

**Une exploration des réseaux sexuels :
une étude pilote des comportements sexuels
et du recours à des soins de santé
chez les partouzeurs**

Patrick O'Byrne, Jessica A. Watts

Il existe très peu de recherche scientifique sur les partouzeurs. Pour le personnel infirmier spécialisé en santé sexuelle, cette absence d'information peut s'avérer problématique, notamment dans un contexte où le taux d'ITS est à la hausse, partout au Canada. Une étude pilote a été entreprise pour explorer la sous-culture d'hommes et de femmes qui fréquentent les clubs de partouzeurs. Des données ont été recueillies à l'aide d'un questionnaire distribué dans un bar de partouzeurs, à deux occasions distinctes, et par la voie d'observations directes dans ces établissements, à ces deux mêmes occasions. Les chercheurs ont mené des observations directes pendant huit heures, et 72 individus (32 hommes et 40 femmes) ont rempli le questionnaire. Les répondants ont dit avoir des relations sexuelles non protégées — orales (80,3 %), vaginales (15,5 %) ou anales (30,8 %) — et ont rarement recours à des services de santé axés sur les ITS (<40,8 %). Selon les auteurs, de plus amples recherches doivent être menées pour explorer la possibilité de concevoir et de mettre en place des services de santé axés sur les ITS à l'intention des partouzeurs.

Mot clé : services de santé

Exploring Sexual Networks: A Pilot Study of Swingers’ Sexual Behaviour and Health-Care-Seeking Practices

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Very little scientific research exists about swingers. For sexual health nurses, this dearth of information may be problematic, particularly as the rates of many STIs are increasing across Canada. A pilot study was undertaken to explore the subculture of men and women who visit swingers’ clubs. Data were collected through a survey distributed at 1 swingers’ club on 2 separate occasions and through direct observation of the clubs on the same 2 occasions. The researchers engaged in 8 hours of direct observation and 72 individuals (32 men and 40 women) completed the survey. The respondents reported engaging in unprotected sex, whether oral (80.3%), vaginal (15.5%), or anal (30.8%), and rarely accessing STI health services (< 40.8%). The authors conclude that further research is needed to investigate the possible design and implementation of STI health services for swingers.

Keywords: community health nursing, health services, HIV, sexual and reproductive health

Introduction

Recently, swinging (i.e., male–female couples having sex with other individuals and/or couples as part of their relationship) has become a topic of interest in the field of sexually transmitted infection (STI) control. This is partly because research has linked swinging with elevated rates of gonorrhoea, chlamydia, and syphilis transmission (Dukers-Muijers, Niekamp, Brouwers, & Hoebe, 2010; Simms et al., 2005) and partly because heterosexual transmission of STIs has increased among those aged 30 to 39 (Public Health Agency of Canada [PHAC], 2009).¹ Research about swinging from an STI perspective is sparse, which complicates the work of public health nurses seeking to decrease STI transmission. While the limited amount of data that are available suggest a link between swing-

¹ While research has found elevated rates of STIs (i.e., gonorrhoea, chlamydia, and syphilis) among swingers, no data exist on HIV. Moreover, the sexual orientation/age characteristics that are associated with swingers do not correspond with the groups that are most affected by HIV. Consequently, this research focused on STIs, not HIV.

ing and STI transmission, the evidence is not sufficient to identify how or why this relationship exists.

To address this knowledge gap, a pilot study was undertaken to generate information about (1) the sexual norms of one community of swingers, and (2) how and why these norms contribute to elevated rates of STI transmission. The study involved on-site observation and survey distribution during two swingers' events.

Current State of Knowledge

The Extant Literature on Swinging and Swingers

The majority of the research on swingers has focused on their sociodemographic and psychological characteristics. This work has revealed that swingers are often white, middle to upper class, conservative voters, and in their thirties (*range* = 28–45 years; *mean* = 40 years) (Jenks, 1998). Information regarding the prevalence of swingers, meanwhile, varies. While no research exists for Canada, it appears that 1% to 15% of all couples in the United States have tried swinging (Bartell, 1971; Cole & Spaniard, 1974; North America Swing Club Association [NASCA], 1997; Weiss, 1983). The variability of these numbers is partially explained by source: The 15% figure comes from a swinging association (NASCA, 1997), which based its statistics on couples who have ever tried swinging, while the more conservative 1% is from research studies with couples who swing on a regular basis (Bartell, 1971; Cole & Spaniard, 1974; Weiss, 1983). Moreover, because some of the research literature predates the NASCA report by nearly three decades, time could be a factor. While there may well be more swingers today, it could simply be that people who swing have become more likely to report the practice. NASCA supports the former supposition but there are no data confirming either.

