The Strategies of Heterosexuals from Large Metropolitan Areas for Assessing the Risks of Exposure to HIV or Other Sexually Transmitted Infections from Partners Met Online

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Abstract

Heterosexuals' use of the Internet for meeting romantic or sexual partners is rapidly increasing, raising concerns about the Internet's potential to facilitate encounters that place individuals at risk for acquiring HIV or other sexually transmitted infections (STIs). For example, online sharing of personal information and self-revelations can foster virtual intimacy, promoting a false sense of familiarity that might accelerate progression to unprotected sex. Therefore, it is critical to understand how those who meet sexual partners online attempt to assess the possible risk of acquiring HIV or STIs posed by having unprotected sex with a new partner and decide whether to use a condom. To investigate this issue, in-depth interviews were conducted with a diverse sample of heterosexual male and female participants from large metropolitan cities who had had unprotected vaginal or anal sex with at least two partners met online in the past 3 months. With few exceptions, participants relied on faulty strategies and heuristics to estimate these risks; yet, most engaged in unprotected sex at their first meeting or very soon afterward. While some seemed to try to make a genuine effort to arrive at a reliable assessment of the HIV risk posed, most appeared to be looking for a way to justify their desire and intention to have unprotected sex. The findings suggest the need for more HIV and sexual health education targeted at heterosexuals, especially for those who go online to meet partners.

Keywords: heuristics, risk appraisal, online sexual partnering, qualitative research

Introduction

IN RECENT YEARS, there has been a proliferation of research on sexual hooking up, that is, casual sex that occurs between relative strangers or very recent acquaintances without the expectation that the partners will form a committed relationship.^{1,2} The primary goal of hooking up is sexual pleasure^{1,3} and this growing phenomenon among heterosexuals is largely being driven by the increasing use of the Internet to meet partners for short-term casual sexual encounters and for long-term relationships.^{4–9}

To date, much of the research on Internet-mediated sexual partnering has focused on the Internet as a risk environment. Specifically, concerns have been raised about the Internet's potential to facilitate the kinds of sexual contacts that might place individuals at risk for HIV or other sexually transmitted infections (STIs) by providing access to a large pool of

potential partners and thereby creating the opportunity for continually new casual sexual encounters.^{4,10–14} Most research on the sexual risks of Internet-mediated sexual partnering has focused on men who have sex with men (MSM)^{15–22} and recent research shows that MSM who use mobile hookup apps to find sex partners are at high risk for HIV and other STIs.^{23–28}

Sociologists have paid attention to the phenomenon of hooking up among heterosexual men and women^{1–3,29} and are increasingly interested in their use of mobile dating apps.^{30–33} However, to date, few studies have looked at the HIV and STI risks associated with their use of online technologies to find partners. Nevertheless, studies that included heterosexual men and women who seek romantic or sexual partners on the Internet^{34–38} and mobile apps³⁹ found them to also be at high risk for HIV and STIs. More attention should be paid to online sexual partner-seeking beyond MSM considering that the practice is becoming more prevalent among

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the general population. For example, between 2013 and 2015, the percentage of American adults who use online dating sites or mobile apps went from 10% to 27% among 18- to 24-year-olds and from 6% to 12% among 55- to 64-year-olds.⁹

Available data suggest that many of the heterosexuals who go online to meet prospective sexual partners do eventually meet in person and have sex.^{4,7,11,40-45} When they do, their activities may include anal sex, which is more common among heterosexuals than probably generally assumed.⁴⁶ In a national sample of 12,571 men and women ages 15-44 (collected March 2002-March 2003), investigators found about one-third of women (30%) and men (34%) reported ever having had heterosexual anal sex.⁴⁷ There is also evidence that condom use is significantly lower during anal intercourse than vaginal intercourse.⁴⁸

Although most people associate HIV and STI transmission between heterosexuals with vaginal intercourse, anal intercourse is also a risk factor for these diseases.⁴⁸⁻⁵⁰ In fact, the CDC reported that anal sex is the riskiest behavior for getting and transmitting HIV for men and women, considerably riskier than vaginal sex.⁵¹ They also noted that regardless of whether the receptive partner in anal sex is male or female, that partner is at a 13-fold higher risk for acquiring HIV than the insertive partner.

Malta⁵² found that relationships formed online developed more quickly than those formed in person, but were of shorter duration. The explanation her participants offered for the brevity of the relationships formed online was that the availability of a large number of potential partners on dating sites made them less inclined to stick with a relationship (p. 13) that was not proceeding as they would have liked.

Research has also suggested that online mutual self-revelations often occur rapidly over a brief period of time and promote a kind of virtual intimacy⁴⁵—that is, a false sense of knowing a person well as a result of self-revelations exchanged online. In a study of women who sought romantic and sexual partners online, Padgett⁴⁵ found that 30% of those who subsequently met men in person reported having sex during their first meeting and 77% did not use condoms. She speculated that this might be due to the high level of disclosure and frequency of email exchanges with men that provide women with a sense of an intimate relationship that may or may not exist in reality, but may encourage sexual intimacy sooner than it would develop through conventional dating methods (p. 35).

The sociodemographic (i.e., education, income) and other nonhealth-related information about themselves that individuals who meet online share with one another often becomes the basis for estimating the sexual risks the other person might pose if unprotected sex were to occur. Yet, research indicates that misrepresentation of appearance, relationship goals, age, income, marital status, and gender is not uncommon among Internet daters and sex seekers,^{12,53-58} which suggests they may also lie about their sexual practices as well as history of HIV and STI testing and outcomes.

Most cognitive theories of preventive health behavior include perceived risk or perceived vulnerability as a key construct (e.g., the Health Belief Model⁵⁹ and the Protection Motivation Theory⁶⁰). These theories posit that for individuals to be motivated to adopt an action to prevent a health threat, they must both feel vulnerable to the threat and also judge it to be serious. HIV and other STIs are health

threats posed by having unprotected sex, especially with casual partners.

Although HIV has become a chronic disease, becoming infected still represents a significant health risk that people are presumably very motivated to avoid. While other STIs are more easily treated or (in many cases) curable, they still carry a significant stigma that people would also presumably want to avoid experiencing. Nevertheless, there is a preference for condomless sex among both many men and many women because they find it more pleasurable.⁶¹⁻⁶³ Consequently, the willingness to use a condom will depend largely on individuals' appraisals of the probability that a prospective partner may have HIV and/or another STI. Therefore, it is important to understand the strategies individuals use to assess the risks of having unprotected sex with prospective partners they meet online.

