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Typologies of sexually explicit media use among MSM: An application of latent class analysis

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Abstract

The viewing of sexually explicit media (SEM) is widespread, especially among men, and research linking SEM viewing and sexual behavior has shown a variety of results, some positive (e.g., sexuality education) and some negative (e.g., poorer body image). These results might be due to limitations in measuring SEM consumption, particularly around typology. The goal of the current study was to examine potential patterns of SEM viewing activities. Using data from an online survey of men who have sex with men (MSM), we conducted latent class analyses of 15 SEM activities. Results suggested a three-class solution. The most prevalent class included over 60% of men and was characterized by viewing primarily safer-sex or conventional behaviors. The second class included 32% of men and had a similar albeit amplified pattern of viewing. The final class included just 7% of men and was marked by high levels of viewing of all activities, including fetish and kink. Compared to the conventional or safer-sex class, the other classes had lower internalized homonegativity, lower condom use self-efficacy, and higher SEM consumption or dose. Implications for HIV prevention, sexuality research and the SEM industry are discussed.

Keywords

sexually explicit media; pornography; men who have sex with men; latent class analysis

The viewing of sexually explicit media (SEM) is widespread, especially among men. Studies estimate that anywhere between 86% and 96% of men have viewed SEM (Hald, 2006; Hald & Malamuth, 2008; Rosser et al., 2013; Træen, Spitznogle & Beverford, 2004). The consumption of SEM, though widespread, varies among men based on age and socioeconomic status (Hald & Malamuth, 2008; Rosser et al., 2012). Among women, there is greater variability in the prevalence of SEM consumption; between 54% and 85% of women are estimated to have viewed SEM (Gunther, 1995; Træen et al., 2004). This popularity makes SEM a lucrative industry, generating profits on par with Hollywood (Carroll et al., 2008).

SEM is also heterogeneous in content and format. SEM is available in movies (e.g., DVD, Blu-ray), photographs (e.g., magazines), and written form, and these formats are available on the Internet as well. SEM also has a variety of genres; some SEM portrays sexual behaviors that range from “vanilla” (i.e., kissing, mutual masturbation, oral sex, vaginal sex, anal sex) to “kink” (i.e., extreme penetration, watersports, bondage and discipline, dominance/submission and sadomasochism [BDSM]). Portrayal of condom use is also highly variable in SEM. Studios that primarily feature films that appeal to heterosexual males generally mandate HIV and STI testing to prevent infections, while many studios portraying men having sex with men (particularly those in California) have generally upheld a self-imposed standard of condom use in anal sex starting in the 1990s (Grudzen et al., 2009). This changed in the 2000s, with bareback (i.e., anal sex without condoms) SEM becoming more common (Calvert & Richards, 2007; Clark-Flory, 2012). Additionally, concerns for the health of performers have led to policies like California’s Measure B, which mandates the use of condoms in SEM (Los Angeles Times, 2012). However, Measure B was met with hostility from the industry and skepticism about its necessity (del Barco, 2013; Los Angeles Times, 2012).

Since 1967, the United States Congress has funded research on the relationship between SEM consumption and behavior (Wilson & Abelson, 1973). Research about SEM in heterosexuals has primarily focused on the relationship between SEM consumption and sexual violence, finding generally null results (Bensimon, 2007; Fisher & Barak, 1991; Issacs & Fisher, 2008; Kutchinsky, 1991; U.S. Council on Obscenity and Pornography, 1971). Until recently, research into the effects of gay SEM has been lacking (Rosser et al., 2012). Since 2011, five studies have examined the effects of gay SEM, all studying the relationship between SEM and bareback SEM consumption and HIV/STI risk (Eaton, Cain, Pope, Garcia & Cherry, 2012; Nelson, Simoni & Morrison, in press; Rosser et al., 2013; Stein, Silvera, Hagerty & Marmor, 2012; Træen, Hald, Noor, Iantaffi, Grey & Rosser, 2013). Positive effects of SEM consumption among men who have sex with men (MSM) include sexuality education, particularly among young MSM, many of whom report learning about sexuality through this medium. Some examples include the existence and mechanics of anal sex between males and gay subcultures (e.g., leather, “bears”), content that is typically not addressed in school-based sexuality education (Kubicek, Beyer, Weiss, Iverson, & Kipke, 2010; Kubicek, Carpineto, McDavitt, Weiss, & Kipke, 2011; Morrison, 2004; Mustanski, Lyons & Garcia, 2011). Potential negative effects include negative body image and a striving for either thinness (Duggan & McCreary, 2004; Isaacs & Fisher, 2008) or greater musculature (Morrison, Morrison & Bradley, 2007). Similarly, the consumption of this medium has been found to positively predict higher numbers of sex partners (Braun-Courville & Rojas, 2009; He et al., 2006; Lewin, 1997), though other studies did not find the same association (Rosser et al., 2013).