Another factor that could affect the rates of swinging (by attracting either increased reporting or greater uptake of the practice) is that, in Canada, the legal status of swingers' clubs has recently changed. In 2005 the Supreme Court ruled, in *R. v. Labaye*, that the Government of Canada has no right to interfere with the practice of adults having consensual sex behind closed doors. This ruling modified the definition of public space and decency in Canada and legalized swingers' clubs (Markovic, 2006), and it could affect both the rates at which couples report swinging and the likelihood of people experimenting with this sexual lifestyle. Despite the potential ramifications of the legal change, however, the research dedicated to swinging continues to be sparse, particularly from an STI perspective.

More precisely, only four articles mention swingers and STIs, with the first two indicating that swingers are concerned about STIs and their fears sometimes affect their sex practices (Jenks, 1998; Murstein, Case, & Gunn, 1985). In the third article, Friedman and colleagues (2008) report on their study of group-sex events, including swingers' clubs. They conclude that sex clubs could facilitate rapid STI transmission because of the high rates of STI discordance among participants. The fourth article (Dukers-Muijers et al., 2010) confirms suspicions that swingers have elevated rates of STIs: Of 8,971 individuals in Holland who attended a free STI clinic between January 2007 and December 2008, those who self-identified as swingers were more likely than both sex-trade workers and men who have sex with men to test positive for gonorrhoea, chlamydia, and syphilis ($p < 0.0001$); the individuals concerned were over 40 years of age. The authors of the study suggest that the heightened STI transmission was likely due to an increased number of sex partners, concurrent sexual partnerships, and low levels of condom use. While research has confirmed that these factors increase STI transmission (Garnett, 2008; Morris, Goudreau, & Moody, 2008), there has yet to be an exploration to determine the effects of these factors among swingers.

Problematically, awareness of the correspondence between swinging and STI transmission provides little information for the nurses whose job it is to help decrease the transmission of these infections. Assumptions are made about how and why swingers' sexual norms facilitate STI transmission (as in the 2010 Dutch study; Dukers-Muijers et al., 2010), but speculation is not a solid foundation for STI prevention work. Indeed, the public health literature indicates that many successful STI interventions are based on in-depth understandings of target-population norms (Global HIV Promotion Working Group, 2006); however, no such data exist about swingers — which indicates that the next step in knowledge generation on this topic is the development of clear understandings about swingers' cultural-level sexual norms.

STI Transmission

Because the goal of the pilot study was to understand STI transmission among a group of swingers, we provide an overview of the factors that affect such transmission. There are five main categories: (1) individual factors, (2) sexual-contact factors, (3) group factors, (4) ecological factors, and (5) infection factors. The first are factors that increase an individual's vulnerability to STI infection, independent of context, such as self-efficacy, personal knowledge about STIs, STI transmission, STI protection, and anatomical determinants/biological susceptibility.

The second group of factors are those that render a sexual contact more or less likely to transmit STI. They include: an individual and his/her sex partner(s)' number of different sex partners, their total number of sex contacts per partner, their relationship status with these partners, the gender of these partners, the STI diagnosis histories of the individual and his/her partners, the places where sex occurs/is arranged, the types of sex that occur, and the use of protective barriers.

The third category comprises the group factors that facilitate STI transmission in specific sexual networks, and thus that increase the likelihood that the members of a certain group will be exposed to STIs. These factors are as follows: the mean number of sex partners per person in the group, the group-level distribution of partners (i.e., a heterogeneous or "small world network" distribution), rates of concurrent sexual partnerships, group STI incidence/prevalence rates, rates of bridging between one group and others with higher incidence/prevalence rates, and age/sex distribution in the group.

The fourth category encompasses the macro-level (ecological) factors that affect STI transmission at the population level, such as availability of condoms and other protective devices; affordability/accessibility of STI testing/treatment services; public health STI policies (e.g., a harm-reduction versus an abstinence focus); social, legal, and religious stances on STIs; and gender-power social norms.