Studies show that among heterosexuals, partners are often unaware of all the other person's risk behaviors for HIV or other STIs; in lack of evidence to the contrary, they often simply assume that a partner has not engaged in various risk behaviors.^{64,65} It seems likely that heuristics will play an important role in many individuals' appraisals of the possible risks posed by having condomless sex with a prospective partner.

Heuristics are shortcuts for processing information in ways that convert complex mental tasks into simpler ones.⁶⁶ They are typically employed under conditions of uncertainty to make efficient judgments about the likelihood of some outcome. However, they can frequently produce systematic errors and biases leading to faulty assessments of a situation and inferences—for example, whether another individual is likely to be HIV infected or have another STI.⁶⁶⁻⁶⁹ Nevertheless, individuals may become convinced of the reliability of the decision-making rules they use if over time they perceive them to be effective (e.g., if they have repeated encounters of unprotected sex and yet do not contract an STI or HIV).

A very common heuristic that has been identified in the HIV and STI literature has been labeled implicit personality theories.⁷⁰⁻⁷⁴ This heuristic relies on observed or inferred personal characteristics (e.g., education, social class, or lifestyle) to judge the HIV or STI risk a potential partner may pose and is obviously heavily predicated on stereotypes about the kind of people who are likely to have HIV or an STI. Another common heuristic is known partners are safe partners or trusted partners are safe partners.^{69-71,75,76} In this heuristic, familiarity is conflated with trust and safety. That is, once individuals believe they know a prospective sexual partner well (even if what they know is immaterial to assessing the health risk they might pose) and no red flags have been identified, they tend to regard the person's self-representation as reliable and therefore deem the person trustworthy.^{70,77,78}

Another heuristic, a clean partner is a safe partner, draws on the historically strong symbolic association of STIs with uncleanness or bodily pollution and the stereotype that people who acquire such diseases have poor personal hygiene.⁷⁹⁻⁸¹ Typically, a potential partner's cleanliness is directly inferred from his or her grooming, appearance and demeanor, and whether he or she emits any bodily odor.^{69,70,80,82,83} Visual inspection of partners for STI is another assessment strategy that has been reported.⁷⁶ Still another common heuristic is that monogamous partners are safe partners,^{69,71,78} while others interrogate prospective partners about prior sexual

contacts or STIs or testing for such diseases.^{76,84} Researchers' interest in individuals' perceptions of risk is largely attributable to the significant role that such perceptions are assumed to play in guiding behavior, regardless of their accuracy. Risk appraisals can be inaccurate because they are founded on erroneous beliefs or assumptions or they may be biased by the desire to arrive at a particular conclusion.^{85,86} For example, a person who strongly desires to engage in condomless sex may be motivated to selectively attend to certain information that allows him to justify that behavior as well as to ignore or minimize the importance of information that would not support such behavior.^{85,87–89} Kunda⁸⁹ called this phenomenon motivated reasoning.

There is some research on the strategies heterosexuals use to evaluate the authenticity of the information provided by people they meet online or to decide who they will meet in person.^{7,90} However, the strategies they employ to assess the likely risk for HIV or STI exposure from prospective partners met online have received far less attention, especially since HIV has become a chronic illness. To address this gap, we investigated the strategies of male and female heterosexuals who meet partners on dating or hookup websites and engage in sexual risk behavior with those partners.

Methods

Sample

The sample consisted of 150 heterosexual adults who meet sexual partners online through dating and hookup websites. Eligible participants had to (1) be between the ages of 18 and 50; (2) self-identify as heterosexual; (3) have had sex only with persons of the opposite sex in the last 3 years; (4) have had unprotected vaginal or anal sex with at least two different partners in the last 3 months, both of whom were initially met online; (5) self-identify as black, Latino, or white; (6) be fluent in English; (7) have lived in the United States for at least the last 10 years; and (8) have lived for at least the last 3 months (from the time of the interview) in the metropolitan areas of New York City, Atlanta, Baltimore, Chicago, Dallas, Houston, Los Angeles, Miami, Philadelphia, San Francisco, or Washington, DC. These were the areas of highest HIV/AIDS prevalence in the continental United States.⁹¹ Quota sampling was employed to obtain equal numbers of men and women and, within each gender group, equal numbers of participants from each racial group.

Recruitment

Given the study's focus on Internet sexual partnering, participants were recruited online. Banner advertisements were placed on dating sites, casual hookup sites, social networking sites, online bulletin boards, and classifieds, stating that researchers wanted to interview heterosexuals who meet romantic or sexual partners on the Internet. The specific focus and eligibility criteria of the study were masked to minimize the risk of fraudulent responses to the screening questionnaire in an effort to gain entry into the study.

Individuals who clicked on a banner advertisement were directed to the first page of the screening questionnaire that informed them that the confidential screening, which would take ~3–5 min to complete, would determine their eligibility for a study of people's experiences meeting romantic and

sexual partners online. It also provided the study team's contact information for those who had additional questions. Finally, this page indicated that all respondents must be 18 years of age or older and a resident of the United States. Respondents were asked whether or not they agreed to these terms and would like to proceed to the screening questionnaire. Clicking on yes was considered to be providing consent to being screened.

On completion of the screening questionnaire, individuals were immediately informed whether or not they were eligible to be in the study. Eligible individuals who indicated they wished to proceed were directed to a page with an IRB-approved consent form. They were instructed to read the document and then indicate that they had understood its contents and were providing consent to participate by clicking a box labeled "Accept" at the bottom of the page. Only eligible individuals who indicated their informed consent in this way were able to advance to an online survey that elicited sociodemographic information and a measure of sexual risk behaviors. On completion of this online survey, participants were contacted to be scheduled for an in-depth qualitative interview by telephone.

Since participants never met face-to-face with the researchers (all data were collected online and through telephone interview), measures were taken to further ensure that the same person did not participate more than once. These included deploying a cookie on the browser of the computer the individual used to complete the screener to prevent subsequent attempts, tracking of IP addresses to disallow identical ones in the sample, and ensuring that those with the same e-mail address did not participate in the study more than once.

