has led to mass vaccination roll-outs, certain populations may lack vaccine confidence.

Older individuals and those with multimorbidity may be at increased risk of poor outcomes if they acquire COVID-19 infection. People living with HIV (PLWH) may be at an especially increased risk of poor outcome due to COVID-19 infection, given the additive effect of immunosuppression.

Understanding reasons for vaccine confidence is essential to maximize rates of vaccine uptake in vulnerable populations.

OBJECTIVES

1-To compare **Vaccine Hesitancy Scale (VHS)** scores between participants who received >1 COVID-19 vaccines and those who did not receive any COVID-19 vaccine

2-To **identify factors** associated with COVID-19 vaccine uptake

METHODOLOGY

With community members, we developed a study questionnaire with items from the validated National Advisory Committee on Immunization Acceptability Matrix including:

- a) perception of vaccine safety and efficacy;
- b) perception of disease susceptibility and severity;
- c) access to vaccination; and
- d) knowledge, attitudes, and trust.

Participants were eligible to participate if they were of adult age, living in Canada and had HIV infection.

PLWH were recruited via social media and through community-based organizations from January-April 2022 (target recruitment n=250).

Participants included vulnerable populations and/or those at higher risk for COVID-19, e.g., men who have sex with men, people who inject drugs, women, persons of African, Caribbean or Black communities, persons from Indigenous communities and persons ≥ 65 years old.

ANALYSIS:

Descriptive statistics were used to summarize results and compare responses between PLWH who have received vs those who have not received COVID-19 vaccine(s)

For each participant, scores on the 5-point Likert scale were added together (reversing for direction, as necessary)

Logistic regression models were used to identify factors associated with COVID-19 vaccine uptake such as age, sex, gender, and responses to the vaccine confidence questions

RESULTS

250 individuals completed survey, but only 205 indicated whether or not they accepted a COVID-19 vaccine

Table 1: Summary statistics for VHS total score

variable	Summary statistics	COVID-19 vaccine uptake		p-value
		No	Yes	
VHS TOTAL	N	21	153	<0.0001
	Missing, n (%)	0 (0.0)	0 (0.0)	
	Mean (SD)	33.0 (9.0)	17.4 (5.9)	
	Median (IQR)	34.0 (26.0, 39.0)	16.0 (13.0, 20.0)	
	Range	(16.0, 48.0)	(10.0, 43.0)	

Table 2: Baseline characteristics of study participants who provided COVID-19 vaccine uptake information

	Study cohort (N=205)
Age	
Mean (SD)	46.9 (14.2)
Median (IQR)	48.0 (33.0, 57.0)
Range	(20.0, 82.0)
Persons >65 years of age, n (%)	19 (9.3)
Sex, n (%)	
Male	150 (73.2)
Female	55 (26.8)
Highest degree or level of school completed, n (%)	
Less than high school	2 (1)
Some high school/completed high school	45 (22.1)
Some college/completed college	119 (58.3)
Some graduate studies/completed graduate studies	38 (18.6)
Missing/prefer not to answer	1
Annual household income, n (%)	
\$29,999 and under	62 (32.3)
\$30,000-\$59,999	59 (30.7)
\$60,000-\$89,999	32 (16.7)
\$90,000 and up	39 (20.3)
Missing/prefer not to answer	13
Born in Canada, n (%)	145 (72.1)
Missing/prefer not to answer	4
Person who injects drugs, n (%)	15 (7.3)
Person who uses non-prescription illicit drugs, n (%)	21 (10.2)
Person from African, Black or Caribbean Community, n (%)	17 (8.3)
Persons from indigenous community, n (%)	12 (5.9)
Duration of HIV diagnosis, n (%)	
≤ 4 years ago	31 (15.4)
5-9 years ago	30 (14.9)
10-14 years ago	30 (14.9)
≥15 years ago	110 (54.7)
Missing/prefer not to answer	4
On Antiretroviral medications, n (%)	198 (97.1)
Missing/prefer not to answer	1

