

# Investigating factors associated with sub-optimal HIV testing among high-risk gay, bisexual, and other men who have sex with men: Results from Engage-Montreal 2017-2018

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## BACKGROUND

- HIV testing is key to effective HIV prevention; **early detection is important to limit transmission**<sup>1</sup>. Quebec HIV screening guidelines recommend gay, bisexual and other men who have sex with men (GBM) at **high-risk for HIV undergo HIV testing every 3-to-6 months**<sup>2</sup>.
- Clinical screening tools such as the **High-Incidence Risk Index (HIRI-MSM) attribute a risk-score**, which may be used to identify GBM at high-risk of HIV acquisition<sup>3,4</sup>.
- Review of recent literature has identified numerous factors associated with accessing HIV testing in GBM populations<sup>5,6,7,8</sup>. Access-related factors can be conceptualized along a trajectory of access (Fig 1).

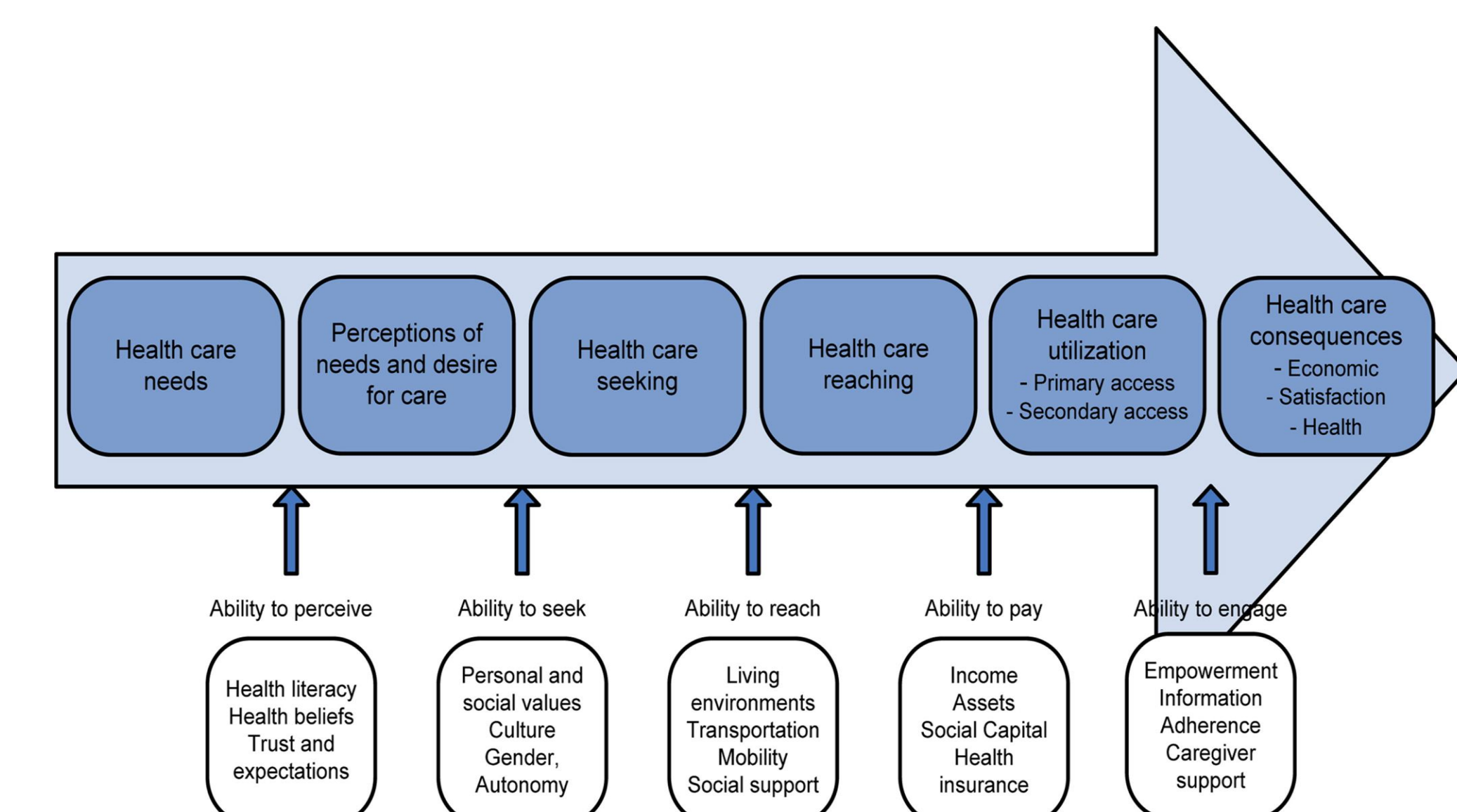


Fig. 1 : Trajectory of access to health services (Levesque et al, 2015)<sup>9</sup>

## OBJECTIVES

- Describe steps in access to HIV testing trajectory (felt the need; tried to get; was tested for HIV) in the past six months (P6M) among GBM of negative or unknown HIV status.
- Among HIV-negative GBM at high-risk for HIV, investigate factors associated with **not being tested for HIV (P6M)**.