Of the individuals who completed the screener, 855 met the eligibility criteria. However, as the quota sample design necessitated that we disqualify individuals with certain demographics when their quotas were met, only 544 were notified of their eligibility. The informed consent was signed by 425 of these individuals; of those, 155 failed to complete the study because they withdrew of their own initiative or were lost to follow-up. Finally, 120 others were removed from the final analytic sample by the researchers for various reasons (e.g., were determined to have already participated in the study or were determined to have completed the screener incorrectly and thus were ineligible). The final sample for analysis comprised 150 eligible participants (75 men and 75 women). The characteristics of the final sample are presented in Table 1.

Data collection

After completing the online consent form, eligible participants proceeded to complete online the Sexual Relationships Questionnaire (SRQ). The SRQ elicited information about participant demographics, preferences in sexual partners met online, online sexual activities, sexual health, and the characteristics of two sexual partners met online with whom participants had had unprotected vaginal or anal sex in the past 3 months and their sexual activities and relationships with these partners. At the end of the survey, participants provided contact information to enable the researchers to schedule an in-depth qualitative telephone interview within the following 2 weeks.

Interviews lasted an average of 2.25 h and were recorded and transcribed verbatim for analysis. Interviewees and interviewers were matched by gender. After the interview, each

TABLE 1. PARTICIPANT CHARACTERISTICS

	Women (n = 75)	Men (n = 75)
Age, mean (SD)	33.1 (8.51)	34.3 (8.42)
Race, %		
African American/black	33.3	33.3
Hispanic/Latino	33.3	33.3
Caucasian/white	33.3	33.3
Marital status, %		
Single	70.7	69.3
Married	12.0	18.7
Separated	4.0	5.3
Divorced	13.3	6.7
Education, %		
High school or equivalent	1.3	16.0
Some college	38.7	25.3
2-year college degree	9.3	8.0
4-year college degree	32.0	40.0
Advanced degree	18.7	10.7
Employment, %		
Employed full-time	54.7	62.2
Employed part-time	25.3	13.5
Unemployed	12.0	21.7
Student	6.7	2.7
Homemaker	1.3	
Household income, %		
≤\$25,000	21.3	20.0
\$25,001–\$49,999	26.7	28.0
\$50,000–\$74,999	22.7	28.0
\$75,000–\$99,999	14.7	9.3
\$100,000–\$149,000	5.3	8.0
\$150,000–\$199,999	4.0	4.0
\$200,000–\$249,999	1.3	1.3
≥\$250,000	4.0	1.3

participant was given a virtual VISA card for \$75 for their participation in the study. The IRB of the university the authors were affiliated with approved the study.

The qualitative telephone interviews relied mainly on unstructured questions and a nondirective interview approach. While an interview guide was used, the guide was not intended to serve as a formal interview schedule, but rather as a kind of conceptual roadmap that enabled the interviewer to elicit the participant's own frame of reference and reveal factors unanticipated by the researchers that influenced participants' experiences and beliefs. The interview guide covered topics such as the participants' history of using the Internet to meet sexual partners, descriptions of their online profiles, involvement in various online sexual activities (e.g., viewing pornography, engaging in cybersex), sexual fantasies, sexual history, and sexual health.

The majority of the interview, however, was spent discussing the relationships with the two recent partners met online with whom the participant had had unprotected vaginal or anal sex in the past 3 months and had been identified on the SRQ. While the SRQ obtained basic primarily quantitative information about these relationships (e.g., their duration and the number of times they engaged in unprotected sex), the qualitative interviews allowed participants to describe the nature and course of each relationship. The qualitative interviews also invited participants to discuss the ways in which they assessed their partners' sexual risk and how knowing or

not knowing their partners' past sexual behavior or STI and/or HIV testing history and status influenced their decision to use condoms or not.

Data analysis

All interviews were transcribed verbatim for analysis. Each of the three interviewers prepared an analytic profile for each participant they interviewed. The profile was an extensive summary of the interview findings organized around the study's specific aims. As a measure of quality control, throughout the data collection, a random subsample of profiles was reviewed by a senior investigator for completeness.

One of the study aims was to identify the strategies participants used to assess the potential sexual risk a prospective partner posed. In the interviews, participants were asked how they tried to assess how risky or safe it would be to have unprotected sex with a partner they met online. While most of the data related to this aim were offered in response to this question, any other comments relevant to how they appraised these risks that appeared in other parts of the transcript were also included in the write-up for this aim for each participant.

Each interviewer's write-up of the findings related to this aim was closely read and provisionally coded to identify the different strategies participants used to assess the sexual risk their partners might pose. A master list of all the different types of strategies elicited from the summaries was produced and a table organizing participant IDs under each of them was generated. The relevant portions of the interview transcript that substantiated the write-ups for all cases included in the analysis were rereviewed while preparing this report and, for a subsample extracted, as a final check on the coding from the profiles. If new strategies were identified at that point, they were added to the table. The analysis below is based on the final data matrix that was developed through this process.

A more common procedure in analyzing interview data is to code the transcripts and we have previously done so in other studies. However, we found over time that this can have the effect of fragmenting and decontextualizing the data too much and often not allowing us to appreciate the connection between segments of text related to the same aim, but coded separately because they appeared in different parts of the data. We have found that the creation of analytic profiles for each case ultimately provides a more comprehensive and integrative synthesis of the findings. We have described our rationale for this data analytic strategy in a previous report⁹² we used it for and a very similar strategy has been used by others.⁹³

Results

All participants claimed to be HIV uninfected. As noted above, participants discussed at length two recent partners they met online and with whom they had engaged in unprotected vaginal or anal sex in the past 3 months. All had had unprotected vaginal intercourse with both partners. Almost half (48%) had had anal sex with at least one of the two partners and, of these, 89% had had unprotected anal intercourse.

Participants were asked to discuss why they felt it was safe to have unprotected sex with these partners, which (in many cases) had occurred on a first or second date. Most participants were aware that behaviors such as unprotected vaginal or anal sex, multiple sexual partners, being MSM, exchanging sex for money, or engaging in injection drug use

could put one at significant risk for acquiring HIV or another STI if one's sexual partner or the injection drug user one shared paraphernalia with had HIV or another STI. Therefore, many asked prospective partners met online whether they had engaged in one or more of these behaviors and typically they would not pursue a meeting with those who did or would not contact or respond online to individuals they suspected might engage in these behaviors.