These disparate results could be due to heterogeneity in the association based upon other characteristics. Gender and age, for example, could potentially be moderators of the association between SEM consumption and these effects. Sexual experience is another potential moderator. The Sexual Risk Behavior model (Wilkerson et al., 2012) identifies five pathways that link viewing SEM with intentions and behavior. If the behavior being viewed is not new (i.e., the viewer has direct experience with that activity), the intentions are

maintained, but behavior is not changed. In contrast, if the behavior being viewed is new and arousing and there is a trusted available partner, behavior can be changed. This model has two implications. First, SEM might have a stronger effect on the behavior of less experienced viewers. Second, the effect of SEM on the behavior of a viewer might dissipate over time.

SEM consumption can be modeled and conceptualized in different ways. One of the most conceptually straightforward ways is to model dose as total time spent watching SEM. This can be advantageous in that SEM can be easily measured in units such as minutes, hours, and times viewed per week. Modeling dose as a continuous variable without regard for content makes the inherent assumption that all SEM is equal, which may not be the case. SEM is marketed by the SEM industry as a set of distinct genres based on content and looks (e.g., leather, bear, solo/jack-off, bareback), which suggests that consumers may prefer distinct “types” of SEM (e.g., <http://www.titanmen.com/>; <http://tour.belamionline.com/>). With this large variety of genres and wide spectrum of HIV risk in portrayed acts available, focusing just on total time spent watching may miss the opportunity to fully describe how people consume SEM. Watching “solo” porn for 3 hours, for example, might not have the same effect as watching bareback porn. Another way to conceptualize SEM consumption is by examining the amount of distinct “types” of SEM that are viewed (e.g., those who like “kinky” sex, those who like “vanilla” sex, those who like watching risky sex). Though these “types” might not be directly observable, the most frequently viewed types of SEM may have a greater influence on sexuality and behavior than SEM consumption overall.

Describing underlying “types” of SEM consumption can allow researchers to better understand the relationship between SEM consumption and risk behavior. The goal of the current study is to determine whether MSM can be grouped into homogeneous classes based on their SEM viewing and to characterize these types by describing the demographic covariates that predict class membership. Understanding both the different classes of SEM viewing and the potential demographic differences between classes will facilitate understanding risk behavior and prevention. It is hypothesized that there will be multiple typologies of SEM viewing, these classes will vary in the types of SEM that are viewed, and the classes will vary along at least some demographic variables.

Method

Participants

Internet-using MSM ($N=1429$) completed an online survey about their use of SEM and sexual behavior. Almost 70% of the sample is younger than 35 years of age, about half have a college degree, and the majority are nonwhite. Fewer than 10% reported being HIV positive, the majority are not in a long-term relationship, and approximately 30% reported using illicit drugs at least once in the past 3 months (see Table 1).

Procedure

Participants were recruited online between May 23rd, 2011 and August 7th, 2011 using banner advertisements on 148 gay-oriented websites affiliated with an advertising agency

specializing in gay consumers. A total of 7,939,758 impressions were displayed during this period and banners had a click-through-rate (CTR) of 0.16%. Banner advertisements directed interested persons to a webpage hosted on a dedicated university server with the appropriate encryption to ensure data security. A total of 5201 MSM met the eligibility criteria, which included having prior sexual experience with a man, being 18 years of age or older, and living in the United States or its territories. Those that met eligibility were invited to complete the survey. The mean completion time for the survey was 42 minutes. Participants were compensated \$25 for completing the survey, and prior to the analysis, a de-duplication and cross-validation protocol was conducted to remove duplicate and suspect surveys (Konstan, Rosser, Ross, Stanton & Edwards, 2005). After this deduplication process, 64 surveys were removed as suspect. Several steps were pursued in order to protect participant identity and ethical standards. A Certificate of Confidentiality was obtained from the National Institutes of Health and the study was conducted under the oversight of the Institutional Review Board of the researchers' home institution. Finally, a refuse to answer response option allowed participants to opt out of answering any item.