Lastly, different STIs have different degrees of transmissibility, depending on certain contextual parameters.² For example, gonorrhea and chlamydia, as site-specific bacterial infections, require direct contact between an infected anatomical site and a susceptible anatomical site, such as might occur in the case of unprotected penile-vaginal sex when one of the two sites is colonized by gonorrhea and/or chlamydia. By comparison, gonorrhea/chlamydia transmission cannot occur if a person with a rectal gonorrhea/chlamydia infection performs oral sex on his/her partner. Syphilis, meanwhile, is a blood-borne pathogen that permeates many body fluids. Consequently, once infection is established, sexual contacts that involve the exchange of body fluid (including saliva) can transmit this infection, regardless of the original site of infection. However, because the natural course of syphilis includes a latent period during which an individual is not infectious, transmission is time-dependent. Ultimately, such infection-specific transmission signals that determining STI transmission for an entire group is complex. Many factors influence this process.

² Although sparse, the extant literature shows that swingers have elevated rates of gonorrhea, chlamydia, and syphilis. Consequently, only these three infections are discussed in any detail throughout this article.

Theoretical Framework: Sexual Script Theory

Gagnon and Simon's (2005) sexual script theory was used to ground the project. From an STI transmission perspective, such an approach was ideal because it provided a framework for examining STI transmission from the viewpoint of culture, group norms, and human interaction — and not exclusively the aforementioned factors that influence STI transmission. Consequently, sexual script theory was used to ensure that data collection both gathered information about STI transmission factors and remained sensitive to the importance of group norms and cultural mores. Because the study was aimed at understanding how the sexual norms of a specific group of swingers facilitate STI transmission, sexual script theory was the chosen framework.

A primary aspect of this theory is its rejection of the idea that sexual practices are expressions of a biological or psychological predisposition. In fact, sexual script theory holds that (consensual) sex transpires when the appropriate stage, actors, act, and performance occur in the required sequence. From this perspective, human sexuality is both inculcated in and specific to particular sociopolitical contexts. The cognitive schemata that individuals use to create their sexualities can therefore be understood as scripts that, through repetition and practice, become internalized and perfected. These scripts are the stories that give sexual meaning to many disparate but interrelated occurrences, actions, and people.

Gagnon and Simon (2005) also insist that these scripts function on different levels: cultural, interpersonal, and intrapsychic. The cultural level refers to the group norms that guide and structure sexual behaviour. While not concrete, cultural scripts provide the context within which individuals interpret people's behaviour. These scripts give meaning to otherwise inexplicable actions. The interpersonal level is less abstract. It is the process of self-observation by which individuals make sure that they respect/follow cultural norms. This level encapsulates people's self-policing to ensure a basic degree of alignment between their behaviour and social expectations. The intrapsychic level explains how individual variation arises when people take care to follow social dictates. At this level, people evaluate cultural norms and modify them based on personal values. This yields a number of personal interpretations and understandings about cultural sexual norms. There are as many intrapsychic scripts as there are people. Nevertheless, sexual script theory indicates that these individualized scripts contain common threads, which reveal the cultural-level scripts. Indeed, it is the commonalities among the multitude of unique intrapsychic scripts that reveal cultural norms (scripts). In-depth analyses of target groups can therefore both elucidate sexual norms and shed light on how and why they facilitate or affect STI transmission

(when the latter point is a goal). In this context, the purpose was to specifically examine the cultural-level scripts/norms.

Methods

Design and Fieldwork Negotiation

This pilot study was a descriptive, non-experimental cross-sectional investigation that also involved direct observation. Data were gathered through the administration of surveys at one swingers' club on two separate occasions and through on-site observation of the swingers' club. The data-collection periods were separated by 1 calendar month because the venue was open once a week only and a national holiday fell during the data-collection period. The idea to observe a swingers' event and to administer surveys on-site during two time periods emerged from discussions with the owner of the club. The owner stated that a sophisticated understanding of swingers' clubs and their practices required on-site presence. He dismissed previous research as based on second-hand data collection about these venues. When the idea of direct observation and survey administration was presented, the owner immediately granted permission for on-site data collection and then notified his manager of the dates when this would take place.

Data Collection

The surveys were distributed on both dates to all those who arrived at the club between the hours of 8 p.m. and midnight. They were handed out in a main area adjacent to the front door. Each couple was approached, told the purpose and nature of the survey, and asked to participate. Those who voiced interest were given two copies of the survey (one in English, one in French), a pen, a clipboard, and a book light. They were instructed to complete the survey in their preferred language and to deposit the completed survey in a locked drop-box that was located near the researcher. The participants were informed that no identifying information would be gathered and that the survey data would not be reviewed until the following day. The surveys contained questions about demographics, sexual practices, and STI health-care-seeking behaviour. All survey questions had been validated in two studies: one on the sexual practices of men who attend circuit parties, the other with gay/bisexual men who visit bathhouses. This was the first time the survey was administered to heterosexual men and women.

