

Impact of Social Searching Mobile Applications on Sexually Transmitted Infection Incidence in Collegiate Populations

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Background and Rationale: As of 2017, $\frac{1}{4}$ of the sexually active population is between the ages of 15-24. However, $\frac{1}{2}$ of newly reported sexually transmitted infections (STIs) are found in persons in this age group (CDC 2017). Many persons in this cohort are in high school and college, a developmental time characterized by the media by sexual awakening and liberation. In college populations, this liberation is facilitated by the use of Social Searching Mobile Applications (SSMA's) such as Tinder, Grindr, and OKCupid. These apps allow people to meet others with similar interests and have been used to aid finding romantic and/or sexual partners. The hookup culture that many persons in the above age group live in may act synergistically with these apps to increase levels of sexual activity and lead to a rise in high-risk behavior that can cause increased incidence of STI transmission.

Hypothesis: Use of SSMA's to find sexual partners will cause an increase in STI instances in collegiate populations.

Proposed Methods: Request to share survey link with students will be sent to health centers of United States colleges and universities, with a focus on attempting to sample public and private higher-education institutions, research universities, and community colleges. The survey will be hosted on an anonymous site that will not record any identifying information about the respondents and encrypted data will be sent to the researcher's computer. The first page of the survey will include questions about the respondent's demographic to better understand their responses to the questions specific to the study. Information collected on the first page of this form will include age, gender, and the gender of the people that the respondent has sex with (male, female, or both).

The next page will collect information on the SSMA-use habits of the respondents

B1– Do you use social searching mobile apps (such as Tinder, Grindr, Jack'd, etc)? This question will be answered on a scale of 1-5, with 1 being a response of “no, never” and 5 equating to a response of “yes, multiple times per week/daily”. A response of 1 will allow the respondent to skip questions 2 and 3, while an answer of 2 or greater will prompt a second question that will collect data on which apps they use. The multiple choice question will be auto-populated with popular apps (OKCupid, Plenty of Fish, Match, Jack'd, Tinder, Grindr, and Bumble), along with a fill-in-the-blank option for any other apps that I did not account for.

B2– Have you ever had sex with a person you met on a social searching mobile app? This question will be answered either yes or no, with a response of “no” allowing the respondent to skip question B3.

B3– Are you more inclined to use contraceptives with someone you met using a social searching mobile app? This question will also be answered with yes or no.

The completion of the above questions will allow the respondent to advance to the next set of questions, which gathers information on their sexual history and STI status.

C1– Have you ever engaged in sexual contact? This question will be formatted as a “select all that apply”, with check boxes for digital, oral, anal, and other penetrative sex.

C2– What type(s) of birth control do you/your partner(s) use? This question will also be a “select all that apply”, with options for oral contraceptives (the pill), hormonal patch, hormonal ring (nuvaring), hormonal implant (Nexplanon, Implanon), the shot (Depo-Provera), non-hormonal intrauterine contraceptive (ex: Paraguard), hormonal intrauterine contraceptive (ex:

Mirena, Skyla), barrier methods (condoms, dental dams, etc.), withdrawal, other, none, and an option for “my partner uses contraceptives, but I am not sure which type”.

C3– How frequently are you tested for sexually transmitted infections (STIs)? This will be a multiple choice question with options for “every time I have a new sexual partner”, “every 6 months”, “annually”, “whenever I have concerns”, “other”, and “I have never been tested for STIs”.

C4 – Do you know your current STI status? This will be a scale question similar in structure to question A1 with 6 options. A response of 1 indicates that the respondent is free from STIs and has supporting test results. A 2 indicates that they are probably free from STIs, but have not been tested. A response of 3 indicates that they do not know one way or another. A 4 indicates that they think that they might have an STI, but have not been tested to either confirm or deny the presence of a venereal disease. A response of 5 indicates that they know for sure that they have an STI and have either received treatment. The final response, with an input of X indicates that the respondent has never engaged in any kind of sexual contact and will allow them to skip questions 5-7.

C5– Do you know the STI status of all of your sexual partners? This will be structured similarly to question C5. A response of 1 indicates that all of their partners have tested negative for STIs, 2 indicates that some partners have been tested negatively for STIs, 3 means that the respondent cannot tell one way or another. 4 means that their partners may be STI-positive, and a 5 means that their partners have tested positively for an STI and has not received treatment.

C6– How many sexual partners have you had in the last 12 months? This question will have two dialogue boxes for the respondent to input a number of sexual partners; the first asks for a total, and the second for the number of sexual partners met on SSMA's.

C7– When do you ask your sexual partners about their STI status? This multiple choice question will have responses including “before the first sexual encounter”, “before cessation of barrier methods of contraception”, “if I have concerns”, “I don't”, or “other”.

Flaws in Methodology: The self-selection inherent in a study that relies on survey completion will not allow for a fully randomized sample. Survey respondents may not answer questions truthfully.

Broader Impacts: A successful analysis of the data collected will allow health educators to address education gaps in sexual education, allow college campuses to directly impact the health of their students, and encourage people to engage in safer sexual activity.