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ATTITUDES ABOUT THE USE OF GEOSOCIAL NETWORKING APPLICATIONS FOR HIV/STD PARTNER NOTIFICATION: A QUALITATIVE STUDY

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Meeting sex partners through geosocial networking (GSN) apps is common among men who have sex with men (MSM). MSM may choose not to exchange contact information with partners met through GSN apps, limiting their own and health departments' ability to notify partners of HIV/STD exposure through standard notification methods. Using online focus groups (four groups; $N = 28$), we explored the perspectives of U.S. MSM regarding offer of partner notification features through GSN apps. Most participants were comfortable with HIV/STD partner notification delivered via GSN apps, either by partner services staff using a health department profile or through an in-app anonymous messaging system. While most participants expressed a responsibility to notify partners on their own, app-based partner notification methods may be preferred for casual or hard-to-reach partners. However, participants indicated that health departments will need to build trust with MSM app users to ensure acceptable and effective app-based delivery of partner notification.

Keywords: geosocial networking applications, MSM, partner notification, HIV, STDs

Men who have sex with men (MSM) are disproportionately affected by HIV and other sexually transmitted diseases (STDs) in the U.S. (Centers for Disease Control

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and Prevention [CDC], 2018a, 2018b). Despite representing only 2% of the population, MSM make up 56% of those living with HIV, 67% of all new HIV diagnoses each year, and accounted for 58% of primary and secondary syphilis cases in 2017 (CDC, 2018a, 2018b). In addition, gonorrhea case rates among MSM are estimated to have increased by 283% from 2010 to 2017, and bacterial STD rates have been rising nationwide among MSM for the last decade (CDC, 2018a; Unemo et al., 2017). To curb the HIV and STD epidemics among MSM, targeted prevention strategies are needed. Partner services (PS) are a core public health strategy used to prevent the transmission of HIV and other STDs. A critical component of PS is partner notification, in which specially trained health program staff assist individuals newly diagnosed with HIV or an STD (index patients) in confidentially notifying their sex partners of possible exposure. PS are an effective method for detecting new cases of HIV, syphilis, gonorrhea, and chlamydia in the U.S. (Du, Coles, Gerber, & McNutt, 2007; Golden, Dombrowski, Wood, Fleming, & Harrington, 2009; Hogben, McNally, McPheeters, & Hutchinson, 2007; Landis et al., 1992; Macke & Maher, 1999; Mathews et al., 2002; Oxman et al., 1994).

Meeting sex and romantic partners through geosocial networking (GSN) apps is common among MSM and poses a challenge to traditional HIV/STD partner notification (Pennise et al., 2015; Phillips et al., 2014; Rice et al., 2012). GSN apps use global positioning system technology on smartphones to allow users to connect with other users based on their location. MSM may communicate with sex partners met through GSN apps solely through the apps and choose not to exchange any other contact information, limiting their own and health departments' ability to notify partners of HIV/STD exposure through standard notification methods (Pennise et al., 2015). Historically, partners have been notified in person or by phone, although many health departments have adapted over time to include notification through email, instant messaging, social networking sites, and sex-seeking sites, and internet partner notification has been found to be acceptable to U.S. MSM (Ehlman et al., 2010; Hunter et al., 2014; Klausner, Wolf, Fischer-Ponce, Zolt, & Katz, 2000; McFarlane, Kachur, Klausner, Roland, & Cohen, 2005; Mimiaga et al., 2008; Udeagu et al., 2014; Vest, Valadez, Hanner, Lee, & Harris, 2007). GSN apps pose unique partner tracing challenges since users often do not have a stable profile or unique profile name, messages with other users are only stored for a limited time, users sometimes delete their profiles or block other users, and users can only see profiles based on location. Most health departments do not currently use GSN apps to trace or notify partners of HIV/STD exposure due to concerns about privacy and the feasibility of locating a partner through GSN apps. On dating/hookup websites, health departments and website users reported being supportive of health department–initiated HIV/STD partner notification through the sites, but only a minority of website owners reported being willing to implement the intervention (Wohlfeiler et al., 2013). Little is known about the acceptability of partner notification through GSN apps among MSM.

Since GSN apps have become a common method for meeting sex partners among U.S. MSM, it is important for public health departments to adapt HIV/STD prevention strategies, including PS, to incorporate these apps. This qualitative study examined how MSM across the U.S. use GSN apps and their perspectives regarding delivery of HIV/STD partner notification and health services through these apps.