The observation data, meanwhile, were gathered during the survey administration period. At the point when survey participants were being sought (i.e., upon their entrance to the club), each swinger was informed that direct observation was also taking place throughout the evening. The

observation data served to enhance and explain the survey findings. To collect these data, field notes were taken about the venue, about people's behaviour, and about the interpersonal interactions between the men and women who were present at the swingers' club during the two data-collection periods. Other notes were taken to record interactions between the club patrons and the researcher. This involved contemporaneous note-taking on scraps of paper after interactions were completed.

Ethics

Ethics approval for the study was obtained from the Research Ethics Board at the University of Ottawa. Informed consent was obtained from all participants. The club owner was given a detailed description of the study, each survey participant was informed about the study and was required to read a description that accompanied the survey, and each person who entered the club was informed of the presence of a researcher who would be observing events.

Results

Observation Data

The swingers' club where the research was carried out was located in a mainly residential area of Ottawa, Canada, approximately 10 minutes by car from the city centre. The building was two storeys high and had no signs indicating that it was a swingers' club. Inside, the lighting on the first floor was very dim; clip-on book lights had to be provided so that the survey could be read. The layout of this floor was that of an urban martini lounge. There were tables and chairs where people congregated after entering the club to talk, dance, and drink water/soda beverages. Attached to this area were a service bar and an elevated dance floor. Participants reported, and observation confirmed, that alcohol consumption — particularly by the men — was limited. Informal discussions at the club revealed that the men did not want alcohol to impede their sexual performance. Drug use was neither reported nor observed. The men were dressed in slacks and buttoned-up shirts, the women in pants, dresses, or thematic clothes. No sexual contact occurred on this floor; it was the “cruising” area, where couples and groups met, interacted, and interviewed one another. Discussions often related to recent events (e.g., news topics) or to vacations, especially those at southern swingers' resorts. Interactions were consistent with the appearance of the club as a martini lounge for middle-aged, affluent, mostly white men and women.

On the second floor the decor and behaviour were different. The lighting was brighter, which enhanced visibility. In addition, while the space on the first floor was open-concept, here it was partitioned into six

rooms: four bedrooms, a “living room,” and a shower room. Each room contained an open box of lubricated condoms. Discussions about the bedrooms revealed that three of the four required an explicit invitation to enter if there were people already in the room. Newcomers waited at the door until someone in the room granted or denied them entry. In the fourth room, which was informally known as the “anything goes room,” people could enter and join in a sexual encounter already in progress. No invitation was required. In all rooms, though, verbal negotiation did occur; that is, the participants often voiced what they wished to do or have done to them and others then accepted or declined their invitation. Male–male sexual contact was neither mentioned nor attempted by any of the participants. Discussions confirmed that this form of sexual contact was taboo. Other discussions revealed that while a typical sexual encounter involved many bodies, sex acts other than oral, vaginal, anal, or manual rarely occurred. Expulsion was the usual outcome when someone did venture to engage in other forms of sexual activity (e.g., urolagnia or sadomasochism).

No safer-sex information was posted or was immediately visible on either floor of the club.