Measures

SEM activities—Respondents were asked to estimate the frequency with which they viewed 22 behaviors depicted in SEM by asking, “When you watched porn over the past three (3) months, how often did you see ...?” Response options were on a five-point Likert scale (1 = never; 2 = a few times; 3 = about half the time; 4 = most of the time; and 5 = always). A multi-step process was used to generate these activities. First, a large pool of potential activities or genres was generated by collating organizational categories (e.g., fisting, solo/jackoff, watersports) used by a number of websites that deliver gay SEM. Next, this list was reduced by removing duplicates and conceptually overlapping activities (e.g., pee, urine, watersports). During analysis, seven activities (solo masturbation, oral sex with a condom, rimming [analingus] with a dental dam, sadomasochism, cross-dressing, heterosexual sex, and sex involving feces [scat]) were removed because of skewed frequencies, little or no variability, or redundancy with other items (as indicated by a high correlation). The final list of 15 activities is provided in Table 2.

Positive and negative affect scale—The Positive and Negative Affect Scale (PANAS; Thompson, 2007) was used to assess positive and negative affect. For each of ten adjectives, participants were asked to indicate the extent to which they felt that way during the past 90 days. All items were responded to using a five-point Likert scale, with 1 = “very little or not at all” up to 5 = “extremely.” Arithmetic means of the five positive (e.g., “excited”) and five negative (e.g., “scared”) items were calculated to create two composite measures of positive and negative affect. Reliability, as measured by Cronbach's α , was 0.82 (95% CI: 0.80–0.83) for positive affect and 0.87 (95% CI: 0.86–0.88) for negative affect in this sample.

Social desirability—Social desirability was measured using the Marlowe-Crowne short-form (Strahan & Gerbasi, 1972). The measure asks participants 10 true/false statements about general characteristics and responses are coded 1 when the response is the socially desirable answer (e.g., answering “True” to “I have never intensely disliked anyone”) and 0 when the response is the undesirable answer (e.g., answering “False” to “I have never

intensely disliked anyone”). A composite measure was created by summing the number of desirable responses, resulting in a summary measure ranging from 0 to 10 in this sample. The Kuder-Richardson 20 internal consistency estimate for this measure in our sample was 0.59.

Internalized homonegativity—The revised Reactions to Homosexuality scale (Smolenski et al., 2010) was used to measure internalized homonegativity, defined as the acceptance of negative attitudes toward one’s own same-sex attraction and behavior. This measure is comprised of seven items answered using a 7-point Likert scale. Sample items include: “I feel comfortable discussing homosexuality in a public situation” and “Even if I could change my sexual orientation, I wouldn’t.” The response options ranged from 1 = “Strongly agree” to 7 = “Strongly disagree.” The mean of the seven items was used to compute a score, with higher scores indicating greater internalized homonegativity. Cronbach’s α in this sample was 0.82 (95% CI=0.80–0.83).

SEM dose—Amount of SEM exposure was measured in hours per week by combining four frequency items (“Please indicate how often you have used the following sources of porn in the past three (3) months: Magazines, Videos or DVDs, Internet pornography on a computer, and Internet pornography on a cell phone or PDA”) and a quantity item (“When you watched porn over the last three months, how long, on average, would you spend watching porn in a single session?”). Response options for the frequency items ranged from “not at all” to “more than once a day”, and response options for the quantity item ranged from “1–15 minutes” to “more than 7 hours.” Dose for each of the four types of SEM was summed to create a total SEM dose variable. This total dose variable, in average hours per week, was log transformed to reduce skewness.

Sexual self-esteem and satisfaction—Self-esteem and satisfaction with sex were measured using subscales of the Multidimensional Sexuality Questionnaire (MSQ; Snell et al., 1993). Sexual self-esteem was measured with five items (e.g., “I am confident about myself as a sexual partner”) and sexual satisfaction was measured with five items (e.g., “I am very satisfied with the way my sexual needs are currently being met”). A five-point Likert scale (1 = “Not at all like me” to 5 = “Exactly like me”) was used; sum scores were created for sexual self-esteem and sexual satisfaction with higher scores indicating higher levels of self-esteem and satisfaction, respectively. The MSQ had a Cronbach’s α of 0.93 (95% CI=0.92–0.94) and an average interitem covariance of 0.89 in our sample.

Condom use self-efficacy—Condom use self-efficacy was measured using a scale developed by Marin et al. (1997). Respondents were asked to read 13 statements and indicate whether or not they would be able to use condoms in the situation. Examples include “Use a condom regularly even if a partner might think less of you?” and “Put a condom on yourself without spoiling the mood?.” Response options ranged from 1 = “definitely not” to 5 = “definitely yes.” Responses were summed to create a total score, with higher scores indicating higher levels of condom use self-efficacy. The scale had a Cronbach’s α of 0.96 (95% CI=0.96–0.96) and an average interitem covariance of 0.99 in our sample.