METHODS

STUDY DESIGN

This qualitative study was conducted in February and March 2017 among cisgender MSM living in the U.S. who use GSN apps to meet sex partners. We conducted four online focus group discussions (FGDs) to explore how MSM meet and communicate with sex partners through GSN apps, attitudes towards PS, and perspectives regarding different strategies for HIV/STD partner notification and health services through the apps. Focus group results informed the development of a subsequent online survey of U.S. MSM assessing the acceptability of app-based partner notification methods. Each focus group consisted of 6–8 participants.

STUDY PARTICIPANTS

We recruited participants through banner advertisements on Facebook and Instagram restricted by gender and age, and we used ads and targeting strategies designed to reach racially/ethnically diverse MSM. By recruiting through general social networking apps instead of selected GSN apps, we hoped to reach users of a broader array of apps and avoid oversampling users of the GSN apps used for recruitment. Interested potential participants clicked on the advertisement and completed an eligibility screener. We used respondent IP addresses to identify multiple submissions from the same participant. Eligibility criteria included: cisgender men age 18 years or older, U.S. residence, meeting a male sex partner through a GSN app in the last 12 months, and being willing to provide informed consent.

Study staff purposively selected racially/ethnically and geographically diverse respondents for invitation to participate in the online FGDs. FGDs were stratified based on age (< 35, ≥ 35) and history of diagnosis with HIV, syphilis, gonorrhea, or chlamydia (ever versus never) into four groups: (1) aged < 35 with a history of HIV/STD, (2) aged ≥ 35 with a history of HIV/STD, (3) aged < 35 with no history of HIV/STD, and (4) aged ≥ 35 with no history of HIV/STD. The cut-off point of age 35 was chosen to approximate a meaningful generational difference in exposure to mobile phone and texting technology. We hypothesized that this difference might influence attitudes and behaviors surrounding the use of such technology in general and its use to notify partners or access health-related services in particular. We anticipated that those with a history of HIV/STD may have different perspectives on partner notification than those who have never had to consider notifying partners of exposure to HIV/STDs. In addition, we wanted to reduce the possibility of stigmatization within the FGDs as participants discussed real experiences with partner notification and to ensure our ability to distinguish between hypothetical versus real experiences. Participants received a $60 Amazon gift certificate for their time. The Institutional Review Board at the University of Washington approved the study, and all participants provided informed consent.

DATA COLLECTION

Demographic information and HIV/STD diagnosis history were collected in the screening questionnaire. Three facilitators conducted the online FGDs (MC, RF, and DK) using the group chat function on Zoom Meeting (Zoom Video Communications, Inc., San Jose, CA), using established online FGD methods (Schneider, Kerwin, Frechtling, & Vivari, 2002; Stewart & Williams, 2005; Wilkerson, Iantaffi, Grey,

Bockting, & Rosser, 2014; Woodyatt, Finneran, & Stephenson, 2016). Participants created aliases to protect their identities from other focus group members and used computers, smartphones, or tablets during the discussion. The facilitators led the text-based discussion using a semi-structured discussion guide. Each FGD lasted 90 minutes and included the following topics: (1) how MSM use GSN apps, including to meet potential partners, (2) how MSM communicate with potential partners in the apps, and their attitudes and beliefs about (3) notifying sex partners about an HIV/STD diagnosis, (4) strategies for notifying partners of potential exposure to HIV/STD through the apps, (5) a health department presence on the apps, and (6) HIV/STD health services offered through the apps.

When asking about partner notification strategies using apps, the facilitators asked participants to share their attitudes around hypothetically having to notify a partner and be notified by a partner about exposure to HIV/STD through each of the following three app-based methods:

Method 1. Partner services staff offers to notify index patient's partners using a health department profile on the app while keeping the index patient's identity anonymous.

Method 2. Partner services staff offers to coach the index patient in how to tell sex partners about the exposure through the index patient's own app profile.

Method 3. The app has a feature that allows the index patient to anonymously send a message in the app to notify any user about possible HIV/STD exposure.

Participants expressed how notifying and being notified would feel to them through the various partner notification methods. Written transcripts of the conversations were saved from the online FGDs.