Survey Data

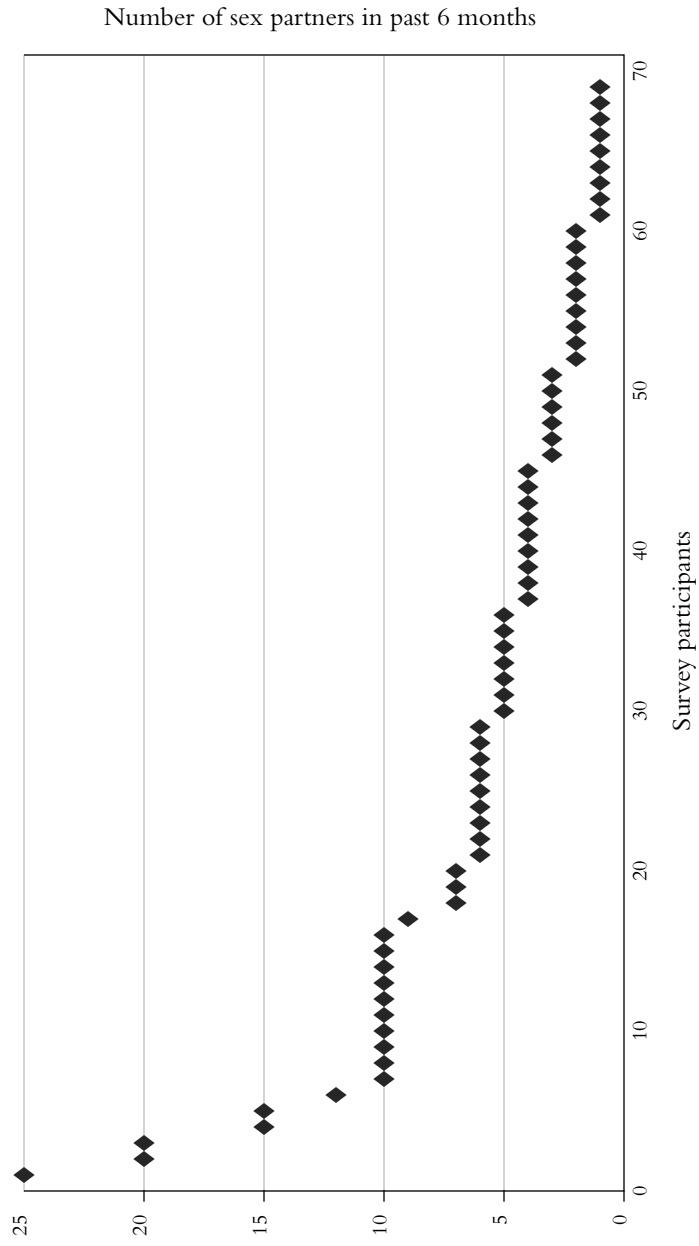
In total, 101 individuals entered the swingers' club during the two data-collection periods, with 17 individuals entering on both nights. There were thus 84 discrete cases, of whom 72 (38 men, 34 women) completed surveys, for a response rate of 85.7%. Of the 12 swingers who did not participate in the research, four were French-speaking, eight were men, and all were Caucasian; no other data were gathered about the non-responders.

Of those who responded, 77.8% ($n = 56$) were English-speaking and 22.2% ($n = 16$) French-speaking. The mean age was 41 ± 7.3 years. For level of education, 18.1% ($n = 13$) reported a high-school education, 33.3% ($n = 24$) a bachelor's degree, and 8.3% ($n = 6$) a master's or doctoral degree. Gross income was reported as follows: 8.3% ($n = 6$) under \$20,000, 22.2% ($n = 16$) \$20,000 to \$40,000, 41.7% ($n = 30$) \$40,000 to \$80,000, and 26.4% ($n = 19$) over \$80,000. See Table 1 for a summary of these data.

Regarding sexual partnerships, the number of partners that respondents reported for the previous 6 months ranged between 1 and 25, with a mean of 5. An X-Y scatterplot of these values (Figure 1) reveals a heterogeneous distribution of partners; many participants ($n = 40$) had a few sex partners (≤ 5), some ($n = 24$) had slightly more than average (6–12), and only a very few ($n = 5$) had many (≥ 15).

Table 1 Overview of Survey Data		
Category	Percentage	Number
<i>Age (mean 41 ± 7.3 years)</i>		
First language		
English	77.8	56
French	22.2	16
Education		
High school	18.1	13
Bachelor's degree	33.3	24
Master's/doctoral degree	8.3	6
Income		
Under \$20,000	8.3	6
\$20,000–\$40,000	22.2	16
\$40,000–\$80,000	41.7	30
Over \$80,000	26.4	19
Oral sex		
Perform: condom use = <i>never</i>	78.9	56
Perform: condom use = <i>always</i>	2.8	2
Receive: condom use = <i>never</i>	80.3	57
Receive: condom use = <i>always</i>	2.8	2
Vaginal sex		
Condom use = <i>never</i>	15.5	11
Condom use = <i>always</i>	39.4	28
Anal sex		
Condom use = <i>never</i>	30.8	12
Condom use = <i>always</i>	35.6	10
Regular STI testing		
Previous STI diagnosis	18.1	13
Gonorrhea	4.2	3
Chlamydia	6.9	5
Syphilis	1.4	1
Genital HSV	4.2	3

Figure 1 X-Y Scatterplot of Numbers of Different Sex Partners



Note: Three of the 72 participants did not answer this question.

