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University of Vermont

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EVALUATION OF GEO-SOCIAL NETWORKING APPLICATION USE AMONG YOUNG ADULTS

Caleb Seufert
Brookfield Family Medicine - January 2016
Danbury, Connecticut
Advisor: Cornelius Ferreira M.D. & Alanna Gilbert
Since 2009 Geosocial Networking Applications (GNA’s), otherwise known as “dating apps,” have rapidly emerged as a new platform for users to communicate, date, and meet for sex.\(^1\)

Popular GNA’s include *Tinder, Grindr, OkCupid, Bumble, Plenty of Fish, and more*…

GNA’s are unique to traditional dating websites in that they allow users to connect with each other based on geographic proximity of their mobile phones.

Popular GNA’s, like *Tinder*, estimate the majority of users are 16 to 34 years-old.\(^2\)

CDC reports half of the 20 million new STD infections/year are among 15 to 24 year-olds.\(^3\)

To date, research has only investigated associations between GNA use and high- risk sexual behavior and health outcomes among men who have sex with men (MSM)\(^7\), but GNA’s that target heterosexual communities are unexplored in the literature.

Given the pervasiveness of technology usage among young adults, it is important to understand the potential risks and benefits that GNA-facilitated communication poses on young adult sexual health, emotional well-being, and safety.

Examination of GNA use and their association with high-risk behaviors and sexual health outcomes among heterosexual young adults is warranted.
PUBLIC HEALTH COST AND UNIQUE CONSIDERATIONS

Cost of Sexually Transmitted Infections

• CDC report states that sexually transmitted infections like chlamydia, gonorrhea, and syphilis increased dramatically in 2014.  
  o Chlamydia increased 2.8% since 2013  
  o Syphilis increased 15.1% since 2013

• CDC estimates nearly 20 million new STI’s occur yearly in the US which accounts for almost $16 billion in health care costs.  

• Annual cost of curable STI’s is estimated at $742 million.  
  o Chlamydia is the most common and costly.

• Young women face serious long-term health consequences  
  • Undiagnosed STDs cause more than 20,000 women to become infertile yearly  
  • Poses a large impact on medical spending for diagnosis and management
Geo-Social Networking App Considerations

- Many GNAs exist and offer similar user experience but privacy, proximity limits, and how users are matched can differ.

- In 2014, *Tinder* had: 5
  - 50 million users per day
  - been available in 30 languages in 159 countries
  - average use of 1.5 hours per day
  - 12 million matches per day
  - estimated worth over $1 billion dollars

- GNAs have been very successful and it is reasonable to expect that additional applications will continue to be developed and marketed to young adults. 6

- These mobile-based apps are a new social avenue for people to communicate and meet. 8
Interview with Cornelius Ferreira, MD
Family Medicine Physician at Brookfield Family Medicine

- **Physician awareness of GNAs:**
  - “I’m vaguely familiar with dating apps but I can’t name any. I’ve heard more about online social forums like Craigslist which may be used for communication, picture exchange, and arranging to meet other people.”

- **Potential health concerns for GNA users:**
  - “As a PCP, I would worry about a few things among GNA users. I would worry about underlying psychiatric issues. Rejection is a major concern. The emotional component could be a major challenge. Safety is another issue among younger adults. Invasion of privacy through pictures sharing and unauthorized spreading of picture is also problematic. Of course casual sex with high-risk practices is a concern.”

- **How could information about GNA usage among young adults help PCP’s?**
  - “I think that we should ask about GNA use within our preventative health screening questions. Reviewing the risks and benefits of GNA use could be included with questions like bullying, sunscreen, texting and driving, sexual activity, etc.”
Interview with Lynn Sosa, MD
Deputy State Epidemiologist, Connecticut Department of Public Health

- **Are you familiar with geo-social networking applications (dating apps).**
  - "Yes, we are very familiar with them at the CT Department of Public Health (CT DPH). We mainly see applications like Grindr, Tinder, Scruff, and Jack’d. People are using them to meet one another."