DATA ANALYSIS

Upon review of transcripts, facilitators determined no new emergent themes arising after the fourth FGD. We uploaded the transcripts to a web-based qualitative research platform, Dedoose version 7.0.23 (SocioCultural Research Consultants, 2016), through which we extracted all participant statements as individual excerpts. We then matched each statement to each topic area of inquiry (i.e., partner notification using health department partner services staff, partner notification using anonymous messaging in GSN apps, etc.). Once this content was organized by topic, two coders each independently produced a single summarizing sentence upon reviewing all excerpts within a topic area. While reviewing the content organized by topic, the two coders assessed for differences in responses between FGDs, which were stratified by age and history of HIV/STD. The summarizing sentences of each coder were placed adjacently and reviewed by an external coder who examined the relationship between the excerpts and each summary sentence. Inter-rater reliability between the two initial coders was high (92%). For topic areas in which summarizing sentences were discordant in interpretation, the external coder facilitated discussion among all coders to reconcile interpretive differences. Representative quotes were selected by facilitators, and spelling and punctuation errors were corrected for the quotes displayed in the results section.

RESULTS

PARTICIPANT CHARACTERISTICS

During the week the advertisement was posted on Facebook and Instagram, 189 eligible men completed the screening questionnaire. Twenty-eight men participated in four online FGDs. Participants had a median age of 31 (interquartile range: 21, 50), 39% were non-Hispanic White, 46% lived in the U.S. South, and 50% reported having ever been diagnosed with HIV, syphilis, gonorrhea, or chlamydia (Table 1). To join the online FGDs, 57% used a computer, 29% used a smartphone, and 14% used a tablet. Grindr was the most common GSN app used by participants, and Tinder was predominantly used by younger participants. There were no substantial differences in participant responses based on age or history of HIV/STD diagnosis.

Communication Through GSN Apps. Participants described careful screening of potential partners met through apps. Before meeting in person, most described chatting in the app and exchanging photos. Younger men described verifying that the other user was real through Snapchat or Instagram. Once they decided to meet in person, phone numbers were sometimes exchanged:

> [Question: How do you decide whether to share contact information with people on apps?]
>
> Multiple face pictures first, then Snapchat, then if they're real they can get my number. (Age 19, HIV/STD History)

Most did not give out their last names, addresses, or personal details even if the conversation was going well. In response to being asked what information participants did not give out:

> Personal info, some people get real nosy. Never my last name and sometimes an alias name. (Age 45, HIV/STD History)
>
> I won't tell someone where I live, work, or hang out. Ultimately most personal identifiers are on a need-to-know unless I feel there is potential there. (Age 24, No HIV/STD History)

Many men mentioned blocking partners on an app after a hookup:

> Very difficult to find guys again after you hook up on Grindr. I'm guilty of blocking guys after I hook up so I don't have to talk to or see them again. (Age 20, No HIV/STD History)
>
> They [previous partners] usually pop up, but I like blocking them right away to avoid that awkwardness. (Age 19, HIV/STD History)

In general, participants reported that partners are easy to find again on the apps unless the partner blocks them, deletes his profile, or changes his username. Most said that favoriting partners' app profiles or saving chats with them facilitated finding them again. In some apps, users have unique usernames that are searchable, but this feature varies by app. Some participants mentioned that app users were typically in the same location, which made them easy to find again. Although, one participant expressed difficulty in finding a former partner:

TABLE 1. Characteristics of Focus Group Participants

Characteristic	Participants
	N = 28
	***n* (%) or Median (IQR)**
Age	31 (21, 50)
Race/Ethnicity	
Non-Hispanic White	11 (39)
Non-Hispanic Black	5 (18)
Hispanic	8 (29)
Other	4 (14)
U.S. Census Region	
West	5 (18)
Midwest	7 (25)
South	13 (46)
Northeast	3 (11)
Ever diagnosed with HIV or bacterial STD[a]	14 (50)

Note. IQR: interquartile range; STD: sexually transmitted disease. [a]STDs include chlamydia, gonorrhea, and syphilis.

> I actually had to find the guy that passed it to me. Since using the app was impossible to find him, I spent hours with friends being detective on the internet! I had his address, picture, and first name. But I hit a dead end of sorts. It just so happened that my sister lived in the same city as him (as I was visiting her at the time) and she had mutual friends with him on Facebook. (Age 23, HIV/STD History)

General Attitudes Towards Partner Notification. Most participants expressed a responsibility to tell partners about exposure to HIV or another STD themselves, regardless of the type of STD or type of relationship they had with the partner.