Regarding sexual practices (as they related to both primary and non-primary partners), 98.6% ($n = 71$) reported practising oral sex (performing/receiving); 78.9% ($n = 56$) of these reported *never* using condoms when receiving oral sex and 80.3% ($n = 57$) reported *never* using condoms when performing oral sex. For performing/receiving oral sex, an equal percentage reported *always* using condoms: 2.8% ($n = 2$). The findings were similar for vaginal sex: 98.6% of the sample ($n = 71$) reported engaging in this form of sexual activity. Only 15.5% ($n = 11$) of those who reported vaginal sex indicated that they *never* used condoms, 39.4% ($n = 28$) reported *always*, 23.9% ($n = 17$) *sometimes*, 2.8% ($n = 2$) *50% of the time*, and 16.9% ($n = 12$) *usually*. The percentage of respondents who reported engaging in anal sex was lower: 54.2% ($n = 39$). Among these, reported condom use was as follows: 30.8% ($n = 12$) *never*, 30.8% ($n = 12$) *sometimes*, 7.7% ($n = 3$) *50% of the time*, 7.7% ($n = 3$) *usually*, and 25.6% ($n = 10$) *never*.

The respondents were also asked about their STI health-care-seeking practices and STI history. In response to these questions, 48.6% ($n = 35$) of participants reported that they regularly underwent testing and 18.1% ($n = 13$) of participants reported that they had previously been diagnosed with an STI. The 13 participants reported a total of 18 diagnoses (three individuals had had multiple infections): 4.2% ($n = 3$) reported gonorrhoea, 6.9% ($n = 5$) reported chlamydia, 1.4% ($n = 1$) reported syphilis, 8.3% ($n = 6$) reported genital warts, and 4.2% ($n = 3$) reported genital herpes. Of the 13 cases, 53.8% ($n = 7$) occurred within the subgroup of 35 participants who reported undergoing regular STI testing. This group thus reported a lifetime positivity rate of 20.0% ($n = 7/35$).

Discussion

The participants in this study resembled the participants in other studies about swingers: They were in their forties, educated, and socio-economically sound (see Jenks's [1998] literature synthesis). Despite these similarities, however, the focus of this study was unique. No previous research has investigated the sexual practices and STI health-care-seeking behaviours of a group of swingers to determine how or why these practices might affect STI transmission. The foregoing data are thus novel findings that yield points for discussion.

Sexual Script Theory: Understanding Swingers' Sexual Norms

The data that were collected and analyzed as part of this study provide a cursory overview of the sexual scripts of a specific group of swingers. Indeed, they illuminate the respondents' group-level sexual norms, such as the fact that male-female oral and vaginal sex are common and

that anal intercourse between men and women is relatively common. Approaching the data from the perspective of sexual script theory indicates that these sexual practices are not simply actions, but are also scripts that (1) establish the overarching behavioural norms of this group of men and women, and (2) provide the context within which their sexual behaviour can be understood. In this context, the numbers and observations reported above can be interpreted as a codified description of the overarching cultural-level scripts within which this group of swingers operate as autonomous yet group-oriented sexual beings. The similarities described above (e.g., that 98.6% practised oral sex and that nearly 80% of these did so without condoms) are the varying but similar actions that characterize this group. The proscription of male-male sexual contact can be considered another of these cultural-level rules. Consequently, these group norms were the fabric that enmeshed the members of this group into a coherent and functional whole — a successfully interacting group of swingers.

The data thus indicate the incipient point and the outcome of these participants' sexual scripts: These men and women joined swingers' clubs and engaged in the aforementioned sexual practices as members of a group of swingers, and self-identifying as such. From the perspective of sexual script theory (and its theatrical undertones), the data reveal the overarching stage (place or context) and some of the actors (people) who are necessary for sexual contact to ensue: The main stage is the swingers' club, smaller stages are the different rooms where sexual contact occurs, and the actors are the other individuals and couples who are present at the club (i.e., on the stage). Moreover, in executing these scripts the couples enter swingers' clubs with the intention of having some sort of sexual contact with people other than their primary partner, and they plan on doing so with their primary partner. This much was evident in the pilot study.