- **Do you think there is a potential public health concern over the use of geo-social networking applications? Specifically among young adults?**
  - "Yes there is certainly a public health concern. Our department focuses on STDs. Currently our priorities are syphilis and HIV, especially among MSM."
  - "Anecdotally I can tell you the majority of the MSM population we interview with syphilis infections are using GSN applications."
  - "Heterosexuals are using the apps and meeting one another as well, however they may not be using them at the same intensity or in the same ways? I don't think we understand heterosexual use of these apps."
Interview with **Lynn Sosa, MD**

Deputy State Epidemiologist, Connecticut Department of Public Health

**What unique challenges have you and your department faced?**

- The dating-apps have presented new challenges to the CT DPH, forcing them to rethink how they approach "partner services". Traditionally they have gone out and interviewed infected individuals to identify past sexual partners and get them tested and treated. However, if there is an abundance of one-time sexual encounters or anonymous partners facilitated by GNA use, then the traditional partner services approach is much more difficult and tracking down affected partners is a problem.

- The question remains, "How do you get to these people that become infected after meeting many partners using GNA apps? We haven't figured out how to best approach this issue yet. Understanding the community that is using GNAs is the first step in overcoming the challenge."

**As Deputy State Epidemiologist, do you think the increase in STI's nationally and locally can be attributed to increasing high-risk behaviors which may include the use of social media to arrange casual and often anonymous sexual encounters?**

- "The increase in infections is certainly multifactorial. Social media use is one part of the story but it is not the only thing. No, I don't think it is solely responsible for the increase, but it is playing a role."

**From a public health standpoint in CT, what sexual health and safety recommendations would you make among active users of geo-social networking apps?**

- "Regardless how people meet, always practice safe sex. Consistent and correct use of condoms for every sex act is essential to prevent sexually transmitted diseases. If you have frequent multiple partners, you need to be tested frequently so you can be treated as soon as possible and let your past partners know as well."
INTERVENTION AND METHODOLOGY

Goal

- Develop a descriptive summary of geo-social application use and sexual behavior among young adults at Western Connecticut State University (WCSU) in Danbury, CT.

Intervention

- **Presentation 1** - WCSU’s Collegiate Health Service Corps Club (CHSCC).
  - Purpose: Discussed attitudes and beliefs with regard to GNA use and potential health impact.
  - Recruited CHSCC members to help brainstorm, create, and distribute a GNA use and sexual health survey.

- **Presentation 2** – WCSU’s Collegiate Health Service Corps Club (CHSCC).
  - Presented survey results to WCSU’s CHSC Club.
  - Purpose: To raise awareness of GNA use, current sexual practices and health, and overall wellness among student survey participants.

Methodology

- Conducted focus-group interviews with WCSU Collegiate Health Service Corps Club (CHSCC)
- Administered a 26-question survey among WCSU young adults, ages 18 to 25 years-old.
- Age groups were stratified:
  - 18-20 years-old (n = 19)
  - 21-23 years-old (n = 20)
  - 24-25 years-old (n = 20)
- Survey contained questions regarding:
  1. GNA’s usage and practice
  2. Sexual behaviors and sexual health
  3. Overall wellness
RESULTS

Demographics & App Use

What is your age range?

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-20</td>
<td>19</td>
<td>31.7</td>
</tr>
<tr>
<td>21-23</td>
<td>20</td>
<td>33.3</td>
</tr>
<tr>
<td>24-26</td>
<td>20</td>
<td>33.3</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Do you consider yourself to be:

<table>
<thead>
<tr>
<th>Identity</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heterosexual</td>
<td>50</td>
<td>83.3</td>
</tr>
<tr>
<td>Homosexual</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Bisexual</td>
<td>6</td>
<td>10.0</td>
</tr>
<tr>
<td>I don’t know</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>98.3</td>
</tr>
</tbody>
</table>

Have you ever used a dating app?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>26</td>
</tr>
<tr>
<td>no</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
</tr>
</tbody>
</table>

Safety

How often do you meet up with someone you found through the app? (n=26)

How do you use protection (i.e. barrier methods) every time you have sex?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td></td>
</tr>
<tr>
<td>Prefer not to disclose</td>
<td></td>
</tr>
</tbody>
</table>

Have you been tested for any sexually transmitted infection (STI) in the past?

