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ORIGINAL PAPER

Reactions to Self-Sampling for Ano-Rectal Sexually Transmitted Infections Among Men Who Have Sex with Men: A Qualitative Study

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Abstract Little is known about men's potential motivations and barriers associated with specific sexually transmitted infections (STI) testing methods. In this study, we examined experiences of self-sampling for ano-rectal STI among men who have sex with men (MSM) in a midwestern community in the U.S. A total of 75 MSM were recruited from community venues throughout Indianapolis, Indiana. Participants completed semi-structured interviews, were asked to obtain ano-rectal self-sample in a private restroom, and were asked open-ended questions about their experiences with ano-rectal self-sampling for STI. Participants included 35 White, 27 Black, and 13 Latino MSM who ranged in age from 18 to 57 years. Regardless of sexual practices, most participants who obtained an ano-rectal self-sample (68/75) reported that the sampling procedure was relatively painless and physically easy. However, regardless of previous receptive anal sex, participants also expressed concerns about the nature of the test (i.e., inserting something into their rectum), which required increased levels of privacy and cleanliness compared to collection of urine samples. Self-sampling proved to be a feasible and acceptable method of collecting ano-rectal STI specimens among MSM. Increased testing for ano-rectal STI among MSM may require addressing the location of sampling and testing sites, existing negative perceptions of ano-rectal self-sampling, and the measures in place to promote privacy and cleanliness.

Keywords Ano-rectal · MSM · Sexually transmitted diseases · Self-sampling

Introduction

Sexually transmitted ano-rectal infection in men who have sex with men (MSM) was a widespread public health concern in the pre-HIV era (Benn et al., 2007; Kim et al., 2003). Ano-rectal infection with *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in particular were common in men at risk for urethral infections, particularly those who engage in receptive anal intercourse (Annan et al., 2009; Sherrard & Barlow, 1996; Young, Moyes, McKenna, & McMillan, 1991). Following safer sex education campaigns, and the resulting increase in condom use, rates of ano-rectal infection among MSM declined. However, a recent resurgence in disease rates has been noted in many surveillance sites (Stolte et al., 2006).

Early diagnosis and treatment of ano-rectal sexually transmitted infection (STI) alleviates symptoms, eliminates complications, reduces transmission risk, and reduces risk of HIV acquisition (Van Der Pol et al., 2008; Wang et al., 2001; Wasserheit, 1992). However, diagnosis typically requires collection of ano-rectal samples by clinicians during a physical exami-

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nation in a clinical setting (Grover, Prime, Prince, Ridgway, & Gilson, 2006). With the advent of nucleic acid-based diagnostic assays and the improved range of acceptable sample types (e.g., self-collected urine and vaginal samples), STI screening can be expanded beyond clinical settings (Chernesky et al., 2005). However, for persons who provide a self-obtained sample, testing for ano-rectal infection is not currently addressed. In addition, clinics and clinicians are often barriers to screening due to issues of clinic access and stigma associated with sexual identity and specific sexual behaviors (Fortenberry et al., 2002). Venue-based or motivation-based self-sampling increases autonomy and reduces barriers to STI screening (Rietmeijer, Hopkins, Geisler, Orr, & Kent, 2008). Additionally, it provides improved privacy and gives the patient more control over the disclosure (or non-disclosure) of their sexual behaviors, which may decrease stigma, a particular concern for many MSM.

Demonstration of the feasibility and acceptability of ano-rectal self-sampling has expanded our ability to offer STI diagnostic services to non-clinic based populations (Dodge et al., in press; Lampinen et al., 2006). However, with the limited amount of research on the incidence and prevalence of ano-rectal STI, little research has focused on men's experiences with ano-rectal STI self-sampling. Due to the lack of data on this topic, we used qualitative methods to examine issues (including knowledge, physical experience, and advantages/disadvantages) associated with self-sampling for ano-rectal STI among MSM recruited from community venues throughout a large midwestern city.