What we need to determine next, therefore, is how the various aspects of the swingers' sexual subculture culminate in the sexual practices reported in this study. In other words, what are the steps between arrival at the swingers' club and the completion of sexual contact? What is it about the swinging lifestyle and swingers' clubs that people desire, derive pleasure from, and enjoy, and how do these factors affect the ensuing sexual encounter? For example, why does unprotected vaginal/anal sex occur in some instances and not others? To answer these questions, more data are needed to describe the sexual scripts of this group of swingers. A better understanding of the meaning and significance of these scripts is essential, particularly if the data are to inform STI prevention work. Without such data, the state of knowledge will remain as it is: a superficial description that indicates that swingers in their forties

are more likely than some other groups to acquire STIs but fails to add any insight that can inform strategies to address the situation. We need information not so much on which sexual practices occur and in what frequency but on swingers' sexual scripts, in order to design prevention strategies that align with (rather than oppose) these sexual scripts.

STI Transmission: The Impact of Swingers' Sexual Norms

A second point of interest in the data is that some aspects of the identified sexual norms could affect group-level rates of STI transmission. Indeed, based on the sexual practices reported by this group as a whole, the probability that certain STIs would be transmitted at elevated rates was disproportionately high.³ In particular, the factors identified in this research population that could affect STI transmission are as follows: (1) the group's heterogeneous distribution of the number of sexual partnerships (visible in Figure 1); (2) the group's elevated mean number of sexual partners per person (five); (3) the group-level rate of concurrent sexual partnerships (i.e., both primary and swinger partners); (4) the group's relatively high rates of unprotected sex (ranging from 15.5% for vaginal sex to 80.3% for oral sex); and (5) the group's low levels of health-service utilization for STI (fewer than half the participants underwent "routine" testing, even though nearly a fifth had previously been diagnosed with an STI).

Previous research has confirmed that these five factors affect STI transmission to such a degree that, in some cases, they enable relatively non-virulent pathogens (STIs in this context) to surpass their reproductive thresholds and to spread throughout groups unusually rapidly. In such cases, infections that should "die out" due to low levels of infectivity not only continue to be transmitted but increase in incidence and prevalence. These factors might explain the elevated rates of STI transmission among swingers that have been found in previous research. To shed further light on this matter, each of the factors identified in this pilot study will be examined in detail.

Heterogeneous distribution of sexual partnerships. The heterogeneous distribution of the numbers of sex partners observed in the study (Figure 1) reveals that while most of the research participants had a limited number of partners, a few had many partner. Thus, a few people had sex with many of the swingers who made up the group (40 participants reported ≤ 5 sex partners in the previous 6 months, while only five reported ≥ 15 sex partners). Such a network distribution is often referred to as a "small world network," wherein there are only a few degrees of

³As will be explained, these STIs are (in order of suspected probability) syphilis, gonorrhea, and chlamydia.

separation between any two individuals (Garnett, 2008; Morris et al., 2008). The outcome of this network distribution, from an STI perspective, is that the few individuals with many partners link many people within the group together and thus enable rapid STI transmission (Garnett, 2008; Morris et al., 2008). For the swingers in the present study, this heterogeneous distribution of sex partners created a group-level environment (by means of heightened levels of interconnectivity) that could facilitate rapid STI transmission. Such density could, in addition, be a contributing factor in the heightened incidence of STIs found in previous research with swingers. The present findings support, but do not prove, such an assertion, which highlights the need for further research to validate this finding.

Elevated mean number of sex partners. The mean number of sex partners per person in the sample (five) also increases the STI transmission probabilities, because it further increases the network density of this group of swingers. Each member of the subgroup, while not having direct sexual relations with everyone in this cluster of swingers, has sexual contact with a sufficient number to compress the network and link most of its members together. In relation to STI transmission, density is important because as density increases, so does the number of transmission routes (Garnett, 2008; Morris et al., 2008). A heightened mean number of sex partners for this group of swingers would thus exacerbate the elevated density that has already resulted from the heterogeneous distribution of sexual partnerships. As noted above, this increase in density could be another contributing factor in the elevated rates of STI transmission reported in the literature. In addition, this factor, in combination with the previous distribution factor, could yield a self-perpetuating cycle wherein these two items could increase STI incidence, and STI incidence in turn could make these two transmission factors more influential. Each would exacerbate the effect of the other. Again, however, these assertions need further exploration.