## METHODS

- Engage-Montreal recruited **1179 sexually active cisgender and transgender men** ≥16 years via respondent-driven sampling (RDS).
- Participants underwent STI testing and responded to a CASI questionnaire, including **questions used to calculate HIRI-MSM score** (age, number of insertive & receptive sexual partners in P6M, number of HIV positive sexual partners in P6M, use of methamphetamine in P6M), in addition to questions (Likert scales on agreement) developed by the Engage team to **measure factors related to each step of the trajectory of access to HIV testing**.
- Among participants with self-reported negative or unknown HIV status, **access to HIV testing is described, stratified by risk of HIV infection** (high vs. low). **HIRI-MSM score ≥ 11** was used to identify participants at high-risk for HIV.
- Among high-risk HIV-negative participants, **univariable logistic regression models were used** to identify factors associated (p < 0.1) with not being tested for HIV (P6M). These factors were retained in the multivariable model.
- Factors **not associated with not being tested for HIV (P6M)** are listed, and odds-ratios and 95% confidence intervals (CI) for factors **significantly associated with not being tested for HIV (P6M)** for both univariable and multivariable models are reported.

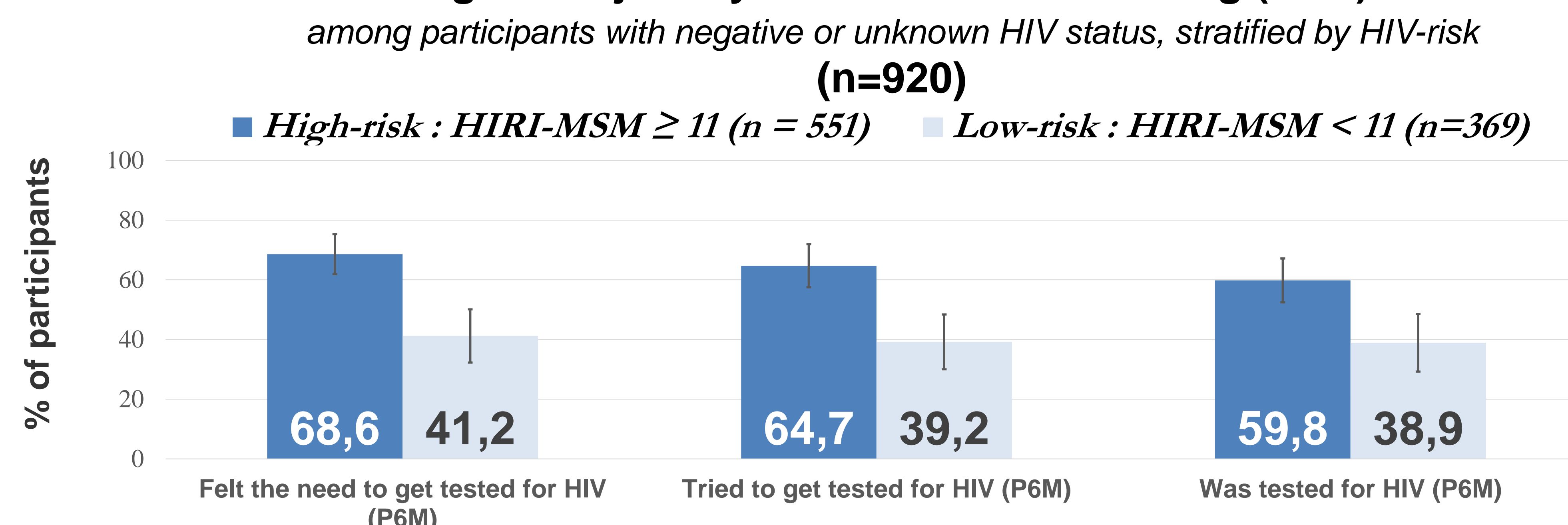
All estimates are **RDS-adjusted**.