Our site (Indianapolis, Indiana) was chosen for data collection because of the magnitude of the STI epidemic in this metropolitan area, particularly among MSM (Indiana State Department of Health, 2006). Indeed, the city has been noted as maintaining some of the highest rates of STI in the nation (Indiana State Department of Health, 2005). Simultaneously, the state of Indiana is dramatically underserved in terms of public health funding; the state was recently ranked last (50/50) in federal funding for health programs by the CDC (Centers for Disease Control and Prevention, 2007). The metropolitan location provided access to participants with a range of racial and ethnic backgrounds, which is particularly important given the disparate rates of infections among ethnic groups (i.e., Black, White, and Latino). Existing studies that have focused on ano-rectal STI-related issues among MSM have done so only in large urban areas of the United States on the East Coast (New York), West Coast (San Francisco), Europe (London, Amsterdam, Rotterdam), and (more recently) in developing countries (Centers for Disease Control and Prevention, 1999; Cook et al., 2002; Francis et al., 2008; Grijsen et al., 2008; Ivens, Macdonald, Bansi, & Nori, 2007; Kent et al., 2005; Stolte et al., 2006; Waalboer et al., 2006). The understudied and underserved nature of the Indianapolis community warranted an exploration of issues associated with ano-rectal self-sampling among men in this setting.

Method

Participants

The study sample was limited to biological males. All participants were at least 18 years of age. In order to ensure relevance of ano-rectal STI screening, all individuals had to report engaging in sexual activity with at least one male partner during the previous six months. We recruited an ethnically diverse sample in order to explore issues associated with ano-rectal self-sampling in various ethnic groups. Demographic characteristics of the participants are summarized in Table 1.

Men who reported antibiotic use in the previous 3 weeks, as well as those reporting chronic ano-rectal conditions such as ulcerative colitis, active anal herpes or other anal lesions, current ano-rectal bleeding, or recent ano-rectal surgery, were ineligible.

In order to obtain a wide array of participants, the research team identified seven locations found to include diverse groups of MSM in previous research (Dodge et al., 2008; Satinsky et al., 2008). Four pilot interviews were conducted at a local STI clinic to ensure the functionality of the interview protocol. The remaining 71 interviews were conducted at a combination of Black- and Latino-oriented community based organizations (CBO); a large multi-ethnic HIV/AIDS service organization; an all-male bath-house; and two primarily "gay-oriented" bars (see Table 1).

Procedure

Men were recruited by a research assistant who was situated in a stationary location within each venue. Participants were asked to complete a semi-structured interview and, subsequently, to obtain an ano-rectal self-sample in a private restroom within the venues. In the interview, all men were asked open-ended questions about attitudes toward ano-rectal self-sampling, regardless of participation in the self-sampling phase. Participants who elected to collect a specimen were then questioned about the process. Participants who self-sampled were instructed on how to open the test kit (BBL CultureSwab EZ Collection and Transport Kit, a swab encapsulated in a plastic tube), twist the top end of the tube (in order to break a perforated seal), insert the swab approximately one half inch inside the rectum, gently twist the swab one full turn, and then remove the swab and immediately place it back into the plastic tube. They were also instructed not to touch the tip of the swab or use any soap, saliva, or lubricant during the process.

The total interview time was approximately 20–30 min and participants were provided either a $25 (for interviews only) or $50 (for interviews plus an ano-rectal sample) payment as compensation for their time. The participants that did provide samples were given the option of having their sample tested for STI and given instructions on how to obtain test results. Study

Table 1 Demographic and recruitment characteristics of sample ($N = 75$)

	Self-sampled ($n = 68$)	Declined ($n = 7$)	All participants ($n = 75$)
Mean age	34	34	32
Median age	29	34	29
Age range	18–57	25–36	18–57
Sexual self-identity			
Bisexual	13	1	14
Gay	55	6	61
Race/ethnicity			
White	32	3	35
Black	24	3	27
Hispanic	12	1	13
Recruitment site			
STI clinic	3	1	4
Black CBO	16	0	16
Latino CBO	9	1	10
ASO	11	0	11
MSM bars	14	5	19
Bathhouse	15	0	15

approval was obtained from the Indiana University School of Medicine/Clarian Health Institutional Review Board and informed consent was obtained from all participants.

Measures

All interviews were conducted using a semi-structured interview guide that was developed by the researchers and pilot tested prior to use. The interview guide was divided into two parts: before and after sample collection.