> I believe you need to tell your partner immediately whether you've been dating a month, a week, or like 10 years. (Age 29, HIV/STD History)

Some thought it would be cowardly to use partner services staff from the health department to notify a partner. Exceptions to this included concerns for the index patients' safety or stigma. When asked about having health department staff notify a partner about exposure through standard methods (phone or in person), one participant responded:

> That feels spineless. If I did this to someone, I need to be the one to tell them. (Age 21, No HIV/STD History)

However, another participant expressed a different point of view:

> I disagree about the spineless part. If a person was closeted or needed some level of anonymity, I respect that he would go to a health professional at all. (Age 18, No HIV/STD History)

Although most men wanted a partner to notify them about an exposure directly, nearly all men ultimately wanted to know about an exposure, regardless of who notified them. Most participants preferred to be notified through a phone call or a text message from partners they did not know well and in person from partners they

did know well, but the overall sentiment was that they wanted to know regardless of how they were told. In the words of one participant, "I'll take honesty in any form" (Age 52, No HIV/STD History).

Men reported mixed feelings about being notified about an exposure by the health department. Some thought it could feel cold and impersonal and did not like that they would not find out who exposed them; others liked the potential to ask health-related questions and be connected to resources.

> I have had that happen [been notified by partner services staff from the health department], and while it was somewhat impersonal, it was helpful and informative. (Age 50, HIV/STD History)

> I feel more comfortable with the health care providers, because they have the resources to help me, whereas with the partner telling me, I would have to seek out those resources. (Age 18, No HIV/STD History)

One participant from a small, conservative town expressed concern about compromising privacy if notified by the health department:

> I wouldn't want to hear from the health department here. Everyone knows everyone. This is small town Tennessee. (Age 62, HIV/STD History)

Partner Notification Through Partner Services Staff in GSN Apps. When presented with hypothetically notifying a partner using Method 1, where partner services staff offered to notify participants' partners using a health department profile in the app, most participants said they would decline the offer and notify their partners themselves. For some participants, using this method of notification would depend on how close they were with the partner:

> I think I would almost prefer that over in-person for the strangers who I've hooked up with, but if I had been seeing a few people consistently, I think I would say it face-to-face to them. (Age 18, No HIV/STD History)

Participants were then asked how they would feel about Method 2, having a partner services staff member from their local health department coach them on what to say when sending a notification message on their own through the app. Men had mixed feelings about the coaching offer:

> I wouldn't want coaching. That makes it cold and impersonal. I would thank them [partner services staff] and decline. I prefer to do things my way so I know my point gets across. (Age 23, HIV/STD History)

> If I had a personal "STD coach," so to speak, to guide me throughout the entire process of telling people and coping with it, I think that'd be a health care revolution in terms of personal care. (Age 18, No HIV/STD History)

> That [coaching] might make it more comfortable to know what to possibly say. (Age 64, No HIV/STD History)

Participants were also asked how they would feel about receiving a notification message through a health department profile on the app. While there were some participants who liked the idea of health department notification in an app, others felt that they would question the authenticity of the health department profile and worry about the confidentiality of the messages. Some men expressed concerns over mali-

cious intent: "it could be a fake profile out trying to scare people" (Age 23, HIV/STD History). A few men disliked the idea of the government knowing what apps they are on: "[I] worry about the Big Brother aspect but appreciate the notification" (Age 46, HIV/STD History).

Despite some skepticism about the authenticity of a message from a health department profile, the consensus was that participants would get tested if they received a message in the app from the health department about being exposed to HIV or another STD:

> It [getting tested] is the most logical thing to do. If you have an entity telling you that you may have been exposed to something, are you willing to take the risk that it is false? (Age 23, HIV/STD History)

> I will get in touch [with the health department] immediately for peace of mind. (Age 29, HIV/STD History)

Partner Notification Using an Anonymous Messaging System in GSN Apps. Participants were asked if they would use an anonymous messaging feature in the app to tell sex partners that they may have been exposed to HIV or another STD (Method 3). While many participants wanted to notify partners more directly, some mentioned that they would use the anonymous messaging feature in an app. Participants liked the ease of notifying with this method and would find it useful if they did not have contact information for the partner or if they had a large number of partners from the app:

> I'd use a feature that allowed me to anonymously tell any of my sex partners with app profiles about the exposure. It's common courtesy, and they have a right to know. (Age 53, No HIV/STD History)

> I would use it if I didn't have the [contact] information of the person [sex partner]. (Age 20, No HIV/STD History)

> If I had a high number of potential contacts on the app then perhaps. (Age 24, No HIV/STD History)

Some participants wanted to be able to customize the anonymous message that was sent to their partners, but another participant pointed out that this could enable app users to send messages for malicious purposes: "You wouldn't want someone to send hate mail like that" (Age 24, No HIV/STD History).