<table>
<thead>
<tr>
<th>3-1 month</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 months</td>
<td>9</td>
<td>15.0</td>
</tr>
<tr>
<td>3-6 months</td>
<td>13</td>
<td>21.7</td>
</tr>
<tr>
<td>6-11 months</td>
<td>4</td>
<td>6.7</td>
</tr>
<tr>
<td>1+ year</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>None</td>
<td>22</td>
<td>36.7</td>
</tr>
</tbody>
</table>
RESULTS: Geo-social Networking Application Use

Have you ever used a dating app?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>26</td>
<td>43.3</td>
</tr>
<tr>
<td>no</td>
<td>33</td>
<td>55.0</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>98.3</td>
</tr>
</tbody>
</table>

What is your age range?

<table>
<thead>
<tr>
<th></th>
<th>16-20</th>
<th>21-25</th>
<th>24-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever used a dating app? yes</td>
<td>8</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>no</td>
<td>11</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>20</td>
<td>19</td>
</tr>
</tbody>
</table>

Specific applications reported among users

* (n=26) more than 1 app per user reported

- Bumble (n=2)
- Okcupid (n=4)
- Plenty of Fish (n=5)
- Tinder (n=19)
- Other (n=3)

What is the purpose of using a dating-app? n = 26

- Sexual Intercourse
- Casual Hook-Ups
- Casual Dating
- Platonic Relationship
- Companionship
- Curiosity/Fun

What is the nature of most your encounters? (n=26, multiple answers per user)

- Sexual intercourse
- Oral Sex
- Hook-up
- Date
- Social activity
- Exchange of pictures
- Texting
- Conversation

How long have you been using these types of app(s)?

Frequency

- 0-1 month
- 1-3 months
- 3-6 months
- 6-11 months
- 1 year
- None
- Prefer not to disclose

Preference

- 0%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
EVALUATION OF EFFECTIVENESS AND LIMITATIONS

Effectiveness
- The primary goal was satisfied:
  - To summarize survey data and present it to a segment of Western CT State University (WCSU) student body.
- Reception of project was excellent:
  - WCSU’s Collegiate Health Service Corps Club was enthusiastic about the project and plans to pursue additional campus projects related to the survey results (see ‘Recommendations’).
- Survey results cannot equate social apps with STD risk or prevalence, however they do encourage app-users to think about whether their own app-use places them at sexual and/or safety risk.

Limitations
- Small survey sample size
- Results have limited generalizability since population was homogenous (college students).
- GNA use has been documented to highest among urban settings. WCSU is a suburban locale and may have lower GNA use prevalence.
- The survey asks sensitive questions which may skew answers. Some participants may be reluctant to share accurate personal information regardless of confidentiality.
Given the demonstrated prevalence of GNA use among young adults, it is important for the general public, health care providers, and app-users to understand the potential risks and benefits of this type of communication.

1. **Provide lectures and discussion within a community forum**
   - WCSU’s Collegiate Health Service Corps Club plans to facilitate a lecture and discussion on GNA use and potential risks among college students. Open to the general public.

2. **Participate at health fairs on college campuses**
   - WCSU’s Collegiate Health Service Corps Club is planning to set-up a GNA information table at WCSU’s annual health and wellness fair during the spring. Information will be specific to WCSU student population based on survey results.

3. **Physicians should be aware of GNA usage among the young adult population:**
   - Construct a Dating-App Education Pamphlet intended for primary health care professionals
   - Incorporate dating-app screening questions for adolescent and young adults during exams
     - Outline risk and benefits of GNA usage and address smart decision making
REFERENCES


Notes:

- Western CT State University IRB Exemption status was granted for this project.