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## RESULTS

Fig. 2: Trajectory of access to HIV testing (P6M)



## Factors NOT associated with not being tested for HIV (P6M)

in univariable logistic regression models among high-risk GBM with self-reported negative or unknown HIV status (n= 551)

### Sociodemographic Factors

- Income
- Marital status
- Gender identity

### Behavioural & Psychosocial Factors

- General Mental Health Status
- Anxiety Symptoms (HADS)\*
- Sexual Compulsivity\*
- Collective Self-Esteem\*
- Sexual Altruism\*

\* Factor measured using a validated scale.

### Factors relating to Accessing HIV Testing Services

- "I could not deal with knowing I am HIV-positive."
- "I feel ashamed about needing to get tested for HIV."
- "I am worried about being discriminated against if I test positive."
- "I don't want to be obliged to disclose my status to future sexual partners if I test HIV+."
- "I don't want to get tested in a place that is associated with the gay community."
- "Knowing I am HIV-positive would allow me to access HIV care as soon as possible."
- "I am afraid that the results of my HIV test will not remain anonymous or confidential."
- "There are clinics near where I work or live where I could get tested for HIV."
- "There are times when I didn't get tested for HIV because of the costs associated."
- "I believe the HIV test is an accurate test."
- "I have been treated unfairly by doctors or nurses because I am gay or bisexual."
- "I don't like having to describe details about my sex life in order to get an HIV test."
- "I feel that the HIV test and counselling procedure takes too long."

## Factors associated with not being tested for HIV (P6M)

in univariable & multivariable logistic regression models among high-risk GBM with self-reported negative or unknown HIV status (n=551)