Their suspicions were often based on things such as how sexually forward a person was in his or her profile, whether the person posted sexually suggestive photos online, or whether they indicated they liked to party or go clubbing a lot. Some did not raise any of these issues with prospective partners because they were not comfortable doing so, were concerned that the person would be offended and break off contact, or considered doing so pointless since they recognized that people often lie about such matters. These participants instead relied on things such as the person's social characteristics or circumstances to make inferences about the sexual risk they might pose. It has also been suggested that the enduring gender double standard may also deter women from raising any matters that could signal an interest in sex with the partner or openly expressing sexual desire.^{2,81}

Most participants certainly feared HIV more than other STIs, but often just asked potential partners if they had been tested without drawing a clear distinction between HIV and STI testing. The data revealed that participants relied on a diverse set of faulty heuristics and strategies to try to estimate the level of sexual risk that having unprotected sex with a person met online might pose. They did not appear to use different appraisal strategies to determine if it was safe or not to have unprotected anal or unprotected vaginal intercourse with a prospective partner. Rather, they seemed, in both cases, to rely on a global judgment of whether a partner was risky or safe or was clean or not clean.

Although participants were not asked directly about whether they thought vaginal or anal sex posed more risks for HIV and STI transmission, there was no indication from the interviews that participants perceived anal sex as riskier. In fact, a few who used a condom for anal sex volunteered it was for personal cleanliness reasons (i.e., to avoid exposure to feces) rather than for disease prevention. Below, we discuss the principal heuristics used; Table 2 provides a summary of the categories of heuristics used with shortened interview quotations.

Requiring evidence of being disease free

In only very few cases, participants requested documentation of a prospective partner's HIV or STI status. These participants got tested regularly for HIV and, in some cases, for STI, had recent documentation that they were disease free, and would only engage in condomless sex with a new partner who could provide the same documentation. In a couple of cases, participants seem to suggest there was also an implied mutual agreement to be monogamous while seeing each other to forestall any chance of becoming newly infected and bringing it into the relationship.

An example of a participant who insisted on evidence that a prospective partner posed no risk of infection was a 40-year-old Latino male participant who insisted on using condoms with a new partner met online until she could produce evidence of recent negative STI or HIV testing. He explained:

Getting tested was, well it's mandatory, wherever I was and I'm with them, they have to be tested. . . . you haven't been tested or if you cannot provide proof that they are clear of any STDs, then I have no problem ending communication with that person. It's pretty simple just to go to the doctor and get tested.

This participant went on to relate his experience with a recent partner. They had both agreed to show each other proof that they had recently tested negative for HIV and other STIs before having sex. He provided his reports, but because the woman's test results were already a year old, he asked her to get tested again. Until she did, he insisted on always using protection.

Similarly, a 32-year-old black woman reported that she was very clear with potential partners right out of the gate that she insisted on HIV and STI testing. She informed them that she would provide documentation that she was disease free whenever they met face-to-face for the first time and that she expected the same of them:

I take HIV and STD testing very seriously. Because I am involved in risqué or crazy practices sexually, I can't run the risk of not being tested. So, I definitely—I get tested every six months because again I run the risk in my activities and also I require my partners to get tested too. But for the most part I can say that has never been a problem. Like it is my rule and it was easy. Well that is your rule, that is my rule too, that is great. I do require paperwork.

When asked how recent she required a prospective partner's test results to be, she said:

No, it has to be within six months. That's crazy. You can't show me an STD test from 2006 (laughter). That's not going to work; are you kidding me? No, so yeah, within six months. You know that sounds pretty fair and I think that is the reality, you are supposed to be getting tested every six months. I also try to get tested a little more often than that and I encourage my partner to get tested a little more often than that.

Assessing the person's trustworthiness

Many participants asked prospective partners about past sexual risk behavior, condom use, drug use, or HIV and/or STI testing, but they also recognized that people easily can, and many probably do, lie about these things to avoid being rejected as a sexual partner. However, while they viewed the information that prospective partners offered about themselves with some skepticism, some also believed they had a strategy for determining who was being honest about the information provided.

One approach used to assess the truthfulness of accounts that prospective partners offered about their behavior was to consider the consistency and accuracy of the information they provided over time. For instance, when they met a prospective partner face-to-face, they assessed if the partner had been honest online in how they had represented their physical appearance. They also evaluated whether prospective partners were consistent about other things they said about themselves (e.g., place of residence, education, or occupation) at different points in time or while communicating in different ways (e.g., online, by phone, face-to-face meetings). When explaining how he assessed if he could rely on the information partners provided about their past sexual behavior, a 21-year-old black male said:

I will probably say, if they're not my friend on MeetMe, then some people . . . you can't see what certain people are doing; but let's say I do have her as a friend and I can see what her

TABLE 2. CATEGORIES OF HEURISTICS

Requiring evidence of being disease free

Request evidence of HIV/STI status (test results)

"If you cannot provide proof that they are clear of any STDs, then I have no problem ending communication with that person." (Hispanic male, age 40)

"I get tested every six months...I require my partners to get tested too. ... I do require paperwork." (black female, age 32)

Assessing the person's trustworthiness

Consider the consistency and accuracy of the information partners provided over time

"Consistency is a big hint that, you know, I would feel safer and things like that...To make sure they're not saying one minute they're in Baltimore but the next minute they're in DC" (white female, age 26)

Observe how open and willing partners are to share information about themselves

"I just felt more safe with [name] because he was so upfront about everything." (white female, age 24)

Relying on one's gut feeling or intuition

Aptitude for recognizing when partners are not being truthful

"You get sort of a feel of when a person is being truthful to you and when a person is being deceptive to you." (black male, age 47)

Rely on gut feeling or inner sense

"There's something deep within me that goes, 'You need to be careful, watch out!'" (white female, age 42)

Choosing partners who are assumed to have limited opportunities for sex

Individuals who are married or in a long-term relationship

"Knowing that she had been in the marriage with the same person for X amount of years, ... her telling me that she hasn't been sexually active with no one...definitely played into my line as far as being comfortable to have sex without a condom." (Hispanic male, age 32)

Individuals who work long hours

"When are you going to sleep with someone if you're always at work, you're always at school?" (black female, age 18)

Avoiding partners assumed to have too many opportunities for sex (who are very attractive)

"He was so beautiful and fun to look at...I felt a little bit more cautious." (black female, age 37)