Demographics—Sociodemographic covariates included age (collected continuously in years and dichotomously recoded as 0 for less than 35 years and 1 for greater than or equal to 35), race (recoded two items assessing ethnicity and race to a dichotomous indicator with 0 for non-Hispanic white vs. 1 for all other races), and education (collected using a 6-level variable ranging from less than high school to graduate/professional degree and dichotomously recoded as 0 for less than a bachelor's degree vs. 1 for a bachelor's or graduate/professional degree). The recodings were done to control for skewness and to facilitate interpretation.

Other characteristics—Participants were asked to provide their HIV status by selecting one of the following five response options: “HIV-positive,” “HIV-negative,” “I’m not sure but I think HIV-positive,” “I’m not sure but I think HIV-negative” and “Don’t know.” These were collapsed to a dichotomous indicator coded 1 for HIV-positive (the first response) vs. 0 for not (the remaining 4 responses). Being in a long-term relationship was defined as having a “regular sex partner such as a boyfriend, husband, domestic partner that you have been in a relationship with for at least three months,” and assessed by asking “How many of the male partners [just identified in the prior question] were primary partners?” It was further cross-validated by asking the length of time in the relationship. Drug use was assessed by asking participants, “In the past 3 months, how often have you used any of the following drugs illegally or inappropriately (e.g., abuse of prescription drugs)?” Response options included: not at all; less than monthly; once a month; once a week; daily; or refuse to answer. Categories of drugs investigated included marijuana/hashish, cocaine, uppers (methamphetamines, crystal), downers (valium, sedatives), club drugs (GHB, ecstasy), opioids (heroin, Vicodin), and poppers (alkyl nitrites). A dichotomous variable was created where 0 = no illicit drug use in the past 90 days and 1 = any illicit drug use in the past 90 days.

Statistical Analyses

After first computing descriptive statistics for all study variables, latent class analyses (LCA; Collins & Lanza, [2010]) were used to identify SEM typologies. A multi-phase approach was used for the LCA models. First, a series of models was estimated to determine if there were classes of types of SEM viewed and, if so, how many distinct classes best described the data. The data were randomly split into two equal groups: a test sample and a validation sample. Models with varying numbers of classes (up to five) were estimated in both groups, adjusting for effects of the identified covariates. The final, best-fitting model was selected based on standard criteria including model fit (lowest Akaike Information Criteria (AIC), Bayesian Information Criteria (BIC), and sample size adjusted BIC; high Entropy [e.g., above 0.80], and a statistically significant [$p < 0.05$] Lo-Mendell-Rubin test), interpretability, theoretical soundness, prevalence in each class, and homogeneity of and separation between classes (see Collins and Lanza, 2010 for detailed descriptions of these criteria). Comparability of solutions between the two random subsamples was also examined and considered. As the 15 indicators were five-level scales and treated as continuous, class means were used for interpretation as opposed to item-response probabilities typically used with dichotomous indicators.

Once the number of classes were established, the final model was re-estimated using the complete sample, including all covariates in the model, and using full information maximum likelihood. Full information maximum likelihood fully maximizes the data, is appropriate when missing data are missing at random, and produces comparable results to multiple imputation (Enders, 2010). Means for the 15 indicators by class are presented from this final model, and odds ratios were computed to measure the association between each of the covariates and class.

STATA v12 (Statacorp, 2011) was used for data management, variable construction, and to calculate all descriptive statistics. Mplus v5 (Muthén & Muthén, 2007) was used for all latent class analyses.

Results

The most common activities viewed in pornography content were oral sex without a condom, anal sex with a condom, and rimming without a dental dam (means all above three on the five-point scale). The least commonly seen activities included toy/dildo insertion, fetish/kink, spanking, depictions of forced sex, bondage/domination, leather, and watersports, all with means below two (see Table 2).

Although the information criteria continued to improve with models with increasing numbers of classes, the improvement modulated after the three-class model. Focusing specifically on the validation sample, examination of the estimates showed that the four and five class models failed to add unique patterns beyond that seen with the three-class solution (see Table 3). For these reasons, we selected the 3-class solution as the most parsimonious model that best represented the data.

Class one was the largest class including 61% of the sample. Average viewing frequencies for men in this class were lower for every activity than men in the other two classes, and the highest reported viewing frequencies were those that might be considered “safer-sex” or “conventional” activities (i.e., oral sex without a condom, anal sex with a condom, and kissing). Viewing frequencies for these safer activities were also most similar to men in the other two classes. Viewing frequencies quickly dropped for more extreme and unsafe behaviors (see Table 4).