Part 1

Questions asked before ano-rectal self-sampling were designed to assess the participant's sexual behavior and knowledge of STI risk, specifically exploring awareness of potential ano-rectal infections and possible testing options. Participants were asked about sexual behaviors with specific items in their rectum (i.e., finger, penis, toys), were asked if "they were aware that the rectum could become infected with a sexually transmitted infection," and whether they were aware that an ano-rectal infection would not be detected by a urine sample. Upon completion of these questions, participants were asked "Would you be willing to provide an ano-rectal sample on yourself today/tonight?" Participants who agreed to collect a specimen were provided sampling instructions. Participants who were unwilling to provide a self sample were asked about reasons they chose not to.

Part 2

Questions asked after ano-rectal self-sampling were aimed at understanding further the individual experience of collecting the sample, including the physical experience, attitudes about sample collection in a non-clinical setting, advantages and disadvantages of provider or self-collected samples, and preferences for future ano-rectal STI testing and receipt of results.

For both parts of the interview, the research assistant told participants that the questions did not have right or wrong answers and were to be used as talking points to best capture the participants' feelings. Clarification was provided for any questions that were confusing to participants and the interview guide contained probe questions to help elicit responses; however, participants were encouraged to speak openly about their experience and provide any thoughts, attitudes, and feedback they deemed appropriate.

Data Analysis

Data were assessed using standard qualitative techniques (Creswell, 2003; Rossman & Rallis, 1998). Interviews were audio recorded, transcribed, and entered into N-Vivo, a widely used qualitative software management system (QSR International Inc., 2008). Sections of each interview were analyzed by three separate coders for emerging themes. For each key concept, coders developed a list of its properties and dimensions. After the initial mapping of themes, the researchers worked collaboratively on the process of interpretation of the coded themes. Emergent themes were compared among coders and collaboratively organized into a matrix of themes and sub-themes. By structuring the themes in this way, the team developed a scheme that was used for analyzing all the narrative data in a systematic way. In accordance with commonly used standards for reporting qualitative data analyses, examples from the data (i.e., quotes) were used to illuminate key themes and sub-themes (Elliott, Fischer, & Rennie, 1999). Examples of thematic contradiction and diversity were also included.

Results

Previous Ano-Rectal Experience, Ano-Rectal STI Knowledge, and Perceived Risk

Overall, five participants reported no lifetime ano-rectal receptive intercourse and no use of anal sex toys, fingers or other objects. An additional five men had never engaged in receptive anal intercourse, but had inserted something (e.g., a finger or a toy) into their rectum. The remaining 65 men had engaged in receptive anal intercourse (i.e., receiving a penis in their anus) and may have inserted objects as well. Despite this high level of

potential exposures for ano-rectal infection, nearly half ($n = 34$) did not know that the rectum could become infected with a STI, many were unaware that a rectal infection could not be detected by a urine sample ($n = 30$), and the majority of participants ($n = 41$) did not think that they had ever been exposed to a STI that could infect the rectum. Further, although nearly all participants had been tested for STI in the past ($n = 67$), most had not had specific ano-rectal STI testing ($n = 46$).

Reasons Men Declined Ano-Rectal Self-Sampling for STI

Nearly all participants (68/75) agreed to provide a self-collected rectal swab at the time of the interview. The most frequently reported reason for declining self-sampling or for being unsure as to whether they would accept self-sampling in the future was lack of knowledge regarding ano-rectal STI testing. Other frequently stated reasons included being uncomfortable with their ano-rectal area and feeling embarrassed. The lack of awareness surrounding ano-rectal STI and testing, coupled with shame, was highlighted by one participant:

> I just don't know anything about doing this. Oh no, I do not think it would hurt. It is only for the pride … I feel ashamed. (Participant 66, Latino CBO)

Additional reasons for declining a self-sample included the "inappropriate" venue location and the potential lack of ability to correctly obtain a sample. All participants who opted not to provide an ano-rectal self-sample were concerned with the location that the specimen collection was being conducted. The venues were felt to be inappropriate for self-sampling for two reasons. First, participants were concerned with the cleanliness and lack of sterility of venues and believed that a more "clean" surrounding was needed in order for self-sampling to be acceptable. Second, participants discussed the fact that the venue locations were, in fact, public. As a result, there was a lack of privacy that they felt should be associated with STI testing. One participant suggested:

> I just don't think it is, there is nowhere in here that is clean if you ask me…I don't know how familiar you are with this place, but, I just wouldn't do it here. If we were at a medical office or something, I would say "fuck it," and do it for you, but not here. (Participant 29, Bar)

Participants who declined self-sampling were asked to describe locations that would be acceptable. The need for a more traditional location was noted by the following participant:

> It must be clean, sanitized, private, non-embarrassing, non-messy, in a comfortable place…I would do it at a clinic or a church but NOT in a bar or a bathhouse or anywhere like that. (Participant 31, Bar)

None of the participants who declined self-sampling believed that sample collection would be physically uncomfortable. Rather, obtaining an ano-rectal sample was not of their expertise. This was illustrated by the following comment:

> I don't think I have the knowledge and I don't think I have the ability to do it, I am not sure, I am not sure that it would turn out correctly if I did it myself and I am not, it's not that I am uncomfortable, I just think that I would rather have it done by someone who knows what they are doing. (Participant 30, Bar)

Reactions to Ano-Rectal Self-Sampling

As mentioned, almost all participants provided a self-collected sample (68/75), including 62 participants that indicated that they wanted their swab to be sent for lab-based STI testing, yielding an overall STI prevalence in this sample of 11% ($n = 9$). All participants who provided a self-sample ($n = 68$) stated that they would be willing to have ano-rectal STI testing in the future. The majority (54/68) indicated a preference for self-sampling rather than clinician obtained samples.

Preference for Self Collection

Participants were asked to provide their rationale for preference for self-sampling rather than clinician-obtained samples. Reasons for preferring self-sampling involved issues of autonomy, comfort, and privacy. The capacity to increase autonomy in dealing with anal sexuality and with ano-rectal STI was a central theme in the preference for self-sampling. Increased autonomy was seen as an opportunity to decrease embarrassment that was associated with anal sexuality and STI testing.

> Um, I think that it's a very personal sort of awkward situation to put yourself in, um, and I am familiar enough with my own rectum that I don't have a problem doing it myself…I also think that it would be more uncomfortable to have someone do it for me or to me. (Participant 4, Clinic)

Another participant commented:

> I just feel more comfortable [doing it myself]. I think, um, I am just self-conscious about that part of…anything, you know. Having a doctor look at that just isn't right. (Participant 10, Bathhouse)

Preference for Clinician Collection

Several participants ($n = 12$) believed clinician-obtained samples would be most appropriate. Those who preferred clinician-obtained samples indicated being uncomfortable with their ability to accurately collect a sample. These participants com-

mented on being unfamiliar with self-collection procedures and reported that they would feel more comfortable have a trained clinician collect the sample.

> I guess, to be safe, I would rather have them do it…I would always feel better with a professional doing it. (Participant 22, Bathhouse)

Another participant noted:

> Because I mean, they know, I mean they know, they basically went to school for that. That is part of their education. They would know what to do. (Participant 37, Black CBO)

Description of Self-Sampling Experience

In order to understand further the experience of ano-rectal self-sampling, participants were asked to describe the process, including how they would describe it to their friends. Both physical sensations and emotional feelings were mentioned by participants. The most common response was that self-sampling was easy, although it was a new experience. This was explained simply by a participant who said, "I would say it was easy but it's just, it's not something I be used to." (Participant 43; Black CBO)

Self-sampling was noted by some participants to be slightly uncomfortable due to the texture and shape of the swab. Participants felt it important to point out that, although the swab itself was sometimes awkward, it was never painful and did not hurt. One participant remarked:

> Because usually if I am sticking something up my ass I have lube on it or something and this is dry and it's not irritating or anything, but it's just, you know. A little bit, not terribly, uncomfortable. (Participant 10, Bathhouse)

However, many recognized that being able to collect the sample themselves increased their level of emotional comfort. This was attributed to the belief that having another individual, such as a clinician, perform samples on the rectum could be emotionally difficult. When asked how he would describe his experience, one participant stated:

> It was [emotionally] comfortable. The fact of not having somebody that has to touch you in that area. (Participant 42, Black CBO)

Recommendations for Peers

Nearly all participants ($n = 61$) suggested that they would inform friends about self-sampling, and described the importance of highlighting the ease of self-sampling and the need for ano-rectal STI testing. Participants recognized that self-sampling addressed health needs that were specific to MSM, in particular, and ano-rectal testing should be included as part of comprehensive sexual health care.