Choosing partners who would want to avoid taking sexual risks

Individuals who are educated and economically secure

"I guess people who are well-off or people, who have a life and have something going for them are more inclined to be healthy." (white male, age 22)

Individuals motivated to maintain a healthy and high-functioning body

"He's very healthy. He's a trainer. So he stated that he didn't smoke or drink,...he wasn't a junkie or a drug addict...He eats a pretty good diet and is in pretty good shape, awesome shape." (Hispanic female, age 45)

Partners who are married or in long-term relationships

"I like some of the married men better because they can't bring home anything...It would devastate their lives." (white female, age 42)

Choosing partners with good personal hygiene

Clean exterior as a sign of a disease-free interior

"She was very hygienic, so someone like that would be...the type that she wouldn't sleep with any guy. The guy has to be clean and stuff like that." (Hispanic male, age 40)

Visual inspection of a prospective partner's genital area

"I was examining her pretty thorough down there, making sure there wasn't no lesions or bumps or discoloration of any type." (black male, age 33)

STIs, sexually transmitted infections.

profile says. I'll ask her a question about herself like, "How many guys, how many boyfriends have you had?" Let's say I already know the answer, just seeing situations like that. Or "Where were you last night?" If we're that close, I could go like, "Where were you?" and I already know she went to a club or something but she tells me "I was lying in bed home all night," then I'll know.

He added, "If they lie about something small, then who am I to say they won't lie about something way bigger than that—like maybe they had herpes or something."

A 26-year-old white female similarly relied on identifying inconsistencies in the information provided by a prospective partner to judge if he could be trusted to be honest. She said:

One thing to say is that they're consistent with what they're saying. Consistency is a big hint that, you know, I would feel safer and things like that. [Consistency in terms of] anything they're saying. Their location, what they want to do. If we're getting to know each other, to make sure they're not saying one minute they're in Baltimore but the next minute they're in DC. You want to make sure they're ... Things like that, (laughs) especially if it's over a period of days rather than just in one day.

Another strategy participants used to infer how trustworthy a prospective partner's reports about past sexual matters were likely to be was to observe how open and willing they were to share information about themselves, especially of a personal or sensitive nature. For instance, a 35-year-old

female Latino participant felt because a potential partner shared that his wife had HPV, he was an open person whom she could trust would not withhold important information about his sexual practices. Consequently, she felt she could trust the information he provided about past behavior. In fact, because he had shared such personal information with her, she trusted him enough to share that she also had HPV. She recounted:

He actually told me that, also give me an indication that he was like more true, that his ex-wife has HPV or tested positive for HPV. I told him, "Do not tell lies," Because he told me she did and I [participant] probably have it. He was very outspoken about that. I kind of felt like, he didn't have to tell me that. Most guys wouldn't, most people wouldn't. I don't know that give me some idea of the kind of person that he is.

Another participant, a 39-year-old black female having extramarital relationships, said that right from his first email she trusted a man she met online who was going through a divorce. Although friends had cautioned her to not simply believe everything he said, she seemed to have achieved a feeling of closeness and intimacy with this partner as a result of all the personal information he had shared with her that allowed her to believe he was forthcoming and truthful. She felt so comfortable that for their first face-to-face meeting, she went to his house. She explained:

The reason I trusted his initial email is because he told me so much about his personal self that I knew he had to be a genuine person. I was like, okay, I'm a go along with this... A lot of my friends were like, "You can't only believe what he tells you!" But sometimes I tend to think I'm a good judge of character. I was like, this man not going to be telling me this type of intimate things and he not be genuine, so I did, I felt comfortable. I felt like I had been knowing him for years, because I had talked to him that long through emails and then on the phone... I didn't have a problem with going to meet him at his house. I really didn't.

A 24-year-old white female participant explained why she felt more confident about the safety of one partner over another. She related:

I think in general I just felt more safe with [name] because he was so upfront about everything. And was really responsible and like very open. So that might've had an influence on the time that I didn't have, or we didn't use a condom or whatever; because maybe I just like felt more safe in general, but yeah.

Relying on one's gut feeling or intuition

Some participants made judgments about how safe or risky it would be to have unprotected sex with a partner met online based on a gut feeling or an intuition they had about the person and/or their ability to be a good reader of people. For example, a 47-year-old black male claimed he had an aptitude for recognizing when people were not being truthful. When asked how he was able to get what he called a feeling about a prospective partner's honesty, he replied:

There's some things that you just can't learn in school. It's sort of like you could ask any police officer after a while of talking to people and interviewing people you get sort of a feel of when a person is being truthful to you and when a person is being deceptive to you. This works over the telephone and in person. You sort of get a vibe, it's uncanny. It's sort of, how can I explain to you how I can feel somebody staring at me, obviously I can't feel their eyes but obviously I

know that somebody is staring at me. The same way, it's sort of like a weird sixth sense, a vibe.

Another participant, a 37-year-old white female, explained how a gut feeling she had led her to believe that a recent partner she had had unprotected sex with could be trusted. She stated:

So... yeah, I, I definitely feel... feel like I kind of tried to size him up. And I didn't get an energetic vibe that told me that he was not to be trusted... which I have had that experience before, where I've been with people and felt very... and it's... it's like a gut feeling... it's an intuitive feeling that there's something wrong, um, with the situation, and I can't trust that person. And, and... I have had that feeling before and I didn't have that feeling with him. Um I... I also rely on a sense of intuition.

A 42-year-old white female and self-described risk-taker said she relied on "my inner sense and knowing" in choosing safe partners from the people she met online. She explained:

Most of the time I can actually get a very good read about somebody and it may not prove immediately that ... because everybody can put on a good game face, they can tighten it up and be a perfectly social, acceptable person; but then after a while, their true essence will start to come out, that's anything in any relationship—friendship, business relationship, it doesn't matter. Their true essence will start to show. I have the ability to actually feel that beforehand, I may not be able to tell you exactly what it is, but there's something deep within me that goes, "You need to be careful, watch out. There's something not truthful, something not forthcoming in this person, they're hiding something." I can almost feel it feels like they're trying to hide something from you.

Choosing partners who are assumed to have limited opportunities for sex

The number of past sexual partners a prospective partner had had was the factor that participants seemed to associate most strongly with the degree of sexual risk they posed. Consequently, they often attempted to elicit information about this aspect of their partners' life. Clearly, it was assumed that more past partners presented more opportunity to become infected with HIV or another STI.