Class two was the second largest class and included 32% of participants. Although not the most prevalent class, viewing frequencies for this class were most similar to the overall sample viewing frequencies, and therefore might be considered the “traditional” viewing profile. Again, viewing frequencies were highest for the safer-sex activities and dropped as activities became more extreme. As seen in Figure 1, the overall pattern was quite similar to class 1 (the lines are mostly parallel), with an overall and consistent increase or amplification in viewing frequency across the full set of activities.

Class three, with only 7% of men, was the smallest group. The viewing frequencies for the safe activities is virtually identical to Class two, but they diverge as the activities become riskier and more extreme, and the drop off pattern seen with classes one and two is virtually

nonexistent in this group (see Figure 1). This class is best characterized as a “fetish” or “kink” class.

Class one, the “safer sex” or “conventional” class, reports viewing significantly less SEM than men in the other two classes. This group also reports significantly higher scores on internalized homonegativity and condom use self-efficacy and is more likely to be college-educated. Class three appears to be elevated compared to classes one and two on a number of the variables, but most are not statistically significant, likely influenced by the small class size. Social desirability, PANAS, sexual satisfaction, sexual self-esteem, HIV status, race and age were not significantly different between the three classes (Table 5).

Discussion

Our study identified three distinct types of SEM viewers: a “safer-sex” or “conventional” group (Class 1), a “normative” group with a similar but amplified profile (Class 2), and a “fetish” or “kink” group that views all included activities (Class 3). These three types of viewers also had different rates of SEM consumption and viewed content that varied distinctly in portrayed HIV and STI transmission risk. It follows, then, that these groups may also have different purposes for SEM consumption, which has implications for both the gay (MSM) SEM industry and the field of HIV prevention among MSM. It may be argued that each of the three classes has their own context within HIV prevention, sexual health, and the SEM industry, described below.

The “safer sex” group reported lower doses of SEM exposure, higher condom use self-efficacy, and higher odds of internalized homonegativity. Compared to the “normative” and “fetish” groups, the “safer sex” group is the most restrictive in both what they view and how often they view it. Consistent with studies on internalized homonegativity (e.g., Smolenski, Ross, Risser, & Rosser, 2009), they may use SEM to manage or control their sexual desires (rather than embrace them) more than MSM in the other two groups. They may also be more conventional or “rule followers” in all aspects of life, sexual and non-sexual. Viewing of conventional pornography could also reflect a difference between SEM that is most conveniently available and SEM that is sought out. The “safer-sex” class may be a group that watches SEM to provide sexual stimulation during masturbation rather than from enjoyment of seeing a variety of sex acts, and the specific behaviors portrayed may reflect the amount of gay SEM portraying condom use that is due to a self-enforced policy of condom use in the SEM industry.

The “normative” group viewed significantly more SEM than the “safer sex” (but less than the “fetish”) group. They also reported less internalized homonegativity and less condom self-efficacy than the “safer sex” group. They differed from the “fetish” group in reporting lower SEM consumption. This “normative” group likely represents MSM who enjoy watching their desired behaviors amplified, those who watch these behaviors as their preferred activities, as well as MSM who are potentially moving or transitioning between the “safer sex” group and the “fetish” group.

The SEM viewing pattern of the “fetish” group is the most extreme, both in dosage and genre. The group likely includes those who enjoy watching a wide variety of behaviors, sensation seekers, and those who embrace fantasy to fulfill behaviors they would never actually engage in. As well, it is likely that at least some in this “fetish” group engage in these sexual behaviors. If the “safer sex” group are MSM who “follow the rules”, the “fetish” group may prefer to not follow societal conventions or norms, at least in terms of SEM viewing.

The pattern of differences between the “fetish” group and the other two groups is interesting. Those in the “fetish” group watched bareback SEM at higher rates than the “safer sex” group and had lower condom use self-efficacy. Another interesting difference is that the “fetish” group had lower odds of higher education than the “safer sex” group. This differs from other studies, which have found that BDSM practitioners are more educated than their “vanilla” counterparts (Wismeijer & van Assen, 2013). That there was no difference in mental health indicators between the “fetish” class and the other two classes is consistent with other literature. In a cross-sectional study, Wismeijer and van Assen (2013) found that BDSM practitioners had average scores on mental health indicators indicating equal or superior mental health than their non-BDSM counterparts.