Overall, participants were amenable to receiving an anonymous notification message through the app, and some expressed that they would feel grateful for the message. One participant expressed that "being anonymous might encourage the guy [partner] to reveal it [his HIV/STD diagnosis]" (Age 62, HIV/STD History). Some liked this option of notifying without involving a health professional: "That [anonymous] message was good and keeps a health care provider out." (Age 20, No HIV/STD History) However, others would prefer that a health professional was involved: "A health department has some credibility rather than an anonymous person who may or may not be real." (Age 19, HIV/STD History)

No participants indicated that having a built-in feature that allows users to notify partners about an HIV/STD exposure would deter them from using that particular app. Rather, some felt that having that feature would show that the app cared about the health of the community, and many would think better of the app for hav-

ing this feature. Moreover, they noted that such a feature would not change the way most men would feel about the app's other users:

> It [an app partner notification feature] tells me that the app is serious and cares about the health of the community they are serving. (Age 18, No HIV/STD History)

> I'd feel safer using the app. At least I know that it cares about its users. There are many other apps that don't have that option [an app partner notification feature] so I think I'd prefer the ones that do. (Age 19, HIV/STD History)

Other men said that it would be nice but would not change whether they used the app:

> It [an app partner notification feature] is not really that important to me. It would be nice, but it wouldn't necessarily be a draw. (Age 29, HIV/STD History)

Health Department Profiles on GSN Apps. Most participants liked the idea of accessing health-related information and services from health department profiles on the apps: "I think it's a good idea. They could also answer questions that people have in general rather than just delivering bad news" (Age 19, HIV/STD History). Men reported expecting health department representatives on the apps to be knowledgeable about sexual health. They indicated they would appreciate information on HIV/STD testing, referrals to health care providers, and referrals for HIV/STD counseling.

However, some participants from rural communities were not comfortable with the idea of a local health department presence on an app. Their reasons for being uncomfortable included fear of loss of anonymity and fear of mistreatment based on perceived local norms of LGBTQ discrimination. Some men felt it was important that the health department staff demonstrate sensitivity and respect towards the LGBTQ community on the apps to build trust among the users:

> When the town is socially conservative and homophobic, there is a great chance in the health department that the workers would be uncompassionate and biased. (Age 36, HIV/STD History)

> As long as they were looking out for the gays and not out to get us. (Age 18, No HIV/STD History)

Participants also mentioned a desire for health department staff on the apps to have experience working with MSM and familiarity with issues affecting their community:

> I would feel safer and more taken care of if the person [health department staff] was knowledgeable of the issues and history and complexity of the gays. Someone who has worked with the gay community on health issues. (Age 18, HIV/STD History)

Many participants raised concerns about verifying the authenticity of a health department profile on the app. To make a health department profile look authentic, participants suggested using the health department logo as the profile picture and including contact information for the health department staff who manage the profile, such as a phone number, address, and website. Several participants suggested having the app verify that the health department profile was real by making that profile look different from other profiles:

> It has to be very clearly identified as the health department, maybe even if there was a way to engage the app companies to personalize or augment those profiles so that they looked different enough to be distinguished from all other profiles. (Age 24, No HIV/STD History)

A few participants suggested that health departments have verified Twitter accounts to link the profile to. Twitter can add a blue verified badge to let users know that an account of public interest is authentic: "Unless they had some sort of validation through the app, like a verified Twitter account, I would not like it" (Age 18, No HIV/STD History).

HIV/STD Health Services Offered Through GSN Apps. Most men reported that they would like app features that would enable them to receive HIV/STD testing reminders and alerts about STD outbreaks in the area:

> I think that would be a good thing to keep in mind. If there were an outbreak and I got a message, it would remind me to check with potential partners. (Age 19, HIV/STD History)

> STD testing calendar updates and check-ins would be a major plus. (Age 24, No HIV/STD History)

DISCUSSION

While most participants expressed a preference to notify partners on their own, they were generally comfortable with HIV/STD partner notification occurring within GSN apps, both by partner services staff using a health department profile and by a hypothetical anonymous messaging system built into the app. In addition to partner notification, many men liked the idea of accessing health information and services, such as HIV/STD testing reminders and notification of local disease outbreaks through the apps. While most participants were amenable to a health department presence on GSN apps, health department sensitivity, respect towards, and experience working with MSM will be essential to gain the trust of MSM who use these apps.