Participants seemed to pay little attention to who had been the partners of their prospective partners and focused only on the number of past partners. Their strategy for managing risk while having unprotected sex was to try to select partners they believed had very restricted opportunities to have had many sexual partners. While in some cases, participants asked prospective partners how many past partners they had had, in other cases, they did not inquire about this directly, but rather attempted to infer how sexually active their prospective partners had been.

Individuals who were married or in a long-term relationship were seen as having limited opportunities to be very sexually active with others apart from their spouse or main partner given that they would have to do this covertly. Therefore, it was assumed that at most they were getting a little on the side and therefore were generally quite safe partners. For instance, a 32-year-old Latino male who said he felt comfortable having unprotected sex with a female he had met online because he learned that she had married young and had been married for 10 years before getting "recently divorced, a couple of years ago." Since then, she had told him, she had not been with anyone new. He explained how this information made him feel about having unprotected sex with her as follows:

Knowing that she had been in the marriage with the same person for X amount of years, she was recently divorced a couple of years ago, her telling me that she hasn't been sexually active with no one—so all that stuff definitely played into my line as far as being comfortable to have sex without a condom.

Similarly a 48-year-old white female explained why she felt it was okay to have unprotected sex with a married man she had met online who she said she had (uncharacteristically) believed when he claimed to have been monogamous with his wife for the last almost 20 years:

One guy that I was with, when I was doing your survey, the guy had been married and I was really the first woman he went out with. I don't usually believe that but I kind of did believe it with him. ... I pretty much felt pretty okay with having sex with him and not using a condom. He only had sex with his wife for almost 20 years and he hadn't had sex with anybody else. Not that that's the smartest decision. His wife could have given him something (laughs), but he hadn't even been sleeping with her for a while. I feel personally you really can't make any assumptions. You constantly have to go get yourself checked out.

Individuals who worked long hours were also assumed to have little time for dating and consequently few past sexual partners. An 18-year-old black female explained how she decided a partner she met online could not be too active sexually, saying:

I asked him was he seeing anybody else. I think those are the right questions to ask. He was like, "No, I'm not with anybody else." I think that's why we kind of hooked up because we're both pretty busy and he's like, "With school and work, I don't have very much time." That made sense that he wouldn't be sleeping with too many people. When are you going to sleep with someone if you're always at work, you're always at school? That's the same thing with me too.

Similarly, a 39-year-old black female indicated she was unconcerned about not discussing or using condoms with a partner she had met online because she believed his busy work schedule precluded his being very sexually active:

Yeah, it was okay with me, because I just assumed—and this time I did assume he worked so much, he doesn't have time for me, messing with a whole bunch of people. So it took my best friend to tell me "Well he finds time for you. Well, what makes you think he isn't going to find time for [other women]?" But it was too late then.

The likelihood of a prospective partner having had many past partners was seen as directly related to their level of physical attractiveness, as judged by the participant. More physically attractive people were assumed to have more opportunities for engaging in sex and therefore likely to have had more past sexual partners.

A 37-year-old black female remembered that she had to exercise caution when her sexual relationship with a partner she met on Craigslist began to grow. This partner was really attractive and looked (in her words) like a Greek God. So, although he wanted to become physically intimate with her earlier, she took her time with him, waiting "maybe in a month or so." She delayed having sex with him for a month because she assumed that he must have had sex with many female partners given how appealing she knew women would find him. She said:

I was like, "Oh, my lord, I have no idea how many women he might have been with." ... I mean, even though he never pinpointed specifics or anything, I mean, I guess I was a little bit judgmental because he was so beautiful and fun to look at. I was like, "Oh, my God. Who would say no to this guy," right? I felt a little bit more cautious. ... Cautious about STDs and also cautious with my heart.

These appearance-based judgments were not exclusively made by women. A 25-year-old white male participant expressed regret about not having found out more about the sexual history and risk behavior of the more attractive of the two female sexual partners he had met online, had unprotected sex with, and discussed in the interview. When asked to explain this, he said, "[She] was more attractive; maybe I was worried she'd have more sexual partners," suggesting he believed she had more opportunity for sex because of her good looks, and regretted not inquiring more about her sexual history.

Choosing partners who would want to avoid taking sexual risks

Some characteristics or situations were assumed to make people more cautious or prudent in their sexual life because they had more to lose if they became HIV infected. For example, individuals who were better educated and more economically secure (e.g., had a good job and/or a nice home) were generally assumed to be more cautious sexually and therefore lower risk partners. Participants assumed that people who worked hard to get a good education, had achieved some economic security, and had a nice lifestyle would not jeopardize these and a promising future by risking contracting HIV. For example, a 22-year-old white man said:

I guess people who are well-off or people who have a life and have something going for them are more inclined to be healthy, just for things to be going for them, they have to be healthy, you know? Social pressure to be healthy; there is pressure on people to be healthy and people to take care of themselves. I don't know. I don't know how to put it.

Similarly, a 27-year-old Latino man said:

Education, uh, the fact that they ... if they're working ... the way I see it is if they're working so hard for something in the future, I doubt that they would want something like HIV to inhibit, you know, to inhibit the process of that and/or the final ... the main goal. Everything is long-term related. I don't think nobody ... nobody wants HIV, ... the way I look at it is if, you know, if they want something that much and they're actually doing the damn thing, they're working that hard.

Valuing and being motivated to maintain a healthy and high-functioning body were other personal characteristics that participants used to make inferences about a potential partner's motivation to stay HIV and STI free. Thus, athletes and others whose identities were tied to their physical well-being and healthy bodies were assumed to be more vigilant about protecting themselves from disease or injury. For instance, when asked what kinds of observations or feelings influenced his notions about how safe it would be to have unprotected sex with a female partner he had met online, a 27-year-old white male participant said:

She was a college athlete. She was a uh, she was a tennis player. So that kind of made me feel like she was okay. [Laughs] I know that might not make a lot of sense but like I

feel like athletes kind of take care of their bodies and that kind of thing. So I don't know, somewhere in my mind I justified it in that way, I guess. ... I remember thinking that worked in my benefit of her being clean.