> Well, I would tell them, you know everyone needs to be tested back there, as well as pee samples, because they won't pick up the same type of thing so that is what I would tell them, things to look out for. (Participant 57, Bar)

Another participant remarked:

> I would be like, "Girl, you need to get tested for syphilis or whatever, so swab your ass and go about your day, cause it's worth knowing." (Participant 36, Black CBO)

Participants felt it important to explain to others that, although ano-rectal self-sampling seemed complex, it was, in fact, simple and quick. Some participants pointed out that a barrier to traditional STI testing was the inability to access services in a quick and efficient manner. Participants believed the ease of self-sampling would be an incentive for their friends.

> Just out of convenience. Um, it doesn't take that long at all so you don't have to set up an appointment. You can get in and get out, it's fairly non-invasive, it is self-explanatory, easy enough for someone to do on their own. (Participant 46, ASO)

Asking a Provider to Self-Sample

When asked if they would be willing to ask a provider to allow them to self-sample, most ($n = 51$) said that this would not be a problem. Participants explained that they would be comfortable asking, although many felt that self-samples had less advantage in a clinic setting. Some participants noted the duty of clinicians to inform patients about all possible sampling options. For participants who were uncomfortable asking for self-sampling, reasons included lack of trust of clinicians and fear of disclosure of sexual orientation or same-sex sexual behaviors.

> No, but that also kind of boils down to the fact that I don't have a primary care physician who is a gay man who I feel comfortable with at this point in my life. (Participant 4, Clinic)

Similarly, another participant noted:

> When you go to the doctor, it is harder to come out and you might feel less confident. (Participant 68, Latino CBO)

Experiences of Self-Sampling in a Non-Clinical Setting

Participants were also asked to provide feedback on the experience of self-sampling in nonclinical settings. All participants were asked both the advantages to and disadvantages of pro-

viding an ano-rectal sample in these locations and also asked about their preference for future ano-rectal STI testing.

Advantages

The most common advantages to ano-rectal self-sampling in a non-clinical setting included convenience ($n = 22$), comfort ($n = 19$), and privacy ($n = 12$). Participants believed that STI testing should be easily accessible.

> That [home] is where I am most comfortable at and that is where it is most convenient because I am not going to the office, a doctor's office or having to wait in line. I can do it at my own convenience. (Participant 14, Bathhouse)

It was also necessary for the environment to provide a level of comfort that some believed did not exist in traditional testing settings because of social stigma. On the utility of using a gay-oriented bar for testing, Participant 38 (Bar) noted:

> Well, I mean this is a, what can I say, a gay environment here, just like everybody is family here so you feel comfortable around them and you know, basically everybody is here for the same thing so.

Additionally, several Latino individuals reported that being in a location within the Latino community enhanced comfort with self-sampling.

> I feel more comfortable in this place. This is a Hispanic oriented organization and this attracts Hispanics … like me. (Participant 69, Latino CBO)

Finally, a key component to finding a venue acceptable for testing was the ability to have a private area to collect the sample. For most, any bathroom was a sufficient space as long as it had an individual stall or locking door to increase privacy.

Disadvantages

The most common disadvantages to obtaining ano-rectal self-sampling in a nonclinical setting included lack of privacy ($n = 18$), lack of testing accuracy ($n = 12$), and lack of cleanliness ($n = 3$). As mentioned previously, most participants felt the space was private enough for the actual sample collection; however, some were still concerned that nonclinical settings did not provide enough anonymity and allowed other patrons to know that they were seeking STI testing. In the words of Participant 24 (Bar):

> I need somewhere that is private, whether it is a stall or something that seals me off from people I guess. So whether that is a bathhouse or a stall that would close, or, like I am not as uncomfortable with there being a door there, you know what I mean. So if I had the choice between doing it at a bathhouse or a bar that did have a private area that I could go to I would pick that over one that was open. Does that make sense?