Concurrent sexual partnerships. Research also demonstrates that concurrent sexual partnerships enhance STI transmission. While concurrency was not measured in the present study, it did arise in the group due to the simultaneous sexual relations that the participants reported with their primary and non-primary sex partners. Concurrency is an integral aspect of this lifestyle: Engaging in sexual relations with people other than one's primary partner is part of the primary relationship. Research shows that high levels of concurrent sexual partnerships within a sexual network can also increase group density — a factor that facilitates STI transmission. If the rates of concurrent sexual partnerships are high enough, they can even produce sufficient levels of group density that no other STI

transmission factor is needed to cause accelerated STI transmission (Garnett, 2008; Morris et al., 2008). This is because concurrency reduces the amount of time that elapses between different sexual relationships; this temporal aspect is important with regard to STI transmission because time permits the development of symptoms, routine screening, and partner follow-up. When time is reduced, so too are the factors that reduce STI transmission. Concurrency in isolation could thus explain the elevated STI rates among swingers reported in the literature. It is more likely, however, that concurrency is simply one of many factors in the increased density of this group of men and women and in the group-level rates of STI transmission.

Unprotected sexual contacts. Research confirms that condom use affects STI transmission to such a degree that the impact of the three foregoing STI transmission factors could be negated if condoms were used consistently and properly. The data collected in the present study show that condom use was not consistent. The result is that the reported unprotected sexual practices would facilitate STI transmission. This facilitation, however, would not be without discrimination. Indeed, because different STIs transmit differently under different conditions, there likely would be variations in the transmission of syphilis, gonorrhea, and chlamydia. For example, while the almost non-existent condom use during oral sex could facilitate syphilis transmission across the entire group,⁴ it would have a minimal effect on group-level rates of gonorrhea and chlamydia.⁵ By comparison, the unprotected vaginal and anal intercourse that was reported would permit the transmission of all three infections. The outcome of the reported sexual practices and level of protection would thus render syphilis the most likely to occur. The fact that syphilis can be transmitted via unprotected oral sex and unprotected oral sex was frequently reported in this study could help to explain the elevated rates of syphilis that previous researchers have attributed to groups of swingers (see Simms et al., 2005).

Low levels of STI health-service utilization. Lastly, STI testing is an effective prevention strategy because it identifies cases in need of treatment and contacts in need of testing. Consequently, STI testing (and the partner notification that accompanies a positive STI test report in many jurisdictions) traces the path of infection back through a given sexual

⁴ This is because syphilis is a blood-borne infection that permeates many body fluids, including saliva.

⁵ While gonorrhea/chlamydia can colonize the oropharynx, the probability of rapid group-level transmission based on this site of infection is low. This form of unprotected sexual contact would nevertheless permit transmission.

network, dispensing treatment to many individuals in the process. This strategy capitalizes on the interconnectivity of sexual networks, and individuals' knowledge of their past/present sex partners, to identify and treat some STIs. Among swingers, STI testing could be a successful prevention strategy because they have a common meeting place (the swingers' club) where they can notify previous/present sex partners of their need to undergo STI testing and/or treatment. STI testing and treatment is an established method for controlling the group rate of infection. The introduction (or enhancement) of this simple prevention strategy, which is not frequently used by the swinger population, could significantly lower group-level STI transmission rates. The current low levels of STI testing would likely render this strategy successful because there is much room for improvement in uptake and use. Furthermore, the fact that swingers congregate in identifiable locations that admit researchers suggests that STI testing and treatment services might also be welcome on site. The high response rate for the survey (85.7%) and the willingness of participants to engage in frank discussions about their sexuality point to the potential acceptance of swingers' venues as testing and treatment sites. More research is needed on this topic, to discern how, when, and under what conditions the services should be offered.

Conclusion

This study examined how and why the sex norms of one group of swingers affect STI transmission. It was undertaken because (1) research indicates that swingers who attend STI clinics have elevated rates of STIs, and (2) many individuals who frequent swingers' clubs may not undergo STI testing. Surveys were distributed and direct observation undertaken on two occasions at one swingers' club, thus moving data collection into the places where swingers have sex. The data reveal that most of the research participants engaged in oral and vaginal sex and some engaged in anal intercourse, and that many engaged in all of the foregoing sexual practices without using condoms. The data also reveal a heterogeneous distribution of sex partners, concurrent sexual partnerships, and infrequent STI testing — three factors that facilitate STI transmission. The outcome of these findings is therefore that (1) the dynamics of this sexual network include many factors that facilitate STI transmission, (2) we need to conduct more research on swingers' sexual scripts, and (3) we need data on how to develop STI prevention interventions that respect/work with these sexual scripts. The openness and willingness of the research participants indicate that such investigative endeavours will not be barred by resistant or reluctant participants.

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