| Sociodemographic Factors  | Univariable* |             | Multivariable*,** |             |
|---|--------------|-------------|-------------------|-------------|
|   | OR           | 95% CI      | a.OR              | 95% CI      |
| <b>Age</b><br>30 and younger  | <b>1.47</b>  | 1.04, 2.10  | <b>1.05</b>       | 0.65, 1.70  |
| <b>Education</b><br>Highest level of education completed: high school or less   | <b>2.28</b>  | 1.47, 3.57  | <b>1.10</b>       | 0.58, 2.07  |
| <b>Ethnicity</b><br>Identifies as English- or French-Canadian   | <b>1.84</b>  | 1.31, 2.60  | <b>1.56</b>       | 0.97, 2.52  |
| <b>Sexual Orientation</b><br>Does not identify as gay   | <b>1.70</b>  | 1.11, 2.61  | <b>0.82</b>       | 0.45, 1.50  |
| <b>Partner Status</b><br>No current regular partner   | <b>1.37</b>  | 0.97, 1.93  | <b>1.43</b>       | 0.88, 2.33  |
| <b>Behavioural &amp; Psychosocial Factors</b>   |              |             |                   |             |
| <b>Number of partners</b><br>Less than 6 partners in P6M  | <b>3.46</b>  | 2.43, 4.96  | <b>3.14</b>       | 1.94, 5.15  |
| <b>Depressive Symptoms</b><br>Low levels (HADS-Depression score < 11)   | <b>2.60</b>  | 1.26, 5.89  | <b>3.04</b>       | 1.08, 10.32 |
| <b>Alcohol use</b><br>No problematic alcohol use in P6M (ASSIST score < 11 for Alcohol)   | <b>1.41</b>  | 0.98, 2.03  | <b>1.49</b>       | 0.92, 2.44  |
| <b>Substance use</b><br>No problematic substance use in P6M (ASSIST score < 4 for Amphetamines, Cocaine, Inhalants, Sedatives, Hallucinogens, Opioids)                        | <b>1.38</b>  | 0.97, 1.96  | <b>0.98</b>       | 0.61, 1.58  |
| <b>Factors relating to Accessing HIV Testing Services</b>   |              |             |                   |             |
| <b>Self-assessment of HIV risk</b><br>"I am at low risk for HIV infection." (Agree or Strongly agree)   | <b>1.41</b>  | 1.00, 1.98  | <b>1.67</b>       | 1.03, 2.74  |
| <b>Beliefs relating to HIV treatment efficacy</b><br>"I'm less worried about HIV infection than I used to be." (Agree or Strongly agree)                                      | <b>1.37</b>  | 0.97, 1.93  | <b>1.92</b>       | 1.22, 3.06  |
| <b>Low knowledge of HIV testing recommendations</b><br>"I know enough about HIV testing recommendations to tell how often I should be tested" (Disagree or Strongly Disagree) | <b>8.17</b>  | 4.30, 16.87 | <b>6.47</b>       | 2.81, 16.47 |
| <b>Does not know where to get an HIV test</b><br>"I don't know where to get an HIV test." (Agree or Strongly Agree)   | <b>3.68</b>  | 1.89, 7.55  | <b>7.80</b>       | 2.31, 33.76 |
| <b>Preventing transmission as motivation for HIV testing</b><br>"Knowing I am HIV+ would allow me to prevent transmitting HIV to others." (Agree or Strongly agree)           | <b>2.55</b>  | 1.41, 4.87  | <b>2.43</b>       | 0.97, 6.77  |
| <b>Not having a primary healthcare provider</b><br>"Do you currently have a primary healthcare provider?" (No)  | <b>1.67</b>  | 1.19, 2.36  | <b>2.74</b>       | 1.66, 4.61  |

\* Quasi-binomial distribution was used for both univariable and multivariable regression models.  
\*\* Missing values: 29 high-risk HIV-negative GBM were excluded from the multivariable model due to missing values.

## KEY FINDINGS

- 31%** of high-risk HIV-negative GBM did **not feel the need** for HIV testing (P6M). **40%** of high-risk HIV-negative GBM were **not tested** for HIV (P6M).
- Factors found to be associated with not being tested for HIV (P6M)** among high-risk GBM in the multivariable model:
  - Low self-assessment of HIV risk
  - Less than 6 partners (P6M)
  - Agrees with statement "I am less worried about HIV infection than I used to be" in the context of HIV-treatment efficacy
  - Low knowledge of HIV testing recommendations
  - Low levels of depressive symptoms
  - Not knowing where to get an HIV test
  - Not having a primary healthcare provider

## LIMITATIONS

- Representativity of sample:** RDS-adjustment may not provide a fully representative population-based sample, and a selection bias may persist.
- Study design :** Cross sectional study design does not allow for causal considerations.
- Information bias :** Although members of Montreal's GBM communities were consulted when developing the Likert-statements measuring access to HIV testing services, these statements have not been validated by other studies. The Engage questionnaire might also have not measured all factors influencing HIV testing. Social desirability & recall bias may also be at play.

## CONCLUSIONS

- Although a higher proportion of high-risk GBM underwent HIV testing in P6M when compared to those at low-risk, there remains a considerable number of high-risk GBM who did not get tested.
- The factors associated with HIV testing seem to be evolving, as many obstacles previously demonstrated to influence HIV testing were not found.
- Promoting HIV testing guidelines in communities of high-risk GBM communities, helping GBM to accurately self-assess their HIV-risk, removing barriers to accessing primary healthcare providers, could help increase the frequency of HIV testing of GBM at high-risk for HIV.