Additionally, because samples were collected outside of a clinic, concerns were raised as to whether the test would be accurate and if test accuracy would be decreased. Participant 19 (Bathhouse) commented: "You are always going to get a better, more accurate result with a professional."

Future Testing Preferences

Given the option of being able to self-sample or clinician-obtained samples in any setting, most participants ($n = 27$) preferred self-sampling at home. According to Participant 14 (Bathhouse):

> That is where I am most comfortable at and that is where it is most convenient because I am not going to the office, a doctor's office or having to wait in line. I can do it at my own convenience.

The majority of additional responses supported self-sampling at a clinic ($n = 7$), a CBO ($n = 6$), and a bathhouse ($n = 3$).

Lastly, participants were asked how they would like to receive test results from self-samples obtained in non-clinic venues. Telephone ($n = 37$), in person ($n = 18$), email ($n = 7$), and mail ($n = 6$) were all mentioned. Participants described the telephone as the most confidential means to ensure that others could not discover their results. The importance of receiving results in person was attributed to the need to gain further information or ask questions if a test result was positive. Overall, confidentiality was of utmost concern. According to Participant 32 (Bar):

> I am big on confidentiality. I think people if they think that your government or your health insurance is going to know what you have already had, which they do. Then it keeps people from going and seeking an original test, let alone treatment for that test because then it prevents you from getting insurance or health care in the future. And it puts you on a government list and no one likes Big Brother.

Discussion

The findings of this study regarding men's experiences with ano-rectal self-sampling affirm the feasibility of ano-rectal self-sample collection among MSM populations. The results also give voice to men's experiences with self-sampling for ano-rectal STI. This type of information is important for any public health intervention effort aimed at improving access to

screening and diagnostic services. This study indicates that discomfort with self-sampling could be reduced by appropriate patient education, simple training, and support. Additionally, participants suggested that the ability to collect a self sample increased autonomy and reduced potential embarrassment often associated with STI screening. Of particular importance are the connections between the social stigma surrounding MSM sexual behavior and special sexual health needs of MSM that often are overlooked. Providing a testing alternative that minimizes physical contact with clinicians and reduces the need to disclose sexual practices, may allow for a sense of privacy for those seeking testing.

Recent studies have highlighted the number of infections that would be undiagnosed by routine testing practice common to many settings (Gunn, O'Brien, Lee, & Gilchick, 2008; Kent et al., 2005). Therefore, public health STD control programs that provide services to MSM should facilitate ano-rectal screening for chlamydia and gonorrhea. The need to increase screening in order to understand the prevalence of disease in vulnerable populations is also critical in order to more effectively target outreach programs. Participants in our study indicated that a lack of knowledge regarding ano-rectal STI and limited access to screening mechanisms were responsible for many individuals having never had their rectum tested for STI.

The experience with self-obtained vaginal swabs as a means for expanding services offered to women (Hobbs et al., 2008; Schachter et al., 2005) should be applied to ano-rectal self-sampling for both men and women. With appropriate instruction guides and/or information from outreach workers, acceptability and quality of vaginal samples was shown to be high (Chernesky et al., 2005). Similar to this and to the applied use of suppositories or enemas, patients can be expected to locate and sample the ano-rectal area safely and efficiently. Our study demonstrated that a lack of confidence among individuals who have not been provided with adequate information on the accuracy of this testing method and the ability to obtain a sample without assistance was a potential barrier to implementing widespread screening. Further, our results support that self collected ano-rectal swabs were not more painful or messy compared to traditional urine sample collection.

These data should be considered in terms of limits inherent in the study design. We sought to explore the experiences of collecting a self ano-rectal swab in a non-clinical setting and did not intend a representative sample. We attempted to include individuals from a range of venues that are accessed specifically by MSM populations, but recognize that a sub-sample of MSM who do not utilize these spaces may have been overlooked, including those who typically utilize for clinics for STI testing. The data were intended as qualitative examples of the range of issues that should be considered in the successful implementation of self ano-rectal collection.

Existing research on ano-rectal self-sample collection is minimal and future studies need to assess additional strengths and weaknesses associated with this testing method. However, our data suggest that MSM find ano-rectal self-sampling to be a feasible alternative to traditional clinic-based testing methods. Further consideration should be given to the need of providing expanded innovative STI testing beyond clinical settings.

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