Our results have important implications for HIV prevention among MSM. As has been reported elsewhere, dosage of portrayed unprotected anal intercourse was inversely related to condom use self-efficacy (Træen et. al., in press; 2013). This analysis is the first to suggest that SEM genre may moderate the relationship between bareback SEM consumption and unsafe sexual behavior. We cannot tell from this analysis whether the higher rates of unprotected anal sex viewed by the “normative” and “fetish” groups (compared to the “safer sex” group) is chosen activity (i.e., in online SEM, MSM can click on bareback SEM), an artifact of the type of SEM being preferred (that extreme penetration, group sex, cum swapping films are more likely to show unprotected anal sex), or a complex interaction between person and preferred genre characteristics. It does suggest that a dose-response understanding of the relationship between bareback SEM viewing and engaging in unprotected anal sex is likely too simplistic. Our results suggest that a complex SEM genre consumption-person interaction may influence the amount or dosage of unsafe SEM consumed.

In addition to the field of HIV prevention, our results have implications for the SEM industry (particularly the gay SEM industry). The SEM industry has limited opportunities to do formal market research and our results present a descriptive overview of the viewing profiles of MSM. There is consistency between our findings and the way that SEM is marketed. For example, kink is its own market and we see a distinct subset of MSM who view this content. Similarly, sex portrayed with condoms is both marketed as a distinct genre and we see a distinct viewing profile preferring condoms. Given the debates with requirement of condom use in SEM, our results suggest that many MSM will watch SEM portraying condoms.

Limitations

The current study had four significant limitations. First, the cross-sectional design precludes identifying temporality; in the case of an association between class membership and condom use self-efficacy, identifying which precedes which is an important area of future research. Second, the use of a convenience online sample limits the generalizability of results and replication studies are needed to inform reliability of findings. Populations that may have been underrepresented are MSM who do not use the Internet, MSM who may ignore ads for studies, MSM who do not view gay SEM and heterosexual men who may watch gay SEM. Third, the study focused on what men viewed, without examining what they preferred. Without knowing the motivation, it is difficult to determine whether these men sought the SEM they watched, or whether it was simply the first available option (e.g., on websites, at bars or arcades). Future research is needed to identify the relationship between patterns of SEM consumption and viewers' subjective preferences. Fourth, as an online survey was used, the integrity of the data collection process cannot be guaranteed. Depending on what other media were being viewed before or potentially during survey completion, some participants may have been aroused while completing the questionnaires. Other participants may have taken long breaks between questions. Finally, some of the associations identified may have been biased due to unmeasured confounds (e.g., libido, outness).

Recommendations for Future Research

Based on these findings, we would prioritize four areas of study to advance a scientific understanding of gay SEM consumption. First, longitudinal studies that examine the relationship between class membership and HIV/STI risk behavior could examine how these classes develop; whether they remain stable over time; if they could estimate the amount of genre viewing that is incidental versus chosen or preferred; and the relationships between these variables and HIV/STI risk behavior. Second, these findings would be advanced by studies that identify how these classes of SEM consumption develop, subjective motivations, and their relationships to other aspects of MSM's lives. Future research needs to examine the frequency of unsafe sex that is shown across each class of behaviors. Qualitative interviews would be helpful to explicate the relationship between individual preferences, the classes found in this study, and bareback SEM consumption. A third direction is to examine whether class membership differs in different sub-populations of MSM, particularly those who may have been underrepresented in this study and those identified as higher risk for HIV. Finally, for researchers proposing intervention research using SEM, these results suggest that this is a highly complex area. Specifically, just producing or promoting a video depicting safer sex is unlikely to address MSM's diverse preferences. Media depicting only normophilic sex is likely to be preferred by most MSM, but unlikely to meet the needs of those most at risk. Conversely, media depicting more "hardcore" SEM and kink may reach those most at risk while being viewed as unacceptable by more conventionally oriented MSM. Thus, SEM-based HIV prevention research will need at least three parallel approaches to reach the three groups of MSM identified in this analysis.