Overwhelmingly, participants expressed a responsibility to tell a partner about HIV/STD exposure themselves, regardless of the type of relationship they had with the partner. Some participants liked the idea of being able to notify casual or hard-to-reach partners using an anonymous in-app messaging system or having partner services staff notify these partners using a health department profile. This is consistent with a previous study of Australian MSM, in which participants reported a stronger sense of moral responsibility to notify regular partners in person and preferred notification methods that ensured anonymity for casual partners, most of whom were met online or through apps (Tomnay et al., 2017). They preferred to notify casual partners anonymously out of fear of negative repercussions, such as blackmail, from those they did not know well. Other studies of MSM have found that they are more willing to notify a main partner than a casual one and may be more likely to notify partners with whom they anticipate future sexual contact (Clark et al., 2016; Gorbach et al., 2000). Partner notification options through GSN apps may provide MSM who would not otherwise notify casual partners with a way to do so anonymously.

Although most men preferred to be told directly about a potential HIV/STD exposure by their partners, they unanimously expressed that they wanted to know about the exposure, regardless of who told them and how they were told, so that they could seek testing and treatment. A study of the acceptability of partner notification through health department email among U.S. MSM found that, while participants wanted a way to verify the authenticity of the health department e-mail, 80% thought it was important to receive a partner notification message regardless (Mimiaga et al., 2008). Similarly, the participants in our study reported needing a way to verify the authenticity of a health department profile when being notified through a GSN app, but the consensus was that participants would get tested if they received a message in the app from the health department. Comparable to the hypothetical in-app anonymous messaging system, inSPOT is a partner notification website that allows individuals to send anonymous electronic partner notification email cards. In a study of the acceptability of inSPOT, 77% of MSM reported that they would seek testing if notified of STD exposure by an anonymous email card compared to 95% if notified by a signed email from the partner (Kerani, Fleming, & Golden, 2013). While men may prefer to be notified directly by their sex partners, the majority would still test for HIV/STD if notified through a health department profile or anonymous message.

Many participants were interested in accessing health-related information from their local health departments through GSN apps, consistent with another study of MSM in North Carolina that found that GSN apps were an acceptable source of sexual health information (Sun, Stowers, Miller, Bachmann, & Rhodes, 2015). That study tested the feasibility of a health department profile on GSN apps to answer HIV/STD-related questions. Over the course of 6 months, the health department staff member answered GSN app user questions about HIV transmission, local HIV/STD testing locations, and HIV testing availability. Our study found that those from geographic areas perceived as discriminatory to gay men were wary of the presence of a local health department on GSN apps. If health departments are on apps, it will be essential that they provide accurate health information and demonstrate sensitivity and respect towards the LGBTQ community to gain the trust of app users. It will be important for app users to be able to verify that health department profiles are real and for confidentiality parameters to be clear.

This study had a number of important strengths. First, conducting the FGDs online allowed for the inclusion of a diverse sample of MSM from across the U.S. Second, the online medium allowed for greater anonymity for participants and the opportunity to type responses without interruption from other participants, which may have allowed for longer and more honest responses (Woodyatt et al., 2016). Third, the data were analyzed by the same researchers who conducted the interviews, which assured that the context of the conversations was not lost in the analyses. However, this study was not without limitations. First, participants were asked what they thought about app-based partner notification methods hypothetically, which may not reflect whether they would use them in reality. Second, our findings may not be generalizable to all U.S. MSM. Men who were interested in and had the time to participate in a 90-minute online FGD may be different from those who did not with respect to their views on partner notification.

CONCLUSIONS

While MSM may prefer to notify regular sex partners about HIV/STD exposure on their own, anonymous partner notification methods through GSN apps may provide a more comfortable and desirable way to notify casual or harder-to-reach partners. This research on the attitudes of U.S. MSM about the use of app-based partner notification contributes to the development of strategies to incorporate apps into HIV/STD partner services and HIV/STD partner services into apps. Implementation of app-based partner notification will necessitate public health and app owner partnerships, such as Building Healthy Online Communities, which is a collaboration of public health leaders and gay dating website and app owners working together in HIV/STD prevention (Building Healthy Online Communities, 2014). Future research should build on the app-based partner notification strategies discussed in this study by assessing the generalizability of these results in U.S. MSM and determining the uptake and effectiveness of these strategies.

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