A 45-year-old Latino female met a trainer on an Internet site on which she said the majority of the guys were health fanatics, workout fanatics. She appeared to assume that because of his job and his focus on having a fit body, he would likely be someone who would be focused on staying healthy and therefore not engage in risky behavior. She described him by saying:

He's very healthy. He's a trainer. So he stated that he didn't smoke or drink, or ... I mean, casual, social, but he took very good care of his body. So he wasn't a junkie or a drug addict. He eats a pretty good diet and is in pretty good shape, awesome shape. He does ... he says he drinks. That's it. That's what he told me.

As discussed above, some participants preferred married men or women or those in a long-term relationship because they believed these individuals had limited time available to have sex with people other than their spouse or partner. In addition, they believed these individuals would be more likely to practice safer sex or be very selective in their choice of extramarital partners because they had to be careful not to bring home an STI that would expose their infidelity and jeopardize their relationship. A 42-year-old white female explained why she sought out married men for sex, explaining:

That's why I like some of the married men better, because they can't bring home anything. They're more fastidious. They're worried about, "I can't bring an STD home or anything of that nature home." They are usually the men who are in these 10-, 15-, 20-, 30-year marriages and God forbid they bring any herpes or any STD home because it would devastate their lives, completely destroy them. Where, on the other scene, it's much more—I've never had unprotected sex from people from other websites; the traditional sites.

Choosing partners with good personal hygiene

Good personal hygiene and bodily cleanliness were frequently mentioned as indications that someone was probably a safe partner. Participants seemed to believe that a clean exterior was a sign of a disease-free interior. For instance, a 32-year-old black female participant decided it was safe to have unprotected sex with a man she had met online because he impressed her in their first in-person meeting as having really good hygiene. Although she recognized that one could not rely on a person's claim that he had no STI, she felt she could rely on her evaluation of his personal hygiene as an indicator of likely disease. She said:

You know right off, I kind of, like when they say it to me, I kind of like be a little weary, you know, and then I look them up and down, you know? I look at how they, you know if they nails is clean, you know, they be wondering, I look at, you know, the face, to see if the face is clean, you know, the teeth, if his teeth is brushed when he came to meet me, you know, if he had on clean clothes, that's how I look, you know. I'm checking him out to see how clean he are, hygiene, I'm talking about hygiene wise.

Another 40-year-old Latino male participant reported that he immediately could tell (when they met in person) that a

woman he met online would be disease free based on her personal hygiene. He stated:

Well once I met her, like I said, in person, I could just tell that she was a very hygienic person, that her hygiene was very good. I know that actually that's not an indication that you have STDs or not, but I couldn't tell, she was very hygienic so someone like that would be.... She's the girl, the type that she wouldn't sleep with any guy. The guy has to be clean and stuff like that.

Other participants relied on a visual inspection of a prospective partner's genital area, which typically occurred at the point they were already undressed and about to have sex, to assess if they were likely disease free. For instance, when asked what influenced him to think that a particular partner was probably safe to have unprotected sex with, a 33-year-old black male said, "I was going off what I saw, what I would take as any odors or, you know. And she shaves, so I was examining her pretty thorough down there, making sure there wasn't no lesions or bumps or discoloration of any type, definitely, because I like to give oral sex."

Similarly, when asked if there were any strategies she used to assess if someone might be a risky or safe partner, a 29-year-old white woman said:

I mean, if they were to have any kind of obvious symptoms of anything along their genital region, it's going to be pretty obvious. If they have any blisters or sores or anything on their dick or anywhere in their pubic area that would be enough for me to run for the door, or even around their mouth, like it looks like they just have full blown oral herpes all over their mouth. That's enough for me to get the hell out of there. That has never happened, but if it were to happen to me, that's enough for me to say, yeah, got to go, see you.

Discussion

Early in the HIV epidemic, considerable attention was paid to the strategies and heuristics individuals used to try to assess the risks for HIV or other STI exposure that might be associated with having unprotected sex with a prospective partner. Indeed, HIV health education messages were often aimed at addressing the misassumptions underlying these appraisals (e.g., by educating people that one cannot assess whether someone is likely to be HIV-infected based on how healthy they look or their social class membership).

Possibly because it is assumed that the public is by now well educated about HIV and therefore not relying on faulty heuristics or strategies to make such assessments, much less attention has been paid to this problem in recent years. Nevertheless, it remains an important topic as individuals rarely have complete information about a prospective partner's past sexual behavior or lifestyle and very rarely know the person's serostatus. Consequently, assessments about the possible sexual risks posed by a particular partner are typically made in a context of considerable uncertainty.

This challenge is only becoming more common as we move more toward what has been labeled a sexual hookup culture characterized by casual sex. Garcia et al.¹ have contended, "Among heterosexual emerging adults of both sexes, hookups have become culturally normative" (p. 2). While hookup sex is likely still most prevalent among this age group, the emergence of hookup websites designed to facilitate casual sex outside the context of a committed

relationship has almost certainly increased hookups among older adults as well.

While some participants appeared to try to make a genuine effort to arrive at a reliable assessment of the risks of acquiring HIV or another STI from a prospective partner, most seemed to be looking for a way to justify their desire and intention to have unprotected sex. Only very few participants insisted that their sexual partners provide documentation of recent testing substantiating they were HIV and/or STI free before having unprotected sex with them.

Others, while not insisting on proof of testing, asked prospective partners about their history of HIV and/or STI testing and/or inquire about how sexually active they had been in the past and about past condom use; very few participants asked prospective partners about their drug use. Some, however, did not bring up any of these matters with prospective partners before having unprotected sex, presumably because they were not comfortable doing so, were concerned that the person would break off contact if they did, or considered doing so pointless since they recognized that people often lie about such matters. These participants relied on things such as the person's social characteristics or life circumstances to make inferences about the other STI risk they might pose.

It is not known how pervasive the problem of lying about one's past sexual practices is among people who use hookup sites. However, given that there is evidence^{12,53–56,58,94} that people often lie about personal information (e.g., age, marital status, or relationship goals) in their online profile on dating and hookup sites, it is reasonable to assume that they might also not reveal things they believed could lead others to reject them as a sexual partner.

Some researchers have suggested that the anonymity of the Internet environment encourages people who meet online to divulge more about themselves sooner in online communication than typically occurs in face-to-face meetings. As noted above, Padgett⁴⁵ and others^{12,95,96} have contended that this disclosure of intimate or very personal information might create a sense of virtual intimacy, precisely because they had shared so much information about themselves.