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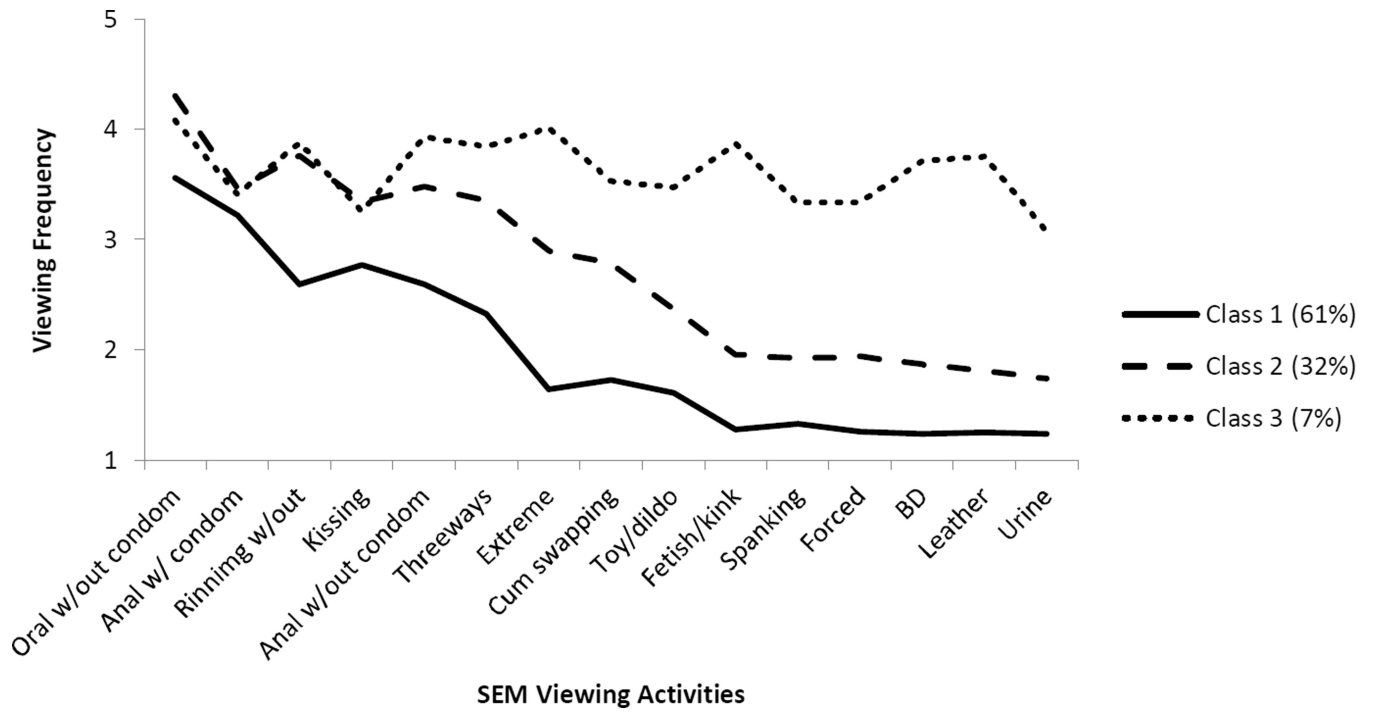


Figure 1.
SEM Viewing Activity Averages by Latent Class

Table 1

Characteristics of the analytic sample

Continuous Variables	M	SD
PANAS, Positive	3.41	0.81
PANAS, Negative	2.19	0.87
Marlowe-Crowne social desirability	5.38	2.03
Internalized homonegativity	2.44	1.23
SEM dose (hours/week)	6.26	9.94
Sexual self esteem	3.16	0.97
Sexual satisfaction	2.87	1.15
Condom use self-efficacy	3.98	1.01
Categorical Variables	n	%
Age		
18 – 34	983	68.79
35	446	31.21
Race/ethnicity		
Non-hispanic white	594	41.57
Nonwhite	835	58.43
Education		
Less than college degree	738	51.68
College graduate	690	48.32
HIV status		
Positive	130	9.10
Not positive	1298	90.90
Long-term relationship		
No	667	46.68
Yes	402	28.13
Missing	360	25.19
Any illicit drug use, last 90 days		
No	770	53.88
Yes	455	31.84
Missing	204	14.28

Note: PANAS = Positive and Negative Affect Schedule. SEM = sexually explicit media.

Table 2

Outcome Indicators' Means, Standard Deviations and Proportions Reporting Most of the Time or Almost Always Viewing

SEM viewing activity	M	SD	%(Most/Always)
"When you watched porn over the past three (3) months, how often did you see..." ^a			
Oral sex without condom	3.83	1.11	66.60
Anal sex with condom	3.31	1.11	46.82
Rimming (mouth on anus) without dental dam	3.06	1.36	40.94
Kissing	2.99	1.31	40.07
Anal sex without condom	2.97	1.15	32.57
Threeways/group sex/orgies	2.76	1.08	25.24
Extreme penetration	2.22	1.28	18.95
Cum swapping/Snowballing	2.20	1.22	17.84
Toy/dildo insertion	1.99	0.97	9.27
Fetish/kink	1.69	0.98	7.12
Spanking	1.67	0.93	6.57
Depictions of forced sex	1.63	0.91	5.81
Bondage/Domination (BD)	1.62	0.90	6.02
Leather	1.61	0.92	6.43
Watersports	1.53	0.88	5.12