Table 3A: Summary table by COVID-19 vaccine uptake status -continuous variable

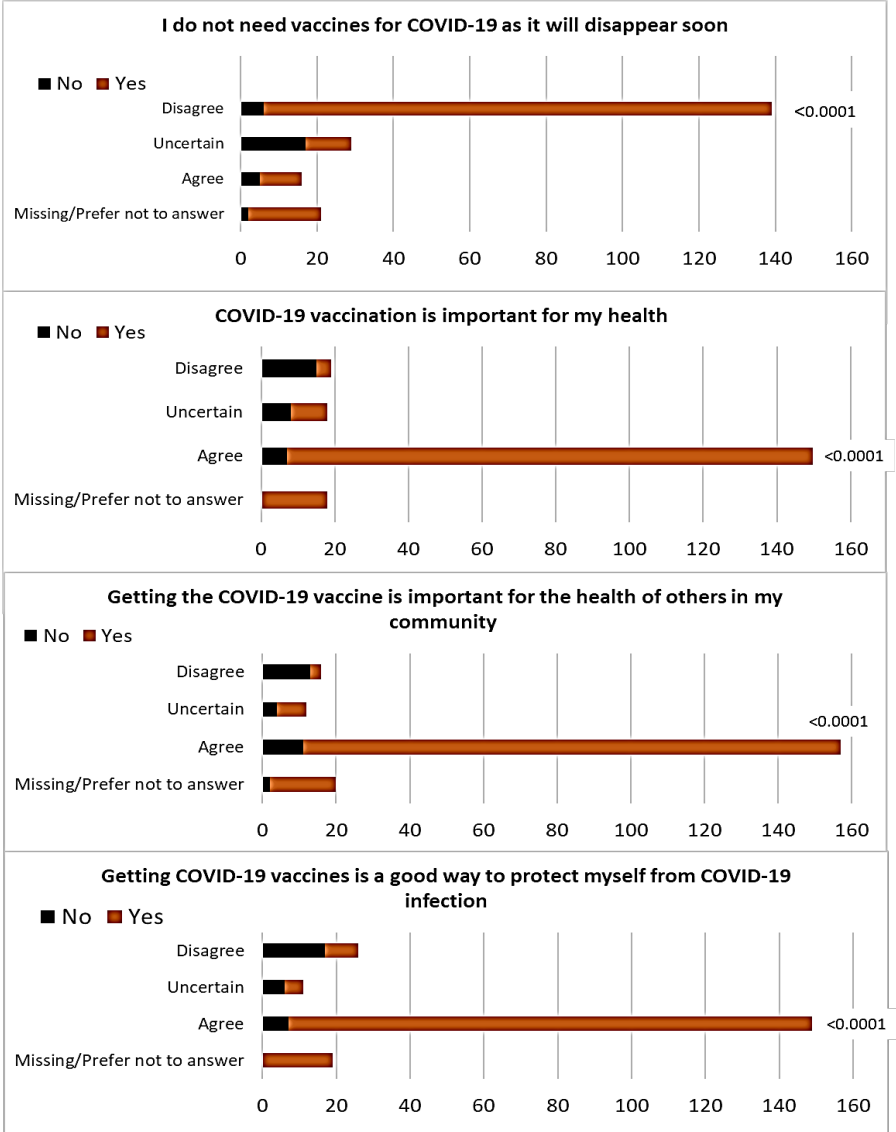
Variable	Summary statistics	COVID-19 vaccine uptake		p-value
		No	Yes	
Age	N	30 (15%)	175 (85%)	<0.0001
	Missing, n (%)	0 (0.0)	0 (0.0)	
	Mean (SD)	33.7 (7.5)	49.2 (13.9)	
	Median (IQR)	32.0 (29.0, 36.0)	51.0 (40.0, 58.0)	
	Range	(23.0, 59.0)	(20.0, 82.0)	

Table 3B: Summary table by COVID-19 vaccine uptake status categorical variable

Variable	Level	COVID-19 vaccine at least one dose		p- value
		No	Yes	
SEX	Female (55)	12 (22%)	43 (78%)	0.08
	Male (150)	18 (12%)	132 (88%)	
Person ≥65 years	No (186)	29 (16%)	157 (84%)	0.23
	Yes (19)	1 (5%)	18 (95%)	
Highest degree - at least completed university	Missing/Prefer not to answer	0 (.)	1 (.)	0.08
	No (92)	18 (20%)	74 (80%)	
	Yes (112)	12 (11%)	100 (89%)	
Person who injects drugs	No (190)	26 (14%)	164 (86%)	0.17
	Yes (15)	4 (27%)	11 (73%)	
Person who uses non-prescription illicit drugs	No (184)	30 (16%)	154 (84%)	0.05
	Yes (21)	0 (0.0)	21 (100%)	
Person from the ACB community	No (188)	29 (15%)	159 (85%)	0.29
	Yes (17)	1 (6%)	16 (94%)	
Person from the Indigenous community	No (193)	28 (15%)	165 (85%)	0.84
	Yes (12)	2 (17%)	10 (83%)	
Man who has sex with men (MSM)*	No (14)	1 (7%)	13 (93%)	0.56
	Yes (136)	17 (12%)	119 (88%)	

p- value - from Chi-square test or Fisher’s exact test
 ABC = African Caribbean Black, (*for male participants only)

Figure 1: Summary of COVID-19 vaccine uptake status – Select VHS items



Answers to the first 7 questions (Q) highly concordant <0.0001 (p- value) - from Chi-square test or Fisher’s exact test
 Regression of vaccine use done using 3 different models (Age + different combinations of Q)

Table 4: results of univariate analysis – logistic regression model for each factor

Factor	Odds ratio of receiving at least one dose vaccine	95% Confidence interval	p-value
Sex (Male vs. Female)	2.05	[0.91, 4.59]	0.08
Age /per 10-year	2.80	[1.91, 4.41]	<.0001
Person ≥65 years of age (Yes vs. No)	2.31	[0.40, 13.32]	0.35
Education- at least with comp university (Yes vs. No)	2.03	[0.92, 4.47]	0.08
Person who injects drugs (Yes vs. No)	0.44	[0.13, 1.47]	0.18
Person who uses non-prescription illicit drugs (Yes vs. No)	NA		
Persons of African, Caribbean or Black communities (Yes vs. No)	2.03	[0.35, 11.88]	0.43
Person from the Indigenous community (Yes vs. No)	0.72	[0.16, 3.20]	0.67
Man who has sex with men (MSM) (Yes vs. No) –Male participants only	0.76	[0.12, 4.67]	0.77

- For each increase of 10 years, the odds of taking the vaccine are increased (multiplied by 2.80)
- No effect of sex or education
- No effect based on sub-group membership, but numbers of participants are small

CONCLUSIONS (PRELIMINARY)

- Increased odds of accepting COVID-19 vaccines with increased **age**, but not with sex or education
- Individuals appear to accept vaccine more for **altruistic** reasons (i.e., protection of community) than individual reasons (i.e., protection of self)
- Individuals who felt that the **pandemic would linger on longer** were more likely to accept the vaccine than those who did not feel the pandemic would last that long
- Need more participants to study findings in more depth, and more from ACB and Indigenous communities to better elucidate differences driving vaccine confidence in various sub-groups of PLWH



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