Indeed, this analysis revealed that the intimate personal information shared online was in many cases used to assess the openness and trustworthiness of a prospective partner, fostered a sense of knowing him or her well, and ultimately informed the decision of whether or not to engage in unprotected sex. However, it is significant that participants considered whether their prospective partner provided information that was consistent, accurate, and/or of a personal nature to gauge the sexual health risk he or she could pose, even when the information was not related to sexual behavior or health. This finding suggests that individuals seem to disregard the possibility that prospective partners may provide accurate information about some aspects or their lives, but not about their sexual behavior and health.

Those who did not solicit information about testing and past sexual behavior relied primarily on inferences about how many lifetime or recent sexual partners the person was likely to have had based on his or her life circumstances or appearance to assess the likely sexual risk he or she posed. The underlying assumption was that more previous partners provided more opportunity for exposure to someone who had HIV and/or another STI. While this reasoning is sound, it

constitutes only part of a sound schema for assessing the sexual risk a prospective partner might pose since it neglects to consider the risk characteristics of the people with whom one is having sex.

The fact that the heuristics for assessing risk are largely the same ones identified in the literature at the start of the AIDS epidemic is an important finding, in that it suggests that all the public education that has taken place around this disease over three decades appears to have been largely ineffective in making individuals able to better assess the risks a potential sexual partner might pose or to recognize just how difficult it is to make any reliable assessment in the absence of recent test results.

However, there may also be real limits to accurately assessing risk given the circumstances most of the participants were operating under. Recognizing that individuals who go online to meet sexual partners may withhold information that might diminish their appeal or simply may not appreciate the risk inherent in their past sexual behavior, we can infer that any reliance on information provided by prospective partners has to be considered as potentially unreliable.

It is a significant finding that most of the participants did not describe the phenomenon of sexual hooking up with partners met online as a risky endeavor. This suggests that using the Internet to find partners has become normative and therefore a feature of our cultural scripts. In addition, when considering the potential sexual risk posed by their partners, participants seemed to push in the back of their mind or completely disregard the well-known fact that the Internet facilitates misrepresenting one's self. It is significant that there were no online-specific strategies or heuristics participants used to assess the veracity and sexual safety of the partners they met online.

The findings suggest the need for more sexual health education to be directed to heterosexuals, especially those who go online to meet partners and typically engage in unprotected sex soon after meeting in person for the first time. Participants seemed to rely on their understanding of HIV risk groups (despite the fact that risk is associated with behavior and not group membership) and of high-risk behaviors (e.g., injecting drug use, or engaging in sex with men and women) to rule out high-risk partners. They seemed much less capable of recognizing individuals who were likely at elevated risk for HIV or other STIs, but did not fall into these stereotypically high-risk categories.

It is also notable that participants did not appreciate that the risk of acquiring HIV was greater from unprotected anal sex than from unprotected vaginal sex. This is an important point to educate heterosexuals about, especially women who are at greater risk of acquiring HIV from an infected partner through either unprotected vaginal or anal intercourse with uninfected men. Because risk for pregnancy does not occur with anal unprotected sex, heterosexuals may be less likely to use a condom for this practice, irrespective of any consideration of risk about acquiring or transmitting HIV or another STI.

Possibly because the prevalence of HIV is not very high in the heterosexual population at this time (apart from, for example, the partners of injecting drug users or of bisexual men), the risk assessment strategies the participants used might suffice for now and be good enough to avoid acquiring HIV or another STI. Gigerenzer⁹⁷ wrote "Heuristics are frugal—that is, they ignore part of the information. Unlike statistical optimization procedures, heuristics do not try to

optimize (i.e., find the best solution), but rather satisfice (i.e., find a good-enough solution)."

Most participants who did not require recent documentation of testing negative for HIV and other STIs recognized that the strategies they were using to assess the safety of a potential partner were less than optimal. Probably even some of those who asked for documentation knew that the prospective partner could have become infected after testing negative for HIV or an STI. Therefore, participants were looking for a satisficing heuristic or strategy that was hopefully good enough to allow them to enjoy unprotected sex and remain HIV and/or STI free.

The study had many strengths, including providing information about a topic that is understudied given the growing use of the Internet to meet sexual and romantic partners and the potential risks it can pose. It also gathered data through telephone interviews that afforded participants more anonymity and, we believe, therefore contributed to more candid reports of behavior. This, however, did not eliminate the possibility that some participants might still have felt a need to underreport how sexually active they actually were, including concealing their participation in certain practices that could be seen as putting them at risk for HIV or other STIs and therefore as undesirable sexual partners. The use of telephone interviews also allowed us to recruit from major HIV/AIDS epicenters throughout the United States rather than from a local geographical area.

For a qualitative investigation, the study sample was large, which ensured saturation of themes. A few limitations should also be noted. It is impossible to know what self-selection bias may exist among participants. While self-selection occurs in every study, because of the sensitive nature of the topic under investigation, it may have been more pronounced. With regard to the women in particular, we may have a sample that is more comfortable with their sexuality and more willing to discuss it with others. Another limitation that is true of all studies of sexual behavior is that there can be no corroboration of reports of behavior. As noted above, we believe the use of telephone interviews may have facilitated more truthful reports because they allowed for a sense of anonymity.

In conclusion, among a sample of heterosexuals engaging in relatively frequent unprotected sex and who seek sexual partners online, we found most employed flawed heuristics to appraise the potential sexual risks a person met online might pose as a sexual partner. Uninfected heterosexuals who are not in HIV serodiscordant relationships or the partners of members of high-risk populations (such as injecting drug users) have not been the target of a great deal of HIV education.

The findings clearly underline the need for much greater efforts to raise their awareness about the risks of unprotected sex and support them to realistically appraise the risks of casual sexual encounters with partners met online. The data support greater efforts to educate heterosexuals about pre- and postexposure prophylaxis. Although neither provides protection against STI other than HIV, the level of risk many heterosexuals appear to be engaging in, their use of faulty heuristics for appraising the HIV and STI risks posed by partners, and the severity of HIV, all justify making them aware of strategies other than condoms for HIV prevention and strongly encouraging their use. It was clear that sustaining consistent condom use was not something most of our participants could do or even wanted to do.

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Ethical Approval

All procedures performed in this study involving human subjects were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its latter amendments or comparable ethical standards.

Author Disclosure Statement

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