Note: SEM = sexually-explicit media; SEM viewing activities ordered from most common to least common. SEM viewing activity items measured on a 5-level scale with 1 pertaining to never and 5 pertaining to always

Table 3

Model fit statistics

# Classes	AIC	BIC	SABIC	Entropy
<u>Test Half</u>				
2	19652.49	19902.67	19712.24	0.942
3	19184.45	19559.72	19274.07	0.923
4	18879.35	19379.7	18998.84	0.926
5	18653.44	19278.89	18802.8	0.879
<u>Validation Half</u>				
2	21441.98	21697.1	21506.64	0.968
3	20934.93	21317.6	21031.92	0.868
4	20682.76	21192.99	20812.08	0.883
5	20499.24	21137.02	20660.89	0.852

Note: AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; SABIC = Sample size adjusted Bayesian Information Criterion

Table 4

Estimates from final, 3-class latent class model (N=1,429)

Indicator	Class 1 “Safer Sex” (61%)	Class 2 “Normative” (32%)	Class 3 “Fetish” (7%)
Oral sex without condom	3.56	4.30	4.08
Anal sex with condom	3.22	3.46	3.41
Rimming w/o dental dam	2.59	3.76	3.88
Kissing	2.77	3.34	3.25
Anal sex without condom	2.59	3.48	3.93
Threeways/group sex/orgies	2.33	3.35	3.84
Extreme penetration	1.64	2.90	4.01
Cum swapping/Snowballing	1.73	2.78	3.53
Toy/dildo insertion	1.61	2.37	3.47
Fetish/kink	1.28	1.96	3.87
Spanking	1.33	1.92	3.33
Depictions of forced sex	1.26	1.94	3.34
Bondage/Domination (BD)	1.24	1.87	3.71
Leather	1.25	1.81	3.75
Watersports	1.24	1.74	3.07

Note: Numbers in columns are class averages for each indicator. Each indicator was measured using a 5-level scale where 1 = ‘Rarely or never (1–20%)’ and 5 = ‘Almost always or always (81–100%)’. All indicators with class averages greater than 3 (on a 1–5 scale) bolded.

Table 5

Regression Estimates Relating Covariates and SEM Viewing Activity Classes

Covariate	Class 2 (vs Class 1)	Class 3 (vs Class 1)	Class 3 (vs Class 2)
Age >=35	1.29 (0.74, 2.24)	0.96 (0.55, 1.70)	0.75 (0.43, 1.30)
NonWhite	1.32 (0.81, 2.13)	1.50 (0.93, 2.42)	1.14 (0.70, 1.84)
College+ Education	0.75 (0.45, 1.27)	0.60 (0.36, 1.00)	0.80 (0.47, 1.35)
HIV Positive	1.31 (0.62, 2.75)	1.97 (0.88, 4.37)	1.51 (0.72, 3.16)
SEM Dose	1.56 (1.21, 2.01)	2.17 (1.68, 2.80)	1.39 (1.08, 1.79)
In a Long-term Relationship	0.76 (0.42, 1.39)	1.19 (0.67, 2.10)	1.56 (0.85, 2.86)
Any Drug Use, Last 90 Days	1.31 (0.76, 2.24)	1.07 (0.64, 1.77)	0.82 (0.48, 1.40)
PANAS Positive	1.02 (0.74, 1.40)	0.90 (0.65, 1.24)	0.88 (0.64, 1.21)
PANAS Negative	1.21 (0.89, 1.64)	1.18 (0.87, 1.60)	0.98 (0.72, 1.33)
Marlowe-Crowne	0.95 (0.83, 1.08)	1.05 (0.92, 1.20)	1.11 (0.97, 1.27)
Internalized Homonegativity	0.66 (0.53, 0.81)	0.67 (0.54, 0.82)	1.02 (0.82, 1.26)
Sexual Satisfaction	1.04 (0.77, 1.41)	1.24 (0.91, 1.69)	1.19 (0.87, 1.61)
Sexual Confidence	1.28 (0.88, 1.85)	1.19 (0.83, 1.70)	0.93 (0.64, 1.35)
Condom Use self-efficacy	0.74 (0.57, 0.95)	0.62 (0.49, 0.80)	0.85 (0.65, 1.10)

Notes:

- Numbers in columns are odds ratios (with 95% confidence intervals in parentheses) adjusted for all other variables in the model. Significant ($\alpha=.05$) in bold.
- Values greater than 1.0 indicate higher levels of the covariate for the class being compared to the referent point; values lower than 1.0 indicate lower levels of the covariate for the class that is being compared to the referent point.